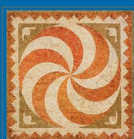




EUROPEAN UNIVERSITY OF TIRANA



LIVING IN A TECHNOLOGICAL ERA



Konferenca vjetore ndërkombëtare shkencore e UET / Annual International scientific conference of EUT
DSSH XI/ 2024
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PANEL I

**TECHNOLOGICAL
TRANSFORMATION AND
ECONOMIC SUSTAINABILITY**

Education for sustainable development as key enabler for sustainability and transformation of societies

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Abstract

There is general agreement that adequate education is a prerequisite for achieving sustainable development. It means that any transitions require suitable education. In the years 2015–2017, an educational project was implemented with the aim of increasing sustainable development and pro-ecological attitudes in Serbia and Bosnia and Herzegovina. The project, financed by Visegrad Fund, involved representatives of institutions supporting education for sustainable development (ESD) from 6 countries: Bosnia and Herzegovina, Czech Republic, Poland, Serbia, Slovakia and Hungary. The result of the project is, a still current and popular, publication for teachers: “Sustainability in everyday life”. This is a collection of lesson plans for students aged 10–14, devoted to how we can take care of the natural environment and the wellbeing of people through our lifestyle and everyday behaviours. The modules of the textbook were improved, changed and corrected by each partner and finally tested in each country by nearly, in general, 250 students.

The project started in 2015 together with Agenda 2030 and almost 5 years have passed since the end of it. Still it can serve as a model of international cooperation in the field of ESD. The aim of the publication is to indicate how international educational projects such as project Visegrade Plus contribute to the implementation of the Sustainable Development Goals and transformation of societies. The example discussed concerns the Western Balkan countries: Serbia and Bosnia and Herzegovina.

Key words: education, sustainability, education for sustainable development, cooperation, transformation

Introduction

The 2030 Agenda is a resolution adopted by the UN General Assembly in 2015. This initiative builds on decades of work by the UN and global society to advance the concept of sustainable development and guidance on its practical implementation. At the heart of the Agenda 2030 are the 17 Sustainable Development Goals with 169 concrete targets which provides a guidance for social development with aim to achieve wellbeing for all people while respecting the environmental limits of natural resources use, now and into the future. The co-authors of UNESCO’s publication: “Issues and trends in Education for Sustainable Development” Alexander Light, Julia Heiss and Won Jung Byun states that “the SDGs recognize that all countries must stimulate action in the following areas – people, planet, prosperity, peace and partnership – in order to tackle the global challenges that are crucial for humanity. Achieving these goals requires a profound transformation in the way we think and act”

There is general agreement that education is crucial factor for achieving sustainable development. Without appropriate education, progress in any area of sustainable development, such as health care, sustainable consumption and production, climate protection, counteracting poverty or striving for equal rights, is not possible:¹. Educational systems are critical to achieve the transition towards sustainability as they equip learners with the knowledge, skills and attitudes needed to re-orient social structures and systems.





¹ <http://www.unesco.pl/662/> [access 10.02.2024].

Since the very beginning of the concept of sustainable development, the United Nations has paid great attention to the role of education in achieving sustainable development and mobilizing world society to implement it. UNESCO – the agenda of UN devoted to education, science and culture has leading role for initiating and implementing educational initiatives. The intensity of the undertaken actions clearly proves how much hope there is in education and its role in transforming the development of civilization. The most important international UN initiatives obliging countries in Europe and around the world to introduce education for sustainable development (ESD) into education systems include:

- UN Decade of Education for Sustainable Development proclaimed in 2002 by the United Nations General Assembly for the years 2005–2014. The decade was coordinated by the United Nations Educational, Scientific and Cultural Organization (UNESCO).
- Global Action Program on Education for Sustainable Development adopted at the conference summarizing the Decade of ESD, which took place in Japan, Aichi-Nagoya, in November 2014.
- The 2030 Agenda and the 17 Sustainable Development Goals adopted at the 70th Session of the United Nations General Assembly in September 2015.
- The framework ESD for 2030 adopted at the 40th UNESCO General Conference and acknowledged by the 74th UN General Assembly

UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015. The newest UNESCO initiative: global framework *ESD for 2030* places a stronger focus on educational contribution to the achievement of all of the Sustainable Development Goals.

FIGURE 1. *ESD for 2030* directly contributes to SDG 4, in particular target 4.7, as well as targets: 12.8, 13.3 and 16.10 but it is considered as a driver for the achievement of all 17 SDGs.

	<p>Target 4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.</p>
	<p>Target 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.</p>
	<p>Target 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>
	<p>Target 16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.</p>

Education for Sustainable Development (ESD) is commonly understood as education that encourages the acquisition of knowledge, skills, values, attitudes and, above all, taking action to enable a more sustainable and fair society for all people and wellbeing for the natural environment. UNESCO is clearly pointed out that ESD is holistic and transformational education that address learning content and outcomes, pedagogy and the learning environment.² It means that ESD is more than only the teaching content but require also engaging, student – centered teaching-learning methods and processes.

Characteristics of education for Sustainable Development

According to UNESCO - the United Nations leading agency for ESD "Education for sustainable development gives learners of all ages the knowledge, skills, values and agency to address interconnected global challenges including climate change, loss of biodiversity, unsustainable use of resources, and inequality. It empowers learners of all ages to make informed decisions and take individual and collective action to change society and care for the planet. ESD is a lifelong learning process and an integral part of quality education. It enhances the cognitive, socio-emotional and behavioural dimensions of learning and encompasses learning content and outcomes, pedagogy and the learning environment itself."³

² UNESCO (2017) *Education for Sustainable Development Goals Learning Objectives* Paris, France

³ <https://www.unesco.org/en/education-sustainable-development/need-know>

Education for sustainable development has a long history dating back to the 1992 United Nation Conference on Environment and Development (UNCED) where 178 Member States agreed on Framework for action Agenda 21. In chapter 36 of the Agenda 21 it is clearly stated that education, training and public awareness are critical tools for the transition to sustainable development.

One of the first items that was a response to the need for education included in Agenda 21 and an attempt to combine theoretical recommendations with existing educational practice was a book published in 1996 in England, edited by Huckle and Sterling, with the direct title “Education for Sustainable Development”. In this book Sterling emphasized needs for radical, strong education for sustainability that may result from positive breakthrough and leading to “changing thinking and practice to live in within the limits that ecological, social and economic sustainability requires”. Researcher pointed out that ESD may and have to embedded in social processes which reflecting the diversity, integration and holistic approach demanded by sustainability. Examples may include: local economics cycles, ethical consumerism, sustainable agriculture, focus on energy conservation rather than supply, ecological design principles in planning, architecture and ecotechnology, adaptation of the precautionary principle in environmental policy.

Since the 1990s and Agenda 21, a huge number of publications have been created, many of them under the auspices of UNESCO, devoted to the characteristics of ESD. The common keynote of the UNESCO publication regarding education for sustainable development is that it is education about developing competences which empower and encourage learners to become active and critical citizens able to undertake actions which lead to sustainability. There is general agreement among researchers contributing to UNESCO publication what are the sustainability competences of particular importance for thinking and acting in favour of sustainable development (de Haan, 2010; Rieckmann, 2012; Wiek at al., 2011).

FIGURE 2. Cross-cutting key competences for achieving sustainability

Key competences for sustainability⁴

- Systems thinking competency: the ability to recognize and understand relationships, to analyse complex systems, to perceive the ways in which systems are embedded within different domains and different scales, and to deal with uncertainty;
- Anticipatory competency: the ability to understand and evaluate multiple futures – possible, probable and desirable – and to create one’s own visions for the future, to apply the precautionary principle, to assess the consequences of actions, and to deal with risks and changes;
- Normative competency: the ability to understand and reflect on the norms and values that underlie one’s actions and to negotiate sustainability values, principles, goals and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions;
- Strategic competency: the ability to collectively develop and implement innovative actions that further sustainability at the local level and further afield;
- Collaboration competency: the ability to learn from others; understand and respect the needs, perspectives and actions of others (empathy); understand, relate to and be sensitive to others (empathic leadership), deal with conflicts in a group; and facilitate collaborative and participatory problem-solving;
- Critical thinking competency: the ability to question norms, practices and opinions; reflect on own one’s values, perceptions and actions; and take a position in the sustainability discourse;
- Self-awareness competency: the ability to reflect on one’s own role in the local community and (global) society, continually evaluate and further motivate one’s actions, and deal with one’s feelings and desires;
- Integrated problem-solving competency: the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution that promote sustainable development – integrating the above-mentioned competencies.

Key competences for sustainability are mutually interdependent. They are not meant to replace specific competences required for example in the formal education, but they encompass these and furthermore have to be developed in conjunction with basic competences (Wiek at al., 2011). According to Rieckmann (2018) sustainability performance depends on the interaction of knowledge and skills, values and motivation drivers and opportunities.

The question is: which teaching learning methods and procedures may be most effective (recommended) for developing key competences for sustainability? In 2022 researchers from Germany undertake the analyzed 17 scientific publication in which suggestions for teaching methods in ESD were made. In the conclusions researchers divided recommended methods into two groups: teaching-learning methods with a high degree of self- direction and methods with high degree of guidance by teacher. Among analyzed recommended methods and procedures for teaching and learning project based learning and projects in local environment were the most frequent. The following methods were recommended by Riess, Martin, Mischo, Kotthoff, and Waltner as effective for building knowledge and promoting problem-solving skills in variety of ways:

- The starting point for learning should be a real-world problem from the sustainability context.
- Acquiring sustainability-relevant knowledge and activating prior knowledge are fundamental.
- New sustainability knowledge or new solutions to problems should be presented.
- Independent phases of learning and problem solving are important but should be supported by feedback and assistance.
- Reflection on one’s learning process is significant in promoting increasingly selfdirected learning.
- Exercises and also the development of routines foster automation and thus promote effective processing of problem solutions.

According to these authors effective teaching-learning methods which support motivation and attitudes include: role playing, simulation games, learning from models (observation and imitation learning), value clarification, projects and

⁴ <https://unesdoc.unesco.org/ark:/48223/pf0000247444> access 3.03.2024

internships in context relevant to sustainability, and the formation of students parliaments in which students may undertake decisions concerning sustainability issues.

Visegrad Plus project – as an example of effective education for sustainable development.

The 2030 Agenda for Sustainable Development was adopted by all United Nations Member States in 2015 and provides a shared blueprint for peace and prosperity for people and the planet, now and into the future⁵. In the same year, an international, educational project titled: “Increasing sustainability and environmental protection attitude in Serbia and Bosnia and Herzegovina” and financed from the Visegrad Found began.

The aim of this project is to raise awareness of sustainable development and environmental protection in Serbia and Bosnia and Herzegovina. The starting point for this project was the assumption that at the beginning of the 21st century, awareness and knowledge about environmental protection and sustainable development in the Western Balkan countries is lower compared to the countries of Central and Western Europe. It was recognised as result of the lower economic opportunities of these countries and the lack of tradition and culture of an “ecological lifestyle”.

The undertaking project focus on education and was intended to change the attitude of students in the field of sustainability and environmental protection by developing educational materials. Developed through the project lesson modules were dedicated to practical and everyday sustainability habits which can lead to sustainable practices of school students in partner countries - particularly in Serbia and Bosnia and Herzegovina.

The project was initiated and coordinated by the Hungarian NGO: Magosfa Foundation for Environmental Education and Ecotourism. Initially six partner organizations from the Central Europe took part in the project:

- Magosfa Foundation,
- Centre for Ecology and Energy/ Bosnia and Herzegovina,
- Education through Culture/ Serbia,
- Center of Environmental Activities/ Slovakia,
- Chaloupky, public benefit company, school facilities for training and education/ Czech Republic
- University of Warsaw – University Centre for Environmental Studies and Sustainable Development/ Poland.

Ultimately, the project was finalised by 5 partners due to the Czech partner’s resignation. Nevertheless, the project should be considered as a very successful and important step towards education for sustainable development at the beginning of the launch of the UN Agenda 2030 and the 17 Sustainable Development Goals.

The main output of the project is a complementary textbook for teachers “Everyday sustainability”. This is a collection of lesson plans for students aged 10-14, devoted to everyday habits. By using activating teaching methods, the proposed lesson scenarios aim in showing how every person can take care of the natural environment and the immediate surrounding in sustainable manner through lifestyle, shopping, waste segregation and other everyday behaviors.

3.1 Project stages and outcomes

3.1.1 Project stages and project start-up success factors

Project “Increasing sustainability and environmental protection attitude in Serbia and Bosnia and Herzegovina” was implemented in the period: September 2015 – February 2017. Its implementation was based on the following stages:

- First, initial project meeting;
- Development of the project website;
- Drafts of the textbook modules developed by the project partners in English and then subjected to mutual consultation;
- Translation of own textbook modules;
- Testing modules in schools in partner’s countries;
- Feedback corrections and final versions of modules for the textbook;
- Typography and printing of the textbook;
- Promotion of the textbook for teachers “Everyday sustainability” including media publication.

All the above mentioned steps of the projects implementation are showing successful scheme of the educational project implementation with the participation of partners from various countries.

A good start is a guarantee of the success of the entire project. Important success factors set up from the early beginning of the project implementation process were: the acceptance of the project implementation principles by all participants and their subsequent compliance. The key to success was the first meeting organized in Vác/ Hungary by the project coordinator

⁵ <https://sdgs.un.org/goals> (access 17.02

Magosfa Foundation. During this meeting, project partners had the opportunity to get to know each other and exchange their experiences in ecological education. The topic and title of the planned textbook were determined and implementation milestones were set.

FIGURE 2. Participants of the project “Increasing sustainability and environmental protection attitude in Serbia and Bosnia and Herzegovina” financed from the Visegrad Fund during the first meeting in Hungary



The other crucial factor which contribute to the success of the project was very good communication among the project's partner which was achieved due to creation of the website from the early beginning of the project's start. It was a multilingual website site with the native languages of all partners, plus English language. The website contained information about partners and the most important data regarding the project's development, which was regularly updated

3.1.2 Outcomes

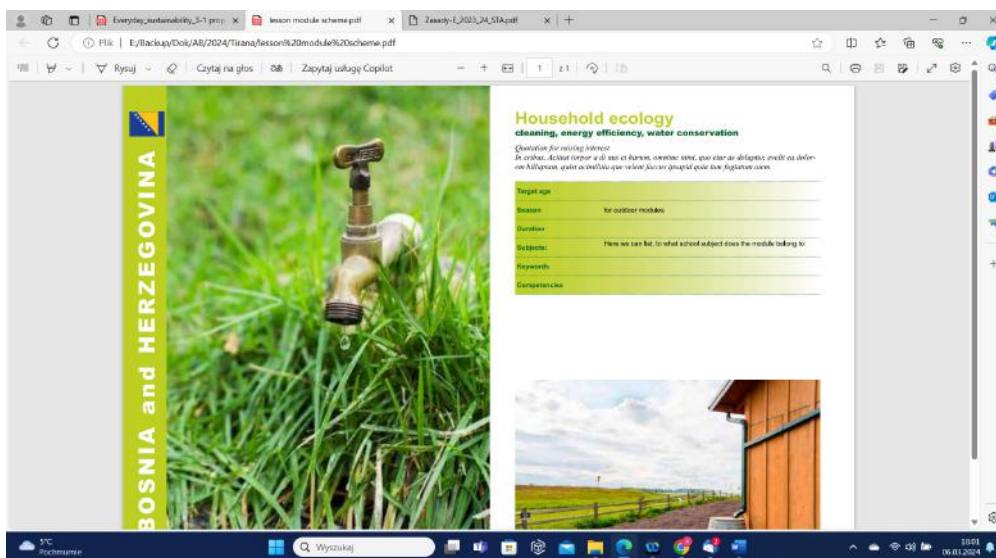
The main outcome of the project is the textbook addressed to the school teachers from all partners countries. The title of the book: “Everyday sustainability” and titles of the particular educational, lesson modules of that textbook was agreed by all partners during the first meeting. The idea was to develop educational activities during which students can discuss and wonder how to implement the principles of sustainable development in everyday lives. The following thematic modules were agreed:

- Conscious consumption;
- Our daily waste;
- Green map of where we live;
- Fair trade in the school shop; Ecology in the household;
- Natural garden – nature in the garden.

All the proposed and agreed teaching models refers to the real life situations and everyday habits.

In January-February 2016 each partner was responsible for developing two lessons module for the textbook with help of experts in English language. The lesson module was carefully designed with the purpose to be real educational tool - easy to use by all teachers. Each module contained a table with information: purpose of the lesson, age group, duration of the lesson, subjects on which the lesson could be conducted, keywords, competences acquired by students.

FIGURE 3. Example of the layout of educational module devoted to the ecology in household developed by project’s partner from Bosnia and Herzegovina.



The course of the classes was described step by step. The activity modules also included student worksheets and recommended literature and websites.

Individual lesson modules were shared among partners analyzed by all project partners who submitted their comments. After accepting and determining the final versions each partner translate the modules to native languages, and adapt it according to the specific needs of the own countries. The modules were tested in schools. Each partner tries out 2 modules with school classes. In total all educational modules were tested by almost 300 school students in all partners countries.

FIGURE 4. Number of students testing educational modules in particular countries

Country	Hungary	Bosna and Hercegovina	Serbia	Slovakia	Poland
Number of students testing educational modules	51	91	44	34	48

After conducting tests at the school and obtaining comments from students and teachers, changes were made and the final versions were established. Introduction and methodology sections were also written. These final versions were again translated into English and distributed to all Partners who translated them into their languages.

The final version of the text book was published in January 2017 by using one common typography in every country.

FIGURE 5. the layout of teachers textbook cover; the first and last page



The modern and attractive form of the publication certainly contributed to the book's success and popularity among teachers. Despite the passage of time, both the content and form of the educational book remain relevant and are very popular among teachers and educators.

The final stage of the project was the project's promotion. Project partners organised the final project event, the school sustainability day in February 2017. Every Partner organised own event, adapted to the capabilities, specificity of schools and expectations of students and teachers. Everyone made sure that this event had an appropriate setting and was well publicized in local, regional or national media. In Poland there were two sessions organized in primary school. Every session lasted 2 hours and was attended by approximately 100 students and 4 teachers. In the first part of the workshop, students learned about sustainable development issues discussed in the publication of the project "Everyday sustainability." They get familiar with the Sustainable Development Goals adopted by the United Nations General Assembly in September 2015.

In the second part of the workshop, students could test their knowledge on sustainable development by participating in a quiz. The atmosphere of the meeting was very good. Students with attention and curiosity took part in classes and eager to answer questions. As a reward, all received the wooden ruler with prints depicting various species of plants and animals.

Conclusions

- Education for sustainable development is a key instrument to achieve sustainable development. All persons in their life long experiences must learn to understand the complexities, uncertainties, compromises and risks related to sustainability challenges at the local and global scale. ESD empowers learners to take informal decision and responsible actions for environmental quality, economic capability and fair and just society for present and future generations.
- To achieve above mentioned aims ESD also aims to develop competencies that enable individuals to actively participate in socio-political processes and moving the societies towards sustainable development. There is general agreement among ESD experts that some of competences are of particular importance in order to think and act in favour of sustainable development: systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, and integrated problem-solving competency.
- Education for sustainable development is holistic and transformational education which address not only the learning content but also the pedagogy and learning environment. Projects are recognized as effective teaching method which may lead to developing sustainability competences and fit into action-oriented, transformative pedagogy.
- Project "Increasing sustainability and environmental protection attitude in Serbia and Bosnia and Herzegovina" financed from the Visegrad Found meets the criteria of teaching method effective for building knowledge and promoting problem-solving by (i) providing educational activity related to a real-world problem from the sustainability context; (ii) presenting new sustainability knowledge or new solutions to problems (iii) promoting effective processing of problem solutions.
- Thank to the international character of the project it was possible to achieve the aim of the project: The aim of this project: to raise awareness of sustainable development and environmental protection in Serbia and Bosnia and Herzegovina. The purpose of the project and the resulting publication was to change the attitudes of students (and through them, adults) so that they can easily contribute to the implementation of the principles of sustainable development and environmental protection through their lifestyle and everyday activities. As the economic opportunities at this time of the Western Balkan countries were limited, the publication focuses on discussing and popularizing everyday behaviors that are easy to practice and financially profitable. The project contributes to the development of education for sustainable development both in schools in Serbia and Bosnia and Herzegovina and in all countries participating in the project.
- Finally it is worth to underline symbolic date of the project's beginning: 2015 the same year when the Agenda 2030 and it's 17 SDGs start to change many socio-economics processes all over the World towards more sustainable practices.

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Bridging Knowledge Gaps

Integrating EU Literacy into Higher Education Curricula in Albania

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Abstract

The article provides an overview of the Higher Education Institution (HEI) curricula in Albania concerning EU Integration, with the objective of enhancing EU Literacy among Albanian youth. Through a combination of questionnaire surveys and desk research, the current state of EU literacy among HEIs is evaluated, revealing a need for improved integration of EU-related topics. Despite the recognition of HEIs as crucial for sustainable development, their incorporation of sustainability remains limited. The European Commission emphasizes the pivotal role of universities in driving green and digital transformations to contribute to societal progress and global leadership. The document explores European integration efforts and best practices in Italy, Kosovo, Bosnia & Herzegovina (BiH), and North Macedonia, highlighting successful initiatives and the importance of collaboration between universities and state institutions. In Albania, while certain disciplines cover EU-related topics more extensively, there is a call for a more comprehensive assessment and enhancement of EU literacy, especially considering Albania's aspirations for EU membership. Recommendations include strengthening regional capabilities, revising curricula, and integrating modules supporting financial literacy and EU integration policies across all HEIs. Ultimately, these efforts aim to empower Albanian youth with the knowledge and skills necessary to navigate the complexities of European affairs effectively and contribute to the country's integration process.

Keywords: EU literacy; HEI; Western Balkan.

Introduction

This document is framed within the framework of the Jean Monnet - Centre of Excellence EUFutur Project. Serving as a policy paper, it delivers evidence concerning Higher Education Institution (HEI) curricula in Albania. The primary objective of this report is to ascertain the extent to which courses pertaining to EU Integration are incorporated into university study programs and provide recommendation intended for the Ministry of Education in Albania to further act on improving the state of EU Literacy in HEI in Albania. This policy paper aims to empower EU literacy among youth population in Albania.

The analysis and findings presented in this policy paper are derived from two principal sources: data obtained from a structured questionnaire and insights gathered through desk research. The questionnaire solicited responses from individuals representing four Western Balkan countries, focusing on the inclusion of EU integration and policy-related courses within their respective universities. Specifically, responses from Albania were isolated for analysis in this report. Structured as a sequential inquiry with predetermined response options, the questionnaire methodology ensures robust data collection. Through this approach, a comprehensive overview of the status of curricular integration related to EU matters in the region, with a particular emphasis on Albania, is attained.

The second source of analysis relies solely on desk research conducted for Albania. This entails the review of websites belonging to 39 higher education institutions, encompassing all active HEIs in the country, including 24 universities, 9 university colleges, and 6 academic institutions. The evaluation focused on discerning whether these institutions offer courses pertinent to the EU. Given that universities are expected to provide transparent and accessible information regarding their academic offerings, this method is deemed effective. These findings contribute to a more nuanced understanding of the landscape of HEI curricula in Albania.

This policy paper has a high importance as it addresses EU literacy towards universities. In the pursuit of a more sustainable world, higher education institutions (HEIs) stand as pivotal agents of change (Leal Filho, 2011). Recognized for their central role in advancing the sustainable development goals (SDGs), HEIs contribute through various means including research, education, partnerships, community involvement, and effective governance (HESI, 2017). Their influence extends across multiple domains such as the economy, societal issues, environmental preservation, policy formulation, cultural dynamics, and demographic shifts, directly impacting sustainable development (SD) outcomes (Findler et al., 2019).

Despite a growing number of universities committing to higher education for sustainable development (HESD) initiatives and engaging with EU literacy, remain limited, often peripheral to the core functions of HEIs. Few HEIs have managed to integrate sustainability comprehensively into their operations (Giesenbauer and Müller-Christ, 2020 and Sterling, 2021), with many lacking a robust SD policy as a fundamental aspect of their governance framework (Leal Filho et al., 2020). Literacy enables individuals to develop capacities of reflection, critique, and empathy, leading to a sense of self-confidence, identity and full involvement in society. Engaging into enhancement of EU literacy among Albanian youth population can empower and contribute towards sustainability in aligning with EU institutions and policies. New paragraph: use this style (with indent) when you need to begin a new paragraph.

Literature Review: On the importance of EU in School Curricula

In today's world, universities play a crucial role in addressing challenges like climate change, digital transformation, and an aging population, exacerbated by the COVID-19 pandemic. The European Commission's Strategy on Universities recognizes these institutions as key to innovation, knowledge creation, and societal transformation. They foster democratic, fair, and sustainable societies, driving growth, entrepreneurship, and employment. By aligning with societal and economic needs, universities contribute to the European Education Area (EEA) and the European Research Area (ERA). This strategy aims to enhance EU understanding, foster European identity, and facilitate student and academic mobility, empowering universities to lead in global roles and transformations. (EU, 2022).

Incorporating EU-centric topics into school and higher education curricula is vital for developing informed, active citizens who can navigate and contribute to the complexities of a rapidly evolving European and global landscape. This integration aligns with the European Commission's strategic objectives for higher education, aiming to deepen the European Dimension in education and research. By enriching curricula with diverse EU-related content, students gain a comprehensive understanding of the EU's principles, policies, and processes, nurturing a shared European identity and appreciation for democracy, human rights, and the rule of law. This educational approach not only prepares students to engage in democratic processes but also equips them to address significant challenges such as climate change, digital transformation, and social equity. As Europe advances towards green and digital transformations, including EU topics empowers universities and schools to serve as lighthouses of the European Way of Life and active agents of change. This prepares graduates who are academically proficient and aware of their role in supporting the EU's global leadership and efforts for sustainable development, enhancing employability, fostering innovation, and strengthening future generations' capacity to uphold and advance European values and objectives (EC, 2020).

The 2020 report "Learning about EU: European topics and school curricula across EU member states" examines how EU themes are presented in curricula and suggests improvements to make EU-related content more relevant to students. It highlights the diverse integration of EU topics within higher education across Europe, noting varying degrees of emphasis, thematic focus, and pedagogical approaches.

Educational systems are increasingly adapting to include EU content, recognizing its importance in shaping informed citizens. Curricula across member states aim to embed EU topics, whether as standalone subjects or integrated within broader themes, emphasizing the EU's political, economic, social, and cultural dimensions. Implementation varies by institution, influenced by policies, faculty expertise, and resources. Some universities offer specialized EU courses, while others integrate EU topics into subjects like international relations, politics, economics, and law. Vocational and technical education also includes EU regulations and policies relevant to specific professions.

The report advocates for enhanced professional development for educators to effectively teach about the EU. It calls on intermediary organizations to support teachers by facilitating engaging learning experiences like interactive simulations, granting students more control over their learning journey. Teachers are encouraged to adopt creative and innovative teaching methods, foster direct dialogues with EU experts, and promote critical thinking and peer learning. This multi-faceted strategy aims to make EU education more impactful and relevant, deepening students' understanding and engagement with the EU while respecting the sovereignty of national education systems and fostering a unified European identity.

Case Study in EU and WB

3.1 Promoting European Integration. The Italian Experience. The Punto Europa of Forli: a Model of Best Practice

The Punto Europa of Forli, established in 1999 by the University of Bologna - Forli Campus, the municipality of Forli, and the Province of Forli-Cesena, is an information, study, and documentation center. Its Scientific Committee consists of University of Bologna professors specializing in EU matters. Since becoming a Europe Direct Information Centre in 2007, a Jean Monnet Centre of Excellence in 2014, and a European Documentation Centre in 2018, Punto Europa has provided various services. It promotes European citizenship awareness through information services and EU documentation distribution. The center also organizes training courses, conferences, and seminars on EU issues for public administration officials, teachers, citizens, and associations.

In 2001, it launched the "EU Citizenship at School" project, funded by the Erasmus+ Jean Monnet Action since 2011. In 2013, it was recognized for "Good Practices on the Daily Activities of a Europe Direct Information Centre" and presented as best practice by Professor Giuliana Laschi. Despite Italy's role as a founder of the European Community and the European Union, there is widespread ignorance about EU objectives, policies, and institutions, partly due to misinformation in mass media and negative portrayals by the government and political parties.

The project "EU Citizenship at School" aims to teach the students how to become aware of their role as European citizens through a better knowledge of the history of the European integration process and the structures, duties, and how the EU works. Meetings are organized in school to explain the history of European integration, how the EU works, and specific topics. Getting young people, as future active citizens, aware of the EU is of crucial importance, and the role of the education system is central to promoting their sense of European citizenship and belonging.

The key to the project "EU Citizenship at School" success lies in the combination of university students as teachers of primary and high school students. The university students are selected with an Open Call for University Students in European and International Studies. The better ones are chosen based on their knowledge of the EU and their attitude to communication. Then, the students will be trained in how to speak in public, tailor the message using appropriate language, and implement recreational activities. The course foresees a residential part that also encourages team building. At the end of the course, they are entitled EU Junior Experts.

They participate as "observer" at the first public meeting with expert student trainers. Two EUJEs hold each Meeting in School classes. Classes are always supported by PowerPoint presentations and videos, making learning more accessible for students.

Since 2015, some school meetings have been held directly in the university spaces (classrooms) – a great experience, especially for professional schools. Meetings are held in Primary, Lower, and Upper Secondary Schools, considering the students' age and using proper language and tools. Meetings are arranged based on one or two compulsory meetings on History, EU Institutions, and Symbols of the EU (EU Citizenship is always included). The second or third meetings concern deepening, answering schools' requests: EU Policies or Opportunities in Europe. At the end of each meeting, the school students and their teacher complete an assessment questionnaire to monitor the work while it is being implemented. In the end, the main achievements of the project "EU Citizenship at School" are:

- Information as the tool for creating/increasing European citizenship awareness.
- University students are positive models: young and informed, studying before speaking. They have developed critical thought; they represent the alternative way to be citizens, not passively but actively, through knowledge.

The added value of the project "EU Citizenship at School" lies in the methodology that represents an education improvement for school and university students, who learn how to convert complex knowledge into a language that anybody can understand, not only in academia. This is an education model to improve the learning skills of everyone involved.

3.2 Promoting European Integration. The Kosovo's Experience

Since its liberation in 1999, Kosovo has been under the continuous influence of the European Union, either directly in the political and economic spheres or through support for civil society and education. Since 1999, a significant portion of the activities supported by various donors has focused on educating about the EU and European values that have come to the fore since World War II in Western Europe, such as democracy, human rights, pluralism, market economy, and tolerance. Special importance has also been placed on awarding scholarships to young people to study European integration at European universities, as well as initiating courses on European integration at the University of Pristina, which was the only university at that time.

Since then, higher education in Kosovo has diversified. In addition to the University of Pristina "Hasan Prishtina," there are now seven other public universities and several private university colleges. This policy paper focuses on the programs of eight public universities: University of Pristina "Hasan Prishtina," University of Prizren "Ukshin Hoti," University of Gjiilan "Kadri Zeka," University of Peja "Haxhi Zeka," University of Mitrovica "Isa Boletini," University of Gjakova "Fehmi Agani," University of Applied Sciences in Ferizaj, and International Business College in Mitrovica. The programs of private university colleges such as UNI-Universum International College, AAB College, UBT, "Pjeter Budi" College, Heimerer, Rezonanca, and the American University in Kosovo (AUK) were also reviewed. Among the public universities, the University of Applied Sciences in Ferizaj is the only one that does not offer a course related to the European Union or European integrations, and the same is true for private university colleges focused on medical fields such as Heimerer and Rezonanca. AUK also does not offer such a course. Among the public universities with more courses and study programs in the field of European integration, the University of Pristina "Hasan Prishtina" is the leader, followed by the University of Peja "Haxhi Zeka," while among the private universities, UNI, AAB, and UBT offer more courses in this field.

EU-related courses are generally more prevalent in public universities than in private ones. Private colleges often focus on areas less covered by public institutions. Both public and private universities mainly offer EU-related courses in law, political science, and economics programs, while they are nearly absent in medicine, engineering, computer science, and education programs.

In master's programs for law and economics, EU courses are highly specialized, such as EU Economic Policies, European Criminal Law, and EU Project Management. The University of Pristina "Hasan Prishtina" and the University of Peja "Haxhi Zeka" offer master's programs in European integration. The University of Prizren "Ukshin Hoti" includes an EU course in its agribusiness program. However, EU courses are lacking in other fields like environment, agriculture, and construction standards, even when relevant.

3.3 Promoting European Integration. The Bosnian Experience

At the University Sarajevo School of Science and Technology, Bosnia and Herzegovina, the Faculty of Economics and Faculty of Political science and international relations offer specialized courses aimed at introducing and discussing European Union (EU) policies. One such course, EC 260 EU Economic Analysis, offered at the third year of study, is designed to be more than a theoretical exploration, and serves as a gateway to understanding the multifaceted dimensions of EU economics. It embarks on a journey to unravel the economic intricacies of the EU's development while simultaneously scrutinizing the policies underpinning its integration process. With a keen eye on both the political and social ramifications, course EC 260 delves deep into the economic impacts on various stakeholders – from individuals to entire regions. More than just dissecting policies, the course emphasizes the dynamic interplay between theory and practice, urging students to critically assess the effectiveness and repercussions of EU policies. Through a combination of theoretical frameworks, real-world case studies, and interdisciplinary discussions, students emerge equipped with a holistic understanding of EU economics. Armed with this knowledge, they are poised to navigate the complexities of European integration and contribute meaningfully to the broader discourse on EU affairs, whether in the realms of economic analysis, policymaking, or international relations.

The Department Political Science and International Relation covers EU studies through several different undergraduate level course. Students delve into the evolution of the European Union (EU) across various dimensions. In the course "Modern Political History," emphasis is placed on understanding the genesis and progression of the European Community, tracing its trajectory from an economic entity to a political union. A focal point of study is the post-World War II period, exploring the historical ideas and events that shaped European integration.

Students examine the driving forces behind integration processes, key theoretical frameworks, the evolution of EU institutions, and the multifaceted engagement of various stakeholders in a course entitled "Basics of EU Politics". Additionally, the curriculum addresses the radical transformations in post-Communist Europe, providing insights into the region's unique historical trajectory and its implications for European integration. By exploring key EU policies, students gain insights into contemporary challenges and opportunities, including democracy, political identity, and pressing issues. The curriculum also covers the dynamics of EU enlargement post-2013, providing a comprehensive view of the EU's current state and future prospects. This approach offers a nuanced understanding of European integration, blending historical, theoretical, and contemporary perspectives.

The module "European Protection of Human Rights" delves into the EU's legal framework, focusing on the primary legal institutions and mechanisms safeguarding human rights in Europe. It highlights the Council of Europe and the European

Convention on Human Rights (ECHR), emphasizing critical analysis of human rights instruments. Students examine the European Court of Human Rights' (ECtHR) interpretation of ECHR provisions and the interplay between the ECtHR and the Court of Justice of the European Union in the post-Lisbon era.

Through critical evaluation, students understand the ECHR's fundamental principles and their practical implications within domestic legal frameworks. The module encourages assessing human rights standards in real-world contexts, fostering an appreciation for the multifaceted nature of human rights protection in Europe. Ultimately, students are equipped with the analytical tools and knowledge to navigate European human rights law and practice.

Lastly, a course entitled "Introduction to EU Law" provides students with a comprehensive understanding of European Union law and its broader implications. Beginning with an exploration of the historical evolution of the EU, students delve into the fundamental institutional, substantive, and procedural aspects of EU law. Emphasis is placed on elucidating the structures of the EU, its law-making processes, and the pertinent case law concerning free movement, citizenship, and fundamental rights. Throughout the course, students examine the EU's role in the global arena and its interaction with international law and national legal systems. They gain insights into the EU's competences, institutions, normative instruments, and decision-making processes. Special attention is given to the relationship between EU law and domestic laws, as well as the application and enforcement of EU law by domestic courts. Additionally, students analyze the functions of the Court of Justice of the EU and its impact on EU legal integration. Furthermore, the module delves into the rules and case law governing the EU's internal market, with a focus on the free movement of goods, persons, services, and capital, as well as selected EU policies. By the conclusion of the module, students attain a nuanced understanding of substantive EU issues, its current functioning, development trajectory, and future prospects. They also develop the ability to critically evaluate the EU's position in the broader international context, particularly regarding substantive matters fundamental to the EU's identity and evolution.

3.4 Promoting European Integration. North Macedonia's Experience

In North Macedonia, particularly in the last twenty years, increased the universities' eagerness to incorporate in the academic program's courses related to the EU history, institutions, law, governance, integration and identity. The interest for these courses evolved and continues to grow due to the necessity that originates from the aspirations of the country and its citizens for the EU membership and the attentiveness of the students to expand their knowledge about European Studies and as such to enhance their options for better integration in the labor market. Furthermore, along with the dynamics of the negotiations process, it was inescapable strengthening of the institutional capacities and enabling the employees in the state and public administration to address all the questions associated with North Macedonia's EU membership. During these years it was evident that there were/are deficiencies in the university curricula, too. For that reason, in addition to the efforts for specific courses there are present tendencies for academic programs in EU Studies, mainly within the Faculties of Political Sciences, the Faculties of Law and the Faculties of Economics.

From the courses and programs' descriptions provided in the web sites of the universities it can be recognized that in North Macedonia courses and programs focusing on European Studies are offered in all three levels of studies, including undergraduate, master, and doctoral studies. Courses compared with programs are more often present and mostly are found in the undergraduate studies while the programs in the master and doctoral studies. The programs in the master studies largely are designated as European Studies, EU Law and European Integration, International Relations and European Studies and European Economic Studies. Similar formulations are used also for the programs in doctoral studies where it is characteristic that are fewer programs compared with the programs in master studies.

Students can have a broad understanding on various EU issues depending on their chosen field of studies. In the undergraduate studies, in the programs of Political Sciences and International Relations, very often as mandatory courses are added History of the EU, European Studies, European Integration, Institutions and Policies of the EU; and as elective courses Theories of European Integration, Foreign and Security Policy of EU, Political System of EU, Illegal Immigration and Human Trafficking in the EU, Multiculturalism and EU, Values, Civil Society and Identity in the EU. In the programs within the Faculties of Law as mandatory courses mainly are encompassed EU Law, Institutions and Governance and EU Law and EU Institutions while as units and/or university's elective courses are European Studies, EU Justice and Home Affairs. In several other study programs, Public Administration and Human Resources Management, Social Work and Social Policy, Media and Intercultural Communication, Applied Economics and Entrepreneurship, Marketing and Management, History, Philosophy and Civic Education are incorporated as elective courses History of European Integration, European values and integration policies, Business Law in the European Union, Monetary and Fiscal Policy in the EU, Administrative System of the EU, European Economic Integration, Macedonian Language for Legal and EU terminology, Balkans in-between EU integration and nationalism, EU Social Policy, Media and Cultural Policy in the European Union. In the graduate programs, master and doctoral studies, great attention is given to the more specialized and professional courses, particularly in programs that are closely related to the European Studies. Among the courses provided are: Regional Policy and EU Structural Funds, EU Policy-Making, EU Law on Environmental Protection, The Law of the EU's Internal Market, The EU Law on Migration and Asylum, EU and International Relations, EU Competition Policy, European Business Environment, Digitalization Policies and Programs in the EU, EU Enlargement and Neighborhood Policy, Parliamentarism and Civil Society in EU, EU Corporate Law, EU Contract Law, EU Intellectual and Property Law, EU Labour and Social Law, EU Energy Law, Regional Autonomy and Local – Self Government, European Tax Law, and etc.

In parallel with increased interest on European Studies, from the universities in offering courses and programs and of students for enrolment, also must be initiated and encouraged the cooperation between the universities and the state institutions as the sole mechanism where the universities will be in the role of providing well-qualified professionals specialized in European issues and EU integration, the state and public institutions in providing opportunities for career development of the graduates on European Studies, and the graduates on European Studies to demonstrate their knowledge and skills by contributing in the processes of the country's EU membership. Moreover, in future must work on creating and maintaining this mechanism because of the reciprocal benefits of the universities, the state and society and students.

EU in Albania

4.1 EU Integration Literacy in Albania – mapping the situation.

The mapping of the current situation is done, through 2 main methods. First, by anonymous questioning method and secondly by a desk research analysis.

At the outset, a questionnaire was administered to 484 respondents from Albania, covering areas such as their understanding of the EU integration process, EU financial institutions, EU integration chapters, and the economy and market performance in relation to meeting EU targets. The results of the questionnaire confirm that students in Albania have a lack of knowledge related to EU financial Institutions and Eu Integration chapters. They require additional information tailored made in Albanian language presuming that this will empower their knowledge on EU in general. They were also asked about the number of EU related courses they are taught at their university. The results were contradicted by the control questioning method, hence, all HEIs in Albania were scanned using the information they provide in the official webpage.

There are in total 39 active Higher Education Institutions in Albania, 21 of which offer at least one or some EU related courses to their students. On the other hand, there are other 18 institutions which either offer no Eu related courses at all, or do not provide any information on their curricula.

Results found out that many programs offering courses related to EU Integration and Policies fall within the domains of Finance, Business, Marketing, Law, Social Science, Political Science, and Journalism.

Excluding 18 HEIs which do not provide any information, programs categorized in Social Science, Political Science, Journalism, as well as those in Finance, Business, Marketing, and Law typically offer an average of four courses related to EU processes, policies, and integration. Conversely, programs in other fields offer an average of two EU-related courses. Excluding the University of Tirana from the analysis, which skews the data due to its size and course offerings, the average number of EU courses drops to one.

Typically, master's programs offer more courses related to EU Policies and Integration compared to bachelor's programs. On average, bachelor's programs offer three EU-related courses, while master's programs offer an average of four courses. This difference can be attributed to master's students possessing a deeper foundational knowledge, allowing for more nuanced perspectives.

Overall, there is a pressing need to assess the number of EU-related courses offered by Higher Education Institutions in Albania. While some institutions offer a substantial number of courses, others provide only a few related to EU Policy and Integration Processes.

Given Albania's aspirations to join the European Union, there is a crucial necessity to enhance and consolidate knowledge in this area. According to feedback gathered from the questionnaire, most Albanian students lack clear information regarding EU financial institutions, EU chapters, and market performance concerning EU targets. Concerning financial institutions, students note differences between EU financial institutions and those in Albania, expressing a desire for more comprehensive information beyond what is currently offered in EU policy courses. Regarding EU chapters, there is a call for more information available in native languages to enhance understanding of the country's economic integration into the EU.

In terms of economic performance and market progress toward EU targets, respondents believe their country's economic situation falls short of EU standards. However, they also advocate for increased stakeholder involvement to explain economic integration into the European Union. University programs should incorporate modules or courses supporting financial literacy and knowledge of EU integration policies. The younger generation requires more information regarding their country's economic performance concerning the European integration process.

Additionally, in faculties of education, which are responsible for training future teachers, courses related to the European Union should be part of the compulsory curriculum, given that future teachers and educators should be prepared to impart basic knowledge about the EU to their students. In journalism programs, courses related to the European Union should be mandatory, especially in private institutions of higher education where such courses are currently missing.

4.2 EU Integration of Albania: Country Strategy and Expertise

The National Strategy for Development and European Integration (NSDEI) 2030 represents Albania's overarching framework for sustainable economic and social development, spanning from 2021 to 2030. As a continuation of the previous NSDEI 2016-2020, the NSDEI 2030 reflects a comprehensive approach towards Albania's integration into the European Union,

focusing on aligning with the Sustainable Development Goals to fulfill the 2030 Agenda. This strategy outlines a long-term vision for the country's democratic, social, and economic development, setting priorities that include boosting sustainable economic growth, enhancing standards for citizens' welfare and rights protection, and improving Albania's competitiveness on a regional and global scale.

Aiming for a clear and merit-based pathway to full EU membership, the NSDEI 2030 underlines the strategic and political significance of EU integration for Albania, highlighting its role in democratization, institutional consolidation, and legal, economic, and institutional system enhancements in line with EU standards. This endeavor reflects Albania's political and cultural identity, increasingly integrated with Europe, and is supported by the overwhelming and continuous backing of Albanian citizens, political parties, and civil society.

Furthermore, the strategy emphasizes the importance of the EU membership process in further supporting Albania's democratization, the rule of law, public institution consolidation, and the continuation of essential reform processes. This aligns with the EU's political, economic, and security interests, particularly in the face of global challenges, presenting EU expansion as a strategic investment for a stable, strong, and united Europe. The NSDEI 2030 thus serves as a critical strategic document, guiding Albania's sustainable development and integration efforts within a clear and sustainable framework, supporting medium-term budgeting processes, and underpinning the country's aspirations for EU membership within a broader, strategic context.

This overview reflects the comprehensive and multi-dimensional evaluation Albania undergoes in its EU accession journey, highlighting significant areas requiring reforms and alignment with EU standards and practices. This involves substantial adjustments in governance, economic policies, legal systems, and societal values to meet the rigorous requirements of EU membership.

According to the EU Albania Report (2023) the main challenges for Albania in the process of EU integration, as highlighted in the report, encompass a range of issues across different areas of governance, law, and public administration. Albania's progress in aligning with the EU *acquis* is assessed across several clusters and chapters, each addressing different aspects of EU laws and standards. The main areas of concern and challenges include:

Judiciary and Fundamental Rights (Chapter 23): Albania needs to further improve the independence, efficiency, and accountability of its judiciary. This includes speeding up the vetting process for judges and prosecutors, filling judicial vacancies, and ensuring systematic follow-up on cases where vetting reveals criminal offenses. Strengthening the fight against corruption and organized crime is also critical. Fundamental rights, including the rights of persons with disabilities, protection of national minorities, and ensuring freedom of expression, remain areas requiring significant progress.

Justice, Freedom, and Security (Chapter 24): Challenges include enhancing cooperation in the fight against illicit drugs, ensuring effective mechanisms to prevent cannabis diversion, improving efforts in asset recovery linked to organized crime, countering cybercrime, money laundering, and trafficking in human beings. Protection against various forms of online child sexual abuse and alignment with EU standards in data protection and cyber security are also important.

Internal Market: This encompasses several chapters, such as free movement of goods, workers, right of establishment and freedom to provide services, free movement of capital, company law, intellectual property law, and competition policy. Albania needs to make progress in ensuring compliance with EU standards in these areas, addressing regulatory barriers, ensuring the operational independence of state aid monitoring, and improving intellectual property rights enforcement.

Sector-Specific Challenges: These include adapting to EU standards in areas such as consumer and health protection, digital transformation and media, taxation, economic and monetary policy, social policy and employment, enterprise and industrial policy, education, culture, and customs union. Efforts are needed to enhance competitiveness, address structural reforms, improve social inclusion, and ensure the sustainability and quality of education and training systems.

Green Agenda and Sustainable Connectivity: Compliance with EU environmental standards, enhancing energy efficiency, promoting renewable energy sources, developing transport and energy networks, and implementing climate change mitigation and adaptation measures are crucial for aligning with the EU's Green Deal objectives.

Agriculture, Rural Development, and Cohesion: Adapting to the Common Agricultural Policy, improving food safety, veterinary, and phytosanitary standards, and aligning with EU policies on regional development and structural instruments are essential for integration into the EU's agricultural and cohesion policy frameworks.

External Relations and Foreign, Security, and Defense Policy: Aligning with the EU's common foreign and security policy, participating in EU security and defense initiatives, and ensuring compliance with EU standards in external trade relations are important for Albania's integration into the EU's external action policies.

Meeting these challenges requires comprehensive reforms, continuous alignment with EU legislation, strengthening administrative capacity, and ensuring effective implementation and enforcement of adopted measures. Progress in these areas is critical for advancing Albania's EU accession process.

Based on the comprehensive sectors evaluated for Albania's EU integration process and the Country Strategy 2030, the country requires a diverse range of experts to address the complex challenges and reforms needed. These experts include:

- **Public Administration and Governance Experts:** To drive the reform in democratic institutions and public administration, ensuring efficiency, transparency, and accountability in governance structures.
- **Legal and Judiciary Reform Specialists:** Experts in legal reforms and judiciary systems are crucial to enhancing the rule of law, ensuring an independent judiciary, and aligning Albania's legal framework with EU standards.
- **Economic Analysts and Policy Advisors:** With the economic criteria focusing on market economy functionality and

competitive capabilities, economic analysts can help devise strategies that bolster Albania's economy to withstand competitive pressures within the EU market.

- **Public Procurement and Financial Control Professionals:** Specialists in these areas are needed to ensure transparent, efficient public procurement systems and robust financial control mechanisms that meet EU standards.
- **Statisticians and Data Analysts:** For the collection, analysis, and reporting of statistical data in compliance with EU methodologies and standards.
- **Human Rights and Fundamental Freedoms Advocates:** To ensure that reforms in judiciary and fundamental rights are in place, safeguarding freedom, security, and justice in line with EU principles.
- **Social Policy and Employment Experts:** Professionals who can help develop and implement policies for social inclusion, employment, and labor rights that align with EU directives.
- **Environmental and Climate Change Specialists:** Given the emphasis on the green agenda and sustainable connectivity, experts in environmental protection, sustainable energy, and climate change policies are essential for aligning with EU environmental directives.
- **Agricultural and Rural Development Advisors:** To guide the transformation of the agriculture sector and rural development practices to meet EU standards on food safety, veterinary, and phytosanitary policy.
- **Trade and Internal Market Experts:** Individuals who understand the intricacies of the EU's internal market, including the free movement of goods, services, capital, and labor, to guide Albania in adapting its policies and regulations accordingly.
- **Digital Transformation Specialists:** To support Albania in the digitalization of its services and media, ensuring digital competencies and infrastructure that meet EU standards.
- **Education, Science, and Research Professionals:** To foster advancements in education, science, and research, aligning with EU benchmarks and fostering innovation and cultural development.
- **Energy, Transport, and Infrastructure Experts:** Specialists in developing sustainable energy policies, modernizing transport systems, and enhancing infrastructure connectivity in line with EU guidelines and the Trans-European Networks.
- **Regional Cooperation and Foreign Policy Advisors:** To navigate the complexities of regional stability, good neighbourly relations, and EU's foreign policy.

The integration process demands a collaborative effort across these specialties, requiring not only technical expertise but also strategic vision, policy-making acumen, and the ability to implement comprehensive reforms in line with EU accession requirements.

Recommendations and Action Plan

Improving EU literacy is a significant aspect to be addressed, especially for Albania as it aims to become a member of the European Union. Incorporating EU topics into education cultivates informed citizens ready to engage with the evolving European and global landscape, aligning with the European Commission's higher education objectives. This integration fosters understanding of EU principles, nurturing a shared European identity and preparing students to address different challenges. It empowers institutions to shape graduates capable of supporting the EU's leadership and sustainable development. However, implementation varies across member states, necessitating improved teacher training and innovative teaching methods. While balancing EU aspirations for unified education with national sovereignty, it's crucial to adapt strategies to individual contexts, such as Albania's unique cultural and political landscape.

Integrating topics centered around the EU into both school and higher education curricula is essential for nurturing well-informed, engaged citizens who can effectively navigate and contribute to the dynamic and rapidly changing European and global environment. Given the inadequacy of information provided by courses dedicated to EU policies, we recommend enhancing the depth of knowledge by implementing an action plan dedicated to EU Literacy.

The education plan must align with The Digital Education Action Plan (2021-2027), a revitalized European Union (EU) policy endeavor. This initiative delineates a shared vision for high-quality, inclusive, and accessible digital education across Europe, aiming to assist Member States in adjusting their education and training systems to the digital era. This Action Plan endeavors to tackle the challenges and seize the opportunities presented by the COVID-19 pandemic. It also offers prospects for various stakeholders including teachers, students, policymakers, academia, and researchers at national, EU, and international levels within the education and training community.

It is essential for all Higher Education Institutions in Albania to integrate modules or include at least one or two courses supporting financial literacy and knowledge of EU integration policies. The younger generation requires comprehensive information concerning Albania's economic performance within the European integration process.

TABLE 1. Action Plan.

Proposed Actions	Responsibility to be undertaken	Steps to overcome	In charge
I. Develop a dedicated Plan for EU Education	Prioritize awareness on the importance of EU literacy and education. Fostering a comprehensive understanding among students of the EU's foundational principles, policies, and processes. Launching informative campaigns in high schools that lack EU-related courses in their curricula. Improved teacher training methods	Collaboration with HEIs	Government, HEIs and Stakeholders
II. Increase collaboration with HEIs	Strengthening regional capabilities, including expertise and resources, to evaluate and offer guidance on EU integration is essential for ensuring thoroughness and overall success in preparing for and implementing EU chapters. Organizing training and seminars with experts in field.	Lack of knowledge of youth on EU chapters and institutions.	Government and HEIs
III. Research Funding and Support	Provide guidance and support to faculty members and students in preparing research proposals and securing funding for EU-related research projects.	Attract funds and provide support for EU implementation	HEIs, NGOs and Stakeholders
IV. EU Networking Events	HEIs in collaboration with Ministry of Integration can organize seminars, workshops, conferences, and guest lectures featuring EU experts and policymakers to foster dialogue and networking opportunities for HEI members. Plan and coordinate EU networking events, guest lectures, and seminars, collaborating with relevant stakeholders to ensure their success	Collaboration with HEIs and Stakeholders	HEIs and Stakeholders
V. Online Resources and Materials	Develop online resources, such as webinars, tutorials, and databases, to supplement traditional learning methods and provide easy access to EU-chapters and other related information. Producing brochures in Albanian to cater to students in non-EU-related fields, such as Finance, Business, Marketing, Law, Social Science, Political Science, and Journalism, who may have limited exposure to EU courses and knowledge.	Increasing European citizenship awareness	Government
VI. Curriculum Review and Revision	Collaborate with academic departments to integrate EU-related topics into existing courses across disciplines, ensuring a broader understanding of EU affairs among students. Work closely with academic departments to review existing curricula and identify opportunities for integrating EU-related topics. Updating the literature used in these courses to ensure relevance.	Curriculum Integration cultivating a shared European identity and a robust appreciation for democracy, human rights, and the rule of law	Government and HEIs

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The Startup Ecosystem and Innovation in Fostering Startups

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Abstract

The concept of startups has evolved significantly over the past few decades. This paper explores the evolution of the startup concept, highlighting its origins in the tech boom of the late 20th century and its expansion into diverse sectors, including healthcare, finance, and sustainability. Through an extensive review of literature and analysis of current data, I examine the profound impact startups have had on the economic revolution, not only in terms of technological advancements but also in job creation, investment opportunities, and fostering competitive markets. Startups are often seen as the lifeblood of innovation, driving forward new ideas and solutions at a pace unmatched by established corporations. This paper delves into the symbiotic relationship between innovation and startup development, supported by a comprehensive literature review.

Keywords: startups, ecosystem, innovation, challenges, GDP, tech

Introduction

Entrepreneurship is a vital source of innovation and economic growth. It fosters the cultivation of new ideas, technological development, and improves the standard of living through economic proliferation [Mazzarol, T., Reboud, S. (2020)]. According to Organization for Economic Co-Operation and Development (OECD), an intergovernmental economic organization of 35 countries committed to democracy and market economy, 60-70% of jobs in OECD countries are created by Small and Medium Enterprises (SMEs) (Mason & Brown, 2014). A development in the entrepreneurial climate can increase the number of startups with the potential to become SMEs or high growth firms. This activity stimulates economic growth, ultimately generating significant employment [Startup Genome. (2021)].

Albania, previously a communist country, transitioned to democracy and a market economy throughout the last twenty years. Among many challenges, unemployment and emigration have been very detrimental to shaping the economy. As of 2015, the unemployment rate was almost 17% with nearly 1 out of 3 young persons, ages 15-29, unemployed and a total emigrant population of more than 1.25 million people in a country of 3 million (Barjaba & Barjaba, 2015; CIA, 2016). As of the second quarter of 2023, the unemployment rate in Albania was reported to be 10.7%. This marked a new low since the third quarter of 2022. The overall number of unemployed individuals in Albania showed a decline of 1.9% compared to the same quarter in the previous year and a decrease of 0.7% compared to the previous quarter.

Subsequently, many travel abroad in search of higher wages and better markets, with the purpose of sending remittances back to family members (Barjaba & Barjaba, 2015)

For a country currently aspiring to join the European Union, entrepreneurship may prove to be the stepping stone to the necessary economic growth. More jobs and lucrative opportunities may provide hope for many Albanians to remain in their home country, while also encouraging expatriates to return.

In Albania, entrepreneurs face many challenges and there is marked room for improvement [Asllani et al (2014)]. According to Asllani et al (2014), while the country did make major progress in the last two decades, there are many aspects such as financing, tax policies, organizational support, etc. of the entrepreneurial environment that need improvement. The EBRD provided a €3 million loan to ProCredit Bank in Albania, with the European Union contributing an additional €450,000 in incentive grants. This support was designed to help SMEs invest in upgrading their production facilities, new equipment, and operations, with a focus on meeting EU standards in environmental protection, worker safety, and product quality and safety. Enterprises could apply for funds and were eligible for a grant incentive equivalent to 15% of the loan amount. Alpha Bank Albania, backed by investments from MIGA, aimed to support its portfolio and maintain loans to SMEs. MSMEs accounted for approximately 12% of their total loans, indicating a focus on supporting small business growth.

There are many government and non-governmental organizations (NGOs) working locally to help entrepreneurs through funding, mentorship, and various programs [Abdellatif, Mahmoud M., Binh Tran-Nam, Marina Ranga, and Sabina Hodžić. 2022].

Albania has a young population, a growing tech sector, and a number of government initiatives aimed at supporting startups. However, there are still a number of challenges that need to be addressed in order for the startup ecosystem to thrive. An entrepreneurial ecosystem is a set of interconnected entrepreneurial actors (OECD, 1996).

Some of these actors include entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies), and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, number of serial entrepreneurs, etc.). These formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment [(OECD, 1996]

The Quintuple Innovation Helix model is a framework for understanding innovation that recognizes the role of five key stakeholders:

- **Government:** The government plays a key role in creating a supportive environment for innovation, through policies and programs that promote entrepreneurship, research and development, and access to finance.
- **Industry:** Businesses are the primary drivers of innovation, as they are constantly looking for new ways to improve their products and services and gain a competitive advantage. [Chatzoglou, P. and Chatzoudes, D. (2018)]
- **Universities:** Universities play an important role in generating new knowledge and training future innovators.
- **Financial institutions:** Financial institutions provide the funding that startups and businesses need to grow and innovate.
- **Intermediary organizations:** Intermediary organizations, such as incubators, accelerators, and venture capital firms, play a vital role in supporting startups and helping them to bring their products and services to market.

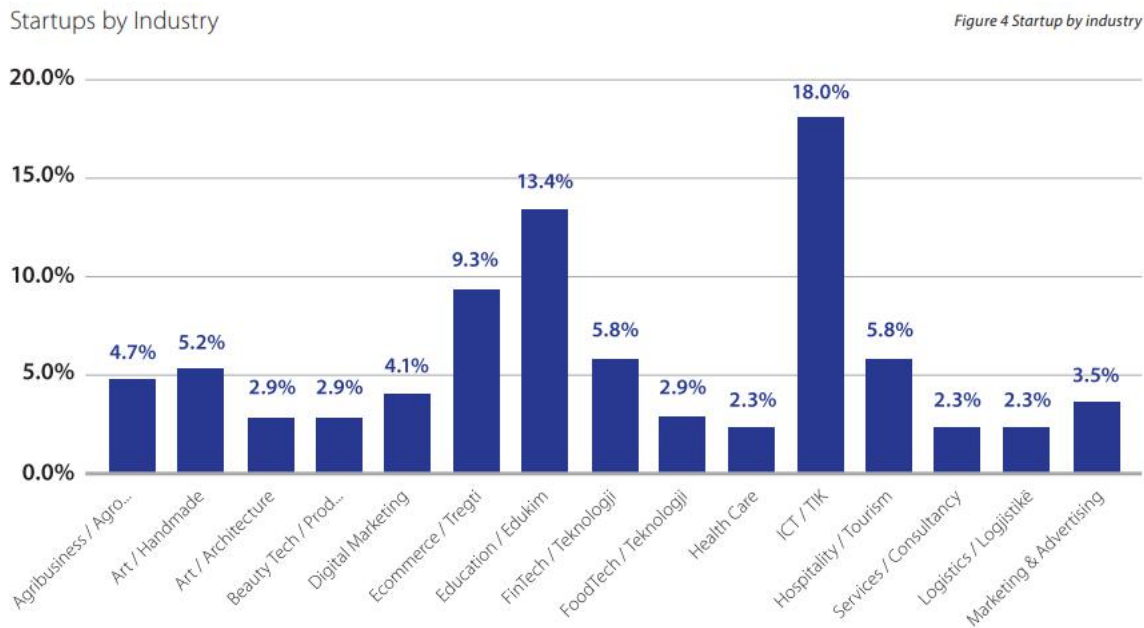
In order to significantly impact the entrepreneurial ecosystem, it is essential to first understand how it is currently interconnected.

Methodology

Analyzing existing literature on startup ecosystems, innovation models, and economic development, particularly focusing on the Albanian context. Examination of successful startups in Albania, such as Publer, Kreatx, and SkaiTech, to understand factors contributing to their success. Evaluation of Albanian government policies and programs that support startups, such as various funding and support schemes. Identifying and examining the roles of different stakeholders in the startup ecosystem, using the Quintuple Innovation Helix model, which includes government, industry, universities, financial institutions, and intermediary organizations.

Challenges

Sectors such as IT/Software development (18%) and education (14%) and ecommerce (10%) represent the main industries where start-ups in Albania explore. However, the Fin-Tech sector (6%), hospitality and tourism (6%), handmade art (5%) agribusiness (5%) and digital marketing (4%) seem to be emerging trends.

FIGURA 1. Startups in Albania by industry, 2020

Source: Baseline study conducted by Eu4Innovation (2020)

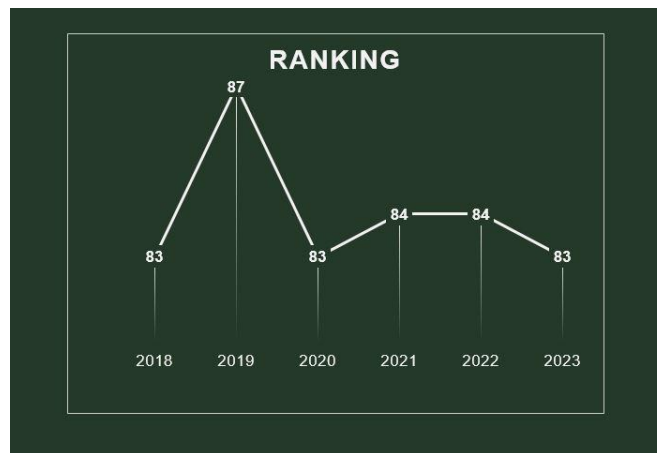
The startup ecosystem in Albania is still in its early stages of development, and there are a number of challenges that startups face. Here are some of the most common challenges:

- **Access to finance:** It can be difficult for startups to raise the capital they need to grow and scale their businesses. There is a lack of angel investors and venture capital funds in the country, and banks are often reluctant to lend to startups. One of the most fundamental needs of starting a business is financial support. Developed countries have established banking systems, available loans, business incubators, angel investors, venture capital organizations, and set policies in place for patents and contracts (Asllani et al., 2014). Often developing countries, such as Albania, are lacking one or more of these aspects. The loans in Albania as a financing option deters individuals from seeking to start a business due to lack of support and the high financial risk. Having a set of established rules and policies in place for legal investments and shareholders also helps by encouraging investors to support entrepreneurs (Asllani et al., 2014). However, the banking sector provides difficult options for loans to SMEs due to the high risk and low margins involved (Baresel-Bofinger et al., 2015). However, loans from banks such as these are reportedly hard to pay back for entrepreneurs, and SME bankruptcies and non-performing loans have increased in the past (Andreas Baresel-Bofinger et al., 2015). SMEs are particularly important for the Albanian 'non-financial business economy'. In 2018, they generated 68.7% of total value added and 80.0% of total employment, significantly more than the respective EU averages of 52.9% and 64.9%. They employed an average of 4.0 people, slightly more than the EU average of 3.7. SME productivity, measured as value added per person employed, was EUR 7 600, significantly lower than the EU average of EUR 41 600.
- **Lack of experienced mentors and advisors:** Many Albanian entrepreneurs do not have access to the advice and guidance they need to succeed. This can be a major disadvantage, especially for first-time entrepreneurs.
- **Fragmented startup ecosystem:** The Albanian startup ecosystem is still relatively fragmented. There is a lack of coordination between the different stakeholders, such as government agencies, universities, and businesses. This can make it difficult for startups to navigate the ecosystem and find the resources and support they need. Being an entrepreneur in Albania comes with a list of obstacles that one must surpass, with one being the lack of role models in entrepreneurship. With start-ups usually lasting around a year, those who wish to start businesses themselves find it hard with no current successful entrepreneurs from whom to learn. Another problem within businesses is the gender discrimination in regards to the community relationship. This sort of mentality makes women reluctant to become entrepreneurs, and attempting to make progress while taking care of their family is a challenge in itself. Yet not all of the cultural aspects of Albania hinder the entrepreneurial ecosystem.
- **Small domestic market:** The Albanian domestic market is relatively small, which can make it difficult for startups to grow their businesses beyond Albania. Albania is still relatively isolated from the rest of the world in terms of expanding their businesses abroad and not being a part of the European Union. Currently the businesses are small scale since they mainly have access to Albania's domestic market of 3 million people (Asllani et al., 2014). Since SMEs constitute much of the active enterprises, their small scale along with the small market hinders the potential of many businesses, and access to larger markets may alleviate this problem. [Asllani et al., 2014]
- **Brain drain:** Many talented young Albanians leave the country to seek better opportunities abroad. This can deprive

the startup ecosystem of the talent it needs to thrive. The availability of human resources has been on the decline in Albania due to the lack of job opportunities and lending institutions. The prospect of going abroad for more opportunities entices many young people to emigrate, especially educated and skilled workers. This is corroborated by the high youth unemployment and emigration rate. Many emigrants go abroad during the harvest or construction seasons, and when they come home they live off of their savings (Piracha & Vadean, 2009). In this sense, they do not contribute to the workforce in Albania directly even though their remittances contribute to the capital gains. This is exacerbated by the fact that a big portion of emigrating population are those who are more educated, leaving a dent in the educated population in Albania. The most recent significant instance of brain drain in Albania occurred in 2020, with a particularly notable exodus in 2022. According to a report by INSTAT, the total number of individuals leaving Albania in 2020 was approximately 1,684,135. This figure includes a diverse group, with over 350,000 people having left between the years 2011-2019, and 47% of these individuals had higher education.

According to “*The Global Entrepreneurship Index (GEI, 2019)*”, Switzerland ranks 2nd among other countries, with a score of 80.4, higher than in 2018. Israel ranks 12th among the top 15 countries good and scores 67.9.

FIGURE 1: *The Global Entrepreneurship Index*



Source: The StartupBlink

Opportunities

The Albanian Startup ecosystem is still in its early stages of development, but it presents a number of opportunities for entrepreneurs and investors. Here are some of the key opportunities:

- *Growing domestic market:* Albania's domestic market is growing rapidly, which provides startups with a large and growing customer base.
- *Young and talented population:* Albania has a young and talented population, which provides startups with a pool of potential employees and customers. The total population of Albania in 2013 was approximately 2.8 million, with an estimated 30% being in the age group of 15-29. By 2021, the population might have grown to 2.9 million, with a proportional increase in the young population. In 2013, the gross enrollment rate in tertiary education was 35%, and it increased to 45% by 2021.
- *Low costs:* The cost of living and doing business in Albania is relatively low, which can give startups a competitive advantage. Albania is often perceived as a low-cost country in terms of living expenses. Factors contributing to this perception include affordable housing, lower utility costs, and reasonable prices for everyday goods and services.
- *Access to the EU market:* Albania is a candidate for EU membership, which gives startups access to the EU single market.

Conclusion

The Albanian startup ecosystem has the potential to become a major driver of economic growth and innovation in the country. However, there are still a number of challenges that need to be addressed in order for the ecosystem to thrive. The Albanian government, universities, and businesses need to work together to create a more supportive environment for startups.

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Green Technologies for Sustainable Economic Development in Albania

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Abstract

The challenges of the New Millennium confront society with problems that exceed local or national borders. Building a creative community requires that these communities are open while also respecting the well-being requirements that people want. Studies have shown that reality does not justify the beliefs and expectations of society in general. Therefore, the presence of the relationship between the individual, society, the development trends of the economy and the environment evidence the fact that the expectations in terms of preservation and protection of the environment continue to remain high.

This paper considers the high demands of society in general for environmental protection as a prerequisite for sustainable development. Studies have shown that there is a growing need for other studies in this field. The measuring instrument is the questionnaire. The data was processed using SPSS. The findings evidenced our claim regarding the relationship between green technologies and sustainability.

Key words: green technologies, sustainability, economic development trends, environment, etc.

Literature review

Green technology currently constitutes one of the problems that has captured growing interest from science, due to the preservation and protection of the environment. Based on Wu & Strezov (2023): "The world is experiencing a number of serious challenges, such as extreme climate changes, energy and resource depletions, global impacts of multiple diseases, extensive environmental pollution, serious food crises, which demand the need for various interdisciplinary green technologies". "Though the pollution problems are old enough, green technology, however, is a relatively new idea" Banerjee & Akuli (2014). Environmental problems have focused the attention of many researchers. Rath & Herbert-Copley (1993) highlighted: "The link between technology and sustainable development is even more suspect, eroded by public perception of the disastrous environmental impacts of past industrial development and the ways in which presumably "benign" technologies - chlorofluorocarbons, for example - have in practice had unforeseen and damaging effects on the biosphere".

Qamar et, al. (2024) admits that: "Therefore, the need of the hour is that we as a society should invest in Green Tech as they are:

- a) Less taxing to the natural environment thus reduces the resources depletion.
- b) Emission of greenhouse gases (GHG) (CO₂, CH₄, N₂O) is considerably less or zero.
- c) Usage of renewable resources (wind, solar) is encouraged"

Green technologies have an early history. Safdie (2023) evidences the use of wind energy - as early as 5000 B.C., She admits that our ancestors were using wind energy to move boats down the River Nile. By 2000 B.C., wind power was pumping water and grinding grains. Further, she admits that: “although battery-powered vehicles might seem like a new trend, 90% of New York City taxis at the turn of the 19th century were electric vehicles” Safdie (2023).

Ugochukwu (2024) admit that: “In an era where environmental consciousness is at the forefront of global concerns, the technology landscape is experiencing a paradigm shift towards sustainability”. Further he stresses: “As we step into 2024, it’s evident that the trajectory of technological advancements is increasingly guided by a commitment to eco-friendly practices and solutions” Ugochukwu (2024).

Jin (2016) in his study about green technology problem notes that has an interest increases in this direction. So, Jin (2016) admits that: “The findings indicate an increase in the dissemination of green innovations, cross-country R&D activities, and incentives for global climate mitigation”.

Kjo sipas Wu, Guo, Huang, Liu, & Xiang (2018) refers the Agenda for Sustainable Development 2030, adopted by all United Nations Member States in 2015 which highlight that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.

Wu & Strezov (2023) treat the connection between green technologies and sustainable development as derivatives of each other. This is what they express: “The future of sustainable development will depend on practical green solutions for extensive areas, which promote the development of green technologies”. While Brundtland (1985) accept: “Sustainable development is able to meet the requirements of the current generation and does not have to consume the capability of the future generations”. However, researchers accept a link between inequality, environmental quality, and sustainable development. Scrugg (1998) stress: “findings indicate that increasing inequality can result in a degradation of environmental quality, as the sustainability approach assumes”. In the same approach are Vona & Patriarca (2011), who are examining the relationship between inequality and green technologies for the members of the Organization for Economic Co-operation and Development (OECD) between 1985 and 2000, reach the conclusion that inequality in rich countries is negatively correlated with the diffusion of green technologies, whereas inequality in poor countries is dependent on per-capita income. For Agan & Balcilar (2022): “Although the creation of green technologies plays a key role in climate change mitigation and sustainable development, these technologies may not be adopted widely, and their benefits may not be realized”. The spread of green technologies is also conditioned by environmental issues. “Both the theoretical and empirical literature have established a link between environmental conditions and the diffusion of green technologies” Agan & Balcilar (2022).

Green technologies in the environmental context need scientific study. [Söderholm](#) (2020) stress that: “Addressing climate and environmental challenges, clearly requires natural scientific knowledge as well as engineering expertise concerning the various technical solutions that can be adopted to mitigate the negative impacts (e.g., carbon-free energy technologies). However, ursuing sustainable technological change is also a societal, organizational, political, and economic endeavor that involves several non-technical challenges”.

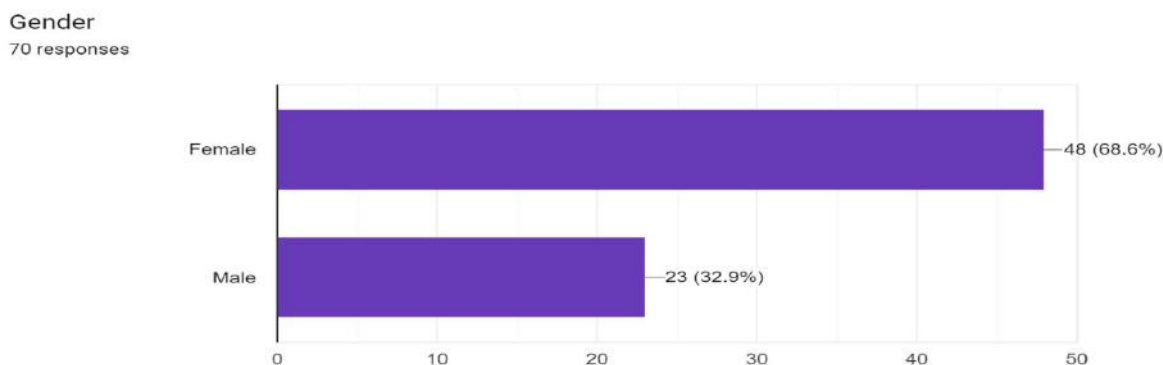
Methodology

The methodology used for this paper consists of: They work at the desk and terrain work. The desk work first considers the literature review. For this paper, many scientific articles have been studied in advance that have formed the theoretical basis of the paper. The determination of the sample size and the preparation of the questionnaire, as a measuring instrument which was tested in advance, were a special commitment. The sample size is 70 responses. Hair et al., (2018) admits: “For example, exploratory factor analysis cannot be done if the sample has less than 50 observations (which is still subject to other factors), whereas simple regression analysis needs at least 50 samples and generally 100 samples for most research situations”. The data were processed through descriptive analysis. In this study, we created a questionnaire that was shared with Google Form and we collected a total of 70 responses regarding the sustainability of the environment today. Terrain work considers data collection.

Results of the Study

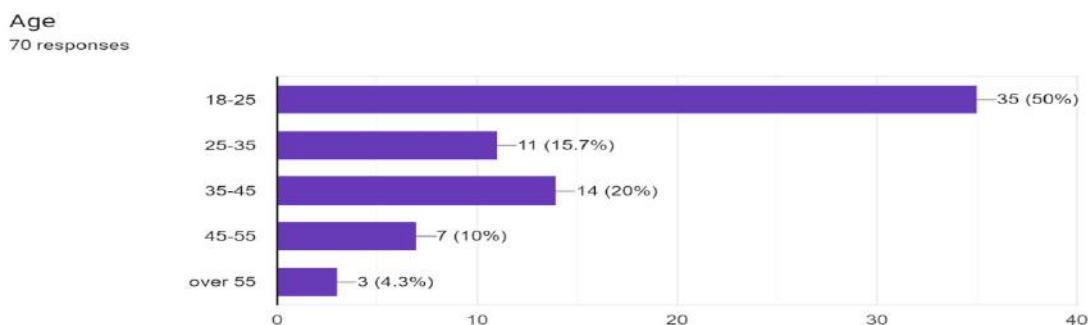
Environmental crisis and global warming today is becoming more and more necessary to pay attention. Environmental sustainability and the return from linear to circular economy is very important for human life. Below are the results of the study where the responses of the consumers are real and correct.

FIGURE 1: The gender of the interview



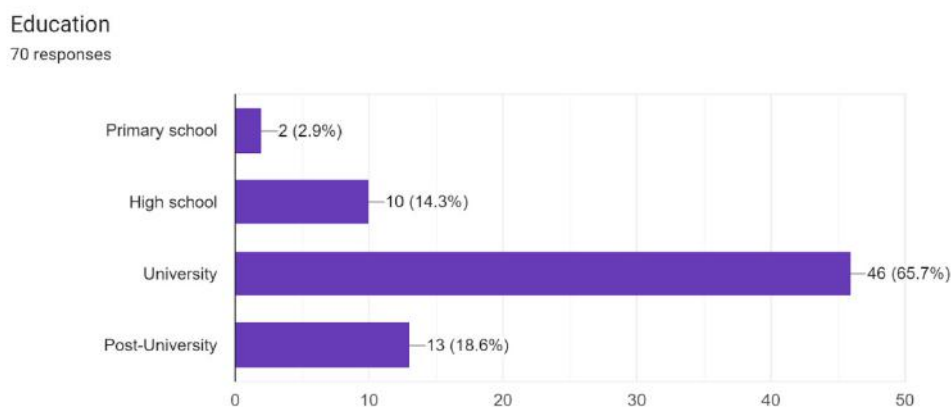
The figure above shows the gender of the 70 respondent of the study. 68.6 % are female and 32.9% are male. In this scientific research it is noted that the female gender is more available to respond in relation to this new phenomenon that is affecting the whole world. Also, scholars such as Swim et al. (2020) have shown that emphasized the impact of gender-associated social stigma and norms on green consumption

FIGURE 2: The age of the interview



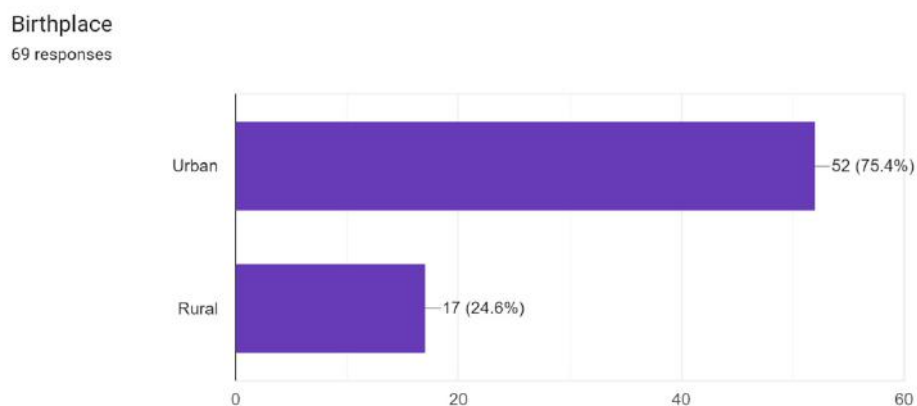
The figure above shows the age of the interviewers. The dominant age in this research is 18-25 years (50%), 15.7% of interviewers belong to the age 25-35 years, 20% are in the group age 35-45, 10% of respondents are 45-55 years old and 4.3% over 55 years old, out of 70 interviewees in total. We think and believe that the age of citizens affects the evaluation of green technology. But we cannot define this influence exactly. While Paro et, al. (2021) admit that: “Future studies could validate the results presented in this study, and include other demographic and behavioral dimensions”.

FIGURE 3: The education of the interview



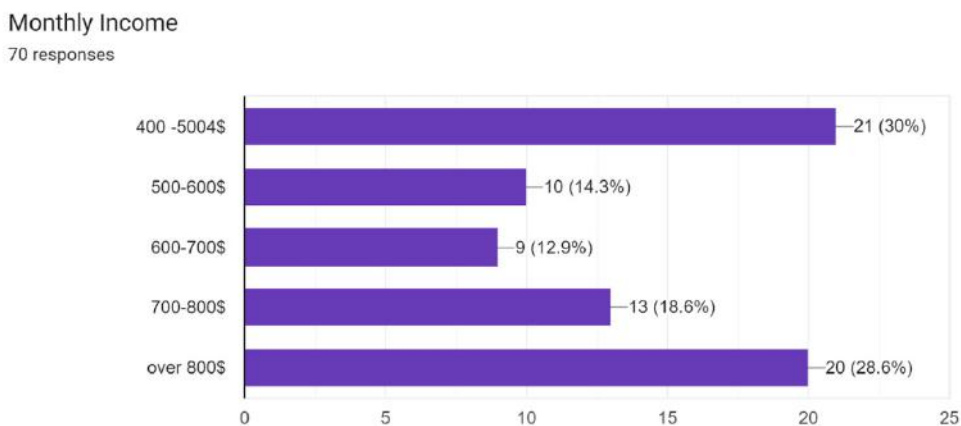
The data shows the education of the interviewees. 65.7% of the total of interviewees are with University, 2.9% are with primary school, 14.3% of respondents are with high school and 18.6% have finished post-university study from 70 total interviewees. Li et.al (2023) stress: “Education makes people informed and concerned about environmental problems.”

FIGURE 4: The birthplace of the interviewees



The figure above shows the birthplace of the interviewees. In this research we see that most of consumers live in urban areas since the focus of the study is the city. This situation explains with the fact that: “Many people are simply not even aware of green technology’s existence, as well as not knowing how to live a greener life, many just do not understand the concept of green technology...”

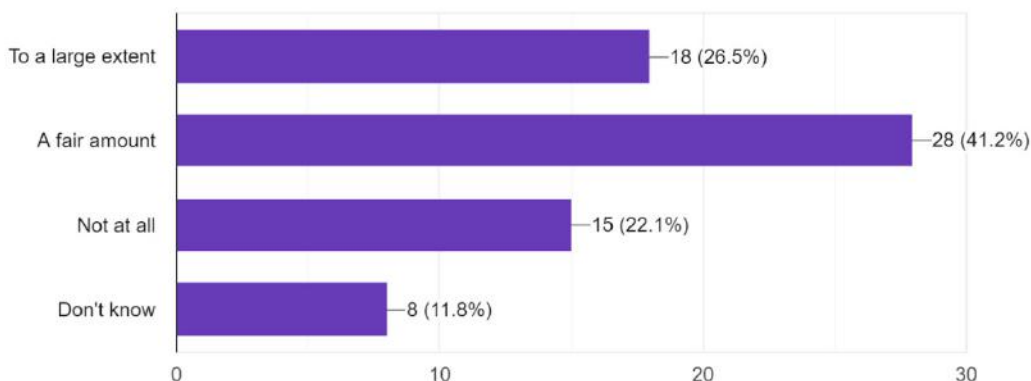
FIGURE 5: The monthly income of the interviewers



The figure above shows the monthly income of the interviewers. 30% of them has 400-500\$, 14.3% has 500-600\$, 12.9% has 600-700\$, 18.6% has 700-800\$, 28.6% has over 800\$.

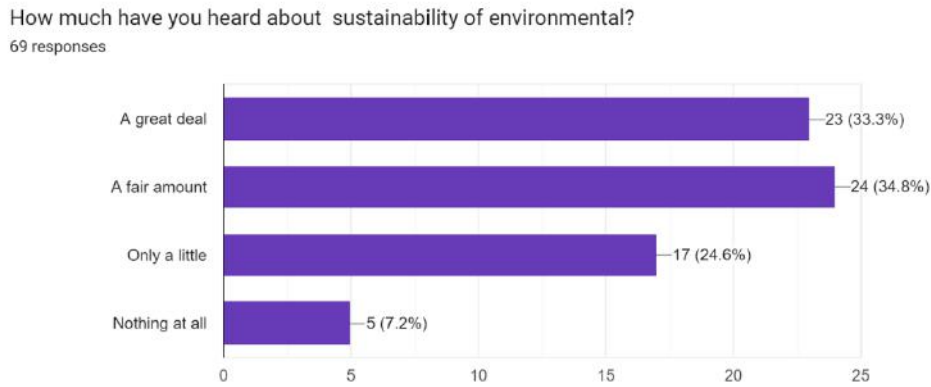
FIGURE 6: How environmental sustainability affects decisions Albanians make around environmental protection?

How environmental sustainability affects decisions Albanians make around environmental protection?
68 responses



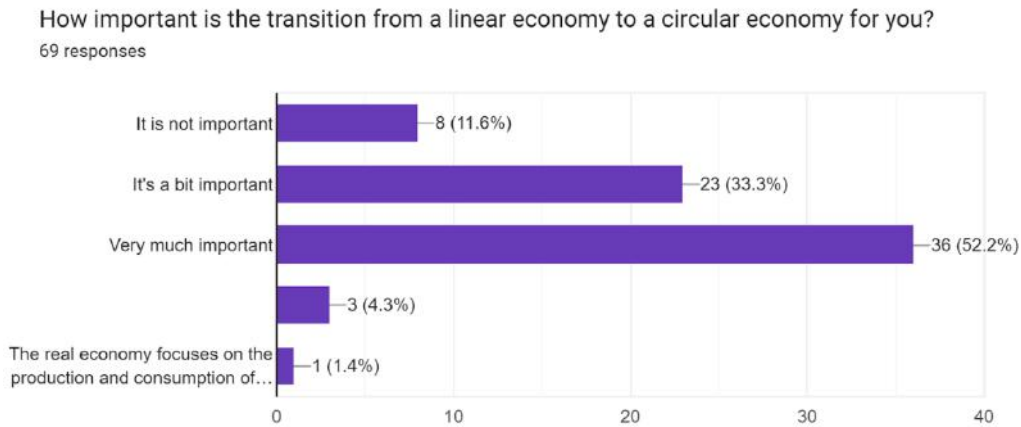
The figure above shows how Albanians have been influenced in their decisions to protect the environment. 26.5 % have been answered for a large extent, 41.2% have been answered for a fair amount, 22.1% have been answered not at all and 11.8% are without answer. We think and believe that the economic situation of citizens also affects individual decision-making for environmental protection. The study of Alatas & Akin (2022) reveal that a cointegration relationship exists among the series in the long run, indicating that both income and income inequality are crucial factors in sectoral emissions. The estimates show that a 1% increase in the Gini index leads to an increase in emissions from the power and building sectors by about 1.4%, etc.

FIGURE 7: The approach of consumer about sustainability of environmental



The figure above shows the information about sustainability of environmental. The development of technology has influenced the facilitation of information for everything. The consumers have been answered that: 33.3% of 70 total interviewers like a sustainability of environmental, 34.8% of responders have heard a fair amount about environment problems, 24.6% of them have heard only a little and 7.2% are without answer.

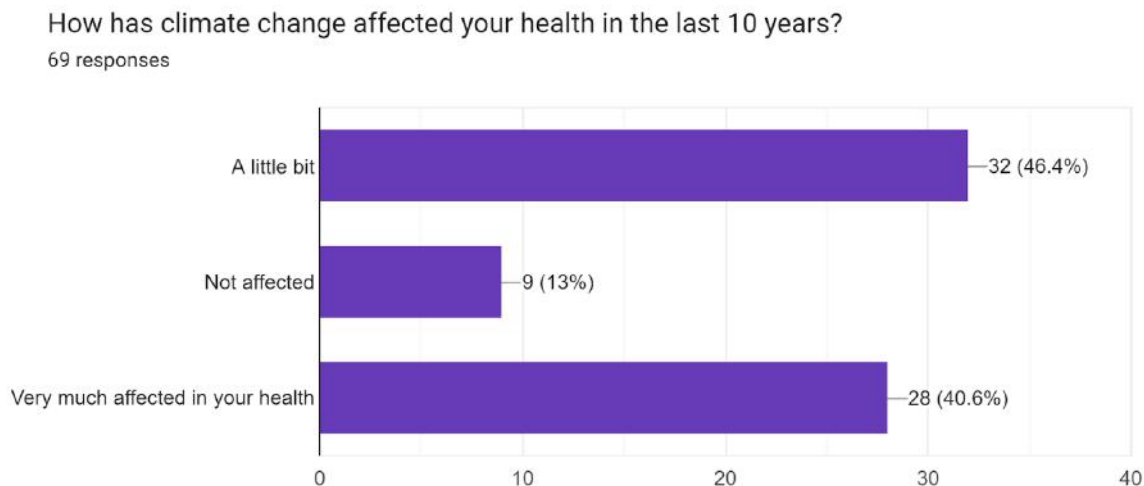
FIGURE 8: The importance of the transition from linear economy to a circular economy



The results above show that the consumers agree that the sustainability is very much important (52.2%), 11.6% some of them do not consider it important, 33.3% consider a little bit important.

For Sharma et al. (2020): “The circular economy (CE) is a more holistic approach that advocates towards extracting the value from the waste and reaching sustainability goals.” The transition from linear economy to a circular economy is very important. While Neves & Marques (2022) stress: “A paradigm shift from a linear economy to a circular economy is crucial to reduce pressure on the environment and to improve the security of supply of primary raw materials”.

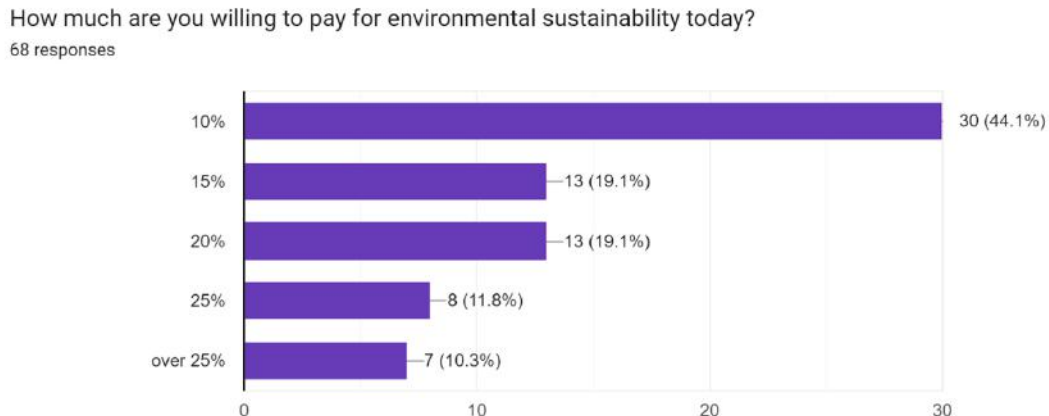
FIGURE 9: The impact of climate change in the last 10 years.



The figure above shows the climate change in the last 10 years. 40.6% answered that climate change affected very much the health of consumers, 13% are not affected from this phenomena. While 46.4 % of responders are a little affected.

Studies have shown that: “Climate change affects global health via multiple direct and indirect pathways” Haines et.al (2006). Based on Confalonieri et al. (2007): “Every year, disasters involving weather- and climate-related hazards result in thousands of deaths worldwide and contribute to the global burden of disease” Also, the WHO (2018) testifies to the same situation. Some researchers like Xu et al (2020) admit that: “Direct health consequences may derive from changes in temperature and precipitation, and human exposure to heatwaves, wildfires, floods, and droughts“.

FIGURE 10: The willingness to pay of consumers for environmental sustainability.

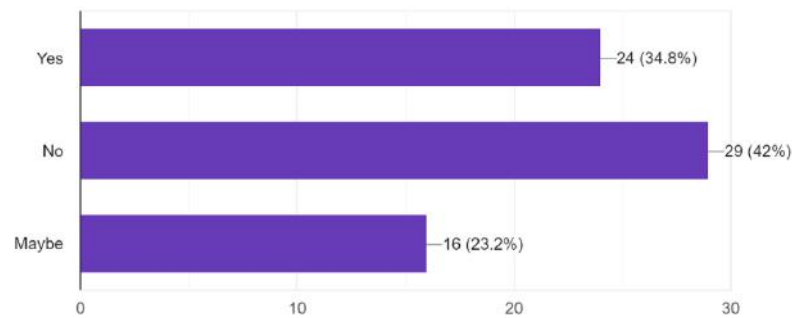


The figures above show the willingness to pay of consumers for environmental sustainability. About 22.1% of the respondents are ready to pay more than 25% of income. Most of them, about 44.1%, admit that they can pay only 10%. Based on Institute of Sustainability Studies (2023) which refers CSA: “46 percent of consumers are more likely to purchase a product that has a strong sustainability profile. By the same token, almost 60 percent will not spend more money on an eco-friendly product.”

FIGURE 11: The strategies policies of the government about sustainability of the environment

Do you have information that the government is undertaking strategic policies to protect sustainability of the environment and avoid its pollution?

69 responses



Most of the respondents, about 42% of them, do not have information on the government's strategies for the sustainable development of the environment and 23.2 % answered this question "maybe". Informing the public is important because it makes them more engaged. Based on Ereat & Segnit (2006) "studies of discourses within environmental politics draw conclusions about political communications strategies."

Conclusion

The reduction of damage to the environment as a result of human activity evidences the necessity of the incremental actions of many people focused on a common goal - green technologies. Green technologies are a powerful support for sustainable development. Our study evidence facts that care is still not taken to protect the environment. In this context, we think that Deficiencies in environmental education are noted. Improving the economic situation to increase the willingness to pay for environmental protection is a necessity. Our study evidence that more studies are needed to interweave technical knowledge with economic ones. Also, we need more awareness on the recognition of environmental law. For this, local information networks on the recognition and implementation of the law can be built.

John Holdren, President of the American Association for the Advancement of Science and advisor to U.S. President Barack Obama for Science and Technology, called on his colleagues to tithe 10% of their time to working on the globe's significant problems; He said: "Providing for societies everywhere the energy their economies need without wrecking the climate their environments need". Holdren (2011)

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The new trends in Albanian payments market – digitalization and new players

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Abstract

The payments market in Albania has experienced significant changes and developments over the past few years. The digitalization of payments, which had already started to accelerate using various electronic payment instruments, was further intensified during the Covid-19 pandemic. This period also saw the approval of the new law “On Payment Services”, alongside an increase in the number of licensed payment service providers (mainly e-money institutions). Additionally, there was a noticeable rise in clients’ awareness of new payment methods and their trust in these forms of payment.

Keywords: Open banking, PSD2, digitalisation, service providers.

Developments of Albanian payments market

Due to low percentage of adult (over 15 years old) population in Albania owning/having access to a banks or other payment service provider’s account, which in 2017 was only 40%, was evidenced the need for an action plan from Albanian authorities. In this context, Bank of Albania with the support of World Bank, drafted the National Strategy of Retail Payments (Bank, 2018), aiming to provide high-level strategic guidance for increasing access to accounts and improve the usage of electronic payments. The main objective of the Strategy implementation was to promote the intensive use of modern (i.e. electronic) retail payment instruments across the whole country, with the goal of achieving 10 cashless payments per capita by year 2023.

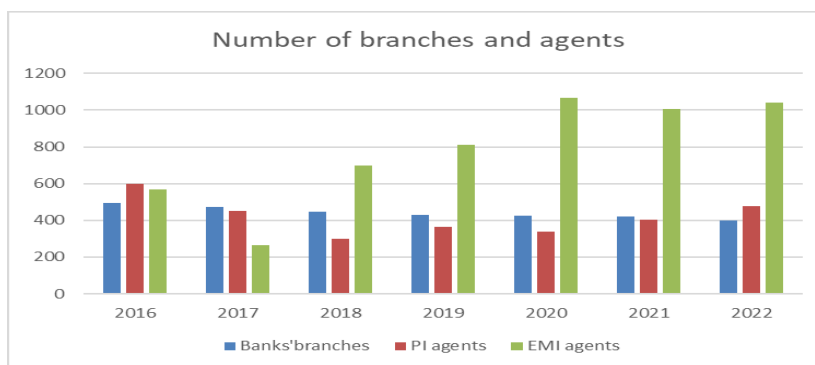
According to Bank of Albania’s Annual Report 2022, the progress of electronic payments throughout 2022 has contributed to the fulfilment of the quantitative objectives of the National Strategy of Retail Payments (2018-2023), reaching a level of use of electronic payments per capita at 17.19 out of 10 payments which was the objective of the Strategy. Also, positive developments have been noted in the expansion of the percentage of the population that owns a payment account.

The number and volume of payment transactions performed in electronic way, has increased during the last years. The population shows a positive trend towards this type of services offered by payment service providers, which have also increased in number, but also in their coverage of regions and services offered to their customers (see graph 1).

The financial education measures by the Bank of Albania and the financial entities themselves, have increased the customers interest and trust in payment services conducted in modern/electronic form. The implementation of new legal and regulatory requirements applicable to payment service providers, defining the rules of safe and sound operation for them, also affect the trust of customers in these institutions.

The Covid pandemic and its rules on the other side, sometimes obliged customers to change their behaviour, switching from traditional methods of payment towards electronic ones.

GRAPH 1



Source: Bank of Albania website, Annual Supervision Reports (2016-2022)

The new law “On payment services”

As a need to improve the payments market conditions for operation of payment service providers and as a lack of legal requirements until that time, Albania transposed for the first time, the Payment Services Directive 2 (PSD2) into the new law “On payment services” (hereinafter “the Payment Services Law”), which was approved by the Parliament in April 2020. This law foresees the terms and conditions on the establishment, operation and supervision of payment institutions, as new types of financial institutions that will offer payment services in Albania, previously fallen under the general category on non-bank financial institutions. The law also aims to increase the level of transparency of conditions and information requirements for payment services, and also foresees the respective rights and obligations of payment service users (clients) and payment service providers.

In parallel of what PSD2 brought for European payments market, also the Payment Services Law presents for the first time in Albania, two new types of payment institutions: payment initiation service providers (PISP) and account information service providers (AISP), as important parties in Open Banking process, which are also called Third Party Providers (TPPs). The latter is also a new concept in European markets and refers to new services and operators that will enter the payment market. Payment initiation service providers (which can be in the form of online stores, mobile applications, vendors, etc.) under the Payment Services Law, are allowed to have access in the banks’ customers payment accounts and can initiate payments from these accounts on the behalf of their customers. On the other side, there is a new category of TPP - the account information service providers, which are allowed under the Law to access different information related to payment accounts of their customers held in different payment service providers/ banks and provide aggregate information on them, in one single place (application).

The new Payment Services law changes the financial services landscape, develops new payment channels compared to the traditional ones, sets new standards for increasing the payments security, fosters the consumers protection through more transparent contract conditions and alternative dispute resolution of their complaints, incentivises the competition and innovation through setting standards for the new and existing players of payment markets.

Further to that, Bank of Albania has implemented a set of regulatory acts, for the implementation of the Payment Services Law and for defining technical aspects of licencing, operation and supervision of payment service providers.

As the general trend noticed everywhere in the world, even in Albania, the use of payment instruments and digital payments has increased during the last years. The lockdown during covid pandemic increased the need for people to make online payments. This new trend was also fostered by the strategic objectives and policies of the central bank and concrete steps to decrease the cost of online payments.

After the implementation of the law, were licenced several new market players – e-money institutions, which offer electronic payments through the issuing of electronic money kept in prepaid cards or electronic wallets. The use of electronic money is an alternative to bank account but is more convenient to the unbanked part of the Albanian population. The increasing number of e-money institutions and payment institutions and their presence (even through agents) in areas where banks do not go, gives this part of the population the possibility to be flexible for their payments, and to profit from lower payment costs, especially for utility, fines, or other periodic payments.

There are 4 payment institutions offering payment services for their clients and 10 electronic money institutions, where 3 of them are also licenced to offer payment services, operating in Albania. On the other hand, 11 banks also offer payment services to their clients. In this regard, the payment market is divided between these 3 types of payment service providers: banks and non-banks PSPs, payment institutions and e-money institutions.

As the legal framework defines, there are some differences between different types of payment service providers. The first category is the TPs - payment initiation service providers (PISP) and account information service providers (AISP), which have a very narrow scope, by offering data services and at no moment own customers’ money. They give orders to other PSPs

to initiate payments, or just aggregate customers' data with the latter consent and requirement. According to Payment Services Law, these are considered as payment institutions.

Another broader category are the payment institutions, which may offer 8 types of payment services as provided in the annex of Payment Services Law, including services 7 and 8, namely payment initiation service and account information service.

Then comes the category of e-money institutions, which apart of offering payment services as the payment institutions, they also can issue electronic money.

The broadest category of payment service providers are banks. They can offer all the above-mentioned payment services as TPPS, payment institutions and e-money institutions, but as an addition they offer banking products and other financial services.

Literature review

According to the European Commission Report¹, the first Payment Services Directive (Directive 2007/64/EC), established a harmonised legal framework for the creation of an integrated EU payments market. Building on PSD1, PSD2 addressed barriers to new types of payment services and improved the level of consumer protection and security.

The process of developing digital technology in many sectors of the economy could not help but affect the banking system as well. Many authors and experts in the field agree that banks are still the subject of changes and transformations in the banking sector influenced by digitalization. The final objective of this process is to improve the quality of customer service and increase their trust in and loyalty to the banking system.

Technology has become an integral part of our lives and as a result the economy is becoming increasingly digital, platform-based and data-driven. So, when we talk about technological development and its impact on the banking industry, we should not leave without mentioning the fact that the success of the digitization of the banking sector also depends on the degree of digitization of the economies of different countries. Many studies show that there is a positive relationship between the digitization of the economy and the possession of some basic digital skills of individuals. In parallel to the analysis of the digitization of the banking sector and the factors that affect it, we must also dwell on some data regarding the digital skills of individuals who can also be considered potential consumers of the bank. For example, in EU countries, while 87% of people (aged 16-74) used the internet regularly in 2021, only 54% possessed at least basic digital skills. The Netherlands and Finland lead the list, while Romania and Bulgaria are the worst performers. Even though most jobs in the EU require basic digital skills, a considerable part of the population still doesn't possess them. According to the proposed 2030 target of the Path to the Digital Decade, at least 80% of citizens should have at least basic digital skills by 2030. In Albania, based on results of the survey about the use of information and communication technology in 2021, 79.3% of people (aged 16 – 74) use the Internet, of which 91.7% use it every day (Xhindi & Kripa, 2023).

In Albania, based on results of the survey about the use of information and communication technology in 2021, 79.3% of people (aged 16 – 74) use the Internet, of which 91.7% use it every day (Instat, 2022). According to Xhindi, T & Kripa, E (2023), although some of the most relevant and prestigious organizations in the world: CBO, OECD, the US State Department and the EU, have given Albania very high ratings in digital governance, there is still much to do regarding digital skill's education and the gender gap in the ICT sector.

The development of digital technologies and the automation of financial services have led to a revolution in the banking and payment sector (Barroso&Laborda,2022). Before years 2000 the payment services were not subject to significant EU regulations (Brener, 2019). This changed with the announcement of the Lisbon Strategy in 2000 and the launch of the SEPA (Single Euro Payment Area) project. The regulation of the payment area began with the publication of the Electronic Money Directive (superseded by the Electronic Money Directive II in 2009). According to the European Commission Report², the first Payment Services Directive (Directive 2007/64/EC), established a harmonised legal framework for the creation of an integrated EU payments market. Building on PSD1, PSD2 addressed barriers to new types of payment services and improved the level of consumer protection and security. The new regulation, which progressively began entering into force between January 13, 2018, and September 14, 2019, entails fundamental changes in the industry as it gives third parties access to bank infrastructure.

PSD2 has therefore introduced significant innovations with the ultimate objective of promoting greater competition, efficiency and innovation in the payment services market while strengthening the protection of users of payment services, the transparency and security of electronic payments. PSD2 also represents an important opportunity for new market operators. So PSD2 has an impact on the PayTech sector development in Europe. In their study, Polasik, M., Huterska, A., *, Iftikhar, R & Mikula, S. (2019) indicate three main drivers of the number of PayTech licenses granted in the EU. Firstly, the potential of the economy, measured by population and the popularity of online shopping, has a positive impact on the number of licenses issued. Indeed, all five major EU economies have licensed a significant number of entities. However, despite the considerable market potential, some countries, like Germany and Italy, have not yet created conditions encouraging these businesses to

¹ Report From the Commission to The European Parliament, The Council, The European Central Bank and The European Economic and Social Committee on The Review of Directive 2015/2366/Eu of The European Parliament and Of the Council on Payment Services in The Internal Market.

² Report From the Commission to The European Parliament, The Council, The European Central Bank and The European Economic and Social Committee on The Review of Directive 2015/2366/Eu of The European Parliament and Of the Council on Payment Services in The Internal Market.

provide cross-border services on a pan-European scale. This may change in the future and, having succeeded in a large local market, the PayTech entities operating in these two countries may commence their expansion. However, the results obtained showed that the positive impact of high market potential occurred before the adoption of PSD2.

However, the development of financial technology can also create new risks that can affect financial stability (Bank of England, 2019).

Application and impact of Payment Service Law implementation

Recent years have been characterized by considerable changes in the payments services market. Electronic payments in Albania have been in rapid growth, where their number in 2023 is higher than 2.6 times the number of these payments performed in 2019. Also, the value of electronic payments has increased by nearly 86%, when comparing 2023 data with those of 2019. During the last years, new payment service providers using digital technologies have entered the payments market, where now dominate the e-money institutions. This period also the use of cards and other payments instruments, has increased. All the banks operating in the market offer different e-banking services, such as ATMs, POS, internet banking and electronic cards, creating the appropriate environment for their customers, to go digital in their services.

The implementation of the new Payment Services Law has brought several developments in different aspects of payment services and providers of these services.

Number of payment service providers

In this regard, the number of payment service providers has increased after the law being functional. In the table 1 is provided the number of payment institutions and e-money institutions before and after the entry into force of the new law.

TABLE 1

	2019	2020	2021	2022	2023
PIs	7	5	5	5	4
EMIs	2	3	7	9	10

Data as per end of year; Source: Bank of Albania website

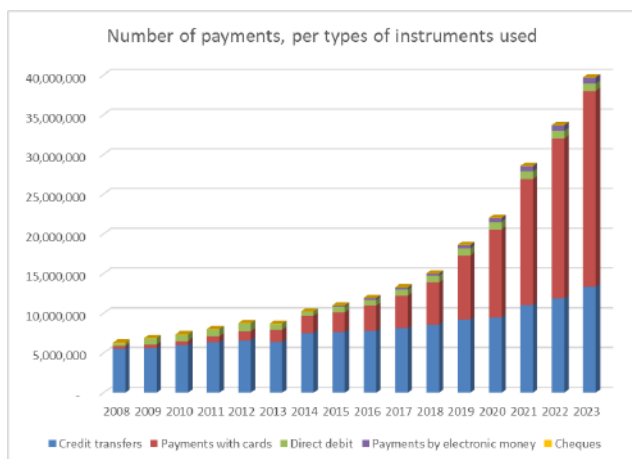
In year 2020, one payment institution was converted to an e-money institution (Albanian Post) and one payment institution was revoked the licence. This explains the changes in numbers between the end of 2019 and the end of 2020.

Since the entry into force of the Payment Services Law on 2 January 2021, several e-money institutions have been newly licenced, respectively 4 new EMIs in 2021, 2 in 2022 and 1 in the end of 2023. In 2023, was revoked the licence of a payment institution, due to its requirement.

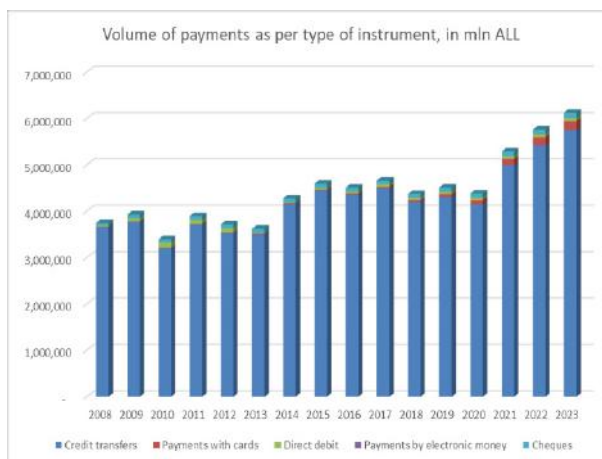
Number and volume of payments

The recent years have been characterized by notable positive developments in the payment services market of banks and a wider usage of electronic payments instruments. The value of payment transactions executed by banks during 2023, reached 6,127 billion ALL, with an annual increase of 6.2%, while the number of payment transactions increased by 17.8% compared to 2022, reaching several 39.7 million payment transactions.

GRAPH 2/A



GRAPH 2/B

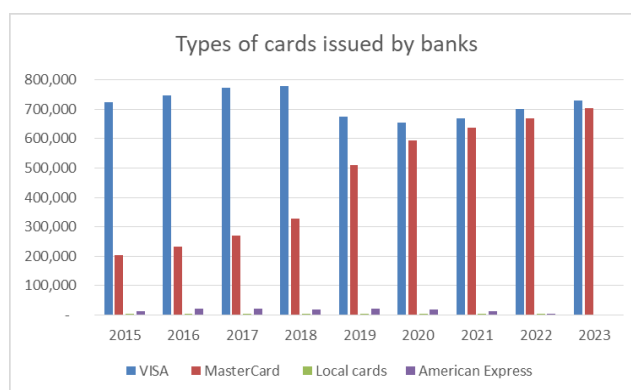
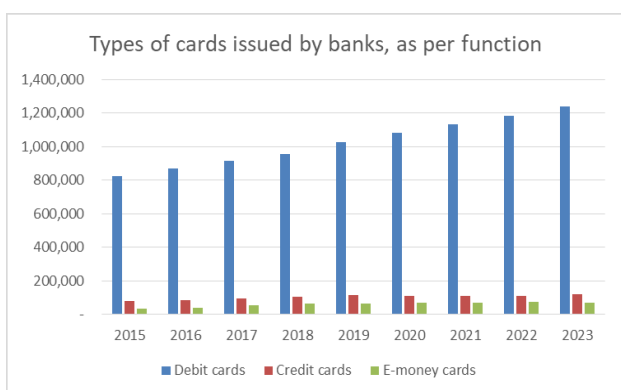


Source: Bank of Albania payment statistics, Authors’ calculations.

Card ownership and usage

According to the Bank of Albania Annual Report 2022, at the end of 2022 all the 11 banks that operate in the Republic of Albania were licensed as card issuers, of which seven were licensed also as card accepters. Banks have supported the use of cards, by increasing the number of ATM and POS terminals. In this sense customers are now more familiar and have more opportunities to execute electronic transactions, compared to cash ones. This reduces the costs and the time of making payment transactions or depositing/withdrawal of funds and increases financial inclusion of Albanian population. As graph 3 shows, debit cards issued remain in a proportion of 10 times compared to credit cards issued. In the recent years, there is also a trend of banks to issue a few cards with e-money function. This function is better covered by e-money payments performed by e-money institutions. Analysing the cards issued by banks in Albania, per type of card schemes, although before VISA prevailed the market, as the latest data of 2023 show, the number of cards is equally shared between VISA and MasterCard.

GRAPH 3



Source: Bank of Albania payment statistics, Authors’ calculations.

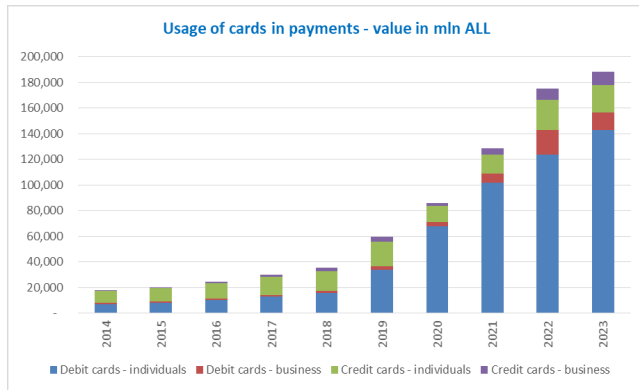
The number of payment transactions executed by banks during 2023, is almost double of that number for the year 2020 (see graph 2/a). The number of card-based transactions executed for the period 2021-2023³ has increased on average by more than 30% per year. A notable increase is evidenced also in the value of card-based transactions during the period 2020-2022, on average by nearly 44% per year. This increase is also related to the covid pandemic situation, where payers started to use more the electronic payments, conditioned from the covid distance rules.

In the last 4-5 years, the number of banks’ card-based transactions has significantly exceeded the number of credit transfers initiated in paper-based form, where in 2023 their ratio is higher than 4. This shows a new tendency of the payment services users starting to use more cards for their transactions, where speaking in terms of payments number, the card based transactions constitute the largest payment instrument used (62% in 2023), but in terms of the overall volume of payment transactions, card based transactions make up only 3% of total value of payment transactions.

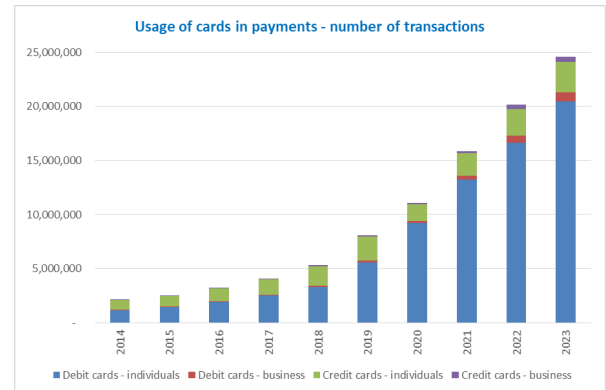
³ Since the implementation of the Payment Services Law.

Albanian banks' clients have used in a larger scale, the debit cards, where compared to the number of payment transactions executed by credit cards, those executed by debit cards have been around 6 times higher during the last years.

GRAPH 4/A



GRAPH 4/B

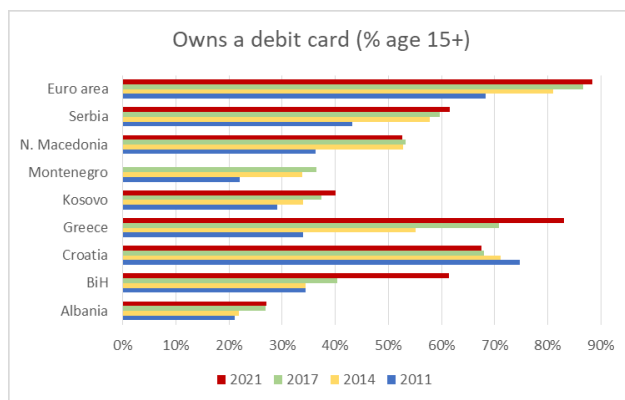


Source: Bank of Albania payment statistics, Authors' calculations.

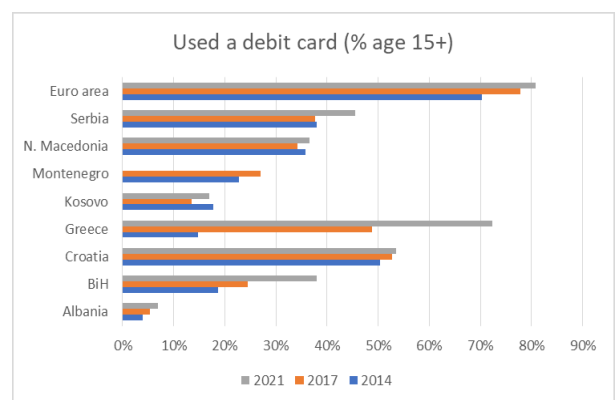
In the following graphs, is presented a comparison of ownership and usage of debit cards in several Balkan countries (EU members or not) and in the Euro area, based on “The Global Findex Database 2021⁴”. It is important to note that data presented from the Global Findex are based on interviews with nearly 1.000 respondents from each country, which have been selected as representatives for the survey and sometimes the data may differ from what national authorities report based on banks'/financial institutions' reporting data.

There is a clear increase in percentage of population over 15 years old, which own a debit card, and also in the percentage of its usage. According to these data, Albania remains at the lowest levels for the percentage of population over 15 years old which owns and uses a debit card, compared to all other countries of the region. But a positive trend of this figure is noticed when comparing data of 2011 to those of 2021 for Albania. Another element noticed is the low percentage of population over 15 years old which uses the debit card (only 7% in 2021), even though they possess such a card (27% in 2021). Countries which are EU members (Greece and Croatia) have higher percentage of populations owing and using debit cards, comparable to the levels of Euro area. Other Balkan non-EU countries remain in lower levels of this indicator compared to EU ones, but Serbia, North Macedonia and Bosnia & Herzegovina are characterized by higher percentages for the region.

GRAPH 5/A



GRAPH 5/B

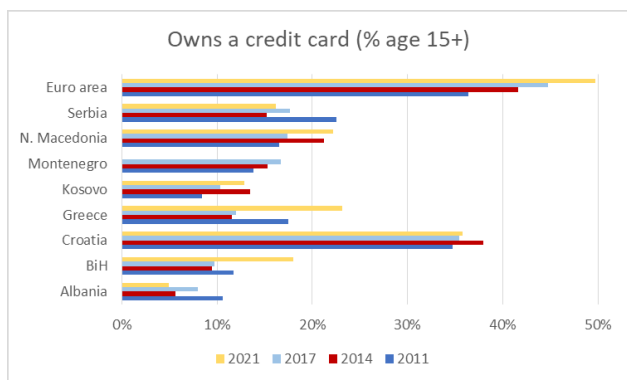


Source: Global Findex Database 2021, Authors' calculations.

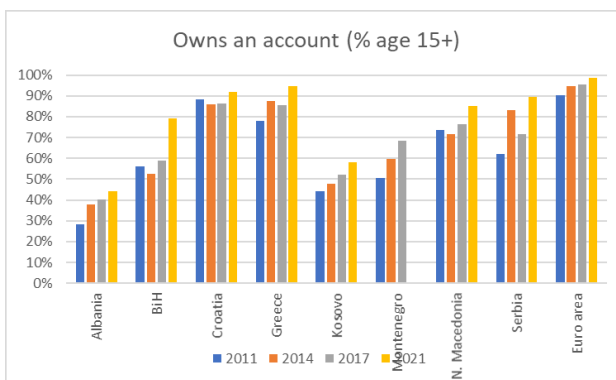
On the other hand, the possession of credit cards from adult population (over 15 years old) for all the countries under consideration, is nearly half of the percentage of population owning debit cards.

4 “The Global Findex Database provides almost 300 indicators on topics such as account ownership, payments, saving, credit, and financial resilience. Findex data is reported for all indicators by country, region, and income group. Data is also included summarized by gender, income, labor force participation, age, and rural and urban residence. Available indicators are reported for 2021, 2017, 2014, and 2011.”

GRAPH 6



GRAPH 7



Source: Global Findex Database 2021, Authors’ calculations.

Home banking payments

Home banking payments, which include internet banking, mobile banking, computer banking, etc have shown a positive trend in the recent years. This trend has been fostered by the situation of Covid pandemic, where people were sometimes forced to make online payments, due to non-access to banks’ branches. According to the Bank of Albania’s Annual Report 2020, another measure that aimed at facilitating the costs of payments to bank customers and encourage the use of Home banking services, was the suspension of commissions applied by banks on electronic transfers of credit in lek and the fees for participants in the payment systems operated by the Bank of Albania. In this context, as expressed in Bank of Albania’s Annual Report 2020, contributions to the upward trend of home banking were assessed to be the measures undertaken by the Bank of Albania and the policies of banks, in the framework of promoting these alternative payment means. These measures were reflected in an increase in remote accessible accounts by 32.6% and an increase, against the total account, of 19.8%.

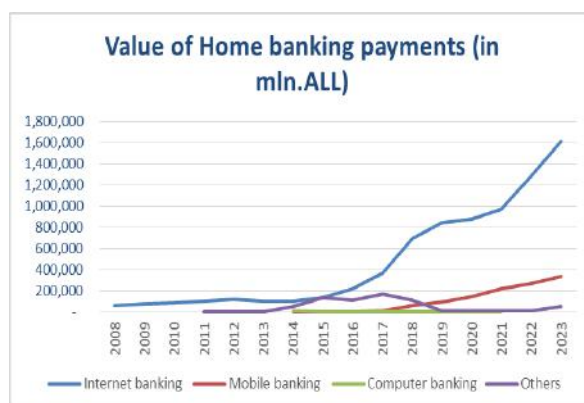
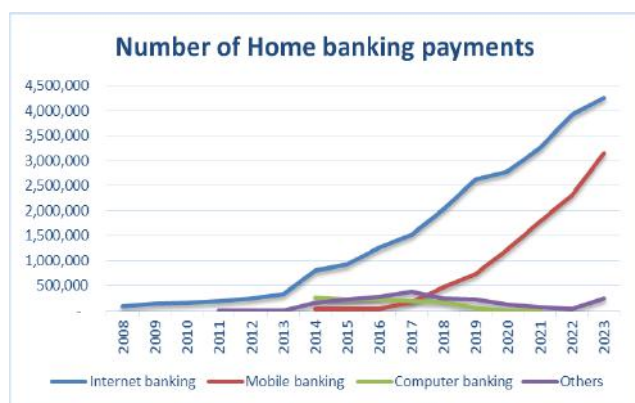
We also believe that the population that started to use online payments during the pandemic period, continue to do so even some years later. The increase in financial education level, based on Bank of Albania’s and of banking system’s efforts and policies, evidence the increase in number and volume of payments executed through remote channels.

The implementation of Payment Services Law and its stricter requirements on more secure channels and more transparency to their customers, have influenced the positive trend of home banking usage.

Also as per Bank of Albania’s Annual Report 2022, what contributed to the use of home banking are considered the measures taken by the Bank of Albania to reduce commissions, but also the development of the infrastructure, the spread of opportunities to access the Internet, as well as the familiarization of banks customers with the use of this instrument. It is estimated that bank policies have played a positive role in the promotion of these alternative payment methods, which is reflected in the increase of accounts accessible remotely by about 24.0% and an increase in accounts accessible from the Internet to the total of all customer accounts by 28.3% during 2022.

Based on Bank of Albania’s payment statistics, the percentage of accounts accessible from the Internet to the total of all customer accounts, increased to 33.9% during 2023, compared to only 14.8% in 2019.

GRAPH 8



Source: Bank of Albania payment statistics, Authors’ calculations.

Electronic money used for payments

Despite the low number and volume of payments executed by e-money instrument with banks (which also offer other alternatives for their customers to carry on transactions and e-money is not a primary alternative), payment service users have moved in the recent years towards electronic money institutions.

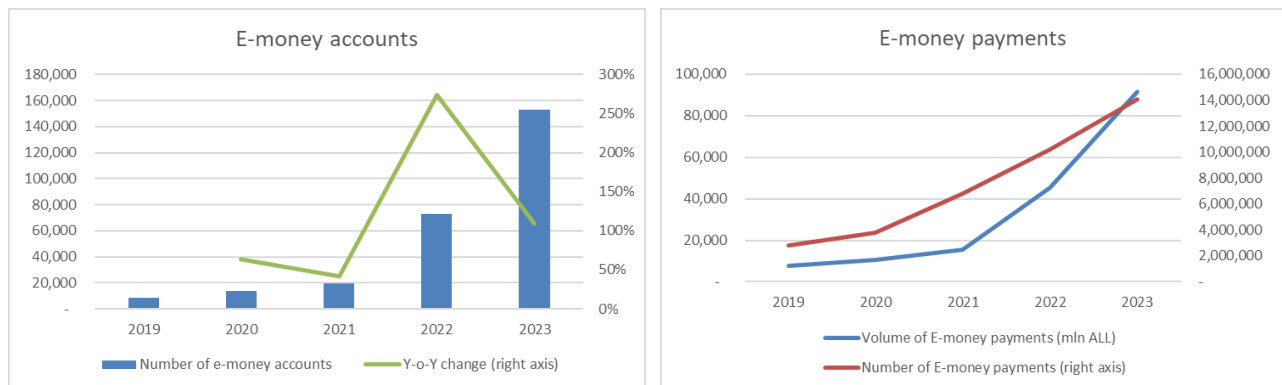
After the implementation of the Payment Services Law, as explained above, new e-money institutions entered the market. The increased number of these institutions is accompanied by a rapid increase in number of e-money accounts (the number at the end of 2023 is 10 times the number of accounts at the end of 2020 – thus before the implementation of the law).

On the other side, the number and volume of payment transactions performed with e-money accounts has also increased, reaching over 14 million payments in 2023 (from nearly 4 million in 2020), or a volume of 91 billion ALL (from 10.8 billion in 2020).

For the year 2023, the volume of payment transactions performed with e-money accounts in banks is only 4% of the payment transactions carried out with e-money accounts in electronic money institutions. Speaking in terms of numbers of payment transactions, those executed by banks' e-money accounts consist only 5% of the payment transactions performed through EMIs.

All the above figures support the assessment that the importance and role of e-money institutions will further increase for Albanian market, the competition with banks will increase, resulting in lower costs for the customers.

GRAPH 9



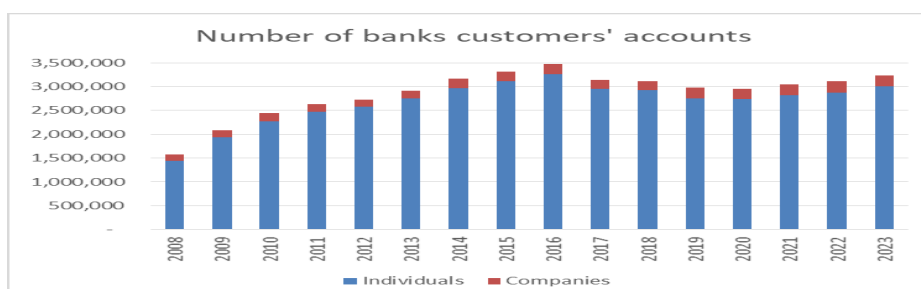
Source: Bank of Albania payment statistics, Authors' calculations.

Access to banks/financial institutions accounts

As Albania has been characterized by a low level of financial inclusion, thus by low percentage of population owning bank accounts, as an important objective included in the National Strategy of Retail Payments (2018-2023), is the increase of this percentage. One solution for promoting financial inclusion, is the drafting and approval of another law, the law "On the payments account with basic features", which has entered into force in the beginning of April 2024. The main objective of this law, is to determine the terms and conditions for opening and using a payment account with basic features for consumers and households, paying special attention to those who are not covered by banking services. The law also determines that vulnerable categories (such as pensioners, invalids, students, unemployed) have the opportunity to ask banks to open basic accounts, at no cost. This will affect the number of payment accounts opened by banks, which together with the services offered by other PSPs, will increase the percentage of population being served by the banking and financial sector.

The number of banks' customers' accounts has experienced a slight increase in the recent years. These accounts are dominated by the individuals' accounts, compared to the number of business accounts.

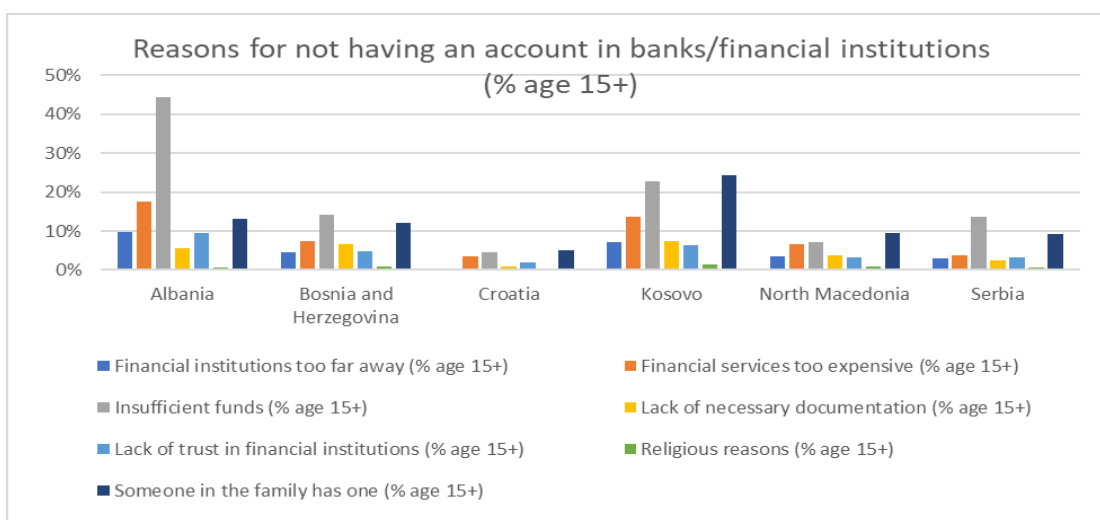
GRAPH 10



Source: Bank of Albania payment statistics.

According to Global Findex Database 2021, the percentage of population over 15 years old owning an account with a bank or another financial institution in Albania, has increased over years, reaching 44% in 2021, from 28% in 2011. Despite this increase, Albania still remains behind other Balkan countries, where in the last years the indicator in question has reached or exceeded 80% (except Kosovo). In Euro area and in Balkan countries which are EU member states, the population over 15 years old possessing an account is higher than 90% (see graph 7). In the following graph 11, are presented the reasons that respondents of Global Findex Database 2021 consider as impediments for not having a bank (financial institution's) account. For Albania, the main reason for not having such an account seems to be the fact that the respondents of the survey do not have sufficient funds to necessitate the opening and possession of bank accounts (44%), following by another reason related to the high costs of maintaining such accounts (17%), and by the fact that they do not need an account in the time being another family member already owns one (13%). Nearly the same reasons dominate also for Kosovo respondents, which remain similar to Albanians in the mentality and problems faced for using bank accounts. Another reason noticed by Albanian respondents is the distance from banks/financial institutions and the lack of trust in the latter.

GRAPH 11



According to Global Findex Database 2021, more than 70% of respondents over 15 years old have answered that have made a utility payment. But from this category, nearly 70% admit that have made this type of payment using cash only, while only 2-3% have used financial institutions' accounts or mobile phone, to make this payment. The opposite situation is characteristic for Euro area in 2021, where only 4% of respondents have made a cash payment, while 73% have used an account and 14% a mobile phone to carry out a utility payment.

Higher use of cash in utility payments is typical also for other non-EU Balkan countries (Serbia, Bosnia and Herzegovina, Kosovo), while the other countries such as Greece and Croatia, which are part of EU, show a lower percentage of making cash payments.

TABLE 2

Country	Year	Made a utility payment (% age 15+)	Made a utility payment: using a financial institution account (% age 15+)	Made a utility payment: using a mobile phone (% age 15+)	Made a utility payment: using cash only (% age 15+)
Albania	2014	73%	3%	0%	68%
	2017	77%	5%	1%	70%
	2021	73%	3%	2%	65%
Bosnia and Herzegovina	2014	82%	3%	0%	78%
	2017	66%	12%	2%	52%
	2021	77%	20%	10%	52%
Croatia	2014	68%	10%	2%	57%
	2017	59%	41%	13%	15%
	2021	73%	39%	33%	23%

Greece	2014	81%	6%	0%	75%
	2017	71%	22%	4%	45%
	2021	76%	60%	33%	11%
Kosovo	2014	38%	1%	1%	36%
	2017	52%	8%	2%	42%
	2021	54%	6%	3%	43%
Montenegro	2014	53%	3%	0%	50%
	2017	59%	23%	1%	34%
N. Macedonia	2014	68%	11%	1%	56%
	2017	68%	25%	2%	39%
	2021	75%	40%	22%	23%
Serbia	2014	66%	6%	1%	58%
	2017	69%	26%	4%	40%
	2021	83%	26%	20%	49%
Euro area	2014	82%	61%	3%	14%
	2017	81%	65%	7%	9%
	2021	82%	73%	14%	4%

Source: Global Findex Database 2021, Authors' calculations.

Risks related to new types of payment services and possible solutions for their mitigation

The provision of new services and the new market players presented by payment services law, creates for the financial institutions in general and for banks, in particular, additional risks and responsibilities, which should be mitigated or prevented. In this regard, we can mention some potential types of risks that are related to the payment service provision, such as: security and data protection, operational and reputational risks, consumer protection issues, etc.

Competition - Entering the payments market of new players, creates enlarged competition and more pressure on banks charges, and sometimes, reduction of market share for them. In the recent years, the number and importance of non-bank PSPs (payment and e-money institutions) has grown, where of course a positive impact and incentive has given the implementation of Payment Services Law. But these institutions, although can offer payment services, they are not allowed to offer typical banking services, like deposits and loans⁵. On the other hand, payment institutions and e-money institutions are obliged to safeguard their customers' funds, by depositing them in a commercial bank or by investing them in liquid, low risk assets. In this regard, PIs and EMIs have to open an account in a bank. Furthermore, PIs and EMIs can be direct or indirect participants in payment systems, in the latter case, for offering payment services for their customers, they should have access to these payment systems/infrastructures to process payments transactions. In all these cases non-bank PSPs and banks should be collaborative to each-others and not consider the other party as a competitor.

Regarding the issue of non-bank PSPs requiring to open accounts in banks and the objection of the latter to open such accounts is an issue related to the concept of "de-risking" by commercial banks. De-risking is a decision of / a practice followed by the banks to end, adjust or not start a business relationship with other customers (including PIs and EMIs), for ensuring regulatory compliance, especially in AML field. Banks are required now by Payment Services Law, to open accounts for PIs or EMIs, in order to facilitate their activity, and in any case of refusal to open such accounts, the banks should provide justification and explanations to the supervisory authority for such refusal. Sometimes banks refuse to open such accounts, providing superficial explanations, usually related to de-risking, as they see the PIs and EMIs, as direct competitors in their payment area, but this refusal can cause disruption to the activity of PIs and EMIs.

Further investment to update the systems - On the other side, banks with older core business systems, are obliged to adopt these systems to the newer technologies and to keep the pace of these fintechs or new types of payment service providers, which will ask for extra investments. Albanian banks have already started to adopt their banking core business systems to the new requirements of the law on Open Banking, and to present interfaces which will be compatible to TPPs apps.

⁵ These institutions may grant credit only related to the payment services, thus to facilitate and execute payment transactions when the client has not enough money for certain transactions.

Increased potential operational and fraud risk – The increased usage of electronic payments in the last years, derives the dependence on technological solutions to offer such payments, which increases the operational, ICT-related risks and fraud risk. A significant barrier for these types of risks is the correct implementation of legal and regulatory requirements adopted, and the additional measures that payment service providers should take when choosing modern technologies. One step which will have a positive impact is the introduction of strong customer authentication (SCA) rules in legal and regulatory framework. The concrete impact in Albanian market is still not evidenced, but in European payment markets SCA has proven to be effective in reducing fraud. The implementation of SCA rules is challenging for payment service providers in Albania, as it requires some additional investments in payment infrastructures, but they have taken relevant steps to comply with legal requirements.

Security risk and data protection - Another risk which arises from (new) payment services, is the potential security risk during the execution of payment transactions, and the risk of data loss or mis usage during the process of sharing data with the TPPs.

On the other hand, payment institutions and electronic money institutions face some other risks during their operations, which are required to be measured, mitigated and managed properly. For this issue, electronic money institutions and payment institutions are required by regulatory acts to establish and develop adequate risk management systems, conform to the nature, volume and complexity of their activities/services.

Liquidity risk – it's the risk that the institution has inadequate cash flows to meet its financial obligations. In order that PIs and EMIs have enough money to serve their clients and respond in a timely manner to their claims, the Payment Services Law and its implementing regulations ask these institutions to safeguard customers' funds in banks or in other liquid low-risk assets. Customers' money are not considered deposits and they should be kept separately from institutions' own money.

Foreign exchange risk – being the risk resulting from fluctuations in exchange rates, when the institution is exposed to foreign currency open positions (currency mismatch between assets and liabilities). To solve this problem, there exist regulatory requirements which limit the ratio of open position to the regulatory capital of the institution, should not exceed 30% in a single currency and 40% for total currencies.

Money laundering or terrorism financing risk - the risk that the institution or its services might be used for a purpose connected with money laundering or terrorism financing. PSPs are subject to legal and regulatory requirements for anti-money laundering and financing of terrorism. Respecting all these rules, decreases significantly the risk that these institutions being part of such violations.

Open Banking – the new trend in payments market

As per Payment Services Law and the relevant regulation, banks and other payment service providers, are required to open their customers' data to other PSPs, if the customer requires and gives its consent to do so. To be opened and in the same time, to ensure security for the transmission of financial data or payment initiation orders on behalf of their clients, the PSPs have to follow certain rules and being certified for the security of the API interface (Application Programming Interface).

The Open Banking, as a new concept formalized by the Payment Services Law presents the TPPs (payment initiation service providers and account information service providers), as new players in the payment chain. In Albania, there is an increased interest of PIs and EMIs to be part of Open Banking platforms, which are expected to start their operations during 2024. Until now, there is no PI or EMI having a licence for such payment services, as most of them are new in the market and need still some time to adopt to new legal requirements and to expand their clients' base.

Banks on the other side have to adopt their IT systems and increase security measures, in order to be ready to open their data to new market players. This requires additional investments and costs for the banks, which also tend to show resilience towards the opening and sharing their customers (data) with other competitors.

Open banking services bring some new opportunities to the users and the institutions:

Increased competition: it enables new market players to challenge traditional banking and services, providing innovative products and services.

Incentive for financial inclusion: It creates more opportunities for clients belonging to financially excluded communities to access financial services.

Increased security: The new payment services Law requires additional security measures that ensure the customers 'data protection. Banks should communicate securely with TPPs, to let them access the financial data of their customers.

More transparent and efficient payments: *Open Banking* and payment Services Law promotes faster, more secure and more transparent payment services, enabling reduction in execution costs and time, compared to traditional banking services.

As explained above, the open banking is a new trend in payments market (even in European countries), but it tends to go further into a more advance concept - "open finance". Open finance, as the next step of open banking, will encompass more financial products and services, not just banking.

It is expected to allow TPPs to access a wider range of customers' financial data, including data on investments, savings, pensions, insurance, mortgage, etc. The aggregation of data could be used by financial institutions, to design personalised financial products and services for their clients.

Conclusions and recommendations

The increase in the number of Payment Service Providers (PSPs), along with the entry of Payment Initiation Service Providers (PISPs) and Account Information Service Providers (AISPs), is expected to intensify competition and further reduce payment costs for customers.

The implementation of new legal requirements will enhance the security and transparency of payment transactions, fostering greater trust and encouraging wider use of electronic payment instruments among consumers.

The introduction of a law on basic accounts is anticipated to expand the number of consumers served by banks and other financial institutions, improving financial inclusion and raising the percentage of the population with access to accounts.

Further efforts are needed in financial education, both from Albanian authorities and PSPs, to attract unbanked individuals into the financial system.

Banks must upgrade their core systems to comply with open banking requirements and enable Third-Party Providers (TPPs) to access their clients' data.

TPPs should prioritize obtaining security certifications and be proactive in offering payment initiation and account information services.

Future Work

This study primarily examined the theoretical aspects of new legal requirements for payment services and analyzed market developments before and after the implementation of the law.

Future research could focus on the risks associated with electronic payments and explore the factors influencing their volume and prevalence. By then, additional data will likely be available, allowing for a more comprehensive evaluation of the effects of open banking implementation.

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Empowering the elderly: legal and social perspectives on digital inclusion

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Abstract

The decision for elderly individuals to embrace the digital sphere poses significant challenges. They grapple with the choice between staying connected with evolving technologies and digital opportunities or prioritizing safety by remaining offline. This dilemma becomes crucial when considering the implications for full societal participation. This article digs into real-life situations illustrating the complexities faced by the elderly. In the banking sector, the dwindling number of physical branches limits access to advice and cash withdrawal. Simultaneously, the increasing prevalence of cashless transactions raises concerns about whether older individuals genuinely have a choice and possess the necessary skills to navigate this shift. Societal expectations from entities like banks and public services come into question – should they play a proactive role in supporting the elderly through these transitions? The role of frontline staff, exemplified by supermarket service desks, is explored, pondering the extent of their involvement in providing assistance and guidance. Examining these activities involves assessing not only the possibilities and support available but also the inherent boundaries and frameworks. Essential considerations include evaluating the availability of knowledge and ensuring a secure foundation for assisting the elderly. For instance, volunteers in libraries offering consultation hours may provide valuable support, but concerns arise regarding the potential misuse of information shared during these interactions. Healthcare settings present another pertinent example. Nurses or home care workers, often trusted figures in an elderly person's life, find themselves navigating digital dilemmas. Loneliness or distant family members may prompt the elderly to seek guidance on trusting emails or entering data on websites. This raises questions about the knowledge levels of healthcare providers, as well as the extent of their responsibility should issues arise. The article addresses the legal and social dimensions of digital resilience among the elderly, drawing on examples from various European countries. By examining these multifaceted issues, it sheds light on the intricate balance between empowering seniors in the digital age and safeguarding them from potential risks. The cross-sectoral issues and the role of elderly, volunteers and professionals make it a complicated theme, with broader responsibilities of other actors in society.

Keywords: Digital Resilience, Elderly, Societal Participation, Banking Transitions, Frontline Support, Healthcare Dilemmas, Supporting Environments, Intergenerational, Public-Private

Introduction

In the digital era, inclusion and participation are critical for ensuring equitable access to technology and digital resources for all individuals, including the elderly. Digital inclusion refers to activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use information and communication technologies (ICT). This encompasses affordable access to high-speed internet, digital literacy skills and awareness and access to appropriate devices and services.

Participation involves the active engagement of individuals in the digital society, including using digital tools for communication, accessing services and contributing to digital content. Effective participation requires both digital literacy - defined as the ability to use ICT to find, evaluate, create and communicate information - and digital skills, which include the technical know-how to operate devices and applications.

For the elderly, digital inclusion and participation are particularly significant. Elderly often face barriers such as a lack of digital skills, physical impairments and limited access to technology, which can exacerbate social isolation and reduce quality of life. Enhancing digital literacy among the elderly can improve their access to healthcare, social services and social interactions, thereby promoting greater autonomy and well-being.

Background and Context

This article, authored by researchers from the Netherlands and Albania, reflects a collaborative effort between universities. The collaboration between the universities spans various themes such as European identity, resilient democracy, vulnerable neighborhoods, digital resilience and youth participation. Students conduct joint research by exploring similar themes from their respective perspectives. Faculty members and researchers extend student work through collaborative research, discussions and publications, fostering mutual understanding and learning opportunities.

Recent activities focused on the digital resilience of the elderly in different countries, like the Netherlands, Albania, Finland, Spain and Italy have highlighted two specific themes, further investigated and discussed in this article. This ongoing work aims to elaborate on these insights.

There is no general agreement on the age at which a person becomes 'an elderly person'. WHO uses 50-65 years, depending on the development level of countries. In this article, the definition of elderly is retrieved from the United Nations: 60+ years (World Health Organization: WHO, 2022 & *Our World Is Growing Older: UN DESA Releases New Report on Ageing* | UN DESA | United Nations Department of Economic and Social Affairs, n.d.)

Relevance of Digital Inclusion

Digitalization presents both benefits and drawbacks, with various tactics available to address these challenges. Innovative applications like semi-autonomous vehicles or improved medical diagnostics are among the benefits of digitalization. Platforms like Uber and Airbnb optimize supply and demand, while smart meters help manage energy consumption. However, digitalization also increases energy consumption and poses privacy risks, with potential data leaks and social media algorithms limiting our exposure to diverse content. This creates new questions about privacy, digital security, responsibility and intellectual property rights. Digitalization creates new jobs while eliminating others, particularly those involving standardized processes. Rapid technological advancements can also create a gap in digital inclusion and accessibility (Social Economische Raad, 2024). There are several tactics to apply to these risks and benefits. You can choose to avoid risks through digitization or by avoiding certain technologies as much as possible. Others, on the other hand, choose to embrace digitization. They ensure that proper security measures are in place to manage the risks and then take full advantage of the benefits. An approach that leverages benefits and manages risks is often the most effective.

Challenges faced by vulnerable groups, especially elderly

There are several vulnerable groups that face different challenges in dealing with digitalization. This includes older people who have limited experience with digital technologies. They may experience difficulties in using a computer, laptop, smartphone and online services. Access to digital services, which can range from online banking, online tax returns to online shopping and online news, may be hampered. But digital skills can also be a challenge for people with low literacy levels, who already have limited reading and writing skills. This is reflected in understanding instructions on online tools or forms. When there are financial constraints, or people are long-term unemployed, digital skills can be lost or not sufficiently up to date, which in turn can make access to technology or digital services more difficult (Digitalisering: Kansen En Risico's, n.d.) (Digitale Overheid, 2023). As a final example, an illness or disability, both physical and cognitive, may also experience difficulties when using digital devices. As one can imagine due to a visual or motor impairment (Digitalisering: Kansen En Risico's, n.d.) (Digitale Overheid, 2023).

Older adults often have limited experience with digital technologies, making it challenging to use computers, smartphones and online services. This digital divide hinders their access to essential services, including online banking, tax filing, shopping and news gathering. Additionally, low literacy levels can further exacerbate difficulties in understanding and navigating online tools and forms. Financial constraints or long-term unemployment can result in outdated digital skills, impeding access to technology and services. Physical or cognitive disabilities can also pose significant barriers to using digital devices effectively (Vereniging van Nederlandse Gemeenten, 2021) (Digitale Overheid, 2024).

General legislation and policies

Ensuring digital inclusion and safety requires legal frameworks and policies. Key regulations in the European Union include the General Data Protection Regulation (GDPR), which protects personal data. In healthcare, the Health Insurance Portability and Accountability Act (HIPAA) governs the use and misuse of data.

The Charter of Fundamental Rights of the EU and the Treaty of Lisbon recognize and respect the rights of the elderly to lead a life of dignity and independence and participate in social and cultural life. The Digital Services Act (DSA) ensures transparency and accountability for online platforms, while the Digital Decade Policy Programme 2030 aims to empower digital skills and infrastructure (*EU Charter of Fundamental Rights*, n.d.)

Specific action plans in countries like Finland, Spain, France and the Netherlands focus on digital inclusion for the elderly. Although Albania has not signed the EU DSA it is actively pursuing digital transformation activities. New laws for digital nomads and startups have been formulated, however the focus towards the literacy of elderly or this with literacy issues is yet limited (*Kuvendi I Shqipërisë*, 2023) (Gobierno de España, 2021).

Various initiatives aim to achieve digital inclusion. The United Nations Development Programme (UNDP) supports inclusive digital transformation in over 100 countries including Albania (*UNDP Annual Report 2022*, n.d.). Another example is the EDISON Alliance. This is an initiative of private and public sector leaders, bringing together actors from the telecoms and wider ICT industries, among others, with members from healthcare, financial services, education and investors with the aim of advancing digital inclusion. South Asia and Africa have so far benefited the most from this Alliance. Finally, the World Economic Forum (WEF) is also paying attention to this theme. The WEF stresses the role of digitalization in greater justice, connectedness and emancipation (*Pathways to Digital Justice: Whitepaper Launch*, 2021)

Impact of digitization

Studies in the Netherlands by e.g. Alexander van Deursen (the first to give a systematic overview to discuss the skills and literacies needed) and civil society organizations like Netwerk Mediawijsheid, SeniorWeb and Nationaal Ouderenfonds highlight the need for developing everyday digital skills among elderly. Older individuals recognize benefits like managing practical matters, maintaining social contacts and entertainment. However, they are also skeptical about risks like phishing and privacy issues, often feeling compelled to use online services. The step towards to right support is difficult. This means that the elderly, potentially the group with the greatest benefit of digitalization, profits the least or at least not enough (Netwerk Mediawijsheid, 2021) (Van Deursen & Universiteit Twente, 2019).

Nicole Ketelaar, Associate Professor and Researcher at Saxion University of Applied Sciences noticed that the people who benefit the most or should benefit the most, are not sufficiently included in surveys and research. Overall, there seems to be a big difference between what people are expected to know and be able to do and what they actually can do and do (Saxion, 2024).

In early research in Spain, by Perez Amaral (2021), a group of twelve digital services were considered, like e-commerce, e-learning, e-health, e-banking, e-government, chat, email, cloud services and social networks. The digital gaps were analyzed in each service according to six relevant socio-demographic characteristics: gender, age, education, digital skills, population size and income. Results show that gaps are narrowing in most dimensions and specific characteristics, but not in others such as age, education and digital skills. The gaps reveal the evolution of digitization and in some cases of digital exclusion for specific groups like (relevant here) elderly adults.

Support systems for the elderly vary across countries. In Finland, digital literacy programs are integrated into community centers, providing accessible education for elderly. The Netherlands has implemented similar programs, but with more focus on client consent and data protection. Spain and Italy face interoperability issues but are working to improve digital literacy among the elderly through targeted initiatives ((UNIÓN DEMOCRÁTICA DE PENSIONISTAS Y JUBILADOS DE ESPAÑA (UDP) & UDP, 2019) (Urru & Urru, 2023) (*UNECE Annual Report 2021 | UNECE*, 2022)

Two striking sectors

In the various studies carried out by the students involved with regard to digital resilience among the elderly, two sectors in particular stood out: the banking sector and the health sector. The most striking issues are highlighted below.

Banking Sector

Financial legislation is important. Not only digital legislation, but also laws and regulations like Anti-Money-Laundering, Consumer Protection Laws and Know-Your-Customer. There needs to be extra attention for laws regulating cash payments which are crucial for the financial and healthcare sectors, ensuring that elderly can access essential services no matter what. For example, the Netherlands and Germany have enacted laws to regulate cash payments, ensuring that elderly can continue

to access cash and financial services even as digital transactions become more prevalent. This legal framework is essential for maintaining financial inclusion, independence and security for the elderly (various national and international laws).

Digitalization significantly impacts elderly in the banking sector. The shift from physical branches to digital banking reduces accessibility for seniors who prefer personal assistance and cash transactions. Service points, as advocated by organizations for elderly like ANBO in the Netherlands, are essential for maintaining personal contact and ensuring financial control. Banks generally do offer online support via telebanking or chat and do support clients face to face in their offices, but do not come to the home or the village of a senior client. So senior clients who do not have the possibilities to participate in online support, have the choice to ask a trusted family member for support or a do a (long and perhaps complicated) travel.

More multi-factor-authentication (MFA) and similar technical solutions to safety and security in banking, make banking at the same time more complicated. Online banking possibilities make physical banking branches less used, so these partly disappear. Older adults often face challenges in accessing digital banking services due to limited digital skills and the reduction of physical bank branches. This shift can lead to financial exclusion and increased vulnerability to fraud. The need for personal assistance and cash transactions remains crucial for many seniors, necessitating the establishment of service points to provide the necessary support (Weisman-Pitts, n.d.).

Between European regions, the approach to banking differs because of the cultural backgrounds and also because some banks are more "grounded" in the community than others. Overall, the service towards elderly is an issue. Support systems in libraries and other community centers are in the northern part of Europe in place, however the privacy implications are not always transparent. Working with volunteers makes these implications more complex. And although cash payments are still possible, sometimes additional fees for cash payments or cash withdrawals are charged which raises the threshold for participation in society. In Spain a law is in the making to forbid to charge 65+ citizens for cash withdrawals (BOE-A-2022-3198 Ley 4/2022, De 25 De Febrero, De Protección De Los Consumidores Y Usuarios Frente a Situaciones De Vulnerabilidad Social Y Económica., n.d.) (Cotte, 2023).

During time, fraud and fraud protection changed. Banks expect clients to be alert and not participate in fraudulent actions. This makes it more difficult to get money back in case of losing money because of hacks or other fraud. This makes elderly insecure.

A recent case in The Netherlands. Bunq, a digital bank, where the balance between safety and comfort was more towards comfort compared to other banks. With no time between planned transaction and the actual transaction. Elderly and others who were misled and gave personal information were not compensated at all. Lawsuits are ongoing (Kamphorst & Schellevis, 2024)

Potential solutions include enhancing digital literacy programs, increasing the availability of financial services. In the Netherlands and other northern countries, the library and community centers are taking care of a part of these services. For some trainings on specific topics, the banks are still needed. No matter whether it is wanted that a public service takes over this role. It also shows the complexity of responsibilities and roles, which make it difficult for elderly and others to keep the overview.

Students at the universities did inventory research among grandparents of the students. In this way, researchers expected to get more honest and in-depth answers from the elderly. Of course, the disadvantage is that the target group is limited to elderly with studying grandchildren. Researchers are aware of this flaw, but as a start it was very informative. As an additional result, both students and grandparents perceived as very inspiring to know more about each other's perspectives and lives. This is a topic that is rarely spoken about in the regular contact between grandparents and grandchildren (Saxion/UET research in progress).

Results showed that grandparents who used internet (appr 60% of the population interviewed) are aware of the most common scams and turn to family members for support in case of doubt. However, the remaining 40% is still relying on television and telephone for news and entertainment and on cash for daily necessities. Even if the 40% is decreasing during time, it is still a large percentage of a growing part of our overall population.

Results revealed that the elderly partly rely on cash money. But ATMs are rarer, also because of ram-raid burglary made ATMs in the wall impossible in most countries. Now there are less ATMs, and they are more tucked away in shops or other inside places. This makes them more difficult to reach for people with a disability.

The support system of especially family members is important. But not always in place, with children on a distance. And then it is only those elderly who are grandparents, we expect that for elderly without children the situation is not better to put it mildly.

Generally speaking, the trust in digital banking seems higher in northern Europe than in the southern part. In the northern countries digital banking is embraced by the citizens due to their high-tech standards and robust digital infrastructure. In the southern part of Europe traditional banking still plays a significant role. Citizens value face-to-face interactions and therefore the process of adoption of digital services is developing in a slower pace (Study on New Digital Payment Methods, 2022) (European Central Bank, 2022).

Healthcare Sector

In Europe the approaches to deal with health issues of elderly vary based on cultural, economic and political factors. Healthcare can be organized in a centralized or decentralized approach. Health care can be focused on care with social support networks

or focus on care in nursing homes. In all countries, involved in the research by students, there is a mixture of contribution both from the private and public sector. Digitization of health care sees common trends throughout Europe.

The digital transformation in healthcare has profound implications for the elderly, presenting both opportunities and challenges. Access to telehealth services, electronic health records, and digital health monitoring tools can enhance care for elderly. Especially in remoted areas, for example the northern region of Finland, in combination with a shortage of suitable personnel digital solutions can make great difference (interviews in Finland, 2024). However, the digital divide poses significant barriers to fully realizing these benefits. For example, many older adults lack the digital literacy skills necessary to navigate online health platforms, utilize telehealth services, or manage electronic health records. This gap can lead to disparities in access to healthcare services.

Besides that, when it comes to the use of, for example, a robot for sharing medication as used in Finland, the question is whether digital health tools are designed with an elderly user in mind. An elderly user with less digital competencies. Examples of poor user interface design, small text sizes and complex navigation when troubleshooting occurs can make these tools inaccessible for elderly.

In the interviews with the grandparents concerns about data, privacy and security are prevalent. More concrete does this show in fear of data breaches and misuse of personal health information, or even (identity) fraud.

Finland has made significant strides in integrating digital health services. The “Digital and Population Data Services Agency” provides comprehensive digital services and education to the elderly. The “Omaolo” service offers digital health checks and remote consultations, making healthcare more accessible to seniors. This is especially important – and perhaps a reason for its existence – in a country as Finland with a low population density outside Helsinki and the larger cities (*The Finnish Health Sector Growth and Competitiveness Vision 2030 - Sitra, 2023*).

The Netherlands emphasizes patient consent and data protection. Initiatives like “MedMij” ensure that patients have control over their health data, promoting trust and security. Programs such as “DigiD” provide secure digital identification, enabling elderly to access healthcare services online confidently (however complicated). Spain and Italy face interoperability issues but have launched initiatives to improve digital literacy among the elderly. In Spain, the “Salud Responde” app facilitates tele-health services, while Italy’s “Fascicolo Sanitario Elettronico” offers a digital health record platform, enhancing access to health information. Albania has focused on telehealth and mobile health solutions. The “e-Health Albania” platform enables remote consultations and digital health monitoring, particularly beneficial during the COVID-19 pandemic (Dasho et al, 2023).

Overall digital health literacy, access to telehealth and Electronic Health Records are seen as having the biggest impact on the life of the elderly. Self-empowerment, less travelling and minimizing exposure to infectious diseases. EHR can improve care coordination for the elderly, allowing health care professionals to get access to comprehensive health information. Community centers and libraries often provide digital literacy training for seniors, including healthcare-specific modules. These programs can help older adults learn how to use telehealth services, manage EHRs, and navigate online health information.

Not only the elderly are to be trained, but health care providers also have to learn how to support elderly in a pleasant and effective way. Knowledge and awareness on communicating with elderly is essential. This also helps to find the best features in digital tools, like text sizes, navigation types, voice commands to make these tools more accessible.

Research in Germany by Hess and Merkel (2020) shows that at the individual level, young age, high education, high social class, and living in an urban area were positively associated with a high probability of using internet-based health and social services. At the country level, the proportion of elderly people who participated in any training activity within the last month was positively associated with the proportion of elderly using these services. The probability of using internet-based health and social services and their accompanying advantages strongly depend on the socioeconomic background. Training and educational programs might be helpful to mitigate these differences.

Interesting research is conducted by the research group Technology, Health & Care from dr. Marjolein den Ouden, where she has the focus on the crucial role of technology in the improvement of the quality of care and welfare. It contributes to personalizes care, promotes independent living at home for longer and increases individuals' self-control. Nevertheless, the use of technology is not yet sufficiently integrated into the daily work of healthcare and welfare professionals. However, this is essential to make healthcare future-proof and to be able to meet the growing demand for healthcare (Saxion, 2024).

Discussion/methodology

An important note to make is the fact that the article is based on the work of various groups of students. They have written a general picture of the challenges for elderly in the field of digitalization. One group focused more on a phenomenon and another group more on the comparison between countries. In addition, many groups have made the choice to interview their own grandparents and family. We therefore have a small and fairly homogeneous group of respondents. Results are therefore general and descriptive, but local differences may be observable. In addition, a more heterogeneous group with more respondents can also form a different perspective on certain situations described. In addition, desk research and observational research, supplemented with in-depth interviews, played an important role in many of the studies. An advantage that was noted during the surveys is that many engaged respondents, even though they sometimes came from completely different backgrounds, were able to relate to their own parents or grandparents. As a result, the conversations were very pleasant, and the questions were explained with concrete examples.

Conclusion and further research

Concluding this article, the following points can be noted.

Digital inclusion and participation are vital for ensuring equitable access to health and financial services for the elderly. Overcoming barriers such as digital literacy, trust, and usability requires targeted policies, supportive initiatives, and accessible digital tools. By addressing these challenges, older adults can benefit from digital health innovations, enhancing their autonomy and well-being.

On the other hand, it was quite impressive to notice how differently people think and work with digitalization regarding to elderly in different countries and regions. Cultural differences are significant, which, partly in combination with income differences, means that the elderly think differently about independence and privacy.

The increase in scale in banking and healthcare brings more uniformity and easier sharing of information and resources, but this also entails risks of a different kind of dependency for the entire society, not just the elderly. It is important to continue to question and involve those who need to be involved. To ensure trust, convenience and safety. It is important that society feels the importance and responsibility and not just the individual elderly person. Therefore, it is also important to involve elderly in developments and decision making.

The universities will continue to work together on the topic of digitalization, mostly from the perspective of digital resilience of different groups in societies. There is a need to focus not only on skills and technology, but also on ethical issues. Also, we want to focus on the public sector and the role of public and private organizations can be investigated more in depth. Public services are an area with similar problems as mentioned in this article. Every elderly needs to use some of them and especially in Albania the elderly have struggles to cope with the online platforms and therefore need to have access requirements and digital skills. This links to the question how proactive the services must be. But also, more demarcation, depth and connecting with the actual situation in which older people find themselves, for example by means of action-oriented research, is a topic of discussion between the students, lecturers and researchers of the universities involved. But a start has been made and we would like to close with an open end: to be continued.

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Determinants and Differences of Domestic and Foreign Commercial Bank Profitability in Albania

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Abstract

This study examines the impact of bank ownership structure on profitability within the Albanian banking sector. We employ Ordinary Least Squares (OLS) regression to analyze the determinants of Return on Equity (ROE) using quarterly data for domestic private and foreign-owned banks from 2017 to 2022. The model incorporates a dummy variable for bank type to capture the ownership effect. Additionally, we control for factors influencing profitability, including capital adequacy, credit risk, bank size, cost-to-income ratio, and liquidity.

Our findings reveal a statistically significant positive association between credit ratio and ROE, suggesting that banks with better loan portfolios exhibit higher profitability. Furthermore, bank type significantly influences ROE. There is a statistically significant difference in average ROE between domestic and foreign banks. However, further analysis is needed to pinpoint the specific bank type with lower profitability.

While the model explains a moderate portion of the variance in ROE, it suggests the presence of other unobserved factors influencing profitability. Future research could explore these additional factors and alternative model specifications to enhance the model's explanatory power.

This study contributes to the growing body of knowledge on factors influencing bank profitability, with a specific focus on the role of bank ownership structure in the Albanian context. The findings provide valuable insights for policymakers, market participants, and investors when navigating the dynamics of the Albanian banking landscape.

Keywords: Banking profitability, Domestic banks, Foreign banks, Return on Equity (ROE), Ordinary Least Squares (OLS) regression

Introduction

The banking sector serves as the lifeblood of any economy, channeling funds between savers and investors, facilitating transactions, and fostering economic growth and stability. Understanding the factors that influence bank profitability is critical for policymakers and regulators seeking to ensure a healthy financial system. In Albania, the growing presence of foreign banks alongside established domestic institutions has sparked a vital question: how does bank ownership (domestic vs. foreign) impact profitability?

This study delves into this under-explored area by examining the influence of ownership structure on bank profitability within the Albanian context. By leveraging existing research on domestic versus foreign bank performance, we aim to analyze its relevance to the Albanian banking landscape. This research not only addresses a gap in knowledge but also provides valuable insights for a range of stakeholders:

Market Participants: Identifying potential areas of competitive advantage or disadvantage for domestic and foreign banks can inform strategic decision-making, allowing them to optimize their operations and enhance their market positioning.

Investors: Understanding the profitability landscape of Albanian banks, both domestic and foreign, provides valuable insights for investors, both domestic and foreign, when making informed investment decisions within the Albanian banking sector.

Policymakers: This research can inform policymakers in designing interventions aimed at promoting financial inclusion while ensuring the stability of the Albanian banking system. By understanding the factors influencing bank profitability across ownership structures, policymakers can create an environment that fosters a competitive and profitable banking sector, ultimately contributing to Albania's economic well-being.

Literature review

Understanding the factors influencing bank profitability in Albania requires examining existing research on domestic versus foreign bank performance. Here's a summary of relevant studies:

Country Risk and Foreign Bank Location: Grosse and Goldberg (1991) suggest that foreign banks tend to prioritize relatively low-risk markets like the US when the source country exhibits higher country risk. This could influence the profitability of foreign banks in Albania compared to domestic institutions, depending on Albania's perceived risk.

Market Size and Foreign Bank Presence: Fisher and Molyneux (1996) found a correlation between large domestic banking markets and a higher presence of foreign banks. Albania's banking market size could be a factor in attracting foreign banks, potentially impacting competition and profitability for both domestic and foreign institutions.

Impact of Foreign Bank Entry: Janek (2004) argues that foreign bank entry can negatively affect domestic banks' profitability. This suggests a potential competitive pressure on domestic Albanian banks from foreign entrants.

Profitability Differences: Studies by Ali (2005) and Wahid & Rehman (2009) offer contrasting findings. Ali observed foreign banks in Lebanon being more profitable than domestic banks, while Wahid & Rehman found foreign banks in Pakistan to be more efficient. These results highlight the need to investigate if similar trends exist in Albania.

Foreign Banks and Domestic Profitability: Interestingly, Dorothea & Oleksandr (2007) found a positive relationship between domestic bank profitability and the share of foreign bank assets in Ukraine. This suggests a potential for co-existence and even mutual benefit for domestic and foreign banks in some markets.

This existing research provides a framework for analyzing the Albanian context. Our study will explore whether foreign bank presence in Albania aligns with these findings and investigate how ownership (domestic vs. foreign) influences bank profitability.

The regression model

This study delves into the profitability of Albanian banks, comparing domestic private institutions with foreign-owned banks. Utilizing quarterly data from 2017 to 2022, we focus on a sample of six banks – three domestic private and three foreign. Ordinary Least Squares (OLS) regression model is employed to analyze and compare their Return on Equity (ROE) as the primary measure of performance.

We explore a range of factors influencing bank profitability in Albania. A key area of investigation is whether domestic private banks exhibit profitability levels distinct from their foreign counterparts. Furthermore, we analyze how various bank-specific characteristics impact profitability:

Capital Adequacy (CAR)

Measured by the ratio of Tier 1 and Tier 2 capital to risk-weighted assets, it reflects the bank's overall safety and soundness. Higher capital adequacy ratios indicate a better buffer against potential losses, potentially impacting profitability.

Credit Risk (CR):

Measured by the proportion of total loans in arrears to the total outstanding gross loan portfolio, it reflects the bank's exposure to bad debts. Higher credit risk ratios suggest a greater likelihood of loan defaults, potentially reducing profitability.

Bank Size (SIZ)

Measured by the natural logarithm of total assets, it captures the overall size of the bank. The relationship between size and profitability is complex; economies of scale might benefit larger banks, while smaller banks might be more nimble.

Cost-to-Income Ratio (CIR)

Measured by operating expenses divided by operating income, it reflects the bank's efficiency in managing its expenses relative to income. Lower cost-to-income ratios indicate better expense management, potentially leading to higher profitability.

Liquidity Ratio (LIQ)

Measured by liquid assets divided by total assets, it reflects the bank's ability to meet its short-term obligations. Liquidity is crucial for smooth operation, but holding excessive liquid assets might reduce profitability due to lower returns.

BankType

Represent bank ownership structure (domestic vs. foreign) in the regression model. The coefficient of the significant dummy variable ($i_Domestic$ or $i_Foreign$) indicates the difference in average Return on Equity (ROE) between domestic and foreign banks, controlling for other factors in the model.

The regression equation

The following model specification will be employed within the Ordinary Least Squares (OLS) framework to assess the influence of these factors on ROE:

$$ROE = \alpha + \beta_1 CAR + \beta_2 CR + \beta_3 SIZ + \beta_4 CIR + \beta_5 LIQ + \beta_6 BankType + \epsilon_i$$

<i>ROE</i>	- <i>Return on Equity</i>
<i>CAR</i>	- <i>Capital Adequacy Ratio</i>
<i>CR</i>	- <i>Credit Risk</i>
<i>SIZ</i>	- <i>Bank size</i>
<i>CIR</i>	- <i>Cost to Income Ratio</i>
<i>LIQ</i>	- <i>Liquidity Ratio</i>
<i>BankType</i>	- <i>dummy variables created from the BankType variable using $i.BankType$ (1) (domestic) and $i.BankType(0)$ (foreign).</i>
ϵ_i	- <i>Error term</i>

This study investigates the factors influencing Return on Equity (ROE) in the banking sector, with a particular focus on the role of bank type. Ordinary Least Squares (OLS) regression emerges as a well-suited method for this analysis due to several key attributes.

Firstly, OLS provides readily interpretable coefficients. By minimizing the squared deviations between predicted and actual ROE values, OLS offers a clear measure of model fit. Importantly, the estimated coefficients for each independent variable, including a binary variable for bank type, are easily interpretable.

In the context of the bank type variable, a positive coefficient would signify that, on average, one bank type (e.g., domestic) exhibits a higher ROE compared to the other (e.g., foreign) after controlling for the effects of other factors included in the model.

Secondly, OLS enjoys widespread use and established reliability. This well-established statistical technique boasts a proven track record across various disciplines, including finance. This extensive adoption fosters confidence in its applicability for regression analysis, particularly in studies that incorporate bank type as a factor influencing ROE. Additionally, the ease of implementation of OLS in most statistical software packages makes it a convenient choice for researchers.

Thirdly, OLS is well-suited for analyzing linear relationships. The core assumption of OLS is a linear relationship between the independent variables and the dependent variable (ROE in this case).

If the data suggests a roughly linear trend between these variables, including the binary variable for bank type, then OLS is an appropriate method to estimate the strength and direction of those relationships.

While OLS excels at capturing the overall relationship between variables, it can be complemented by grouping the data by bank type for separate analyses. This approach can reveal potential nuances in how other factors (e.g., credit ratio) influence ROE between domestic and foreign banks.

By performing separate OLS regressions on the grouped data, we can obtain estimated coefficients that can be compared. This comparison provides a more nuanced understanding of how bank type interacts with other determinants of ROE, potentially revealing differential effects across bank types.

By employing OLS regression along with the complementary analysis of grouped data by bank type, this study aims to achieve a comprehensive understanding of the factors influencing ROE, with a particular focus on the role of bank type.

Dependent Variable: ROE
Method: Least Squares
Date: 05/27/24 Time: 00:04
Sample: 2017Q1 2022Q4
Included observations: 143

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.675404	2.223433	3.452051	0.0007
CAR	0.089005	0.352809	0.252276	0.8012
CR	0.965777	0.264183	3.655712	0.0004
SIZ	0.491282	1.352187	0.363324	0.7169
CTR	0.040779	0.163647	0.249191	0.8036
LIQ	0.121949	0.058216	2.094777	0.0380
TYPE	-90.34034	21.90465	-4.124255	0.0001
R-squared	0.141310	Mean dependent var		9.430847
Adjusted R-squared	0.103427	S.D. dependent var		15.95199
S.E. of regression	15.10455	Akaike info criterion		8.315581
Sum squared resid	31028.05	Schwarz criterion		8.460616
Log likelihood	-587.5641	Hannan-Quinn criter.		8.374516
F-statistic	3.730136	Durbin-Watson stat		2.070129
Prob(F-statistic)	0.001821			

This study employs Ordinary Least Squares (OLS) regression to analyze the determinants of Return on Equity (ROE) for a sample of banks spanning the period from Q1 2017 to Q4 2022 (n=143).

The model explains a moderate portion of the variance in ROE, with an R-squared of 0.1413. This suggests that other factors not included in the model may also influence ROE. The adjusted R-squared of 0.1034 provides a more conservative estimate of the model's explanatory power.

The estimated coefficients for each independent variable and their corresponding statistics are presented in the table.

Credit Ratio (CR): The positive and statistically significant coefficient (0.9658, p-value = 0.0004) indicates a strong association between credit quality and ROE. Banks with higher credit ratios (better loan portfolios) tend to have higher returns on equity.

Constant (C): The positive coefficient (7.6754) represents the base level ROE when all other independent variables are zero (which is unlikely in practice).

Bank Type (TYPE): The negative and statistically significant coefficient (-90.3403, p-value = 0.0001) suggests a difference in average ROE between the two bank types included in the model (e.g., domestic vs. foreign). Here, a negative coefficient indicates that, on average, one bank type exhibits a lower ROE compared to the other after controlling for the effects of other factors in the model. Further analysis, potentially by grouping the data by bank type for separate regressions, would be necessary to identify the specific bank type with the lower average ROE.

Capital Adequacy Ratio (CAR), Bank Size (SIZ), Loan-to-Deposit Ratio (CTR), Liquidity (LIQ): The coefficients for these variables are positive but statistically insignificant (p-value > 0.05). These results provide no clear evidence of a relationship between these factors and ROE within the context of this model.

The F-statistic (3.7301) is statistically significant (p-value = 0.0018), indicating that the model is jointly significant. This implies that at least one of the independent variables has a statistically significant effect on ROE.

The Durbin-Watson statistic (2.0701) suggests no significant autocorrelation in the residuals. This analysis highlights the positive and statistically significant relationship between credit ratio and ROE. Future research may explore additional factors influencing ROE and consider alternative model specifications to improve the explanatory power of the model.

Conclusions

This paper investigates the factors influencing bank profitability in Albania, with a particular focus on the role of bank ownership structure (domestic versus foreign). We employ Ordinary Least Squares (OLS) regression to analyze the Return on Equity (ROE) of a sample of six banks (three domestic private and three foreign-owned) using quarterly data spanning 2017 to 2022.

Our model explains a moderate portion of the variance in ROE (R-squared = 0.1413). This suggests the presence of unobserved factors that also influence bank profitability in Albania.

A statistically significant and positive association is observed between credit ratio and ROE (coefficient = 0.9658, p-value = 0.0004). Banks with superior loan portfolios tend to exhibit higher returns on equity.

Bank type significantly influences ROE (coefficient = -90.3403, p-value = 0.0001). However, further analysis is necessary to identify the specific bank type (domestic or foreign) with the lower average ROE.

The explanatory power of the model could be enhanced by considering additional factors influencing ROE and exploring alternative model specifications. The generalizability of the findings may be limited due to the relatively small sample size of six banks.

Future research should investigate the impact of additional factors on ROE, such as macroeconomic conditions, the competitive landscape within the banking sector, and operational efficiency. Exploring alternative models, such as panel data analysis, could incorporate time-series aspects and potentially refine the analysis.

A more detailed examination of bank type differences can be achieved by performing separate regressions for domestic and foreign banks to identify specific variations in their profitability determinants.

This study offers valuable insights for policymakers, market participants, and investors in the Albanian banking sector. Understanding the factors that influence bank profitability, particularly the role of ownership structure, can inform strategic decision-making, promote financial stability, and ultimately contribute to the well-being of the Albanian economy.

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A Weak Link: Exchange Rates and Albania's Trade Balance with the European Union (2007-2022)

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Abstract

This study examines the relationship between Albania's trade balance with the European Union (EU) and the Euro/Lek exchange rate. We employ a Vector Autoregression (VAR) model to analyze the dynamic interactions between trade balance, exchange rate, inflation, GDP (economic growth), and remittances during the period 2007-2022. Data is sourced from INSTAT, Eurostat, and other reliable sources.

Contrary to traditional expectations, our findings suggest a weak association between exchange rate fluctuations and the trade balance. The VAR model reveals that economic growth (GDP) exerts a stronger positive influence on Albania's trade balance with the EU, while remittance inflows exhibit a negative association. This implies that a growing Albanian economy leads to a more favorable trade balance, potentially due to increased exports. Remittances, on the other hand, might be linked to higher import consumption, thereby worsening the trade balance. Inflation shows no statistically significant connection with the trade balance.

These findings challenge the conventional view of exchange rates as the primary driver of trade balances. Our research contributes to the ongoing discussion on the multifaceted factors influencing trade dynamics in emerging economies.

Keywords: trade balance, exchange rate, GDP, inflation, VAR model

Introduction

Exchange rates are not static; they fluctuate based on the combined activities of households, businesses, and financial institutions. These actors buy and sell foreign currencies to facilitate international transactions¹. The resulting exchange rate reflects the sum of these transactions between economic agents. In an open economy, exchange rates directly influence resource allocation by impacting the relative value of domestic goods compared to foreign goods (like the Euro in this case). Consequently, exchange rates play a key role in shaping a nation's trade balance.

This paper investigates the relationship between Albania's trade balance with the European Union (EU) and the Euro/Lek exchange rate. The first section will examine recent trends in Albania's trade balance with European Union and explore existing theoretical and empirical studies on the link between exchange rates and trade balances.

We will then analyze the evolution of Albania's trade balance with European Union over the past fifteen years, including an empirical summary of the data focusing on the EU trade balance and other relevant macroeconomic factors². Finally, the paper will employ a Vector Autoregression (VAR) model to explore the causal relationship between Albania's EU trade balance and the Euro/Lek exchange rate.

¹ Krugman, P., Obstfeld, M., & Melitz, M. J. (2018). *International Finance* (11th ed.). Wiley. (p. 33-35)

² Falk, M. (2008). *Determinants of the Trade Balance in Industrialized Countries* (FIW Research Report N° 013 / June 2008).

Literature review

The theoretical underpinnings of the relationship between exchange rates and trade balances have laid the groundwork for extensive empirical research aimed at measuring and understanding the nature of this interaction.

A study in this field has analyzed the relationship between fluctuations in the real exchange rate and the trade balance, situated within the framework of a 'two-country' trade theory model. The real exchange rate (RER) emerges as the second most influential factor within the 'two-country' trade model. This empirical evidence, drawn from a panel dataset of 78 nations over the period 1992–2021, addresses crucial gaps in the existing literature, offering a finer-grained understanding of how real exchange rates shape international trade dynamics. Importantly, the study implies that policymakers should recognize the pivotal role of the real exchange rate as a key determinant of trade flow. (Min-Joon Kim; Thi-Thu-Huong Le; 2024)

In a paper by Martin Falk (2008) on the determinants of the trade balance using data for 32 industrialized and developing economies for the period 1990–2007, the study found that countries with trading partners who have a higher real GDP per capita tend to have a trade surplus (positive trade balance as a percentage of GDP). This link was statistically significant. Interestingly, a country's own wealth (real domestic GDP per capita) has the opposite effect, leading to a trade deficit. The analysis also revealed that a weakening of the domestic currency (real depreciation of the real effective exchange rate) improves the trade balance. However, this effect is weaker for countries already struggling with a trade deficit or those with a significant amount of foreign investment.

Galih Aga Lumayung, Firsty Ramadhona Amalia Lubis, Nizaul Ngulum Fadilah, Maman Faudzi and Lestari Sukarniati (2024) in their study on the effect The Effect of GDP, FDI, and Inflation to Trade Balance in 12 APEC Countries found that GDP does not have significance with the trade balance, FDI has a positive significance for trade balance, and inflation has a negative significance with trade balance.

Building on prior research by Bertatsos et al. (2020), this study examines the relationship between the trade balance and its determinants. Their findings suggest a long-term connection between these factors, except during periods of significant trade deficits. When deficits become severe, the trade balance seems to deviate from these underlying forces and behave more erratically. Interestingly, their research also indicates that a depreciation of the US dollar, particularly a small one, can improve the trade balance in the short term. However, in the long run, any depreciation is likely to worsen the trade balance³.

This paper investigates the influence of the real exchange rate on Albania's trade balance over the past fifteen years. In 2022, the euro/lek exchange rate witnessed a significant shift, strengthening the Albanian Lek against other currencies. This analysis aims to shed light on how this appreciation, along with other factors, has impacted Albania's trade balance with European Union in the recent past.

Macroeconomic factors in Albania

Albania operates under a floating exchange rate regime. This system allows the value of the Albanian lek (ALL) to fluctuate freely against foreign currencies, such as the euro (EUR), based on supply and demand within the foreign exchange market. These fluctuations reflect the dynamics of international trade and investment between Albania and its trading partners. In essence, the exchange rate reflects the relative ease with which goods and financial capital can move across borders⁴.

Trade balance between Albania and the European Union

The trade balance data between Albania and the European Union (EU) from 2007 to 2022 (in millions of Lek) reveals a persistent negative trend. This signifies that Albania consistently imported more goods and services from the EU than it exported throughout this period. The negative trade balance exhibited significant fluctuations over the years. The deficit ranged from a low of -143.91 million Lek in 2007 to a high of -230.07 million Lek in 2008.

Exchange rate

The analysis of the volatility of the Euro/Lek exchange rate over the period 2007-2022. reveals two distinct sub-periods:

Sub-period 1 (2007-2015): Characterized by moderate fluctuations. The early years (2007-2009) saw the exchange rate range between 122.58 ALL/EUR (in 2009) and 132.667 ALL/EUR (in 2007). The latter part (2010-2015) exhibited greater stability, with the rate hovering between 137.33 ALL/EUR (in 2011) and 140.583 ALL/EUR (in 2012).

In the Sub-period 2 (2016-2022): Marked by significant changes: 2018: A rapid appreciation of the Lek against the Euro occurred, with the exchange rate dropping from around 134.25 ALL/EUR (in 2017) to 125 ALL/EUR. The COVID-19 pandemic brought relative stability to the exchange rate. During the year 2022, renewed strengthening of the Lek, not only

³ Bertatsos, G., Tsounis, N., & Agiomirgianakis, G. (2024). Handling asymmetries in the trade balance. *Research in Economics*, 78(1), 1-13.

⁴ Kim, M.-J., & Le, T.-T.-H. (2024). Influence analysis of real exchange rate fluctuations on trade balance data using feature important evaluation methods. *Information*, 15(3), 156.

against the Euro (falling to 118.83 ALL/EUR in December 2022) but also against other major currencies. The most significant monthly depreciation likely occurred in July 2022

Inflation

The provided data on Albania's inflation rate from 2007 to 2022 reveals a dynamic trend with periods of both relative stability and significant fluctuation⁵. The inflation rate ranged from a low of 1.29% (in 2010) to a high of 6.73% (in 2022). We can identify two broad sub-periods. The period 2007-2015 witnessed generally moderate inflation, with rates fluctuating between 1.61% and 3.62%. This suggests a period of relative price stability. On the other hand, the period 2016-2022 shows a marked increase in volatility. While some years maintained inflation below 2% (e.g., 2010, 2014), a significant spike occurred in 2022 (6.73%).

GDP

Generally, as a country's GDP increases, its demand for imported goods and services might also rise. This is because economic growth often leads to higher consumer spending and business investment, potentially increasing demand for foreign goods unavailable domestically.

Remittances

The provided data on remittance values in million lek for the period 2007-2022 reveals a generally increasing trend with some fluctuations. The highest remittance value was observed in 2022 (197.28 million lek), while the lowest occurred in 2013 (135.46 million lek).

The data suggests a potential offset between remittances received and the trade deficit with the EU. While the trade balance figures are negative (representing a deficit), the remittance values are positive.

The econometric model

This research explores the interconnectedness of trade balance with the European Union (EU), exchange rate fluctuations, inflation, economic growth, and remittance flows in Albania. Our primary goal is to identify and analyze the specific relationships between these variables within the Albanian context.

To achieve this objective, we have constructed a regression model based on a well-defined conceptual framework. This framework considers the theoretical connections between the economic factors mentioned above. However, we have adapted the model specifically for Albania, allowing us to gain a deeper understanding of how these variables interact and influence the Albanian economy.

$$TB_AL_EU = \beta_0 + \beta ER + \beta Inflation + \beta GDP + \beta REM + \varepsilon$$

TB_AL_EU - This data represents the trade balance between Albania and the European Union (EU). It reflects the net difference between the value of goods and services Albania imports from and exports to the EU.

ER- represents the euro/lek exchange rate. The value of the Albanian Lek is determined by the foreign exchange market, a dynamic marketplace where currencies are traded freely. This system allows supply and demand to dictate the Lek's value against other currencies. Fluctuations in the exchange rate reflect the ongoing flow of goods, services, and investments between Albania and its European trading partners.

Inflation- If inflation in Albania is higher than in the EU, Albanian exports become relatively more expensive compared to similar goods produced in the EU. This can lead to a decrease in demand for Albanian exports in the EU market, potentially widening the trade deficit (Albania imports more than it exports).

GDP (Gross Domestic Product) - GDP is a key metric that reflects the total monetary value of all final goods and services produced within a country's borders during a specific period (usually a year). It essentially measures the size and health of a nation's economy by capturing the value added by domestic production and service units.

REM- Remittances can boost disposable income in Albania, potentially leading to increased consumer spending. If a significant portion of this spending goes towards imported goods from the EU, it could widen the trade deficit (Albania imports more than it exports from the EU).

⁵ Lumayung, G. A., Lubis, F. R. A., Ngulum, N., Fadilah, M., Faudzi, M., & Sukarniati, L. (2024, February 12). The Effect of GDP, FDI, and Inflation to Trade Balance in 12 APEC Countries [KNE Social Sciences].

Descriptive analysis

TABLE 1: Descriptive statistics

	TB_AL_EU	ER	GDP	INFLATION	REM
Mean	-182.1073	-0.001770	1452.538	0.025075	159.2673
Median	-183.4913	-0.003535	1414.800	0.020350	158.2507
Maximum	-143.9105	0.077861	2138.300	0.067300	197.2818
Minimum	-230.0708	-0.049683	966.6000	0.012900	132.8973
Std. Dev.	21.59832	0.030377	298.0521	0.013370	14.76121
Skewness	-0.214832	0.992241	0.539081	2.091584	0.616399
Kurtosis	2.942011	4.279530	3.054919	7.255130	4.529070
Jarque-Bera Probability	0.125316 0.939264	3.716912 0.155913	0.776967 0.678084	23.73668 0.000007	2.571896 0.276388
Sum	-2913.717	-0.028320	23240.60	0.401200	2548.276
Sum Sq. Dev.	6997.314	0.013841	1332526.	0.002682	3268.399
Observations	16	16	16	16	16

Here, The skewness values are relatively small, generally between -0.2 and 2. This suggests the distributions for most variables might be somewhat symmetrical. A slightly negative skew for TB_AL_EU (potentially more frequent trade balance surpluses in some years) and a positive skew for INFLATION (more frequent higher inflation rates) are worth noting.

Most kurtosis values are above 3, indicating the distributions might be more peaked than a normal distribution. This means more data points are concentrated around the center compared to a normal curve.

All p-values are greater than 0.05, except for INFLATION. This suggests we wouldn't reject normality for most variables based solely on the Jarque-Bera test. However, it's advisable to consider skewness and kurtosis alongside this test for a more complete picture.

Dependent Variable: TB_AL_EU
 Method: Least Squares
 Date: 04/28/24 Time: 02:00
 Sample: 2007 2022
 Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.582707	57.32163	0.079947	0.9377
ER	304.6519	199.2003	1.529375	0.1544
GDP	0.099375	0.030525	3.255506	0.0077
INFLATION	647.5608	392.3725	1.650372	0.1271
REM	-2.177059	0.575261	-3.784474	0.0030
R-squared	0.577489	Mean dependent var	-182.1073	
Adjusted R-squared	0.423848	S.D. dependent var	21.59832	
S.E. of regression	16.39413	Akaike info criterion	8.682031	
Sum squared resid	2956.443	Schwarz criterion	8.923465	
Log likelihood	-64.45624	Hannan-Quinn criter.	8.694394	
F-statistic	3.758704	Durbin-Watson stat	2.542645	
Prob(F-statistic)	0.036550			

R-squared (0.5775): This indicates that the model explains approximately 58% of the variation in TB_AL_EU. This is a moderate explanatory power, suggesting the chosen independent variables capture some, but not all, of the factors influencing the trade balance.

Adjusted R-squared (0.4238): This is lower than R-squared, but still positive. It suggests the model complexity with these variables might be reasonable and not just adding noise.

REM: The p-value for REM (0.0030) is statistically significant at the 0.05 level. This suggests a negative linear relationship between remittances and the trade balance. In other words, higher remittances might be associated with a lower trade balance (possibly indicating increased imports).

GDP: The p-value for GDP (0.0077) is also statistically significant. This suggests a positive linear relationship between GDP and the trade balance. In other words, higher GDP might be associated with a higher trade balance, due to increased exports.

Other variables: The p-values for ER and INFLATION are higher than 0.05, indicating a lack of strong statistical evidence for their individual relationships with TB_AL_EU in this model.

The F-statistic (3.7587) and its corresponding probability value (0.0365) test the overall significance of the model. The p-value is lower than 0.05, which suggests we can reject the null hypothesis that all regression coefficients are zero.

This indicates the model is statistically significant at the 0.05 level, meaning the variables together explain a significant portion of the variation in TB_AL_EU. Durbin-Watson statistic (2.5426): The value is inconclusive for autocorrelation, so further tests might be needed to diagnose any potential issues.

VAR Model

VAR models are a popular method for multivariate time series, such as the one in this study. These results are from a Vector Autoregression (VAR) model, which is a type of time series model used to analyze dynamic relationships between multiple variables. Let's explain the main components of production:

a) Model specification: The VAR model includes five variables: TB_AL_EU, ER, GDP, REM and Inflation. The lag length used in the model is 2.

b) Coefficients: Each variable has coefficients associated with its lagged values (eg, TB_AL_EU (-1), TB_AL_EU (-2)), along with a constant term (C).

The coefficients represent the influence of the lagged values of each variable and constant on the actual values of the variables.

c) Standard errors and t-statistics: Standard errors are given in parentheses, and t-statistics are given in square brackets. These values are used to evaluate the significance of the coefficients. In general, larger t-statistics (with absolute values greater than 1.96, assuming a 5% significance level) indicate greater significance.

d) Model Fit: The R-squared and adjusted R-squared values measure the fit of the model. The F statistic tests the overall significance of the model.

Additional information: sum of squared residuals, standard error of the equation, Akaike information criterion (AIC), Schwarz criterion, and other model fit statistics. Mean and standard deviation of the dependent variables.

VAR Test

Vector Autoregression Estimates

Date: 04/28/24 Time: 02:44

Sample (adjusted): 2009 2022

Included observations: 14 after adjustments

Standard errors in () & t-statistics in []

	TB_AL_EU	REM	INFLATION	GDP	ER
TB_AL_EU(-1)	0.156262 (0.33343) [0.46865]	-0.229906 (0.24130) [-0.95279]	-9.05E-06 (0.00028) [-0.03196]	-3.808203 (3.01900) [-1.26141]	0.001547 (0.00056) [2.74685]
TB_AL_EU(-2)	-0.332147 (0.27382) [-1.21303]	0.131182 (0.19816) [0.66201]	0.000165 (0.00023) [0.71037]	0.263660 (2.47926) [0.10635]	0.000893 (0.00046) [1.92948]
REM(-1)	-0.814529 (0.58068) [-1.40271]	0.086604 (0.42023) [0.20609]	-2.51E-05 (0.00049) [-0.05082]	-4.376403 (5.25776) [-0.83237]	0.002847 (0.00098) [2.90178]
REM(-2)	-0.481672 (0.76704)	-0.440231 (0.55510)	0.000281 (0.00065)	-1.669692 (6.94517)	0.000918 (0.00130)

		[-0.62796]	[-0.79306]	[0.43056]	[-0.24041]	[0.70883]
INFLATION(-1)	-147.3048	397.3535	-0.620202	-1036.762	0.815235	
	(774.231)	(560.304)	(0.65770)	(7010.24)	(1.30792)	
	[-0.19026]	[0.70917]	[-0.94298]	[-0.14789]	[0.62331]	
INFLATION(-2)	1639.547	-297.3655	0.305545	-1894.962	1.612151	
	(521.016)	(377.055)	(0.44260)	(4717.53)	(0.88016)	
	[3.14682]	[-0.78865]	[0.69034]	[-0.40169]	[1.83165]	
GDP(-1)	0.173380	0.091825	0.000224	1.405421	2.55E-06	
	(0.07414)	(0.05366)	(6.3E-05)	(0.67132)	(0.00013)	
	[2.33846]	[1.71135]	[3.56078]	[2.09351]	[0.02036]	
GDP(-2)	-0.105317	-0.018853	-0.000194	0.234306	-0.000278	
	(0.10507)	(0.07604)	(8.9E-05)	(0.95131)	(0.00018)	
	[-1.00239]	[-0.24795]	[-2.17359]	[0.24630]	[-1.56906]	
ER(-1)	-99.63251	398.5032	0.352682	2961.891	-0.189087	
	(155.399)	(112.461)	(0.13201)	(1407.05)	(0.26252)	
	[-0.64114]	[3.54348]	[2.67163]	[2.10503]	[-0.72028]	
ER(-2)	-21.22504	-108.4907	0.042831	661.7947	-0.851323	
	(164.518)	(119.060)	(0.13976)	(1489.62)	(0.27792)	
	[-0.12901]	[-0.91122]	[0.30647]	[0.44427]	[-3.06316]	
C	-147.0774	89.07687	-0.036229	-472.0331	0.180147	
	(64.7856)	(46.8848)	(0.05503)	(586.599)	(0.10944)	
	[-2.27022]	[1.89991]	[-0.65829]	[-0.80469]	[1.64603]	
R-squared	0.922193	0.947621	0.929830	0.977393	0.947972	
Adj. R-squared	0.662835	0.773025	0.695932	0.902035	0.774547	
Sum sq. resids	251.3963	131.6636	0.000181	20610.31	0.000717	
S.E. equation	9.154166	6.624792	0.007776	82.88608	0.015464	
F-statistic	3.555677	5.427513	3.975356	12.97008	5.466161	
Log likelihood	-40.08095	-35.55349	58.91126	-70.92656	49.28707	
Akaike AIC	7.297279	6.650499	-6.844466	11.70379	-5.469582	
Schwarz SC	7.799395	7.152615	-6.342349	12.20591	-4.967465	
Mean dependent	-181.4097	161.2739	0.024179	1513.300	-0.002024	
S.D. dependent	15.76513	13.90540	0.014102	264.8175	0.032569	
Determinant resid covariance (dof adj.)		0.000000				
Determinant resid covariance		0.000000				
Number of coefficients		55				

The model is estimated using data from 2009 to 2022 (adjusted sample after accounting for lags). Each equation estimates one of the five variables as a function of its own lagged values (TB_AL_EU(-1), TB_AL_EU(-2), etc.) and lagged values of the other four variables. The table shows the estimated coefficients for each lag of each explanatory variable in each equation. The numbers in parentheses are the standard errors, and the values in brackets are the t-statistics.

R-squared and Adjusted R-squared measure how well the lagged variables explain the variation in the dependent variable in each equation. The values are generally high, indicating a good fit. The table also provides various other statistics like F-statistic, Log likelihood, Akaike AIC, Schwarz SC, etc., which are used for model selection and evaluation but require additional context to interpret definitively.

By analyzing the coefficients and their significance (based on t-statistics), you can understand how past values of each variable (including its own lags) affect the current value of that variable. For example, a significant positive coefficient for TB_AL_EU(-1) in the TB_AL_EU equation would suggest that a higher trade balance in the previous period leads to a higher trade balance in the current period. Similarly, you can examine how other variables influence each other. It's important to consider the entire set of coefficients across all equations to understand the dynamic relationships between the variables.

TB_AL_EU(-1): The positive and statistically insignificant coefficient (0.156262, p-value not shown but likely > 0.05) suggests a weak tendency for persistence in the trade balance. A higher trade balance in the previous period might be associated with a slightly higher trade balance in the current period, but the effect is not statistically robust.

REM(-1): The negative and statistically insignificant coefficient (-0.229906) implies a possible negative relationship between remittances and trade balance. Higher remittances in the previous period might be linked to a slight decrease in the current trade balance, but again, the effect is not statistically significant.

TB_AL_EU(-1) or INFLATION(lagged terms): No statistically significant coefficients from the trade balance or inflation are found in the Remittances equation. This suggests that past trade balance or inflation might not significantly influence current remittances. The significant coefficients in the Remittances equation likely capture the effects of other variables not included in the model or past values of remittances themselves (REM(-1), REM(-2)).

Most coefficients in the Inflation equation are statistically insignificant, making it difficult to draw definitive conclusions about the impact of past trade balance, remittances, GDP, or exchange rate on inflation.

GDP Equation: TB_AL_EU(-1), REM(-1), INFLATION(lagged terms), ER(lagged terms): The absence of statistically significant coefficients from other variables in the GDP equation suggests that past trade balance, remittances, inflation, or exchange rate might not have a strong direct impact on current GDP. The significant coefficients in the GDP equation likely stem from other factors not included in the model or past values of GDP itself (GDP(-1), GDP(-2)).

Exchange Rate (ER) Equation: Lack of significance: Similar to the Inflation equation, most coefficients in the Exchange Rate equation are statistically insignificant, limiting clear interpretations about the influence of other variables on the exchange rate. As with inflation, examining model diagnostics and potentially incorporating additional relevant variables might be necessary to understand the factors affecting the exchange rate.

Statistical significance (t-statistics) is crucial. Non-significant coefficients indicate a weak or inconclusive effect, while significant coefficients suggest a potentially important influence. The analysis focuses on the direction and significance of coefficients. The magnitude of the coefficients can be used to gauge the strength of the effect, but interpretation should consider the scale of the variables involved.

Conclusions

This paper investigates the relationship between the exchange rate (ER) and the trade balance (TB) of Albania vis-à-vis the European Union (EU). Employing a Vector Autoregression (VAR) model, we examine the dynamic interactions between TB, ER, inflation, GDP, and remittances.

The VAR analysis yields a surprising result: a weak association between exchange rate and trade balance. Traditionally, exchange rate fluctuations are considered a significant determinant of trade balance. A depreciation of the Albanian Lek (ALL) relative to the Euro (EUR) is expected to enhance export competitiveness and improve trade balance. However, our findings suggest otherwise.

The model highlights factors with a stronger influence on Albania's trade balance with the EU. A positive and statistically significant relationship is observed between GDP and trade balance. This implies that economic growth in Albania leads to a favorable trade balance, potentially due to an increase in exportable goods. Conversely, remittances exhibit a negative and statistically significant association with trade balance. This counterintuitive finding suggests that higher remittance inflows might lead to increased consumption of imported goods, thereby worsening the trade balance. Inflation, on the other hand, displays no statistically significant connection with trade balance.

In conclusion, this study challenges the conventional wisdom regarding exchange rate as the primary driver of trade balance. For Albania's trade with the EU, economic growth and remittance flows appear to exert a more substantial influence. These findings contribute to the ongoing debate on the multifaceted determinants of trade balances in emerging economies.

The study acknowledges limitations inherent to the analysis. The timeframe employed might be relatively short. Expanding the data range could provide a more comprehensive picture. Additionally, factors such as trade policies and global economic conditions were not incorporated into the model. Future research could address these limitations by:

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The performance of online banking services in Albania

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Abstract

This study investigates the progress of online banking services in Albania over a 16-year period (2008-2023). Data analysis on electronic banking metrics reveals a significant rise in electronic banking activity, with a growing preference for these channels compared to traditional cash-based transactions. Notably, the proportion of bank accounts accessible online has steadily increased, suggesting a rise in internet banking penetration. Further examination of the relationship between the number of online accounts and internet banking transactions could reveal a potential positive correlation, indicating that as more accounts become accessible online, there may be a corresponding rise in online banking activity.

While limitations exist, such as potential influences from unaccounted factors (demographics, internet access, security trust) and the non-normal distribution of some variables, this study offers valuable insights. Future research avenues include investigating the factors driving online banking adoption in Albania, analyzing customer satisfaction with security and user-friendliness of online banking platforms, and exploring the impact of mobile banking on internet banking usage and future trends.

Overall, this study highlights Albania's positive progress in online banking adoption. Continued investment in digital infrastructure and public trust in online security can lead to even greater growth in this sector, potentially promoting financial inclusion and efficiency for Albanian banks and customers alike.

Keywords: *online banking services, customer service, mobile banking.*

Introduction

Many commercial banks now offer various online banking services, also known as internet banking or electronic banking (e-banking). A key challenge, especially in developing economies, is designing these online channels to be user-friendly, reliable, and affordable. In essence, online banking allows customers to manage their accounts remotely through information and communication technology. This service can be broadly divided into two categories: home banking and debit/credit card transactions.

The growing familiarity with terms like ATM (Automated Teller Machine), EPOS (Electronic Point of Sale), and various online and mobile banking options demonstrates increasing customer confidence in internet banking. This confidence is further bolstered by the rising use of electronic payments through credit cards, debit cards, and electronic funds transfers.

For banks, online banking offers a significant advantage: reduced operating costs. Because thousands of customers can utilize the service simultaneously without requiring teller assistance, online banking has the potential to increase banks' profit margins in the long run, potentially leading to lower fees for customers. ¹

¹ Dennis Campbell, Frances Frei (2009). Cost Structure, Customer Profitability, and Retention Implications of Self-Service Distribution Channels: Evidence from Customer Behavior in an Online Banking Channel (Management Science Articles in Advance, pp. 1–21 / September 2009).

Literature review

Theory suggests a connection between information and communication technology (ICT) use and improved banking services. Many empirical studies have been conducted to analyze this impact and see if the theory holds true.

A study in this field by Dennis Campbell and Frances Frei uses the context of online banking to investigate the consequences of employing technology to alter customer interactions with the firm. Using a sample of retail banking customers observed over an 18-month period at a large U.S. bank, it tests whether changes in service consumption, revenue, cost, and customer profitability are associated with the adoption and use of online banking. The study finds that customer adoption of online banking is associated with (1) substitution, primarily from incrementally more costly self-service delivery channels (automated teller machine and voice response unit); (2) augmentation of service consumption in more costly service delivery channels (branch and call center); (3) a substantial increase in total transaction volume; (4) an increase in estimated average cost to serve resulting from the combination of points (1)–(3); and (5) a reduction in short-term customer profitability. However, the use of the online banking channel is associated with higher customer retention rates over one-, two-, and three-year horizons.

The paper by Cláudio Hoffmann Sampaio, Marcelo Gattermann Perin and Clécio Falcão Araújo (2015) on the satisfaction in the banking sector provides a meta-analysis of generalizations of the relationships between the antecedents and consequences of satisfaction with online banking services. The results revealed the effect of 15 variables (13 antecedents and 2 consequents) that directly influence online customer satisfaction in banking. In addition, the results indicate a satisfaction studies framework in the online context and possible methodological moderators. The results provide support for electronic commerce research and applications. These results can provide a fresh perspective on the analysis of online banking satisfaction and the opportunity to extend academic and market research.

Ermela Kripa and Marinela Seitaj (2015) on use of e-banking in Albania as an innovative service that combines the positive aspects of modern banking communication technology to bring a range of online banking services close to consumers and business, show that the usage level of this service compared with developed countries is much lower. The level of use of the E-Banking by individuals is in proportion to the investment made by the bank to enlarge the knowledge of this service in the market.

Enola Kadija (2023) in her paper discusses the impact that electronic banking services such as ATM, IB, and MoB have on customers satisfaction in Albania. In the study, customer satisfaction was determined from demographic factors, and the frequency of usage of the three self-services. Based on the impact of e-banking services, ATM services, IB services, and MoB services on the boosting of the customer satisfaction, results suggest that ATM and Internet Banking services have significantly improved customer satisfaction.

Another paper (Mateus Habili, Oltiana Muharremi, Meleq Hoxhaj 2023), which studied the reasons why Albanians use internet banking services, provides useful information on this issue. The decreased desire to utilize cash appears to be a key element influencing the rise in the usage of online banking applications and services. Other important factors are the application technical issues and reduction of banking operations time as well as the application security level.

Building on research examining the impact of information and communication technology (ICT) on customer satisfaction and cost-benefit in banking systems across various countries, this paper focuses on analyzing the performance of Albania's internet banking services over the past 16 years.

Methodology

This section will outline the methodology used to analyze electronic banking trends in Albania over a specified period (2008-2023 based on the provided data).

The data for this analysis will be obtained from a table containing information on various electronic banking metrics in Albania. The table includes the following data points (abbreviations provided in parentheses):

- **BCA (Bank Account Accessible from the Internet):** Number of bank accounts accessible online.
- **TBA (Total Bank Accounts):** Total number of bank accounts in Albania.
- **NCDC (Number of Bank Transactions through Credit/Debit Cards):** Number of bank transactions conducted using credit and debit cards.
- **VCDC (Value of Bank Transactions through Credit/Debit Cards):** Total value (in million Albanian Lek) of transactions conducted using credit and debit cards.
- **VHB (Value of Home Banking Transactions):** Total value (in million Albanian Lek) of transactions conducted through internet banking.
- **NHB (Number of Home Banking Transactions):** Number of transactions conducted through internet banking.
- **ET (Electronic Transactions - Total Number):** Total number of electronic banking transactions (likely sum of NCDC and NHB).
- **VET (Value of Electronic Transactions):** Total value (in million Albanian Lek) of all electronic banking transactions (likely sum of VCDC and VHB).

- **NIBT (Number of Internal Bank Transactions):** Number of internal bank transfers (between accounts within the same bank).
- **VNIBT (Value of Internal Bank Transfers):** Total value (in million Albanian Lek) of internal bank transfers.

The analysis will cover a period of [16 years] from [2008] to [2023], based on the provided data.

Descriptive analysis

TABLE 1: Descriptive statistics

	BCA	ETT	HB	NCDC	NHB	NIBT	TBA	VCDC	VETT	VNIBT
Mean	324834.1	8696407.	2348313.	6348094.	597524.8	15643983	2869953.	51124.48	648649.3	4427473.
Median	181185.0	4438890.	1598020.	2840870.	313169.3	11472710	3016086.	22281.22	335450.5	4382269.
Maximum	1096402.	32288775	7666810.	24621965	2004180.	39745183	3480000.	188093.6	2192273.	6127400.
Minimum	11108.00	379394.0	88261.00	291133.0	63422.00	6323229.	1573830.	4196.000	67618.00	3398102.
Std. Dev.	335935.8	10019516	2408087.	7648472.	610305.9	10266587	488248.1	60900.44	668840.7	763875.6
Skewness	1.002811	1.213329	0.875356	1.302836	0.960039	1.202456	-1.366741	1.350437	0.996606	0.838935
Kurtosis	2.888598	3.225626	2.632970	3.392169	2.786168	3.211361	4.316276	3.358436	2.845879	2.982193
Jarque-Bera Probability	2.689954 0.260546	3.959718 0.138089	2.133135 0.344188	4.628879 0.098822	2.488281 0.288189	3.885514 0.143308	6.136334 0.046506	4.948797 0.084214	2.664431 0.263892	1.877043 0.391206
Sum	5197346.	1.39E+08	37573012	1.02E+08	9560398.	2.50E+08	45919249	817991.6	10378389	70839564
Sum Sq. Dev.	1.69E+12	1.51E+15	8.70E+13	8.77E+14	5.59E+12	1.58E+15	3.58E+12	5.56E+10	6.71E+12	8.75E+12
Observations	16	16	16	16	16	16	16	16	16	16

This table summarizes the key metrics related to electronic banking activity in Albania over a 16-year period (2008-2023). Here are some observations based on the descriptive statistics:

The mean values provide a general idea of the average activity levels. For example, on average, there were over 8.7 million electronic transactions (ET) per year. However, the median values suggest that the distribution of some metrics might be skewed. For instance, the median for ET (4.4 million) is considerably lower than the mean, indicating that there might be a few years with significantly higher electronic transaction volumes.

The standard deviation values show a high degree of variability for most metrics, especially for the total number of electronic transactions (ET), credit/debit card transactions (NCDC), and internal bank transfers (NIBT). This suggests significant fluctuations in these activities over the years.

The skewness and kurtosis statistics indicate that the distribution of some variables might not be perfectly normal. Positive skewness values for ET, NCDC, NHB, and VCDC suggest a longer tail towards higher values, implying that there might be a few years with exceptionally high activity. The kurtosis values are generally close to 3, suggesting a distribution slightly more peaked than a normal distribution.

The Jarque-Bera test and its corresponding probability values indicate that most variables likely do not follow a normal distribution. This is not necessarily a major concern for interpreting the descriptive statistics, but it might be relevant if you plan to conduct further statistical tests that assume normality.

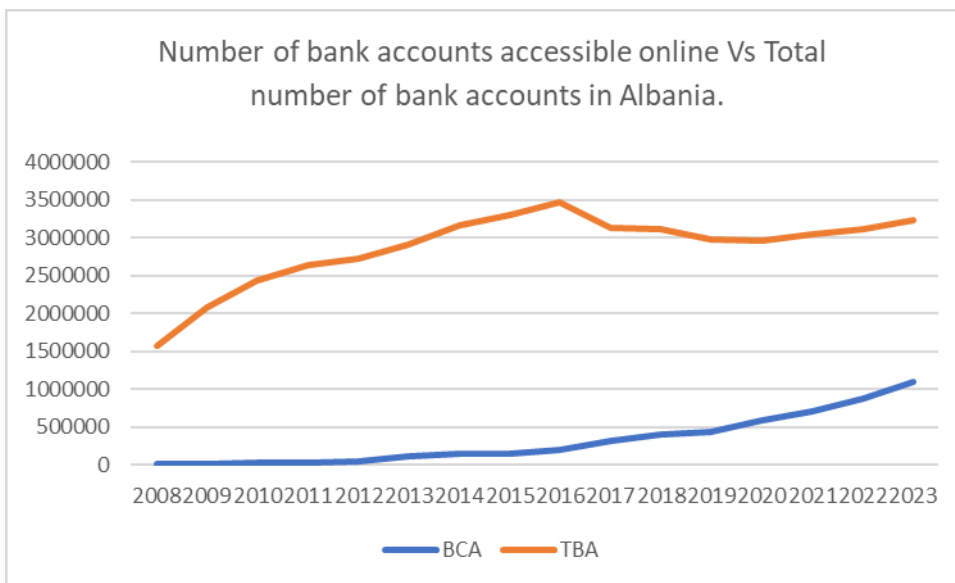
The sum values show the total number/value of transactions over the entire period. These can be helpful for calculating average annual values. The sum of squares deviations provide information about the spread of data points around the mean.

This descriptive analysis provides a snapshot of electronic banking activity in Albania over the past 16 years. The high variability in some metrics suggests that further analysis might be needed to understand the underlying trends and identify potential factors influencing these trends.

Looking at the p-values for the Jarque-Bera test: Most variables (except BCA, ETT, VCDC) have p-values greater than 0.05, suggesting they might be closer to a normal distribution.

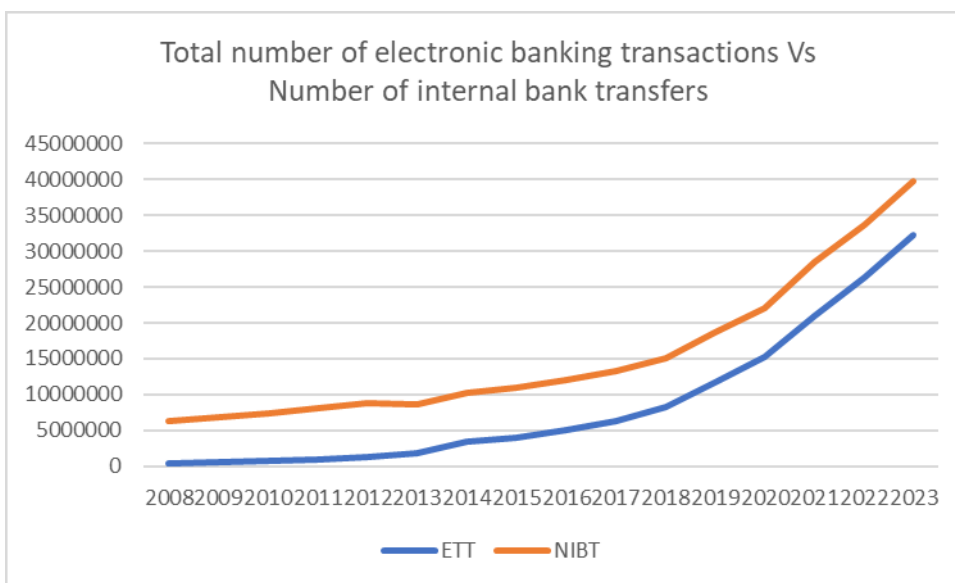
However, some variables (HB, NCDC, NHB, NIBT, TBA, VNIBT) show statistically significant deviations from normality (p-value < 0.05).

FIGURE 1: BCA VS TBA



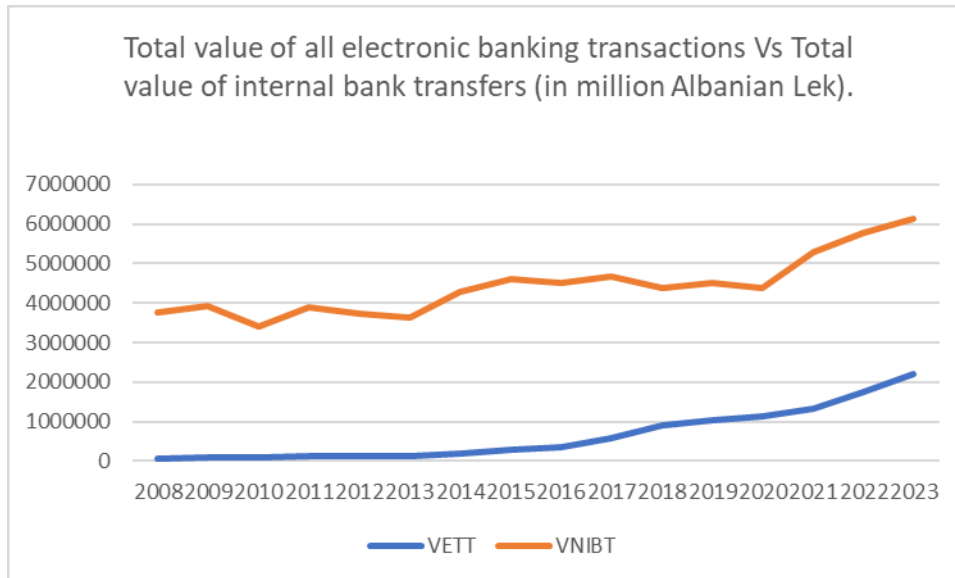
This graph delineates the temporal evolution of electronic banking transactions (ET) within Albania spanning the years 2008 to 2023. The plotted trend reveals a discernible upward trajectory over the observed period, indicative of the progressive adoption and utilization of electronic banking services by the populace. This sustained increase suggests a growing reliance on digital financial platforms, potentially influenced by advancements in technology and shifting consumer preferences towards convenience and accessibility in banking practices.

FIGURE 2: ETT Vs NIBT



The depicted time series plot showcases the longitudinal pattern of internet banking transactions (NHB) across Albania from 2008 to 2023. Notably, the graph illustrates a notable ascent in internet banking activity over the analyzed timeframe, implying an expanding embrace of online banking channels among Albanian consumers. This escalating trend underscores the burgeoning importance of internet banking solutions as a preferred avenue for financial transactions and account management, underscoring the evolving landscape of digital banking within the country.

FIGURE 3: VEET Vs VNIBT

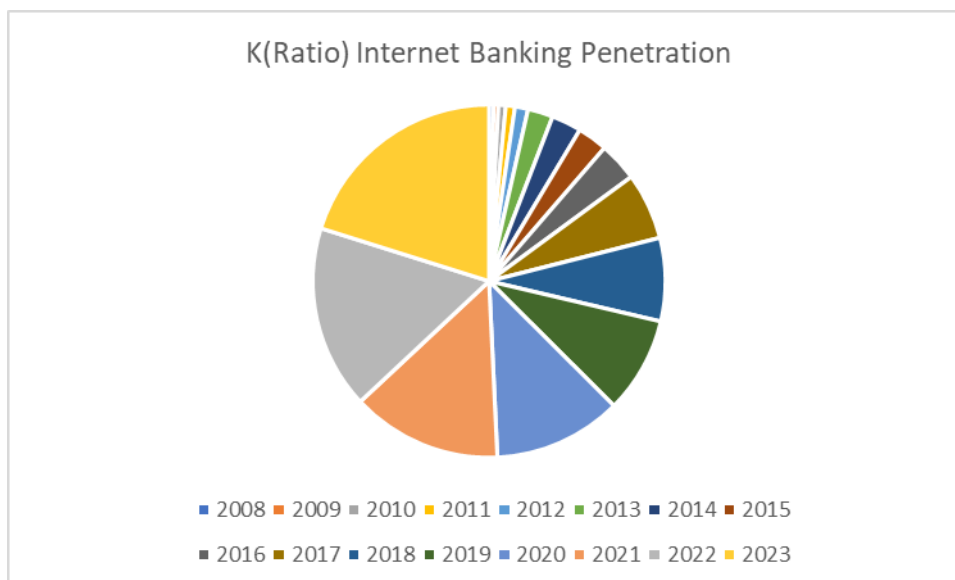


This graph elucidates the chronological trend of credit/debit card transactions (NCDC) observed within Albania over the period spanning 2008 to 2023. The plotted trajectory reveals a distinctive upward trend, signifying a progressive surge in the utilization of credit and debit cards for financial transactions among Albanian consumers. This escalating pattern underscores the growing prevalence of cashless payment modalities and the increasing reliance on card-based transactions as a preferred mode of financial exchange, reflecting broader socio-economic shifts towards digitalized payment systems.

Internet Banking Penetration

We have calculated the ratio of bank accounts accessible online (BCA) to total bank accounts (TBA) for each year. The chart will show the proportion of bank accounts that are accessible online over the years.

FIGURE 4: Internet banking penetration

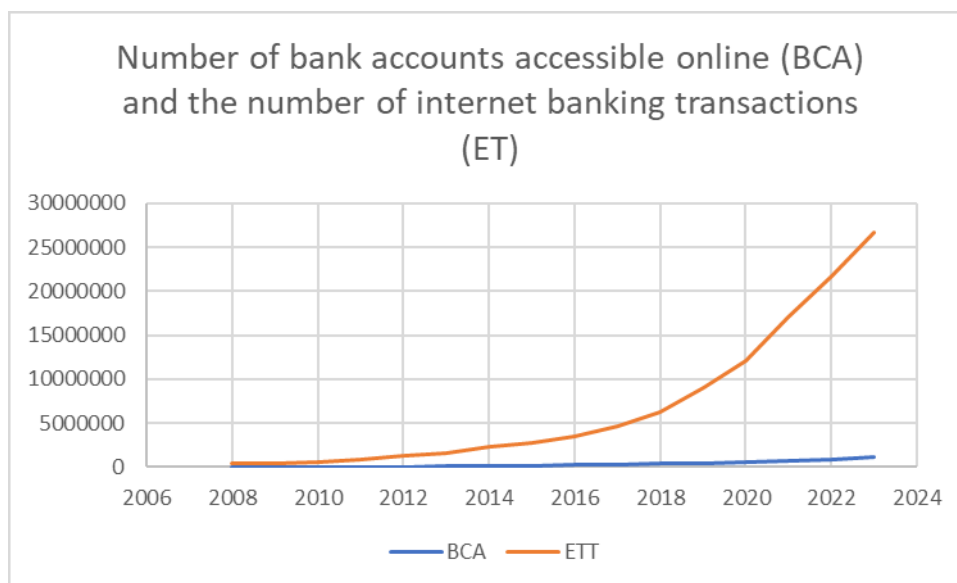


This ratio or proportion chart delineates the relative penetration of internet banking services vis-à-vis total bank accounts in Albania over the temporal spectrum from 2008 to 2023. The graphical representation elucidates the evolving landscape of internet banking adoption, demonstrating fluctuations in the proportion of bank accounts accessible online relative to the overall banking populace. This analytical framework provides insights into the degree of internet banking penetration within Albania’s banking ecosystem, highlighting the extent to which digital banking channels have permeated the financial landscape.

Let's explore the relationship between the number of bank accounts accessible online (BCA) and the number of internet banking transactions (ET).

The chart will show the number of internet banking transactions (ET) on the Y-axis and the number of bank accounts accessible online (BCA) on the X-axis. You can add a trendline to see if there's a correlation.

FIGURE 5: BCA Vs ET



The scatter plot elucidates the potential relationship between the accessibility of bank accounts online (BCA) and the frequency of internet banking transactions (NHB) among Albanian banking customers. By plotting these variables against one another, the graph aims to discern any discernible patterns or correlations between internet banking accessibility and usage frequency. Through this analytical lens, the plot seeks to elucidate the impact of internet banking accessibility on consumer behavior, shedding light on the drivers and determinants of internet banking adoption within Albania's banking sphere.

Conclusions

This study examined the performance of online banking services in Albania over a 16-year period (2008-2023) using data on various electronic banking metrics. The findings reveal a significant increase in electronic banking activity, with a growing preference for electronic channels compared to traditional cash transactions.

Notably, the proportion of bank accounts accessible online (BCA/TBA) has steadily increased, suggesting a rise in internet banking penetration. Further analysis of the relationship between online accounts and internet banking transactions (Figure 5) could reveal a potential positive correlation, indicating that as more accounts become accessible online, there may be a corresponding rise in online banking activity.

While limitations exist, such as the potential influence of unaccounted factors (demographics, internet access, security trust) and the non-normal distribution of some variables, this study provides valuable insights.

Future research avenues include investigating the factors driving online banking adoption in Albania, analyzing customer satisfaction with security and user-friendliness of online banking platforms, and exploring the impact of mobile banking on internet banking usage and future trends.

Overall, this study highlights Albania's positive progress in online banking adoption. Continued investment in digital infrastructure and public trust in online security can lead to even greater growth in this sector, potentially promoting financial inclusion and efficiency for Albanian banks and customers alike.

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Remote teamwork, the post-covid-19 “new normal”. An exploratory analysis on the case of Albania

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Abstract

The COVID-19 pandemic has pushed remote work to the forefront, disrupting traditional workplace dynamics. Individuals and organizations have faced many challenges during this transition, but teamwork has been one of the most significant. The primary objective of this research paper is to explore the impact of remote teamwork in Albania, with a focus on the post-COVID-19 period. It aims to explain how the phenomenon of “going remote” affects a wide range of aspects, such as team productivity, interpersonal communication, interpersonal relations, and work-life balance management within teams. The study will investigate the strengths, weaknesses, opportunities, and threats of remote teamwork, as well as the strategies and technologies utilized by organizations to enhance collaboration and communication. The research paper will employ a mixed-methods approach, including focus group discussions with remote employees, individual interviews with staff comprising managerial and employee roles, and cross-industry surveys. Study findings will contribute to remote work and team dynamics literature, offering insights into the most effective strategies for maintaining successful teamwork through online means in the post-COVID-19 period. Furthermore, this research will provide a set of practical recommendations that can be applied by organizations and policymakers who wish to promote remote teamwork in Albania.

Keywords: Remote work, Teamwork, COVID-19, Albania.

Introduction

The adoption of information and communication technologies (ICTs) has revolutionized the way work is organized challenging management approaches. Remote work has seen a surge, in popularity over the few decades thanks to the emergence of suitable tools that facilitate this shift. It's worth mentioning that Albania was once a country under a communist regime until the early 1990s, which heavily influenced its way of life including work practices. However despite this history remote work has been on the rise in Albania. This can be attributed to the advancements in infrastructure and technology following the downfall of communism providing Albanians with access to the resources as other nations and allowing them to embrace remote work opportunities. As per a report by the World Bank in 2021 internet usage in Albania was virtually non-existent in 1990. Has since soared to reach 79.32% of the population by 2021—an impressive growth trajectory over time. In comparison global internet penetration stood at, around 69.70% in 2021 across 176 countries surveyed indicating that Albania exceeds this average.

Since the 1990s Albania has adopted models due, to political, economic and social changes up, to the present day.

Oshri et al. (2015) define remote teamwork as follows: “Remote teamwork involves the use of communication and collaboration technologies to support geographically dispersed teams in completing tasks and achieving shared goals” (p. 6).

Many organizations have adopted remote working as a means of reducing infection risks and maintaining productivity due to COVID-19 pandemic. The move to remote working has been the change provoked by the pandemic most widely felt

and analyzed in the world of work (International Labour Organization, 2021). This sudden shift to remote working presented significant challenges for teams in Albania, as well as in many other countries, as teams needed to be able to collaborate and communicate successfully in a virtual environment in order to be successful. Because of the advantages that come with work such, as saving on real estate costs boosting employee productivity cutting expenses and widening the applicant pool (World at Work, 2009) numerous companies have started integrating permanent remote work days into their schedules or offering employees the option to work from home full time. However some individuals argue that teamwork can be trickier when team members are based in locations (RW Culture Wizard, 2010). They believe that establishing trust and camaraderie within a team becomes challenging without face to face meetings. Employees often find themselves feeling disoriented, isolated, overwhelmed and out of sync with their colleagues. They aim to foster trust maintain relationships without contact and strike a work life balance for overall success.

While the sudden transition to work has brought benefits it has also highlighted the need for developing new skills and overcoming the hurdles of virtual communication. In Albania where remote work was uncommon, before the hit; these obstacles may be more keenly felt.

Objectives of the study

The main objectives of this study are:

- To identify the strengths, weaknesses, opportunities, and threats that remote working presents for teamwork in Albania especially for the period after COVID-19.
- To investigate how remote working has impacted team collaboration and organizational management, and explore how team performance and productivity in remote working settings can be enhanced.
- To contribute to the broader literature on remote working by providing empirical evidence regarding factors that contribute to effective teamwork during the post-COVID-19 era in Albania.

Research questions

In this study, the following research questions were addressed:

- What is the current situation of remote teamwork after COVID-19 in Albania?
- What are the strengths, weaknesses, opportunities, and threats of remote teamwork in Albania?
- What practices are used to improve team performance and to prevent threats of remote teamwork in Albania.

Literature review

The Evolution of Remote Working

As early as the 1980s, California-based companies like Yahoo provided their employees with the opportunity to take advantage of the internet and ICTs. This concept was known as telecommuting, or Telework (Nilles, 1988). It was defined as “the use of telecommunications and/or computers as a substitute for commuting” (Nilles, 1994, p. 109). A slight difference should be noted between the concepts of “telework” and “remote work” due to historical reasons. Remote work is definitely a post-internet term. In general, it refers to a situation where the employee works and lives outside of the employer’s worksite’s commuting range (Mokhtarian, 1991).

The market has become increasingly saturated with cheaper, smaller and increasingly connected devices over the past few decades, such as smartphones and tablets, as well as an extensive distribution of Internet access and the World Wide Web (ITU, 2016). With the help of these devices employees are able to communicate at any time and from any location (Golden and Geisler, 2007).

The concept of „telecommuting” was first introduced by Jack Nilles, a NASA engineer back, in 1973 setting the stage for the work setup we know today. Scholars have focused on three aspects when studying telework; location, technology and organizational factors (Beer, 1985; Di Martino and Wirth 1990). In the 1980s and early 1990s various technologies like teleconferencing, email and the Internet started replacing communication methods. This shift offered organizations cost saving opportunities (Wellman et al., 1996). As telework evolved California took the lead by enacting guidelines for its implementation. The state embraced telecommuting as an option for both home offices and telecenters (Telecommuting Advisory Group, 1992 p.26).

While technology plays a role in driving telework adoption it’s important not to overlook other contributing factors in this framework. Placing emphasis solely on technological advancements may not provide a holistic view of telework dynamics. Although technological progress is valuable, for analyzing how telework has developed over time as a guiding principle.

It’s important to understand that various factors such, as politics, economics organization, location and environment all influence how companies and their employees embrace telecommuting (Vilhelmson and Thulin 2016).

COVID-19 Pandemic

COVID-19 is without doubt one of the biggest events of the 21st century so far. Globally, the virus spread to nearly all nations and territories of the world, affecting many of them. Towards the end of 2019, a Coronavirus outbreak was reported in Wuhan, China. Coronavirus is caused by SARS-CoV-2 virus (World Health Organization, 2023). More than 672.000.000 confirmed cases and about 6.850.000 fatalities have been reported in over 230 countries since the beginning of the year 2023 (Worldometer, 2023). The World Health Organization reports that since the Coronavirus outbreak began, there have been around 333.300 Coronavirus cases recorded in Albania (WHO, 2023). Moreover, it is estimated that around 3.517 deaths have been caused by the Coronavirus in Albania (WHO, 2023).

There have been alerts issued throughout the world urging people to be cautious due to the virus outbreak. Among essential measures that have been taken to counteract the pandemic are lockdowns and homebound regulations (Sintema, 2020).

Companies were forced to take prompt action when COVID-19 cases surged, preventing viral spread and maintaining corporate operations (Koh & Tan, 2022). The pandemic has caused great hardship and suffering for millions of people around the world (Sengupta and Al-Khalifa, 2022). In light of the pandemic, they had little time to adjust to a new work environment because they were forced into emergent work practices (Choukir et al., 2022). As a result of the COVID-19 pandemic, virtual teams, technology-enabled work platforms, and mandatory work from home have transformed work practices. Since everyone was unprepared for these abrupt changes in work practices, the employees have struggled along with the organizations and their leadership (Andrade and Lous, 2021).

Remote Work

Remote work refers to work conducted outside of a traditional office environment, encompassing both working from home and working from any location worldwide. The flexibility and autonomy inherent in remote work enable individuals to choose their preferred work settings while fulfilling their responsibilities. Many companies such as Airbnb, Allstate, DoorDash, Lyft, etc. now offer remote work options to enhance employee job satisfaction (Flexjobs, 2023). Remote work has been associated with improved performance and increased attractiveness to top-notch employees (Demaj et al., 2021).

Although remote work offers various benefits such as flexibility in terms of time management (Evans et al., 2004), autonomy, increased productivity (Dimitrova, 2003), and improved work-life balance (Kelliher & Anderson, 2010), scholars have raised concerns regarding its impact on employee well-being. Some of the potential challenges faced by remote workers include physical and temporal separation (Lautsch et al., 2009), feelings of social isolation, limited social support (Golden et al., 2008), blurred boundaries between work and personal life, and extended working hours (Grant et al., 2013). These factors can lead to decreased employee engagement and overall well-being. Moreover, remote workers often express apprehensions about career development and advancement due to reduced visibility and limited opportunities within organizations (Campbell et al., 2016).

SUMMARY OF MAIN FINDINGS IN THE EXISTING LITERATURE

Author	Year	Main Findings
Bloom et al.	2015	Conducted a WFH experiment in a Chinese company with 16,000 employees, resulting in a 13% increase in productivity. Increased focus and fewer breaks contributed to the productivity improvement.
Campbell et al.	2016	Concerns about limited career development opportunities and reduced visibility within organizations arise as a result of remote teamwork.
Dimitropoulou	2019	Personal wellbeing and job satisfaction contribute to increased effort and productivity. Flexible work schedules enhance work-life balance and save time and costs for employees.
Eurofound	2020	Teleworking provides increased flexibility and autonomy for managing work and personal lives. However, it may lead to longer working hours and a blurred work-life balance.
Evans et al.	2004	Remote work offers various benefits such as flexibility in terms of time management.
Golden & Raghuram	2010	Remote work can inhibit organizational socialization and affect cognitive and relational aspects, hindering knowledge transfer between teleworkers and non-teleworkers.
Grant et al.	2013	Working remotely leads to blurred boundaries between work and personal life, and extended working hours.
Hegde et al.	2022	Organizations should monitor trends and assess productivity and satisfaction to determine the continuation of remote work or reopening workspaces.
Ipsen et al.	2021	Remote work during the pandemic had mostly positive experiences, including improved productivity, work control, and work-life balance. Disadvantages included job uncertainty and inadequate tools.
Lautsch et al.	2009	Some of the potential challenges faced by remote workers include physical and temporal separation
Lazarova	2020	Remote work poses challenges to efficiency, collaboration, and synergy within teams. Physical separation and communication barriers hinder collaborative efforts and employee satisfaction.

Peters et al.	2016	Organizations face challenges in creating a culture of supporting remote work and tracking remote employees. Teleworking requires consideration of overall culture, values, and control practices.
Zhang et al.	2021	Survey on Twitter revealed slightly positive sentiments towards remote work during the pandemic. Trade-offs and perceptions of remote work are important, regardless of choice.

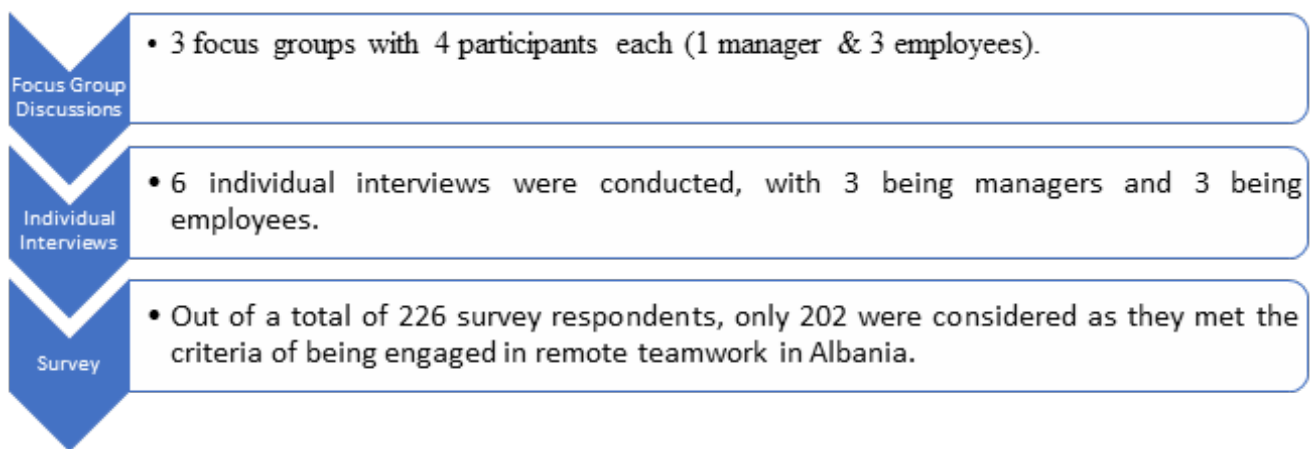
Methodology

This study employs an exploratory case analysis methodology to examine remote teamwork as the “new normal” after COVID-19. The research will utilize mixed methods, incorporating discussions with focus groups, individual interviews, and surveys. The case analysis approach allows for an in-depth investigation of remote teamwork practices in various organizations and industries, considering their unique contexts and challenges. The focus groups will provide a platform for group discussions and exchange of ideas, while individual interviews will allow for more personalized insights. Surveys will gather quantitative data, providing a broader perspective on remote teamwork experiences. This mixed methods approach will enhance the understanding of the dynamics, benefits, and challenges associated with remote teamwork in the post-pandemic era. The exploratory nature of this research paper allows for flexibility and adaptability in data collection and analysis, ensuring comprehensive exploration of the research topic.

Sampling Strategy

In this research, participants for focus groups and interviews were selected using purposive sampling, focusing on individuals with firsthand experience in the subject. For the survey, a dual approach was adopted, incorporating convenience sampling for a broad participant pool and purposeful sampling during analysis, targeting individuals actively involved in remote teamwork in Albania. This combination broadened the respondent pool while ensuring relevance to the research focus.

SAMPLE SIZE



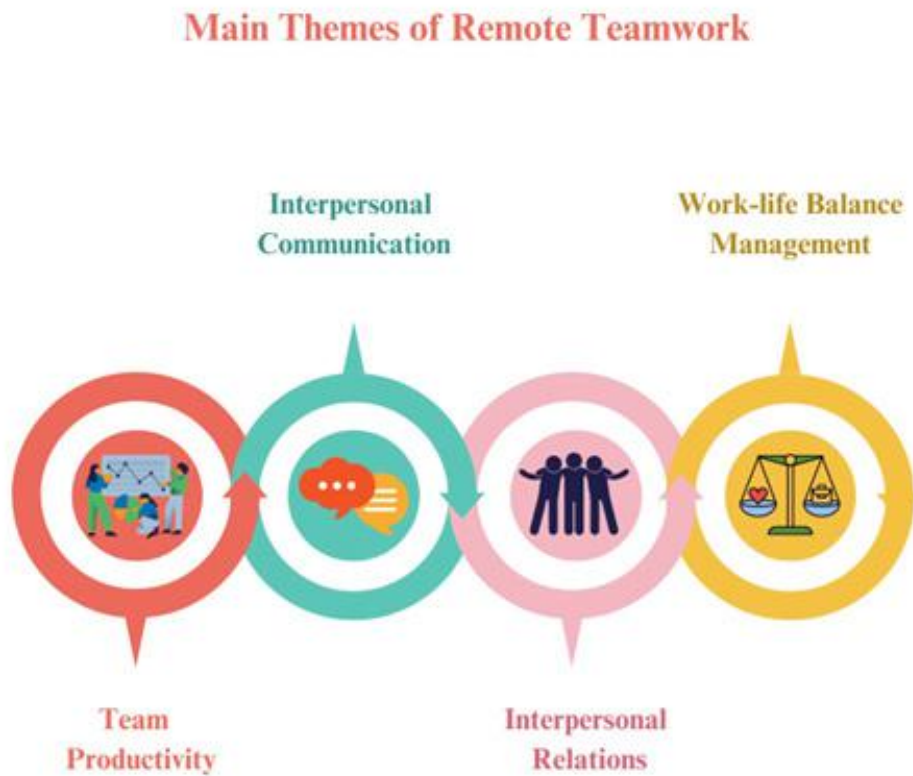
Results

The report begins with the findings obtained from interviews conducted with focus groups, which allowed for the identification of the primary themes related to remote working. In the subsequent section, these themes are examined in detail through semi-structured interviews involving remote managers and employees. Finally, in the third section are the survey results, originally designed to align with the key findings from the interview process. In order to ensure confidentiality, the decision was made to maintain anonymity for all individuals involved in the study.

Focus Groups

Through focus group interviews were identified the 4 main themes of Remote Teamwork which are: Team Productivity, Interpersonal Communication, Interpersonal Relations, and Work-life Balance Management.

FIGURE 4.1 Main Themes of Remote Teamwork



Individual Interviews

In the interviews with employees and managers, the main focus was on their perceptions of remote teamwork and whether the management eased the transition into remote work. Interestingly, was found that team productivity increased, maintaining interpersonal relations decreased, and interpersonal communication was difficult in a similar manner to prior research. The interviewees, however, expressed some variation in their perceptions regarding remote work. The following encapsulates a concise overview of the primary quotes or reactions accumulated from one-on-one interviews.

	Team productivity	Interpersonal Communication	Interpersonal Relations	Work-life Balance Management
M1	„As long as you do not have children at home or anything else that would distract you from your work, remote teamwork has the advantage of allowing you to concentrate on the work. Additionally, you can work at your own pace and skip the morning rush to work. Working from home also creates a sense of freedom and autonomy that can benefit productivity.”	„Occasionally, you can tell if someone is not keeping up at a meeting by their facial expression or body language. In remote meetings, it is important to be explicit in communicating expectations and goals to make sure everyone knows what’s going on. It is also important to give everyone a chance to participate and voice their opinions.”	“The Microsoft Teams service allows you to create group chats, and I can tell you that there is a lot of discussion going on. The focus is on work, but private questions and calls between employees are also common in these chats. In other words, it’s basically a giant office water cooler, except all the gossip is digital!”	„I encourage my team to have a healthy lifestyle. As a matter of fact, I have observed that many people do not take proper lunches when they work at home. It would be nice to have a natural break during the day, enjoy a coffee break, eat a proper lunch, and get outside and move. I remind them time by time.”

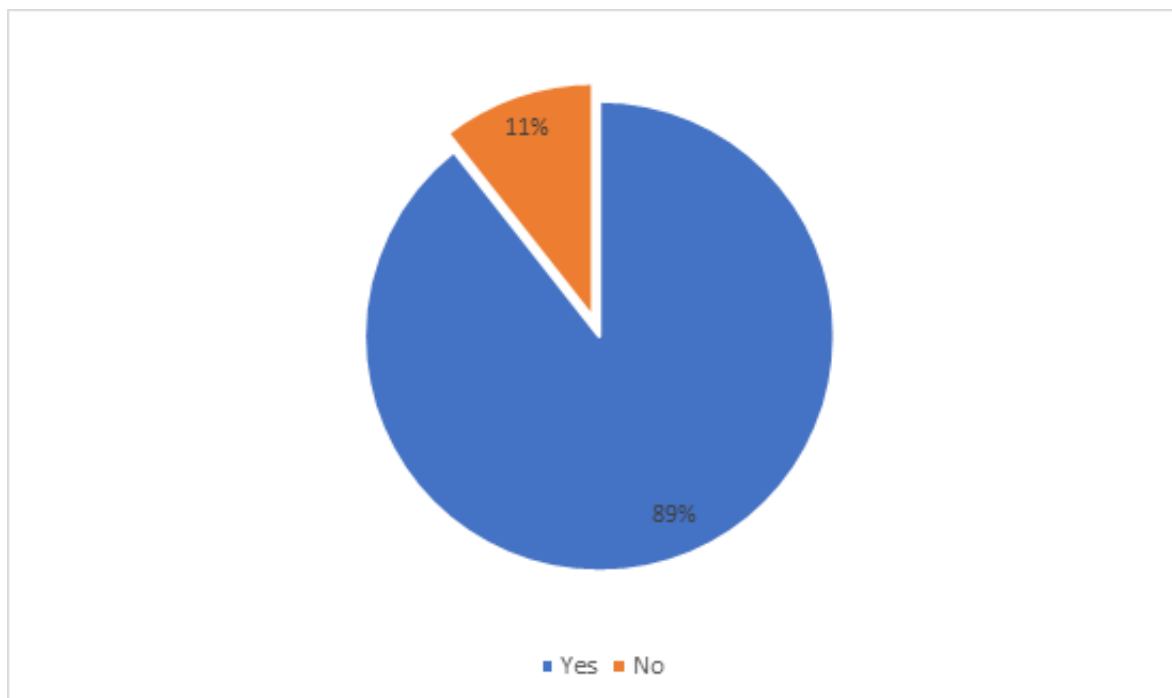
M2	„We are committed to listening to what our customers and employees have to say in order to be able to resolve their issues and make the best decisions for the ongoing processes of the company. By doing this, we are able to maintain a positive relationship with our customers and ensure the satisfaction of our employees. After all, everyone wants to be heard, even if it's just to hear themselves talk.”	„Remote managers should encourage collaboration among remote workers, such as by pairing employees up for projects, setting up brainstorming sessions, and using virtual teambuilding exercises.”	“Virtual collaborative platforms offer the ability to socialize, so you can use the chat whenever you like.”	“I have not ordered the team to work overtime or not, so it is up to them to decide whether or not they should work overtime for themselves. However, it seems that the employees are able to fulfill their tasks within normal working hours. We remind the employees to take pauses and go for walks to help them distinguish between work and leisure, despite the fact that they don't seem to have any difficulties doing so.”
M3	„I have provided the members of my team with access to more things than just the email in our internal systems, which allows them to work remotely as if they were in the office. This has enabled us to continue working as a cohesive unit and maintain peak productivity, even when our team is spread out. Although it's been a bit of an adjustment, I think everyone is finally getting used to the new 'office' being their living room.”	„Employees feel appreciated and integrated when remote managers regularly celebrate their successes and achievements. Celebrating success can boost morale and increase motivation.”	„It seems as though there are no problems with socialization because the employees make sure that they have meetings and socialize with one another on a regular basis. For example, they had planned to hang out even now.”	“It is easier to work longer hours at home compared to in the office. I review each employee's schedule and implement necessary adjustments in order to minimize overtime.”
E1	„I actually enjoy working from home since I'm able to focus on different things. My daily routine is never interrupted by someone tapping on my shoulder. When you're doing market 50 research and you're really into it, when someone comes along and says, 'Hey, can you check this out?' you lose your focus. It takes you about fifteen minutes to get back to where you were before you got interrupted.”	„It is hard to express yourself clearly unless you send emoji. Body language, or whatever you call it, is the most important component of communication, but it has totally disappeared. However, you can certainly communicate.”	„Despite the fact that some social aspects may suffer, I think remote working is the better option from a professional standpoint.”	„Routines must be maintained, which means I work practically the same hours as I did previously. I begin at 2 p.m. and end at 6 p.m. It's important to have a routine in place so there are no late nights. It used to cause me a lot of stress in the past when we used to work overtime. I believe that it is important to limit the amount of time you spend working. One of the reasons I chose part-time remote work as a job is because I prefer flexibility in my work. As soon as the time tracker reaches the 4 hour limit each day, I can turn off my laptop.”
E2	„Due to the fact that you do not have to stop for a coffee and talk for 10 minutes to a stranger, you just kind of go about your work since you don't have anything else to do. There is no point in double-checking something with someone to ensure it is correct. It's just that you do what you're doing. You now have a better sense of self-esteem and trust yourself more.”	“If you ask something at the office, it is often because you want to converse with the person about something else, so to speak. I am just completing my tasks successfully, but I feel like I am not part of a team. I do not feel my voice is being heard by management”	„In certain instances, I reach out to colleagues through calls to inquire about their well-being or send messages in the chat just to check in, similar to the conversations one would have in a coworker's office, such as asking about their family and children.” To ensure everything is going smoothly, you write instead of walking.”	„I work overtime because I'm driven to finish things, and I'm willing to stay late after I have given up for the day to make sure I finish what I'm trying to accomplish. Working overtime at home is much easier. Cooking, taking care of my children, waiting for laundry to finish, or anything of the sort can be done while you are at home, so it is easier to do so.”

E3	„It's really like having a timer set for whatever I had to do right away. It's like saying, 'Now I will do this,' whereas at the office it was more like saying, 'Now that I have accomplished this, what should I do next?'"	"People might misinterpret your tone as harsh or something like that if you try to convey an emotion. I haven't received any comments like that yet, but I've misinterpreted people's messages and gotten messages that sound harsh, which I don't mean to do."	„I think remote working has been a success so far. However, there is something missing when you talk in a chat box when you are not together in the break room. It is not the same thing as being able to chat with someone over coffee. Therefore, it is disheartening that I simply miss the casual interactions and seeing each other in person."	„The computer is turned on when I leave home and turned off when I get back home. My working day is almost an hour longer if I take half an hour to get to the office and half an hour to get home. The right balance between work and leisure was challenging at first but became easier over time."
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Survey

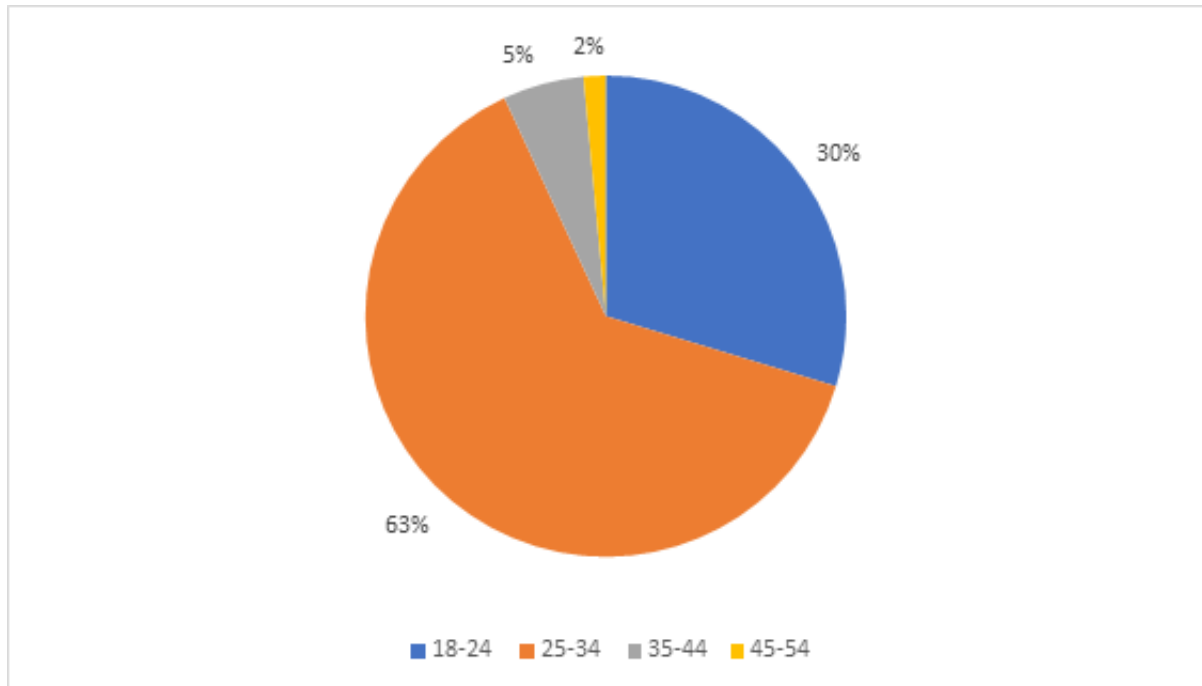
The unique aspect of this survey lies in its structure, which was designed based on the findings obtained from focus groups and individual interviews. This approach allows for a comprehensive exploration of the topic, providing broader insights and contributing to the novelty of this research paper.

FIGURE 4.2 Is Teamwork a Part of Your Daily Routine as a Remote Worker?



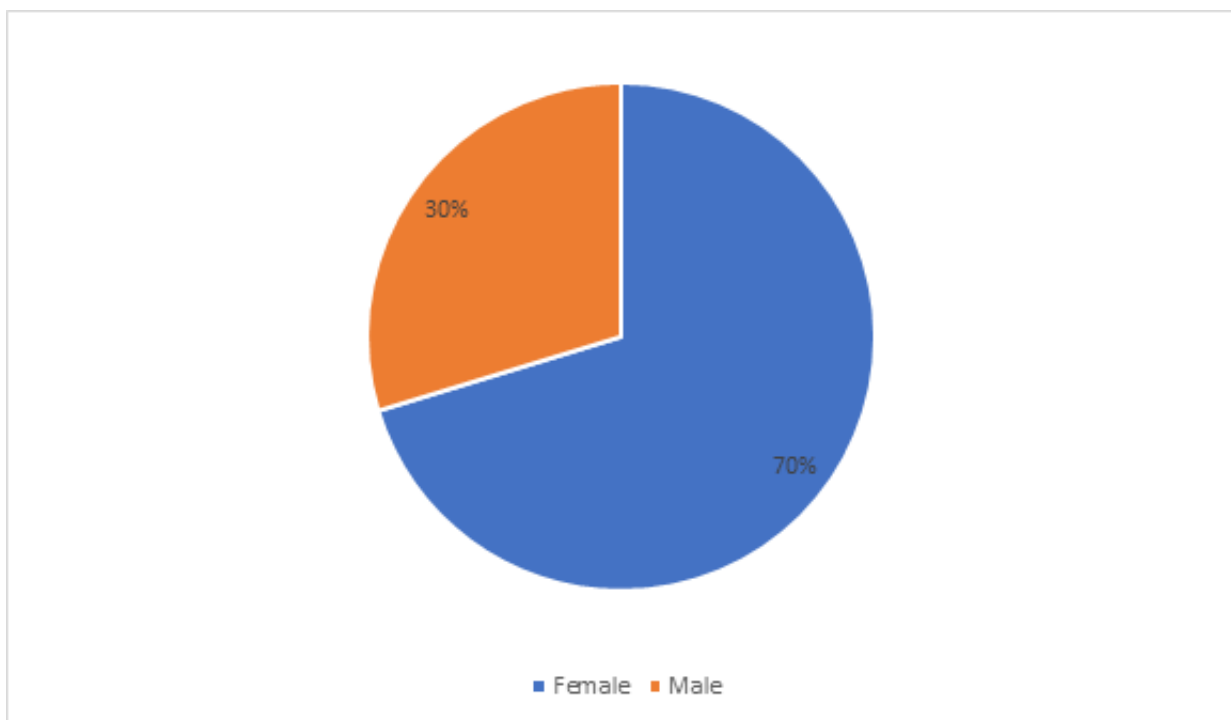
The initial question in the survey serves as a filter to determine the inclusion of respondents in the analysis. Out of the total 226 completed surveys, 202 were submitted by remote employees, while the remaining 24 were not. As a result, the study focused on the responses of the 202 participants who are actively involved in remote teamwork.

FIGURE 4.3 What Is Your Age Range?



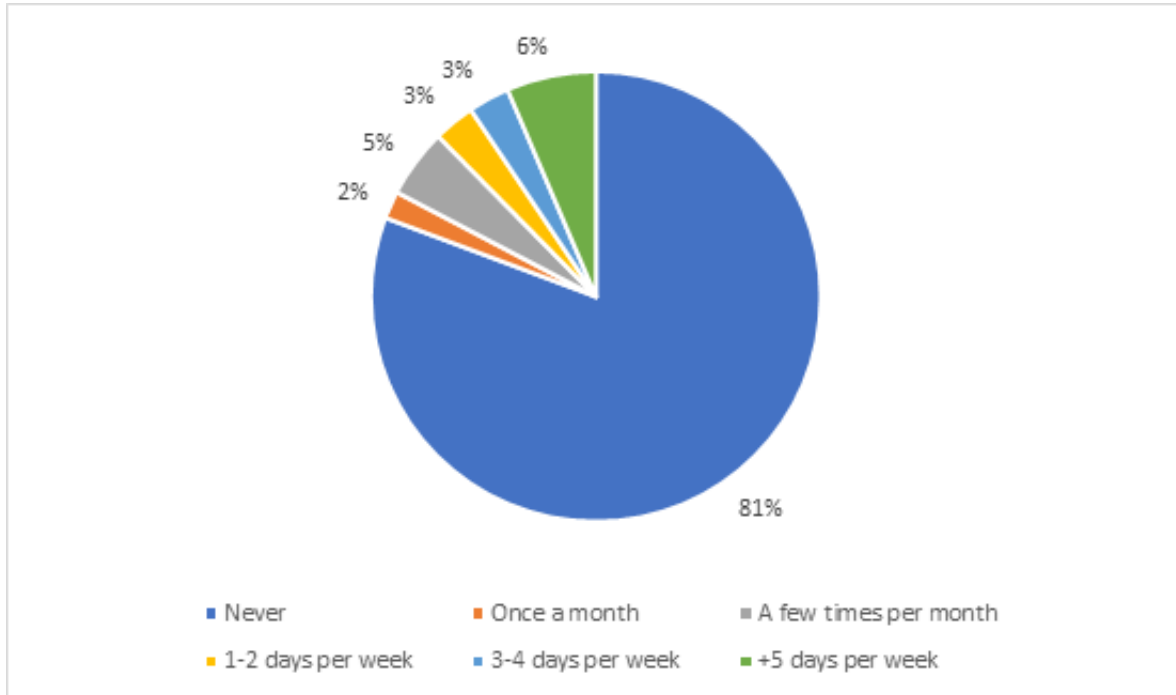
Following that the survey included two questions, about demographics. The majority of survey participants belonged to the 25-34 age group totaling 128 people. Notably there was a number of respondents in the 25-34 age range with 60 individuals participating. In contrast 11 respondents were from the 35-44 age bracket. Merely 3 individuals fell into the 45-54 age group. These results underscore the levels of involvement and viewpoints, across age ranges.

FIGURE 4.4 What Is Your Gender?



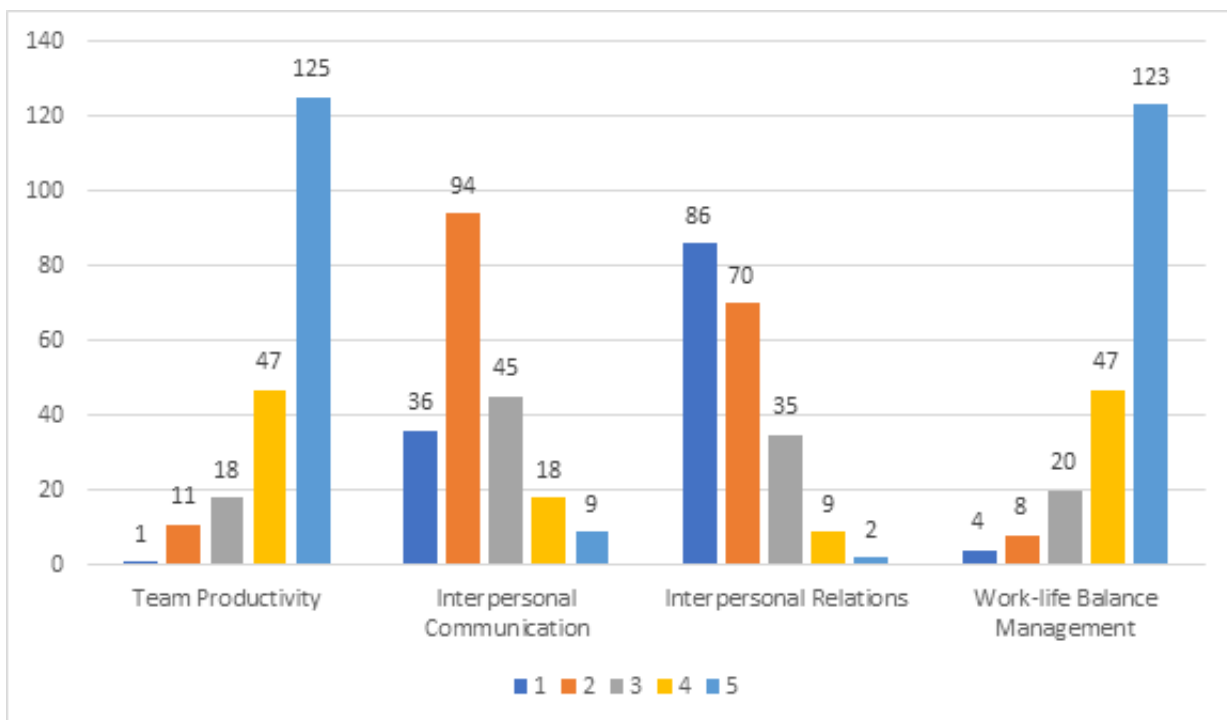
Regarding gender distribution, both male and female respondents were engaged in remote work; however, the data showed a higher number of females (142) compared to males (60).

FIGURE 4.5 How Often Did You Work Remotely Prior to the COVID-19 Pandemic?



Insights from post-COVID-19 focus groups highlighted the pandemic’s pivotal role in remote work adoption. Survey results revealed 163 participants lacking prior remote experience, emphasizing COVID-19’s influence. Notably, respondents engaged in remote work monthly (4), a few times monthly (10), 1-2 days weekly (6), 3-4 days (6), and full-time (13).

FIGURE 4.6 Rating Team Productivity, Interpersonal Communication, Interpersonal Relations, and Work-life Balance Management.



The survey outcomes offer insights into our work environment. Team productivity is notably high, scoring an average of 4.34 out of 5, indicating employees’ motivation and efficiency. However, interpersonal communication received a lower rating of 2.40, suggesting a need for improvement in fostering clear communication channels. Interpersonal relations scored 1.85, indicating a potential need for more social interactions among colleagues. On a positive note, work-life balance management scored well at 4.26, highlighting employee satisfaction in maintaining a healthy equilibrium. These findings guide efforts to enhance employee satisfaction and engagement.

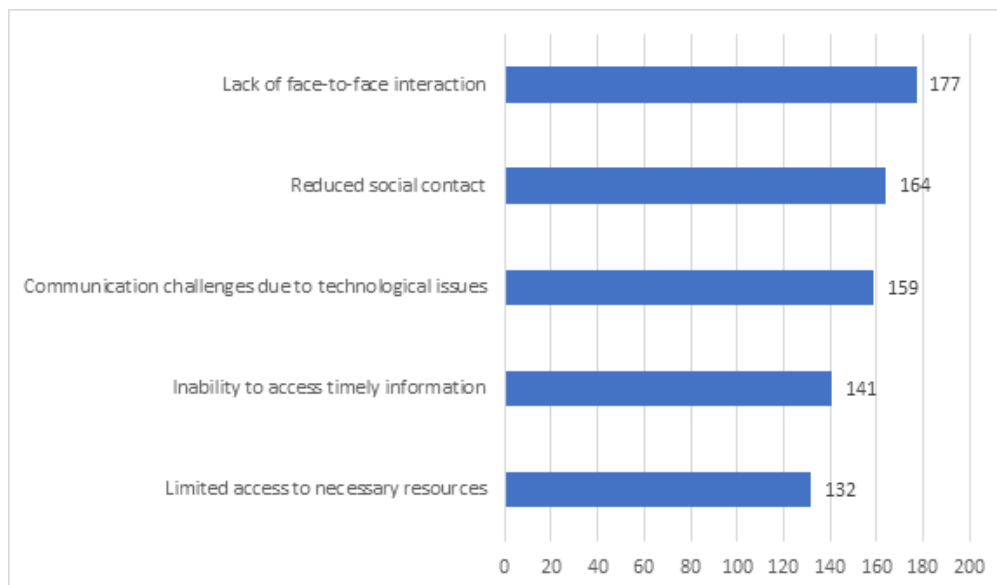
During brainstorming session with focus groups and comments from individual interviews were identified the possible strengths, weaknesses, opportunities, and threats of remote teamwork in Albania. The next 4 checkbox questions require from the participants to select which elements they consider as main strengths, weakness, opportunity, or threat of remote work.

FIGURE 4.7 What Do You Consider as the Main Strengths of Remote Teamwork?



Survey findings uncover remote teamwork's key strengths, with flexibility standing out as the primary advantage, noted by 188 respondents. Cost-effectiveness ranked high, with 170 acknowledging financial benefits from reduced office space needs and commuting expenses, enabling more resource efficiency. The environmental impact was highlighted, with 158 noting reduced traffic and pollution, aligning with sustainability goals. Remote work also correlated with increased job satisfaction (149), focus (142), reduced absenteeism (138), and enhanced superior-subordinate trust (132). Respondents recognized its contribution to greater productivity (130) and perceived autonomy (124), showcasing the multifaceted strengths and transformative potential of remote teamwork.

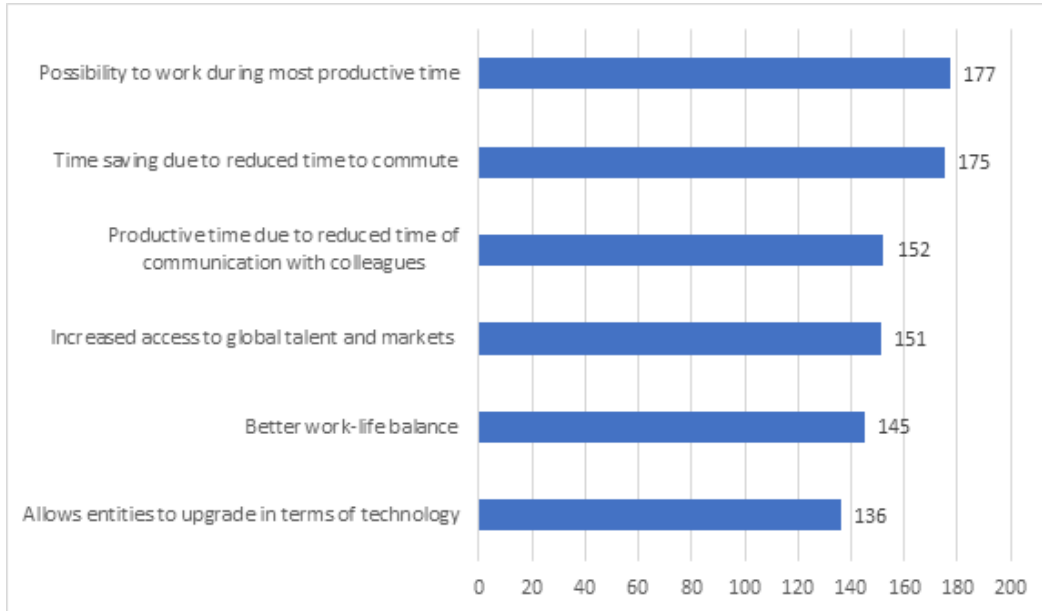
FIGURE 4.8 What Do You Consider as the Main Weaknesses of Remote Teamwork?



The survey underscores key weaknesses in remote teamwork, evident in respondents' top selections. The foremost issue, "Lack of face-to-face interaction," resonated with 177 participants, revealing a strong preference for in-person communication over remote substitutes. "Reduced social contact" closely followed, chosen by 164, highlighting the significance of social ties and the impact of remote work on community. Additionally, "Communication challenges due to technological issues" garnered 159 votes, emphasizing hindrances posed by technical glitches. "Inability to access timely information" ranked fourth with 141 responses.

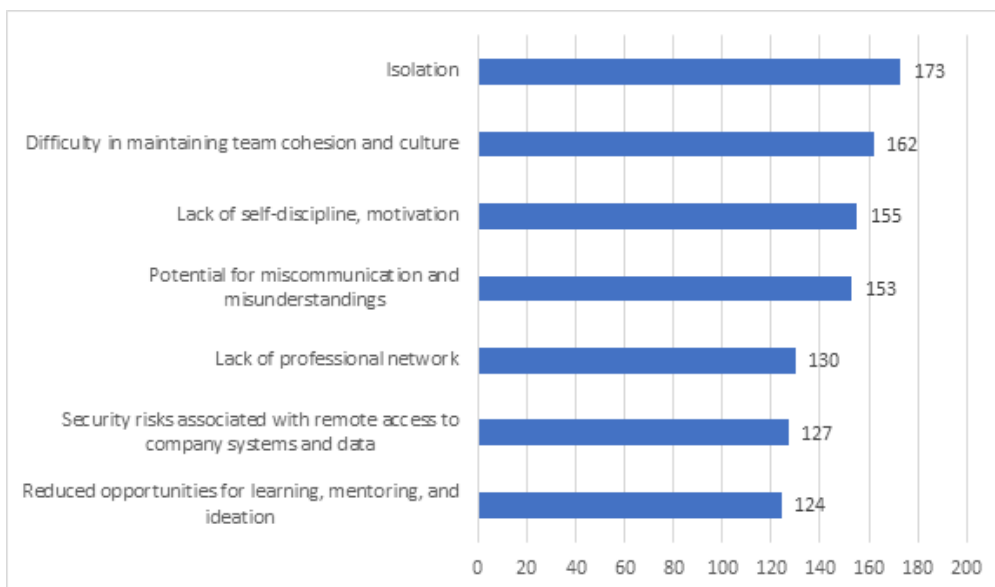
141 votes, indicating frustration with delayed data acquisition. Lastly, “Limited access to necessary resources” was selected by 132 participants, signaling potential obstacles in obtaining essential tools for remote work. These findings illuminate critical weaknesses in remote teamwork, urging organizations to address these issues for enhanced productivity and team cohesion in remote settings.

FIGURE 4.9 What Do You Consider as the Main Opportunities of Remote Teamwork?



Survey results highlight remote teamwork’s numerous advantages for individuals and organizations. Recognized opportunities include aligning work with peak productivity hours (177 respondents), saving time through reduced commuting (175 respondents), and gaining productive time by minimizing communication with colleagues (152 respondents). Remote work, reliant on asynchronous communication, streamlines interactions, fostering focus on tasks. Furthermore, it offers increased access to global talent and markets (151 respondents), facilitating innovation and growth. Additionally, remote teamwork prompts technology upgrades (136 respondents) as organizations invest in advanced tools, enhancing long-term efficiency.

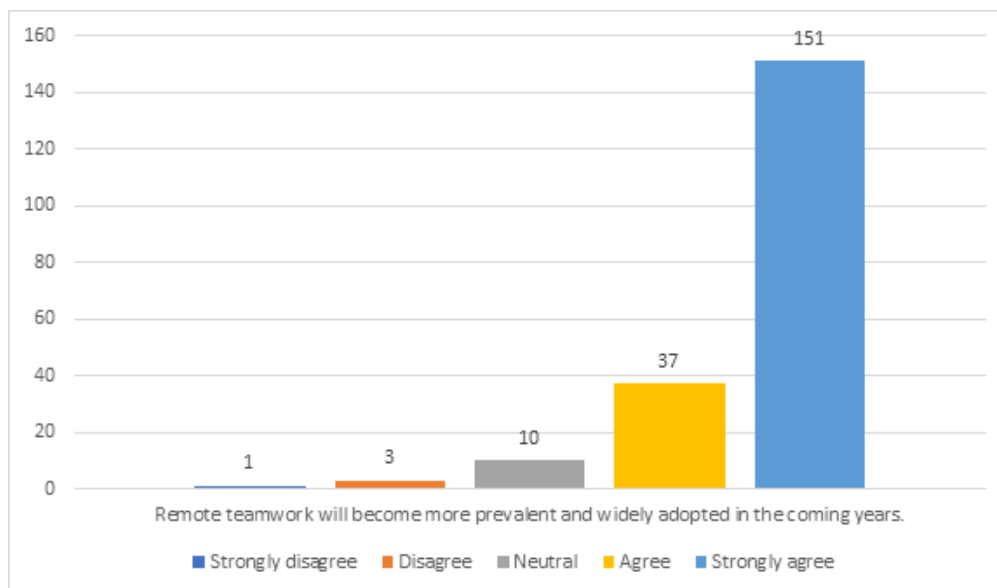
FIGURE 4.10 What Do You Consider as the Main Threats of Remote Teamwork?



Survey findings highlight various challenges and threats in remote teamwork. Isolation, the most common concern with 173 responses, indicates a sense of disconnection among remote employees. Maintaining team cohesion and culture closely follows with 162 responses, emphasizing the need for virtual team-building. The survey also identifies issues with self-discipline

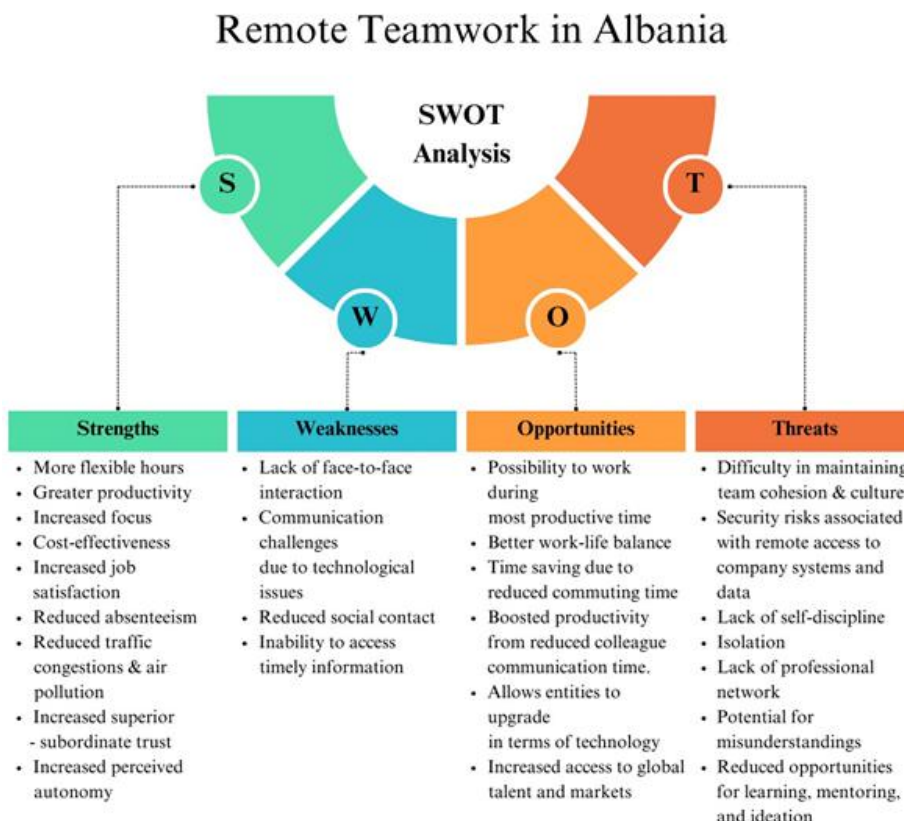
(155 responses) and potential miscommunication (153 responses), emphasizing the importance of clear communication. Lack of a professional network (130 responses), security risks (127 responses), and reduced learning opportunities (124 responses) underscore the need for strategies to address these challenges in remote collaboration.

FIGURE 4.11 Remote Teamwork Will Become More Prevalent and Widely Adopted in the Coming Years.



Survey results reveal a strong consensus, with 188 respondents believing that remote teamwork will significantly rise in the future. Despite a minority holding different views, the overwhelming majority expresses confidence in the increasing prominence and adoption of remote collaboration, highlighting its growing importance in the modern work landscape.

FIGURE 4.12 SWOT Analysis of Remote Teamwork



Discussion and recommendations

This study aimed to explore how teamwork dynamics have evolved in work settings following the impact of COVID 19, in Albania. The pandemic has significantly influenced the surge of collaboration within the country. Due to the necessity of distancing and reducing physical interactions organizations had to shift towards work to sustain their operations. Consequently there has been a rise in the number of employees engaging in work setups. The findings from surveys and interviews conducted for this study in Albania resonate with Ipsen et al.s (2021) research indicating that individuals who transitioned to work during the pandemic generally had positive experiences than negative ones. Survey data revealed that a large majority (80%) had no experience with work before COVID 19 while insights from interviews highlighted how many companies embraced remote work practices due to its perceived benefits amid the pandemic.

The literature review strongly supports the advantages of work with previous research. It underscores benefits such as enhanced flexibility in scheduling (Evans et al., 2004) autonomy and increased productivity (Bloom et al., 2015). These findings bolster the argument presented in this research paper and form a basis, for its conclusions.

Eurofunds study, in 2020 indicated that working remotely has had an impact on work life balance. However the research papers data from Albania suggests that remote teamwork excels in maintaining a work life balance. The study's findings align with Golden et al. (2008) research, which highlighted isolation and limited social support as challenges faced by employees in teamwork.

The research underscores that while remote work can be effective for teams in Albania communication remains an issue. Effective communication is vital for teamwork but is often hindered by technological barriers, lack of face to face interaction delayed access to information and differences in communication styles. Previous studies have also identified communication as a challenge for teams (Hambley et al. 2007).

The hindrance of communication in teamwork can be attributed to factors. Remote workers may encounter difficulties like internet connection, hardware or software issues and inadequate access, to essential tools and platforms.

Interfering with communication can have an impact, on team productivity and performance. Additionally remote teams might struggle with establishing and sustaining relationships because of the absence of in person interactions, which can result in misunderstandings and conflicts. Moreover, varying communication styles and preferences, within teams pose challenges. Individuals' diverse communication approaches may result in misinterpretations and ineffective exchanges.

The results of our research indicate that it is important for companies to focus on communication, within teams. Companies should equip employees with the technology and platforms to support effective communication and collaboration. Additionally, companies should promote the development of relationships among workers. Establish team norms and protocols to address communication difficulties. It is also beneficial for organizations to offer training and assistance to employees to enhance their communication skills and adapt to communication styles.

There are strategies that can be adopted to tackle the challenges encountered in teamwork.

To address issues related to maintaining team unity in work settings teams should prioritize communication and collaboration. Implementing team building activities, frequent meetings and setting team guidelines are essential. To combat feelings of isolation engaging in communication and networking through events online communities and mentorship can be helpful. Overcoming learning opportunities involves emphasizing skill enhancement, virtual training sessions, mentorship programs and collaborative brainstorming sessions.

In conclusion remote work presents benefits for teams in Albania. It enables team members to work from locations, which can assist organizations in attracting and retaining talent while enhancing diversity, within their teams. Remote work also offers team members flexibility and independence that can lead to work life balance and job satisfaction.

Moreover, working remotely can assist companies in cutting down expenses linked to office rentals and utilities resulting in cost reductions and enhanced profitability. Despite its advantages remote collaboration, in Albania comes with obstacles that can be overcome by adopting strategies. By giving importance to communication, teamwork, security measures, self-control building a network and enhancing skills remote teams, in Albania have the potential to establish a thriving and efficient remote work setting.

Conclusion and implications of the study

This research paper delved into exploring the status of teamwork in Albania focusing on identifying key themes and assessing strengths, weaknesses, opportunities and threats. The goal was to propose strategies to boost team performance and tackle obstacles. By using a combination of methods such, as focus group discussions, individual interviews and a cross industry survey the study acknowledged the impact of the pandemic on the rise of work in Albania. Evaluated its effects—both positive and negative—on teamwork dynamics. Key themes like team productivity, interpersonal communication, relationships among team members and balancing work life were uncovered through focus groups. Further examined in interviews.

The findings unveiled four themes that led to propositions. While remote work in Albania showed productivity levels and better work life harmony for employees as positives challenges surfaced in areas like communication and relationships where remote workers encountered difficulties with face to face interactions that could result in feelings of isolation. Moreover, fragmented communication channels were found to hinder collaboration efforts.

To combat these obstacles effectively the study suggested emphasizing communication and collaboration, within teams by utilizing new technologies conducting regular check ins and incorporating team building activities. It's important to make sure that remote employees feel connected and have chances to socialize to keep an efficient work atmosphere. This study doesn't just apply to settings. Also gives useful advice, on how to improve remote teamwork practices. It sheds light on the themes affected by teamwork helping in creating guidelines, strategies and tools for better remote work policies in various industries. Additionally, this research adds insights by emphasizing the aspects of remote teamwork pinpointing areas that need more study and suggesting directions, for future research.

In conclusion, while remote teamwork in Albania presents challenges, embracing new communication tools and promoting socialization can foster innovation and adaptation. From a managerial perspective, the research paper suggests leveraging a broader talent pool for optimal employee selection. The outcomes of this research can guide organizations in navigating the post-COVID-19 era, ensuring remote work remains a viable and productive option. Ultimately, this study fills a literature gap, serving as a foundation for future research on remote working and teamwork in Albania and beyond.

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Technology and labor market: from optimism to uncertainty

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Abstract

This work will review the relationship between technology, labor market, and inequality, in the context of the current technological revolution, defined as the era of Artificial Intelligence (AI). Our traditional understanding of the role of technology has been of its positive impact on productivity and economic growth, bringing higher incomes for labor and higher living standards for the people. However, the current technological revolution which is not confined to simple automation of production processes and rendering of services, but also to cognitive aspects of work, raises serious doubts as to the potential damaging impact on incomes of labor and further rising of inequalities which already are considered to be very high by historical standards.

This article will adopt a historical approach and discuss lessons learned going from the First Industrial Revolution to the current one, Industrial Revolution 4. We conclude by discussing challenges and opportunities of the interlinks between the current demographic trends and technological developments in the context of our local economy.

***Key words:** Industrial Revolution, automation, AI, labor market, productivity, inequality*

Introduction

Ned Ludd was a legendary British weaver who inspired a movement known in history as luddite movement, protesting against the use of new machineries in the textile industry. By employing machines, entrepreneurs replaced the work of skilled labor, who were forced to move at unskilled production processes on lower wages. It was the start of the First Industrial Revolution, a term popularized by the well-known English economic historian, Arnold Toynbee. So, the fear that technological progress will displace labor (both skilled and unskilled) creating unemployment and pressure to lower wages, is not new. The very high-profile classical economists, David Ricardo, Karl Marx, and the latter J.M. Keynes wrote extensively on technology; Keynes (1930) also coined the name “technological unemployment”.

Current developments on the AI revolution pose even more serious threats to society, not limited just to labor market. Implication run deep in terms of threats to democracy and control over human lives. The early seventeenth century English philosopher and statesman Francis Bacon, had largely argued for the possibility that scientific knowledge would help society to control the nature. But the great concern today is that technology is taking over humanity. AI is thought to have far more profound and far-reaching effects on economy and society compared to other waves of technological developments.

In their book “Power and Progress”, Acemoglu & Johnson (2023), argued that the widespread use of digital technology and AI in today’s society threatens democracy and jobs through the overuse of automation, vast data collecting, and invasive monitoring. Furthermore they emphasize that government regulation and social power, particularly trade unions, are necessary to control technology in order for it to benefit society and not cause unemployment, inequality, or poverty.

In their attempts to understand the effects of automation and other types of technological changes on labor demand, Acemoglu and Restrepo (2019), point out that automation always lowers the labor share in value added and may even lower labor demand while increasing productivity because it allows capital to replace labor in tasks it was previously engaged in. While MIT professors Brynjolfsson & McAfee (2016) write that workers are, “losing the race against the machine, a fact reflected in today’s employment statistics.

Standing at the edge of the Fourth Industrial Revolution, which will be defined by the convergence of automation, artificial intelligence, and digital technologies, we find ourselves once more facing difficult concerns regarding the nature of employment and the labor market in the future. Emerging technologies like robotics, machine learning, and the internet of things have the potential to completely transform the future of labor market. These technologies also present unmatched chances for efficiency gains and creativity.

History has demonstrated that technological advancement is not without its difficulties, though. As automation and digitalization increase, worries about lost jobs, skill gaps, and the degradation of labor rights become more pressing. Stated in these terms, technological change, particularly in the information and communications technology sector (ICT) and AI, is fueling (or about to fuel) rapid productivity growth and accompanying job loss. If allowed to go unchecked, the Fourth Industrial Revolution poses serious risks to social harmony and equality.

In this paper we are briefly exploring the complex theoretical relationship between technology and labor markets. The paper takes account of extensive working papers and research work already underway in many countries, especially in developed countries which have a higher exposure of labor market to technological change.

Therefore, this research paper seeks to answer the question: What is the relationship between productivity and jobs?

We will also explore issues related to labor productivity and implication for the income distribution between labor and capital. The government of Albania is pushing for higher wages and salaries, achieving an average wage of 900 euros. Through this analysis we will explore wider implications of meeting such a goal.

Potential impacts of ai on labor markets: a literature review

Standard thinking on the impact of technology, as developed in a simple production function, is that is that more technology improves the ratio of capital to labor (K/L), which raises the output in the economy. This raises the demand for goods and therefore the price of goods also increases. Ultimately, prices, profits, and wages also increase. However, the relationship is not an automatic one and this positive outlook on this relationship between technology and welfare has eroded as we deepen our knowledge on the subject. Even more uncertainties are in the era of AI. Given this new understating, Autor (2022) advises a darker prediction of the future race between labor and technology.

Although discussions about Artificial Intelligence (AI) have intensified in recent years, the development of Neural Networks started at the end of the 1950s and intensified with Machine Learning in the 1980s, to continue with Deep Learning at the start of the new century and the current Generative AI, a disruptive tech currently underway. AI is a General Purpose Technology which can be used across sectors of the economy and the transformation impact can be huge in terms of productivity of labor and dynamics of the labor market.

Theory highlights five channels as to how technology impacts labor¹:

1. *Direct effect*, or “displacement effect” is related to substitution of labor by machines. Usually, technological changes imply a productivity growth and change in factor inputs needed for the production of the same quantity of output. If a technology replaced work performed by humans, than labor is displaced and taken over by machines. From this perspective, technology hurts labor market and particularly the level of skilled work it substitutes. Estimates as to what proportion of jobs are expected to disappear as a result of technological change within the next 10–15 years vary considerably, between 10 and 50 per cent (Arntz et al., 2017; Frey & Osborn, 2017; OECD, 2019).
2. *Demand effect* implies that new technologies increase productivity and therefore reduce the price of output. So, demand for the goods will increase therefore increasing the demand for factors of production, including more labor. But, if this effect takes place or not, depend heavily on the pricing strategy of the firm and ultimately on the competitive structure of the market. If the market is not highly competitive, firms may continue to charge the same high prices and all productivity gains are “privatized” in the form of higher prices, or above the normal profit levels (Greenan & Guellec, 2000; Lachenmaier & Rottmann 2011).
3. *Factor reallocation* explores what happens in long terms, when all markets clear. If the demand for computers or robots increases, for example, then more workers will have to be employed in the production of computers and robots. So there will be a reallocation of engineers from other sectors to this expanding sector. And the opposite occurs when labor is displaced from some sector experiencing a positive technology shock, price of labor will decrease and labor can be employed in other sectors.
4. *Vertical effect*: impact of technology along the supply chain across the industry. For example, if a new technology reduces demand for labor in a sector which is labor intensive, demand for labor will decrease along the supply chain.

¹ For an in depth elaboration of relationship between labor and technology, see Nicoletta Corrocher, Daniele Moschella, Jacopo Staccioli, Marco Vivarelli, 2023, Innovation and the Labor Market: Theory, Evidence and Challenges, Institute of Labor Economics, IZA DP No. 16199.

5. *Horizontal effect* captures the impact of demand for an input across the competing industries, producing goods which are substitutes or complementary products.

In a paper by Korinek (2022), the author summarized the impact of the five channels in a fast food chain that employs an AI-assisted robot technology that replaces 10% of the unskilled workforce but requires additional skilled engineers to operate the technology, estimates that technology would reduce the wage bill of unskilled workers by more than \$200m while increasing the wage bill of skilled workers by more than \$100m. So there is a strong inequality impact of technology.

Given the high level of uncertainty with regard to real impact of technology, the three main topics for research try to answer three key issues: (1) AI can be labor substitute or be complementary to specific tasks and occupations, therefore creating “winners and losers” in the labor market, (2) heterogeneity degree among countries – are developing economies exposed to threats on labor market the same degree with advanced economies? And (3) exposures across demographic groups and skill levels, which can create serious income inequalities among groups of population.

As referring to the first question, that of complementarity versus substitution, a paper of Pizzinelli et al. (2023) finds that some high-skill occupational groups with high exposure to AI, such as professionals and managers, also hold the highest potential for complementarity, while clerical support occupations are highly exposed but have on average low complementarity, which means high degree of substitution of human labor by machines. This paper also finds high heterogeneity among countries, with developing economies (emerging market economies) having lower exposure than advanced economies, given that advanced economies employment structure depends heavily on high skilled workers. As to exposure across the distribution of earnings, high-income workers are more exposed to AI. “However, consistent with their generally higher educational attainment, this difference is mostly accounted for by employment in occupations with high potential complementarity. Meanwhile, employment in high-exposure but low-complementarity jobs is evenly distributed across the distribution. This result suggests that while the potential adverse impact may be more evenly spread across the income distribution, the benefits are predominantly concentrated at the top.

So, taking into account the fact that technology unquestionably affects the labor market what can be said about some predictions on the future jobs? According to Frey and Osborne (2013) findings, within the next 20 years, ICTs might replace roughly 47% of all US jobs. A more likely estimate is that only about 20% of US jobs are likely to be easily automated over the next decade or two, with about 50% being difficult to automate, and the remaining 30% extremely difficult to automate.

Based on the study of Frey and Osborne, Bowles (2014) analyzed the impact of technology on future jobs for the European Union countries and concluded that within the next decade 47-60% of the EU workforce will lose their job due to ICTs.

A study from Atalay et al (2018) finds that new technologies result in an increase in occupations’ nonroutine analytic task content, relative to other tasks. Because new technologies increase the demand for nonroutine analytic tasks, the introduction of ICTs has (for the most part) led to an increase in income inequality. More recent work has argued that information technology complements high skilled workers performing abstract tasks and substitutes for middle-skilled workers performing routine tasks.

Methodology

Through a stochastic frontier methodology, we explored the interlinkages between labor and capital with sector productivity. The estimation assumes that inputs are combined through a Cob-Douglas production technology to produce output. The optimal output level that can be made given inputs, labor, and capital (or investments) is called the production possibility frontier (PPF).

$$Output_{it} = A * Labour_{it}^{\beta_1} * Capital_{it}^{\beta_2} + v_{it} + \varepsilon_{it} \quad (1)$$

The production possibility frontier was estimated using data from Enterprise Survey (2019-2022) where output was production (in million Lek), labor was measured by expenses of the company on employees (including wage, social insurance, and other expenses on staff), the capital was measured by total investments (depreciated and in million Lek). Data were provided at the sectorial level for the time frame 2019-2022. The stochastic frontier estimations were performed using the Maximum Likelihood method with panel data. This estimation generates β 's and the maximal expected output.

Using the inverse Shepard output efficiency formula, the relative loss in output due to inefficiency is given by the stochastic term v_{it} .

$$D_0(x^0, y^0) = \frac{Actual\ Output}{Maximal\ Expected\ Output} = v_{it} \quad (2)$$

After the PPF is estimated, actual production data are compared with the frontier, and the distance of real data from the PPF determines the sector efficiency (or inefficiency). If sectors are found to be at a lower production level than the optimal, there is space for efficiency gain improving the productivity of resources or resource allocation..

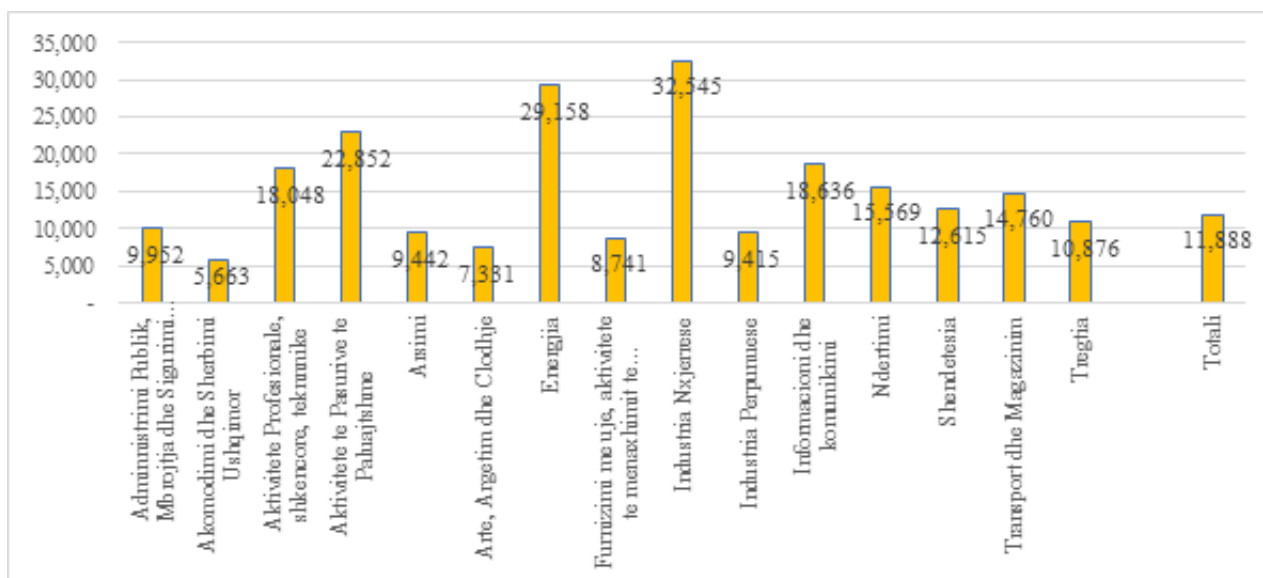
Results and discussion

What about technology and productivity in Albania: some preliminary thoughts.

Technology and productivity in Albania are subjects of growing interest as the country seeks to modernize its economy and improve its competitiveness. However, the low productivity of the Albanian economy is mirrored in the low competitiveness of the economy, low attraction of foreign investments, and modest economic resilience to negative shocks. As a result, Albania scores poorly in the competitiveness index, especially in the dimensions related to business sophistication, organizational culture, or research and development. According to Xhepa and Liperi (2021) businesses seem to be stuck in a low productivity trap, which needs to be addressed carefully as part of the structural reforms.

The national survey on enterprises provides data on the sectorial level. We used the sectorial value-added and number of employers at year-end to estimate labor productivity as the value-added created per employee. The average values created per employee for the period 2019-2022 amount to 11,888 Euro/Year. Traditional sectors and the public sector have a productivity similar nearly to the national average. Sectors such as construction, processing industry, transport, trade, accommodation, and food industry (tourism included) have a value-added per employee around the national average. Sectors with the highest labor productivity (measured as value added per employee) are extractive industries, energy, professional services, real estate sector followed by the ICT sector, (see figure 1).

FIGURE 1: Average Labour Productivity per Employee (in Euro, Annual 2019-2022)

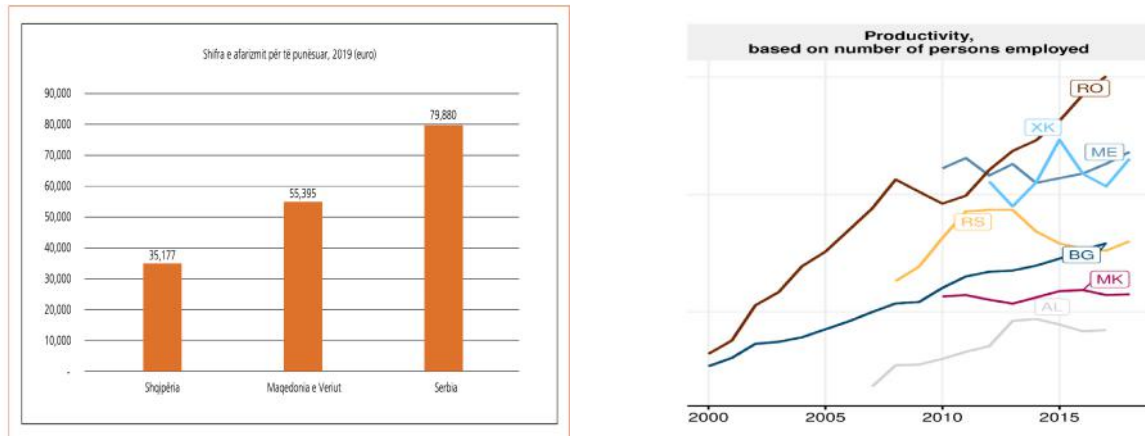


Source: Enterprise Survey (ASN) and IC own calculations.

The dynamics of labor productivity, measured as the average growth rate of value-added created per employee during 2019-2022, shows that on average labor productivity among all sectors has increased by 11%. Sectors that have high productivity in value, show a slowdown in productivity. Energy and ICT sector and construction are among the sectors with a noticeable slowdown of productivity. Among the fastest-growing productivity sectors are accommodation and food (tourism), processing and extracting industry followed by the recreation and entertainment sector.

Previous research does confirm the low productivity of labor comparably to the regional economies of Albania. Labour productivity measured as the ratio of the total output to the number of people employed is half that of other economies in the region (e.g Serbia and Montenegro) and even lower if compared to Bulgaria or Croatia (see figure 2)

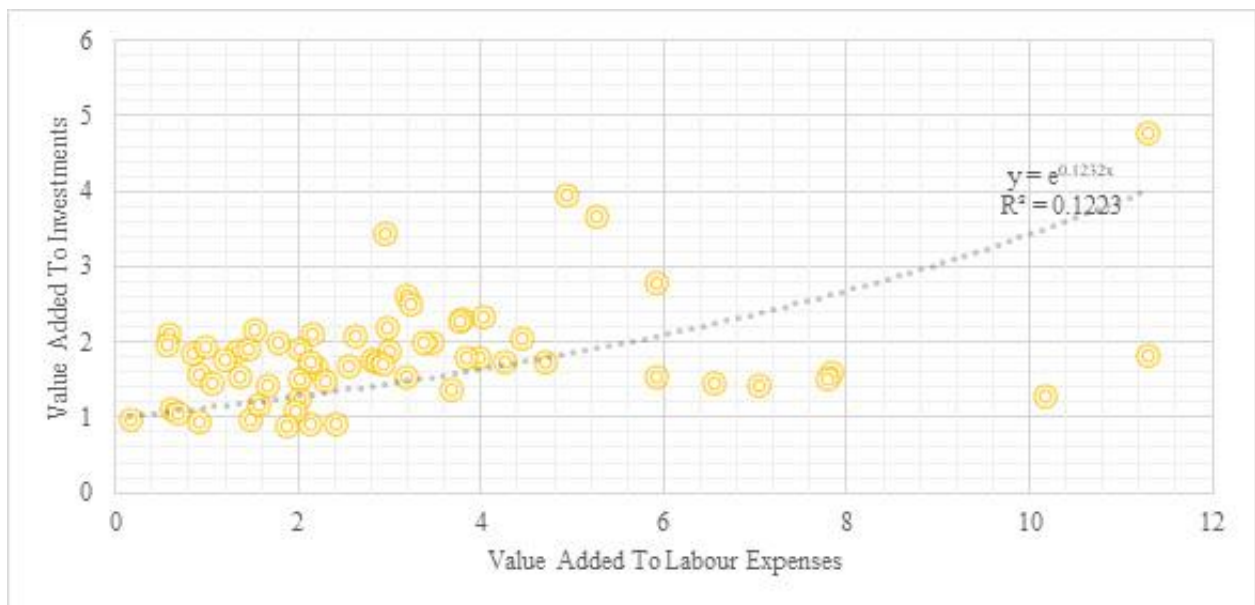
FIGURE 2: Labour productivity compared to regional economies



Source: WiiW Productivity of Western Balkan Countries and Xhepa and Liperi (2022)

Also referring to the data from the National Survey on Enterprise we examined the variation of value added to investment ratio against value added to labor. We found that there is a positive correlation between investment productivity to labour productivity (correlation coefficient 0.37).

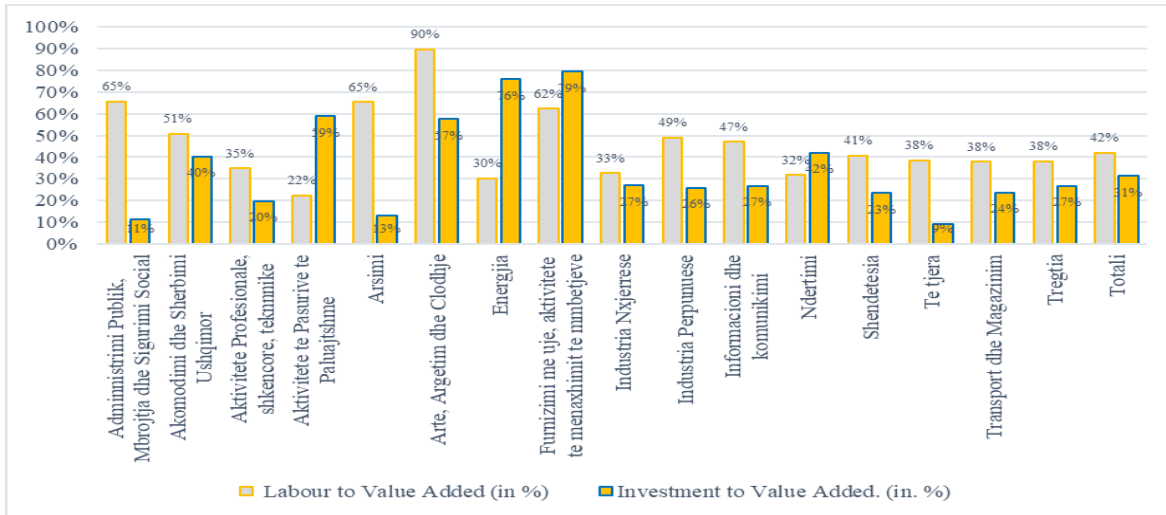
FIGURE 3: Labour productivity vs. Investment Productivity (2019-2022)



Source: Enterprise Survey (ASN) and IC own calculations.

The data confirm that our economy is based more on labor. At the national level share of labor cost to value added is 42%, and capital (investments) is 31%.

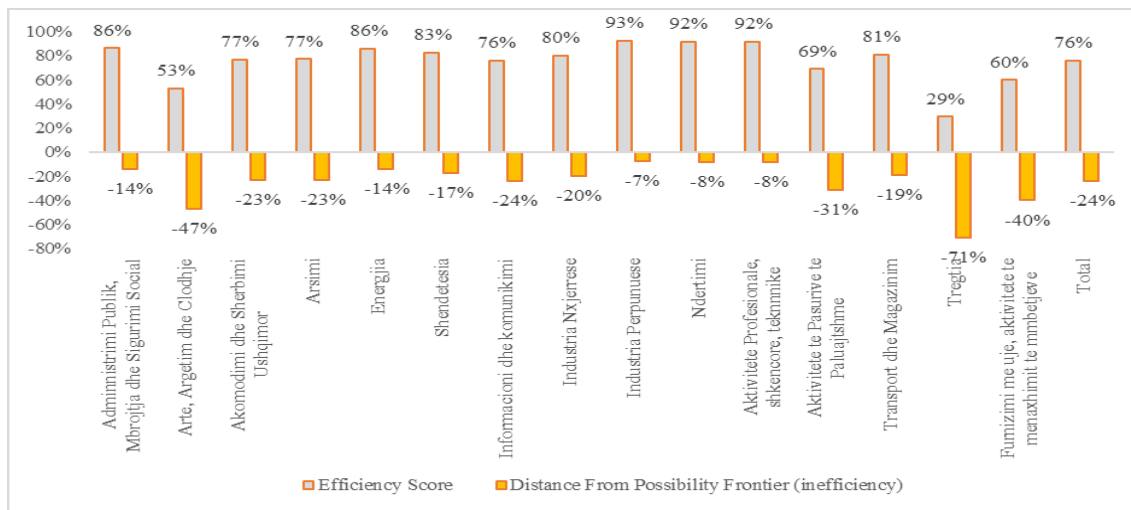
FIGURE 4: Share of labor and capital (investments) in value-added (average 2019-2022)



Source: Enterprise Survey (ASN) and IC own calculations.

To explore further how inter-linkages between labor and capital affect sector productivity we estimated the production possibility frontier using stochastic frontier methodology. The estimation assumes that inputs are combined through a cob-Douglas production technology to produce output. The optimal output level that can be reached given inputs (inputs, labour, and capital) is called the production possibility frontier (PPF). After the PPF is estimated, actual production data are compared with the frontier, and the distance of real data from the PPF determines the sector efficiency (or inefficiency). If sectors are found to be at a lower production level than the optimal, there is space for efficiency gain improving the productivity of resources or resource allocation.

FIGURE 5: Sectorial Efficiency and Inefficiency Score - Stochastic Frontier Estimations



Source: Enterprise Survey (ASN) and IC own calculations.

Results show that at the national level, the efficiency is lower than optimal, and the inefficiency of the national economy is 24%. Combining resources (materials, labour, and capital) is a more productive way that will enable the economy to produce 24% more output with the same resources. Addressing the issue of productivity remains of crucial importance to correct this inefficiency and generate growth.

Sectors that have reached closer to the production possibility frontier are the processing industry (93%), construction (92%), and professional services followed by energy. The sector that is low at value creation and as a result very inefficient is trade, water, and waste management followed by the entertainment and recreation sector and real estate sector. The tourism sector, ICT and extractive industries in-inefficiencies are close to the national level and they could improve their output level through productivity by at least 20%.

Conclusions and recommendations

Technological advancements, particularly in automation and artificial intelligence (AI), are transforming the labor market. The impact of technology on jobs is multifaceted, presenting both challenges and opportunities. By proactively addressing skill gaps, investing in education, strengthening social safety nets, and fostering inclusive economic policies, we can ensure that the workforce is prepared for the future and that the benefits of technological progress are shared broadly across society.

In the Albanian case the dispersion of productivity within sectors, among sectors at the national level, and compared with competitors from the EU and regional economies remains key to addressing the challenge of productivity and competitiveness of the economy. Some positive experiences exist so we have to capitalize on them.

On the other side based on the data appears a group of sectors with very low efficiency, to which we believe the structural adjustment toward optimum resource engagement would be the sole measure toward the improvement of productivity and efficiency. Beyond this, there is a strong and emergent need to raise awareness among local businesses on the importance of innovation and R&D as ways to address low productivity and lack of competitiveness. Maintaining a stable path of investments in R&D and innovation is crucial to the competitiveness, and productivity of firms and sectors.

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Assessment of Digitalization's Impact to Bank's Performance

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Abstract

The purpose of this paper is to measure the impact of banks digitalization to the performance of banking institutions, by finding relevant evidence in the Albanian banking sector.

Secondary data regarding such variables as ATM transactions, cashless payments, home banking, and bank performance metrics such as ROA will be used to inquire about 11 commercial banks operating in Albania.

There will be used descriptive and inferential statistics to conduct the relevant analysis, together with Multiple Linear Regression to evaluate the effect of these independent variables to the performance of banks using return on asset (ROA) as a dependent variable.

The expected findings will summarise if ROA is positively and significantly impacted by the digitalization of the banking sector in Albania. And based on the findings, the derived recommendations will consist of stimulating banks' efforts toward the digitalization of their operations to get to a higher performance as their outcome.

Keywords: Banks, Digitalization, Performance, ROA, Albania.

Introduction

Several industries have undergone radical change due to the advent of digitalization, with the banking industry leading the way. Digitalization in the banking sector refers to the adoption and integration of digital technologies to transform traditional banking processes and services. Accordingly, the first studies regarding integrating digital tools into banking operational and business models were published in the 1990s and concentrated on enhancing the assessment of the banks' financial performance following innovations in information technology investments or integration. Since then, global banking has seen enormous transformation as a result of the technology's quick development.

Technological developments in recent years have allowed banks to remain competitive in an increasingly digital environment while improving customer experience and operational efficiency. Digitalization, which includes implementing different digital tactics and technology, has emerged as a major force behind transformation in the banking sector, redefining conventional banking procedures and reshaping its environment.

The term „digitalization” in the banking sector describes how the use of digital technologies has changed the way that conventional banking services, procedures, and operations are conducted. Numerous causes, such as shifting consumer tastes, technological advancements, regulatory restrictions, and competition from non-traditional financial service providers, have contributed to this development. In recent years, the number and popularity of digital banks have increased and more and more people worldwide resorting to digital services offered by banking sector for their financial needs.

However, the increasing rate of digitalization presents banks with both opportunities and challenges. Digitalization presents banks with several chances for growth and innovation, but it also presents challenges, such as handling complicated regulatory requirements, dealing with cybersecurity threats, and adjusting to quickly evolving technological environments. According to *S&P Global Market Intelligence (2022)*, in several nations, bank branch closure records are being driven by efforts to reduce costs and accelerate digitalization.

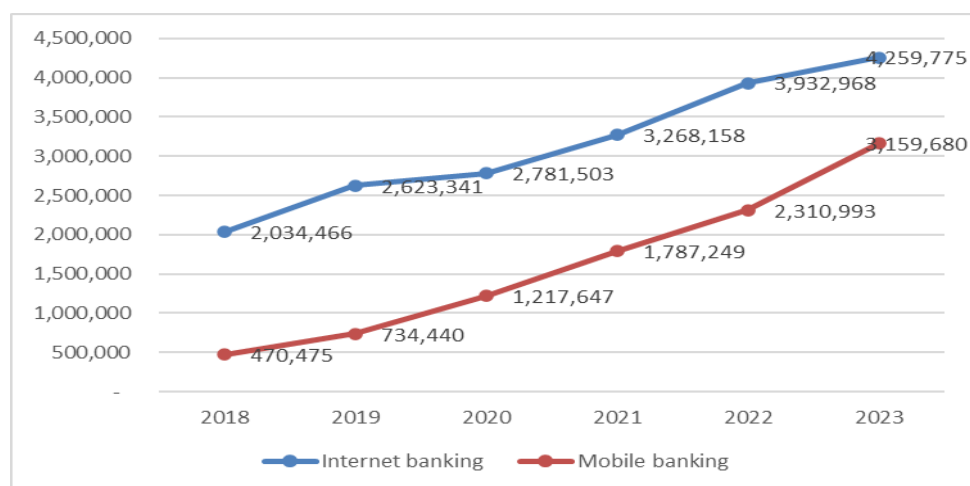
Nevertheless, nowadays digitalization in the banking sector is essential; it is no longer an option but rather a need. Furthermore, the banking industry's digital transformation is beneficial to society's overall digital transformation. According to Carbó-Valverde et al. (2020), there is a greater likelihood of people transitioning to digital channels for financial transactions.

Considering these developments, it is important to assess the impact of digitalization on bank performance. For banking institutions to optimize their digital strategies, manage their resources effectively, and maintain their competitive edge, they must understand how digitalization initiatives impact crucial performance metrics like profitability, operational effectiveness, customer satisfaction, and risk management.

The Banking sector in Albania in the last few years has moved from a low-tech environment to a high-tech one (digital/online banking), and nearly all banks are currently involved in some aspect of the digital transformation. According to the Albanian Association of Banks (AAB) actuality, all commercial bank provides online banking and all of them also offer mobile banking. Albania's digital banking infrastructure is getting closer to more developed European countries.

Banks' reports on payment instruments show a continuous increase in card payments, electronic money payments, as well as home banking payments. The total value of card transactions for 2023 increased by 35% compared to one year ago (*Bank of Albania, 2024*). Referring to *Figure 1*, a significant increase in the number of transactions made both using internet banking and mobile banking is observed.

FIGURE 1: Number of transactions using Internet banking and Mobile banking FROM 2018-2023



Source: Central Bank of Albania (Feb, 2024)

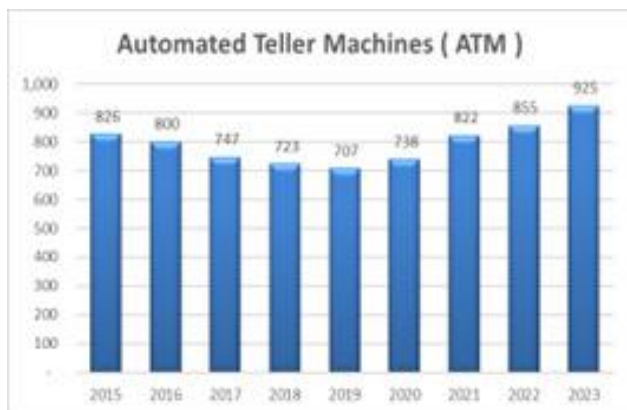
Considering that Internet banking was the only available online banking option from 2008 to 2010, this can be seen as an encouraging result. Also, the data shows that Payments made using mobile banking are less common than those made through online banking.

Internet banking, mobile banking, and most recently, mobile payments, are the ways that electronic retail banking technology has been deployed in Albania. The ATM and point-of-sale (POS) are the most frequently utilized e-banking services provided by banks.

Following their trend development, according to the study's findings of *Braimllari & Mezini (2018)* the spread of POS terminals and ATMs has reached a certain level of maturity in Albania.

The banking system's use of electronic money transfers has also increased recently, although their overall value is still rather low (*Annual Report 2022, BOA*). The fact that more people than businesses utilize electronic money or card payments - 94.7% of people versus 5.3% of businesses - indicates that people have embraced the advances provided by the banking industry more than businesses have (*Annual Report 2022, BOA*).

FIGURE 2: ATM development from 2015 to 2023



Source: Central Bank of Albania (Feb, 2024)

FIGURE 3: POS terminal development from 2004 to 2023



Source: Central Bank of Albania (Feb, 2024)

According to the same report, even though cash transactions carried out by customers have marked a decrease in number during the last 2 years, the prevalence of cash in the Albanian economy continues to be a prominent phenomenon, resulting in significant expenses for different stakeholders and the economy at large.

With assets of around 1800 billion ALL or roughly 90% of all financial assets, the banking industry holds the largest position in Albania’s financial system (*Bank of Albania, 2022*).

Because there are no capital markets, the banking sector’s position in the Albanian economy is even more significant than in more developed ones. Increased social adoption of banking services is crucial for increased financial inclusion as well as for decreasing informality, fostering fair competition amongst market players, and boosting state budget revenues.

Consequently, it is important to look into how commercial banks’ digital transformation impacts their profitability. As far as we know, there has been no quantitative study evaluating digital transformation’s impact on profitability in the Albanian banking sector. Therefore, this study aims to address the following research question:

How digitalization has impacted the banking sector’s financial performance in Albania?

Our investigation of this topic aims to provide an in-depth analysis of the dynamics of digitalization in the banking sector and to provide informative insights to bank management, researchers, regulators, and other interested parties who are wondering how the digital revolution will impact the banking industry.

Literature review

All over the world the pandemic and lockdown altered how customers made purchases and satisfied their needs and desires, and the banking sector also saw significant advancements in the delivery of digital services.

Numerous research works have examined how digitalization affects banks’ operations. Digital technology, according to *Dannenbergh and Kellner (1998)*, can make commercial banks more competitive. *Mbama et al.’s (2018)* study examined the relationship between digitalization, customer loyalty, and UK banks’ financial performance. It concluded that digitalization could enhance financial ratios and have a favorable effect on customer loyalty. According to *Kanungo and Gupta (2021)*, digitalization can stimulate the financial performance of the banking sector. In their study, *Do et. al. (2022)* aimed to assess the various sizes of the influence of digital transformation on the performance of Vietnamese commercial banks. They concluded that the performance of Vietnamese commercial banks has benefited from the digital transformation. Furthermore, the positive impact of digital transformation on bank performance increases with bank size.

Bousrih (2023) in a study on the impact of digitalization in the banking sector for 24 fintech countries, concluded that there is a strong positive association between banks’ return on assets (ROA) and cashless payments, suggesting that the digitalization of banking positively impacts the financial performance of a bank.

According to the study of *Theiri and Hadoussa (2024)*, digital transformation of Tunisian banks seems impacting return on equity and return on assets, two key indicators of financial performance. More specifically they claim that banks do better when they invest in digital channels, payment systems, and internet security. Also, *Proença & Dias (2020)* in their study demonstrated that the innovation of banking services and products has a significant impact on banks’ performance. Banks’ return on equity (ROE) and return on assets (ROA) will increase with the usage of digital transactions.

However, contradictory results were obtained from several studies. According to *Niemand et al. (2021)*, the degree of digitalization of the bank itself might not have a direct impact on profitability, but it might have an impact on other banking activity metrics. *Siam (2006)*, evaluated the impact of digital banking services on bank earnings in Jordan. The impact of digital banking services on bank profitability is shown to be negative in the near term but favorable in the long run due to the costs and investments banks have to make in setting up technological and electronic infrastructure and training workers.

In an effort to find evidence of a connection between the use of digital banking services by clients and profitability metrics such as ROA and ROE, *Akhisar, and Tunay (2015)* conducted research utilizing data from 23 developed and developing nations. Based on their findings, there was no significant correlation between profitability and the utilization of electronic banking services. According to research findings of the *Nguyen-Thi-Huong, L. et.al (2023)*, banks' performance is negatively impacted by digital transformation (as measured by return on equity and return on assets). Additionally, the study discovered a paradoxical scenario in which COVID-19 raised bank profits.

Overall, there is a complex and context-dependent relationship between banking digitalization and financial performance, with divergent conclusions from various studies. The financial performance of a bank is affected by banking digitalization in many ways. As shown above, according to some research, banks' performance as indicated by return on equity and return on assets is negatively impacted by digital transformation. On the other hand, other research suggests that digital transformation improves financial performance by bringing about greater profitability, stability, and transparency. Therefore, studying how digitalization affects the banking industry's profitability in the Albanian context would be useful.

Research methodology

The main aim of this research paper is to measure the impact of digitalization on the performance of banking institutions in the Albanian case. Given that the Albanian case lacks an indicator to measure the level of digitalization in the banking industry we are focused on the impact of different banking channels or technologies on bank's profitability (ROA) in the Albanian banking system. We used a multiple linear regression model to evaluate the relationship between financial innovations (e-banking) and bank's financial performance (ROA). The independent variables were; ATM Transactions, Cashless Payments, and Home Banking as proxies to represent digital banking services, while the dependent variable was Return on Assets (ROA) as a proxy to evaluate the bank's performance.

The multiple linear regression models' general form of the equation is as follows:

$$ROA_t = \beta_0 + \beta_1 ATM_{it} + \beta_2 CP_t + \beta_3 HB_t + \varepsilon \quad (1)$$

Where:

- ROA - Return on Assets at t period as a measure of financial performance of the commercial banks in Albania.
- ATM_t - ATM transactions of the commercial banks at t period.
- CP_t - Cashless payments (payments with bank cards) for the commercial banks at t period.
- HB_t - Home banking transactions of the commercial banks at t period.
- β coefficient - measures the impact of the corresponding independent variables on bank performance.
- ε - The error term captures unexplained variation in bank performance not accounted for by the independent variables.

Secondary time series data from 2014 to 2023 (*Bank of Albania, 2024*) were used.

Data analysis and research findings

The empirical results of the model are presented in *Table 1*:

TABLE 1. Model summary

SUMMARY OUTPUT	
Regression Statistics	
Multiple R	0.790724
R Square	0.625244
Adjusted R Square	0.437867
Standard Error	3.023149
Observations	10

Source: Author's computation

With an adjusted R square of 0.437867, the independent factors account for 43.7% of the variation in the dependent variable. This indicates that 43.7% of the fluctuations in the financial performance of the Albanian banking industry were related to ATM transactions, cashless payments, and home banking.

TABLE 2. Analysis of the variance

ANOVA					
	df	SS	MS	F	Sig. F
Regression	3	91.48968	30.49656	3.336813	0.009749946
Residual	6	54.83657	9.139428		
Total	9	146.3263			

Source: Author's computation

The results of the analysis of variance (ANOVA) are displayed in *Table 2*. The findings suggest that there is a noteworthy correlation between financial performance and ATM transactions, cashless payments, and home banking. A p-value of the F statistic lower than 0.05 level of significance was used to illustrate this. This suggests that in predicting the financial performance of Albania's banking industry, the independent factors taken as a whole appear to be statistically significant.

TABLE 3. Model summary

	Coefficients	St. Error	t Stat	P-value
Intercept	12.1083	10.01072	1.20953	0.27195
ATM transactions	0.000187	8.89E-05	2.099183	0.080569
Cashless payments	0.00017	7.03E-05	-2.40466	0.052958
Home Banking	-9.3E-06	1.05E-05	-0.87991	0.412757

Source: Author's computation

The regression coefficients are displayed in the illustration up above, *Table 3*. Accordingly, home banking (p-value=0.4) is not statistically significant and negative for the time under consideration, whereas ATM transactions (p-value =0.08) and cashless payments (p-value =0.05) are statistically significant in forecasting performance in the banking sector.

In addition, it is reasonable to conclude that the rise in ATM and cashless payments (or bank card) transactions has improved the banking industry's performance nevertheless, with very little effect. By increasing customer satisfaction, diversifying offerings, and raising standards of quality, electronic banking services can expand a bank's customer base and profitability. According to the aforementioned results, performance rises by 12.1083 units while all other factors remain constant.

The regression equation takes the form:

$$ROA = 12.1083 + 0.000187ATMT + 0.00017CP \quad (2)$$

From the regression equation (2) we can estimate that as ATM transactions increase by 1 unit, ROA increases by 0.000187 units; as cashless payments increase by 1 unit, ROA increases by 0.00017 units, if all other independent variables in the model are held constant.

Conclusions and recommendations

The banking sector is growing increasingly digital, which is good for the economy as a whole as well as the banking sector's expansion. Consumers now have another method of accessing financial transactions thanks to the new channels like websites and mobile apps, which have been made possible by the rise of internet and smartphone penetration. These days, being digitalized is a need for the banking industry rather than an option, therefore Albanian banks should significantly encourage and invest in this path.

However, the study's results indicate that the performance of Albania's banking industry has not been significantly impacted by digital technology, and as a consequence, *digital technology has had a small impact on the banking sector's performance*. Despite the bank innovations being in existence for almost a decade in the country, there is a lot that needs to be done in order to improve the service's performance. In addition, the bank's profitability could be enhanced by e-banking services, thus more should be done to maximize the sector's overall benefits.

All commercial banks provide online banking and all of them also offer mobile banking. Albania's digital banking infrastructure is getting closer to more developed European countries.

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PANEL II

**TECH FRONTIERS: NAVIGATING
THE NEW PARADIGM IN LAW,
POLITICS, AND INTERNATIONAL
RELATIONS**

The complexity of online disinformation and awareness for digital media literacy

Abla XHAFERI

Abstract

In today's digital age, the proliferation of social media platforms and the ease of sharing information have transformed the way people consume news and interact with society. While these advances have undoubtedly brought many benefits, they have also brought a new challenge: the spread of misinformation online. This article explores the current social topic of online misinformation and highlights the urgent need for digital media education as a tool to navigate the complexities of this phenomenon. It examines the impact of online misinformation on individuals, communities and democracies, while emphasizing the role of education and media literacy in empowering individuals to critically evaluate information and make informed decisions. The article closes with conclusions and recommendations for policymakers, educators, and individuals to promote digital media literacy and combat the spread of misinformation online.

Keywords: social media, online disinformation, misinformation, media literacy, media education, digital citizenship

Introduction

Social media has created much greater opportunities to communicate and share information. As E. Scherer (2012) points out, for this reason people are abandoning traditional media, exchanging information with each other through social networks, saying and sharing what they know. According to J. V. Pavlik (2001), the Internet has exceeded the capabilities of these media and offers opportunities to create a feeling of involvement and direct influence of the user in his actions, to adapt and present a certain content in a personalized way, taking into account the preferences, interests, behavior and history of his actions and to provide a certain source of information or service only when the user actively requests it and at the moment he wants it.

Online platforms offer space even to people who do not belong to the field of journalism, to produce journalistic materials, including news, and are followed by many users. The diversity of these communication platforms and the distribution of material and information through "trust networks" (networks of people who exchange information online based on mutual trust) have led to the increasing spread of inaccurate, false, malicious material and fake news. fake and disinformation (UNESCO 2020).

In recent years, the prevalence of fake news and disinformation online has grown exponentially, posing a significant challenge to society. Online platforms have become the basis for the spread of disinformation, conspiracy theories and propaganda, which are often intentional and are the logical result of five features of the digital media ecology: the financial decline of legacy news, the instantaneous growth of the news cycle, the speed of the circulation of misinformation and disinformation, the increasingly emotional nature of online discourse and the growing number of financial beneficiaries. (V. Bakir and A. McStay (2018).

Users of these platforms share images, messages, videos and events, which they consider newsworthy (R. Jewitt 2009), trusting their publishers (C. Silverman and J. Singer -Vine 2016). This has far-reaching consequences, including erosion of trust, polarization and threats to democratic processes. The producer of false information often aims to misinform (C. Edson et

al. 2018). Misinformation is simply inaccurate news coverage, possibly by accident. (D. A. Scheufele & N. M. Krause, 2019). An inaccurate or misleading article may be misinformation or disinformation, but in this case the intention of the communicator remains difficult to determine (C. Wardle & H. Derakhshan 2018). Simply labeling suspect or incorrect information from social networks is not always effective (Clayton et al., 2020). Two of the main motives for the spread of false information are the economic aspect and the ideological aspect. (H. Allcott and M. Gentzkow 2017).

Disinformation is the dissemination of harmful information. (C. Wardle, 2017). It has the potential to shape public opinion, influence political beliefs (A. J. Berinsky 2017) and fuel social divisions. The rapid spread of false narratives can reinforce existing prejudices, deepen social divisions and undermine social cohesion. Furthermore, the manipulation of information can erode trust in institutions, including the media, and create fertile ground for the erosion of democratic values. Understanding the impact of online disinformation is essential to understanding the urgency of addressing this issue.

Digital media literature and its role

Digital media knowledge plays a vital role in equipping individuals with the skills needed to navigate the complex digital landscape. They empower individuals to critically evaluate sources of information, distinguish fact from fiction, and recognize potential biases. Digital media knowledge encompasses a range of competencies, including information literacy, media production skills, and the ability to engage in responsible digital citizenship. By fostering these skills, individuals are better equipped to make informed decisions and resist the lure of disinformation online.

Digital media literature consists of all literary and multimedia materials produced for distribution, consumption and sharing in the digital environment. Unlike traditional literature, digital media literature has its own unique features, such as hypermedia, that allows users to explore and connect with content interactively. Users can click on links, navigate through pages, complete different levels of events, and create different literary experiences, making reading more interactive and engaging.

Digital media literature has changed and evolved greatly in recent years, offering a wide spectrum of possibilities for authors and their readers. It is an interesting field of study that reflects the impact of technology on the way we create and distribute creative works. C. E. Werts (2008), distinguishes between digital and media literature. After selecting from many definitions, for digital literature she states: "Digital literacy is more than just the technical ability to properly operate digital devices; it includes a variety of cognitive skills used in the execution of tasks in digital environments, such as surfing the web, deciphering user interfaces, working with databases and chatting in chat rooms" (p. 6), while for media literature he writes that it "provides a framework for accessing, analyzing, evaluating and creating messages in various forms - from print to online video. Media literacy builds an understanding of the media's role in society, as well as the essential skills of inquiry and self-expression needed by citizens of a democracy" (Ibid).

The role of digital media literature is different and important in the age of information and technology. Digital media literature serves to transmit information, news, analysis and reports quickly and easily; can affect the emotions and feelings of the audience; allows different voices and perspectives to be raised; can bring people together in forums, social networking groups and other digital platforms to share thoughts and ideas; has opened the way for new artistic formats and creative expression; has brought new opportunities for literary analysis and criticism; has brought about a major change in the way people learn and acquire knowledge; has played an important role in the dissemination of political ideologies and their influence on public opinion; it has a great impact on the formation of people's cultural identity and has brought about an increase in cooperation and interaction at the global level.

Media literature has also transformed the way we read, write and use literary works. It creates new opportunities for authors and artists to experiment with different forms of creativity and to connect more widely with their audience. Changes in technology and the use of digital media continue to influence this field, making it increasingly dynamic and innovative.

Media literacy and its importance, promotion and encouragement to acquire it

The concept of media literacy was defined at the National Leadership Conference on Media Literacy (1992) in Aspen, USA. News and media literacy has been broadly defined as "the ability to access, analyze, evaluate and create messages in various forms. (P. Aufderheide 1992). Media literacy develops the skills to access media, understand, explain, evaluate and create media content.

The concept of media literacy, like literacy itself, has long been controversial (C. Luke, 1989). This concept has had different contestations, and as a result, also different definitions. Definitions currently range from the tautological (computer literacy is the ability to use computers) to the extremely idealistic: shorthand for cultural ideals as eclectic as economic development, personal fulfillment, and individual moral strength (S. Livingstone 2004). Alternative definitions come from different disciplinary and theoretical frameworks, which operate in different cultural contexts, changing with media developments. (R. Penman and S. Turnbull, 2007).

Today, media literacy is emerging in a new form, called computer literacy or Internet literacy. Whether this form is truly 'new' and whether it is appropriately labeled 'education' is the subject of a range of academic, political, community and public debates (S. Livingstone (2004).

B. Bachmair and C. Bazalgette (2007) write: “Media literacy continues to be a recognized term that includes a broad portfolio of skills, knowledge and understanding related to modern communication media” (p. 82).

There is a wider consensus on the importance of media literacy as a tool to develop skills for information analysis, evolution and communication in all forms.

Integrating media literacy education into school curricula can equip pupils and students with the critical thinking skills needed to navigate the digital landscape. This includes teaching them how to evaluate information sources, identify disinformation and engage in respectful dialogue online. Schools can partner with media education organizations and experts to develop comprehensive programs that address the challenges of online disinformation.

Digital media literacy skills must be constantly updated and adapted as the online landscape evolves. This requires ongoing research, training and collaboration between researchers, educators, policy makers and technology experts. P. Aufderheide’s (1992) report to the National Leadership Conference on Media Literacy (1992) notes: “Emphasis in media literacy training range widely, including informed citizenship, aesthetic appreciation and expression, advocacy social, self-esteem and consumer competence. The range of accents will expand as literacy increases.” (p. 9)

Continuous learning ensures that individuals are equipped with the most up-to-date tools and knowledge to navigate the ever-changing challenges posed by online disinformation. Educational institutions should integrate media education into their curricula from an early age. This includes teaching about developing critical thinking skills, information verification techniques and responsible digital citizenship. Educators should collaborate with media education experts to use effective and engaging teaching materials and methods.

Continued research and innovation in the field of digital media literacy is essential to keep pace with emerging technologies and information ecosystems. Funding agencies and academic institutions should allocate resources to support research that examines the effectiveness of media literacy interventions, explores new strategies to combat online disinformation, and identifies emerging challenges and trends.

Policymakers can play a crucial role in promoting and educating media literacy in schools, developing regulations to curb the spread of disinformation, and promoting transparency on online platforms. Educators can integrate media literacy into curricula by teaching students how to critically evaluate sources, fact-check information, and engage in respectful discourse online. Finally, individuals must take personal responsibility by being vigilant consumers of information, questioning sources, and sharing content responsibly.

Promotion of digital media education

In one of the recommendations of the Parliamentary Assembly of the Council of Europe, this definition is given: “Media education can be defined as teaching practice that aims to develop media competence, understood as a critical and distinctive attitude towards the media in order to form well-balanced citizens, able to make their own judgments based on available information. It enables them to access the necessary information, analyze it and be able to identify the economic, political, social and/or cultural interests behind it. Media education teaches individuals to interpret and produce messages, to choose the most suitable media for communication and, ultimately, to have a greater role in the media supply and product” (Council of Europe 2016, p. 78). This type of education aims at learning about media with the aim of providing young people with knowledge, developing their critical understanding and active participation, enabling them to interpret and make informed judgments as media consumers, to become media producers in their own way, thus becoming more powerful participants in society.

Media education aims to develop critical and creative skills of young people (D. Buckingham, 2001). This education should be promoted as the tool that develops people’s skills to protect themselves from the undesirable effects of the media (R. Penman and S. Turnbull, 2007). Through this education, individuals learn to identify sources and analyze content based on the criteria of authenticity, objectivity and impact.

Media education informs individuals about media manipulation techniques, making them more aware of covert advertising, fake news, and other interventions that may have different goals. Media education promotes the ability to express oneself through media. Individuals learn to produce their own content, such as videos, articles, blogs, podcasts, using technology in innovative and creative ways. Through media education, people learn about the influence of media on society and culture. They develop knowledge on important social issues, such as media and cultural diversity, media ethics and the influence of the media on politics and public opinion; learn to understand and respect the diversity of different opinions, beliefs and attitudes. This helps to develop a more open and prepared society for dialogue and cooperation.

Media literacy helps develop the skills needed to filter, organize and process information in a productive way. This helps broaden the knowledge and skills used in a wide range of disciplines and situations. Recent studies assess it as an important resource for fulfilling the promise of digital citizenship (H. Martens, R. Hobbs 2013).

In addition to media content analysis, media literacy emphasizes ethics and responsibility for shared information. Individuals learn to recognize the difference between freedom of expression and weak influence and understand the weight of their words and actions in the virtual and real world.

Media education proclaims the importance of using technology in a reasonable and productive way. This includes managing time online, balancing media use and other activities, and using technology to achieve positive goals.

Media skills are an attractive asset for many jobs and other fields. Media literacy helps individuals advance in their careers and use technologies to achieve personal and professional goals.

In conclusion, education and media literacy have a vital role in empowering individuals in a world dominated by media and information. This type of education helps to form a more critical, conscious and powerful society, which is able to deal with the challenges and opportunities of the information age. In an improved way, education and media literacy should become an integral part of the education system to prepare a powerful and informed generation.

The impact of disinformation on the internet, addressing and fighting to prevent it

The impact of disinformation online can be very damaging and widespread. Disinformation is the dissemination of false, manipulated or distorted information in order to influence people's thoughts, beliefs and behaviour. This impact can occur in many ways and with different consequences:

Disinformation can significantly influence the thoughts and behaviors of individuals. When people come into contact with false information, they can make wrong decisions and base false understandings of the world. This can influence personal decisions as well as their beliefs about various issues, including health, politics and more.

Disinformation can cause tension and conflict in communities. When false information is spread about different ethnic, religious or other groups, it can escalate hatred and division. One such example is the spread of false stereotypes that can damage relations between different groups and cause conflicts.

Nowadays, the Internet and social networks are important channels for communication and information. Disinformation can manipulate public opinion and influence democratic processes, including elections. The use of disinformation to spread false news about politicians, political platforms or various political issues can lead to false votes and damage the integrity of democratic processes.

Addressing the problem of incorrect information and disinformation online in a more active way is done through the development of an internal approach to control the news consumption habits of individuals. This term means knowledge of how news is produced and consumed and useful skills in exercising control over these processes (E. K. Vraga et al., 2021).

Addressing disinformation online requires a multifaceted approach involving policymakers, technology companies, independent organizations, educators, individuals and international bodies. Partnerships and collaborative initiatives can lead to the development of comprehensive approaches and best practices for addressing disinformation online. Sharing knowledge, resources and experiences can increase the collective impact of efforts to promote digital media literacy.

Scientists and educators have identified helpful behaviors and attitudes to combat misinformation and disinformation online. A simple but effective technique for users is to read a story before sharing it based on the headline alone. This limits the spread of disinformation and challenges individuals to contemplate information before promoting it, but requires a higher degree of cognitive processing (L. Wang & S. R. Fussell, 2020).

Efforts to combat fake news are mainly focused on three types of solutions (N. Mele et al. 2017), which are related to three different actors: the information provider (the information provider approach emphasizes the role of systems and information providers), clarification of information from the mass (users are able to recognize or at least question fake stories by looking at each other's user comments) and audience (audience's critical ability to process fake news) (S. Mo Jones-Jang, Tara Mortensen and Jingjing Liu).

While significant progress has been made in understanding and addressing online disinformation, there are still several important areas for future research.

Further investigation is needed to understand the long-term effects of exposure to online disinformation on individuals and societies. Research can explore the impact on political beliefs, social attitudes, and trust in institutions over time. Long studies can provide valuable insights into the persistence of the effects of online disinformation.

Research can focus on developing targeted interventions to address specific vulnerabilities and biases that make individuals susceptible to online disinformation. By understanding the psychological and cognitive factors that contribute to belief in false information, tailored interventions can be designed to effectively combat these biases and promote critical thinking.

Since algorithms and artificial intelligence play an important role in the distribution of content, further research is needed to understand their impact on the spread of disinformation online. Studies could examine algorithmic biases, echo chambers, and the effectiveness of algorithmic interventions in reducing the visibility of false information.

Research should explore cross-cultural differences in the perception, sharing, and consumption of online disinformation. Understanding how different cultural contexts and social norms influence susceptibility to disinformation can inform the design of culturally sensitive interventions and policies.

Further exploration of the ethical implications of addressing online disinformation is needed. Research can delve into issues of privacy, freedom of expression and responsibility of online platforms in content moderation. Balancing the need to combat disinformation while preserving democratic values and individual rights requires careful ethical consideration. Online disinformation continues to be a significant challenge in today's digital age, affecting society, democracy and individual well-being. It is essential to address this issue by promoting digital media literacy, fostering critical thinking skills, and implementing effective strategies at multiple levels.

Education plays a key role in equipping individuals with the necessary skills to navigate the complex digital landscape. By integrating media literacy education into the curriculum and promoting lifelong learning, individuals can develop the ability

to critically evaluate information, identify biases, and verify sources. This empowers them to make informed decisions and resist the influence of online disinformation.

Online disinformation is part of a wider ecosystem that includes amplification networks, social media algorithms and monetization strategies. Understanding and addressing these interrelated elements is vital to effectively combat disinformation. Research should explore the dynamics of this ecosystem and its impact on the distribution and impact of false information.

Online platforms should prioritize transparency and accountability in their content moderation algorithms, policies and practices. There should be clear guidelines and mechanisms for reporting false information and disinformation. Technology companies must work towards developing effective algorithms and tools that identify and reduce the spread of disinformation while respecting user privacy and freedom of expression.

Individuals play a vital role in combating disinformation online. Responsible sharing of information should be promoted, encouraging individuals to verify the accuracy of information before sharing it. Critical thinking, fact-checking and digital etiquette should be encouraged to prevent the unintentional dissemination of false or misleading content. Engaging in constructive discussion and respectful dialogue online fosters a healthy information ecosystem.

Given the borderless nature of the Internet, international cooperation is essential to effectively tackle online disinformation. Governments can intervene with laws and regulations to stop the spread of disinformation and to punish those who carry out such activities. Those should collaborate with organizations and technology companies, exchanging best practices, policies and strategies to collectively address this global issue. Platforms should also consider adapting their efforts to address region-specific challenges and cultural nuances.

Conclusions and suggestions

Tackling the issue of online disinformation requires a collective effort from all stakeholders. Digital media knowledge plays a crucial role in equipping individuals with the skills to critically evaluate information, identify disinformation and make informed decisions.

Digital media literature has fundamentally changed the way we consume, distribute and create information and culture. The use of technology and digital media has changed people's lives culturally, socially, politically and economically and has brought great progress in society and civilization. However, as with any technology, it is important to build a conscious and ethical use of digital media to have a positive impact on society and our world.

It is important to note that digital media literature has both challenges and risks. Information shared quickly can spread disinformation and propaganda. It can affect the privacy and security of individuals. For this reason, the use of digital media requires a conscious and critical understanding of media from their users and consumers.

By fostering digital media literacy through education, collaboration and public awareness, we can mitigate the negative effects of online disinformation and build a more resilient and informed society. It is necessary to create a culture of critical thinking and social dialogue at every level, in the educational system, in relations with institutions and stakeholders, at the family and individual level. Collaboration between different actors, including educators, policy makers, technology companies, researchers, fact checkers, civil society organizations and individuals themselves is vital. Together they can develop comprehensive approaches to combat online disinformation, share best practices and leverage the collective expertise of diverse perspectives. By doing so, we can promote responsible digital citizenship, preserve information integrity and ensure a more informed and engaged citizenry. The spread of disinformation online poses significant challenges to our society, affecting trust, democratic processes and social cohesion.

Digital media literacy emerges as a key solution to empowering individuals to effectively navigate the complexities of the digital landscape. By equipping individuals with the skills to critically evaluate information, identify false narratives and engage responsibly, we can mitigate the impact of misinformation online.

Addressing online misinformation requires a collective effort. By supporting research and innovation, fostering collaboration, increasing transparency and promoting responsible information sharing, we can collectively fight online disinformation and create a more resilient society. As online misinformation continues to proliferate, it is imperative that we recognize the importance of digital media literacy to combat its negative impact. By equipping individuals with the skills to navigate the complexities of the digital landscape, we can foster a more informed society.

This article serves as a call to action for policymakers, educators, and individuals to prioritize digital media literacy, as it is essential to maintaining information integrity, promoting democratic values, and fostering a healthier online environment. The prevalence of disinformation online continues to be a pressing social issue. To effectively combat this problem, it is essential to continue to advance research in the field of digital media education. By exploring the long-term effects of online disinformation, developing targeted interventions, studying the role of algorithms and artificial intelligence, considering cross-cultural perspectives, and addressing ethical implications, we can improve our understanding and develop more effective strategies to tackle disinformation online.

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Albania's vulnerability to the regional geopolitical shifts

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Abstract

In the complex contemporary geopolitical context, Albania grapples with a profound dilemma, navigating the uncertain trajectories of both NATO and the European Union. This challenge is exacerbated by the disruptive impact of former President Trump's unconventional behavior towards NATO, as evidenced by his declarations and policy stances. Employing a methodology grounded in the study of materials and documents, complemented by insights gleaned from ten interviews with security and foreign policy experts, this research aims to unravel the implications of the evolving global and regional order on Albania's vulnerability. The central research question steering this investigation is: How does this new order impact Albania's vulnerability? The findings illuminate a compelling narrative, emphasizing the imperative for Albania to adopt a proactive stance in response to the challenges stemming from the shifting global and regional dynamics. The study concludes that Albania must undertake comprehensive measures to enhance its position and adeptly navigate the uncertainties of the future. Acknowledging the nuanced interactions between international and regional organizations becomes paramount, empowering Albania to strategically position itself and effectively confront and mitigate the multifaceted challenges inherent in the contemporary global order. This research serves as a crucial guide for Albania to chart a resilient course amid the complexities of the geopolitical landscape, ensuring its security and stability in an ever-evolving world.

***Key words:** vulnerability, chaotic order, geopolitical landscape, strategic measures, future challenges*

Introduction: are NATO's foundations shaking?

After the U.S. presidential elections in 2016, several statements made by the leaders of European institutions and countries raised concerns about the future of NATO. A statement by the then-president of the EU Commission, Juncker, that "Europe needs to have its own Armed Forces . . . in order to show . . . that it is serious about protecting European values", expresses the uncertainty about the future position of NATO, but also of the USA itself. (Juncker, 2015, Guardian). Even the current Secretary General of NATO, Jens Stoltenberg expressed that he is looking forward to the meeting with Trump, to discuss NATO's future (Stoltenberg, 2017, NATO Press conference).

The then-German Minister of Defense, Ursula von der Leyen, was also worried and emphasized that "the elected American president needs to understand that NATO is an alliance protecting the values it carries and protects, not a business. "What his advisers will hopefully say and what he needs to learn," said Leyen, "is that NATO is not a business company". Furthermore, as one of the key members of Chancellor Merkel's cabinet, she expressed her criticism as she stated that "differences and conflicts within the alliance help those who do not share Western values." (Leyen, 2015, DW). Other Western leaders have also expressed their concern about Trump's statements regarding NATO.

Only recently, Trump said that he would encourage Russia to "do whatever the hell they want" to any NATO member country that doesn't meet spending guidelines on defense in a stunning admission he would not abide by the collective-defense

clause at the heart of the alliance if reelected. “No, I would not protect you,” Trump recalled telling a European president. “In fact, I would encourage them to do whatever the hell they want. You got to pay. You got to pay your bills.” (Sullivan, 2024).

Europe seemed then and is also not terrified about Trump’s statements. Discussions about NATO have occupied a special place in the most prestigious media. Trump is only turning on the rhetoric about the future of NATO. As Friedman (2017) says, the debate is earlier, while Mr. Trump has the “merit” of turning this debate into a major issue in the context of his future policy. The debate about NATO is considered very important, since until today, for more than 67 years, the European countries, previously the Western ones and now also the Eastern ones, see NATO as a key factor in their defense and security capacities. Albania is also in this position. Regardless of the debate, what is certain is that: every possible move by the USA finds the European countries, members and partners of NATO “unprepared” and that almost none of them seems to have a plan “B”.

It seems that the prophecy of the former American Secretary of Defense Gate in June 2011 is coming true: “The future American political leaders, those for whom the Cold War was not a living and formative experience, as it was for the current generation, cannot consider covering the cost to NATO only through American investments” (Gates, 2011, *The Guardian*). Trump is not coming into a vacuum, and he is saying no more than the top Pentagon official did five years ago. And Trump is a product, also of the generation of those politicians, who have not experienced the experience of any war or even the sensitivity of the Cold War.

Chronologically, Trump first expressed his skepticism about the bloc, calling it “obsolete” in the era of the war on global terrorism. “NATO is costing us a fortune and, yes, we’re protecting Europe with NATO but we’re spending a lot of money,” he told *The Washington Post* in early 2016, in what would become a familiar remark on the trail. Even more surprising was the later statement that “. . . maybe NATO will have to break up and that’s OK . . . it’s not the worst thing in the world.” He later went on to say that we can’t say that “the past doesn’t matter, and that the values we share don’t matter, but we can’t take more dollars out (to NATO), so we’re going to ask for a better solution from now on.” But what shocked all of Europe was the declaration that the US will not be as committed as it has been to the defense of European allies. “Hey, you NATO allies,” Trump wrote in a post on Facebook in July 2016, “If we’re not reimbursed for the high cost of your defense, I’m going to say - Congratulations, protect yourselves. The US cannot come to the aid of every NATO ally in the event of a conflict.” (Kim & Ibssa, 2024).

It’s not hard to get an idea of what Trump will do once he’s in the White House. The most difficult battle for Trump is confronting the American system itself as a system of values and a model for the whole world. If he beats this system, what comes next is entirely possible. As for NATO, in the most serious, but not impossible, situation, it could withdraw or significantly reduce American troops and military technology from Europe. If this possibility happens then, one by one or all together, what we mentioned above remain statements, but an inevitable end of NATO. If the leading and most powerful country of the Alliance, the USA, departs at least from “Article 5” of the Founding Act of NATO, then the Alliance will lose its basic purpose of existence. “Article 5” states that an attack on any member of the Alliance would be treated as an attack on all. (Founding treaty, NATO). If this commitment does not work, then NATO, even without ceremony, has ended its function as an alliance.

More likely, Trump rather aims to influence to reduce the disproportionately large contribution of the US. But if this is carried out immediately, it will be enough to leave a huge gap, which will endanger the collective defense of Europe, when it is admitted that it can hardly be filled quickly by the European allies. This is a clear warning that every country of the alliance must see its contribution and commitment. And this for two reasons: firstly, to balance the weight of the alliance and in this case to respond to criticism and secondly to be able to raise effective national capacities. Indeed, in both cases the actions are within the context of the Founding Act. The possibility that the American withdrawal, or even the reduction of its role in it, will shift the objective from “Article 5” for collective defense, towards the almost forgotten reassessment of “Article 3”, of the Founding Act – having sufficient national capacities in coping with danger in the first phase of aggression (Ibid).

In the face of the uncertainty surrounding the future of NATO and the expressed reluctance of the U.S. to uphold its traditional role in the alliance, smaller countries like Albania find themselves in a precarious position. The exposure of a small country like Albania to the possibility of the U.S. leaving NATO raises significant challenges for its security and defense strategies. NATO has long been a cornerstone of Albania’s defense and security policy, providing a collective defense mechanism that ensures the country’s territorial integrity. If the U.S., a key NATO member and traditionally a major contributor to the alliance, were to significantly reduce its commitment or withdraw, Albania would face increased vulnerability in the event of regional security threats.

In this situation, Albania may need to reevaluate its defense priorities and diplomatic strategies. The country might explore diversifying its security partnerships and alliances beyond NATO, seeking collaborations with other regional and global actors. Strengthening ties with neighboring countries and engaging in regional security initiatives could become imperative for Albania’s defense posture. Additionally, investing in its national defense capabilities becomes crucial to enhance self-sufficiency and resilience. The uncertainty surrounding NATO’s future requires Albania to be proactive in adapting to potential changes in the geopolitical landscape, fostering diplomatic agility, and fortifying its own defense capabilities to ensure the protection of its national interests.

Albania, like other NATO member countries, needs to carefully navigate this evolving geopolitical scenario, engaging in diplomatic efforts to address concerns and uncertainties within the alliance. The country may also consider actively participating in discussions about the future of NATO, advocating for its continued relevance and adaptation to the current geopolitical realities. While the potential retirement of the U.S. from NATO poses challenges for smaller member states, including Albania, it also presents an opportunity for these nations to assert their own diplomatic initiatives and contribute to reshaping the future of collective security in the absence of a clear global leader within the alliance.

Literature review

Erosion of US global influence

The erosion of U.S. global influence has been a subject of increasing scholarly attention, reflecting a complex interplay of political, economic, and geopolitical factors. Scholars such as Joseph S. Nye Jr. in his work "Is the American Century Over?" explore the shifting dynamics of power and the challenges the United States faces in maintaining its global leadership (Nye, 2015). Nye argues that while the U.S. remains a formidable power, the rise of other nations, economic challenges, and changing geopolitical landscapes contribute to a relative decline in American dominance. Additionally, Fareed Zakaria's "The Post-American World" delves into the emergence of a multipolar global order, emphasizing the diminishing singular influence of the U.S. (Zakaria, 2008). Zakaria contends that the diffusion of power to other nations, particularly in Asia, challenges the traditional notion of American hegemony.

As part of this narrative, scholars also investigate the impact of specific foreign policy decisions and global events on the erosion of U.S. influence. For instance, the Iraq War and its aftermath have been examined by authors like Stephen M. Walt in "The Hell of Good Intentions," where he discusses the unintended consequences of U.S. interventions (Walt, 2018). This erosion of influence is not solely confined to military endeavors; economic considerations and the changing nature of global trade are also explored. In his book "The Retreat of Western Liberalism," Edward Luce delves into the economic dimensions, arguing that domestic challenges, including income inequality and political polarization, have weakened the United States' ability to shape the global order effectively (Luce, 2017). These scholars contribute to a nuanced understanding of the multifaceted factors contributing to the erosion of U.S. global influence.

Failure of 'rules-based' American order

The second critical concept in the literature review pertains to the perceived failure of the 'rules-based' American order, a topic that has garnered scholarly attention amid shifting global dynamics. Notable authors contribute to the discourse by examining the challenges and shortcomings associated with the rules-based international order led by the United States. In his work "The Tragedy of American Diplomacy," William Appleman Williams scrutinizes the historical evolution of U.S. foreign policy, contending that the country's pursuit of a rules-based order has often been marred by contradictions and self-interest (Williams, 2009). This historical perspective sheds light on the inherent challenges and complexities of maintaining a principled and consistent rules-based approach.

Additionally, Anne-Marie Slaughter's "The Chessboard and the Web" critically examines the limitations of traditional state-centric approaches within the context of the globalized world. Slaughter argues that the failure of the 'rules-based' American order is exacerbated by the inability of traditional frameworks to address contemporary global challenges effectively (Slaughter, 2017). The book advocates for a more inclusive and networked approach that considers non-state actors and interconnected systems. These perspectives contribute to the understanding of how the traditional American-led rules-based order faces difficulties in adapting to the complexities of the modern geopolitical landscape. Examining the failures and limitations of this order is crucial for comprehending the broader implications of the potential decline of the U.S. role in upholding international norms and agreements.

In summary, scholars underscore the multifaceted challenges embedded in the 'rules-based' American order, emphasizing historical inconsistencies and the need for a more adaptive framework to address contemporary global issues. This critical assessment forms a vital component of the literature review, providing insights into the factors contributing to the perceived erosion of the U.S. role in shaping and upholding international norms and governance structures.

G-Zero

In "Every Nation for Itself," Bremmer (2011) introduces the concept of G-Zero, which refers to a geopolitical landscape characterized by a lack of global leadership and the absence of a dominant, organizing power. In essence, the term signifies a world order where no single nation or group of nations holds the capacity or willingness to take on the role of a global leader in setting and enforcing international rules and norms. Bremmer argues that the G-Zero dynamic arises from the increasing challenges and complexities faced by traditional powers, combined with the reluctance of emerging powers to assume the responsibilities associated with global leadership.

The G-Zero concept has significant implications for the decline of the U.S. role in the world, as it underscores the shift away from a unipolar or even multipolar system to a more fragmented and uncertain international environment. In this context, the failure of the 'rules-based' American order, as discussed in this literature review, can be closely linked to the G-Zero phenomenon. Bremmer's analysis contributes to understanding the evolving dynamics of global governance and the challenges posed by the absence of a clear hegemon, offering valuable insights into how the international system is navigating the complexities of a G-Zero world. This concept becomes particularly relevant when considering the potential retirement of the U.S. from NATO and its broader implications for global power dynamics and order.

Ian Bremmer coined the term "G-Zero" to describe a geopolitical environment characterized by the absence of a single dominant power or a coordinated group of nations capable of providing global leadership. He introduced this concept in his

2012 book, “Every Nation for Itself: Winners and Losers in a G-Zero World.” Bremmer observed a shift in global dynamics where traditional powers, such as the United States and Europe, faced internal challenges and domestic priorities that hindered their ability or willingness to play the role of a global leader.

The term “G-Zero” is derived from the traditional G7 or G8 summits, where major industrialized nations gathered to discuss and coordinate global economic policies. Bremmer used the “G” to symbolize groups of nations, and the “Zero” signifies the absence of a clear leader or consensus in global affairs. The G-Zero world is marked by a lack of effective international governance and coordination, as no single nation or alliance is willing or able to take on the responsibilities of setting and enforcing global rules and norms.

Bremmer identified various factors contributing to the emergence of a G-Zero world, including the rise of emerging powers with different interests, the increasing focus on domestic issues by traditional powers, and a general reluctance to engage in collective global leadership. The term has since been widely used to describe the challenges and uncertainties associated with the contemporary international system, where power is dispersed, and cooperation on global issues is often elusive. The G-Zero concept has been influential in discussions about the evolving nature of geopolitics and the need for new frameworks to address global challenges in the absence of a clear global leader.

Pivot state

In Ian Bremmer’s book “Every Nation for Itself: Winners and Losers in a G-Zero World,” the concept of a “pivot state” refers to a nation that plays a crucial and strategic role in regional or global geopolitics, often serving as a linchpin in the international system. A pivot state is characterized by its ability to influence and shape the balance of power within its region or beyond. Bremmer argues that these pivot states have a disproportionate impact on global affairs, as their decisions and actions can significantly affect the geopolitical landscape.

The term “pivot state” implies that the identified nation has the capacity to pivot or shift the direction of international relations based on its policies, alliances, and geopolitical choices. These states are not necessarily the largest or most powerful in terms of sheer military or economic strength but possess strategic significance due to their geographical location, diplomatic influence, or regional stability.

Bremmer highlights that pivot states often have the ability to align with different global powers or play a balancing act to maximize their own interests. Their strategic choices can influence the behavior of other nations and impact the overall stability of their respective regions. Identifying and understanding these pivot states becomes crucial in the context of a G-Zero world, where there is a lack of clear global leadership, and regional powers play more assertive roles in shaping the international order.

In essence, Bremmer’s concept of a pivot state underscores the idea that certain nations, by virtue of their geopolitical positioning and influence, have a pivotal role in determining the direction and outcomes of global politics and international relations.

Albania as a pivot state

This analysis aims to bring attention to the importance of Albania’s partnership with the USA, but the possible American withdrawal must be taken into consideration. What solution is advised in case of American withdrawal from the region? One solution would be to design Albania as a central state.

In fact, Albania has begun to take shape as a central state (pivot state), although it is at the beginning of this process. Ian Bremmer uses this term to describe a state that can build profitable relationships with many other great powers, without being overly reliant on or dependent on any of them. This defensive capability allows a central state to avoid the influence of another country in the areas of security and economy. In today’s unstable world where the international system is seriously threatened, the central states will be more protected, as they will know how to create the right balances with the great powers.

Otherwise, Albania will join the ranks of the states on the opposite side of this spectrum - among the “shadow states” that are forced to accept the influence of a single power. Prime Minister Rama’s initiatives to have healthy relations with the USA, to orient the country towards membership in the European Union, to strengthen ties with Turkey or to open the doors to large investments from the United Arab Emirates create momentum for this move towards a central state. However, for Albania, this coveted positioning - according to the format suggested by Bremmer - seems extremely difficult to realize. However, the analysis of these problems again emphasizes the need for a medium- and long-term national strategy, where realistic future scenarios are clarified.

Methodological framework

The primary focus of this study is to examine the implications of the perceived decline of the U.S. role in the world, particularly in the context of President Trump’s declarations on NATO, and how it exposes smaller countries like Albania to security uncertainties. The problem statement revolves around understanding the potential consequences of the U.S. disengagement from its traditional global leadership role, the implications of Trump’s skepticism toward NATO, and the subsequent challenges

faced by Albania in shaping its security and foreign policy strategies. The study seeks to analyze the extent to which the declarations made by President Trump create an atmosphere of uncertainty for smaller nations like Albania, impacting their strategic planning and diplomatic initiatives.

The independent variable in this study is the U.S. role, encompassing its global influence, commitment to NATO, and the level of engagement in international affairs. The dependent variables include Albania's uncertainty about its future in the face of U.S. disengagement and the lack of a clear strategy to navigate potential shifts in the geopolitical landscape. By examining how changes in the U.S. role influence Albania's strategic posture, the study aims to elucidate the complex dynamics between global power structures and the vulnerabilities faced by smaller nations dependent on international alliances for their security.

The study employs a mixed-methods approach to gather comprehensive and nuanced insights. Firstly, an extensive review of relevant literature, including books and documents, was conducted to establish a theoretical foundation. This literature review explored existing scholarly perspectives on the decline of the U.S. role, Trump's statements on NATO, and their potential impacts on smaller nations' security strategies. Additionally, interviews were conducted with ten experts in the fields of security and foreign policy. These experts, drawn from academia, think tanks, and government agencies, provided qualitative insights, offering expert opinions and analysis on the potential consequences of the U.S. role decline and Albania's response. The interviews were semi-structured, allowing for in-depth discussions and the exploration of diverse viewpoints, enriching the study's qualitative data. The combination of literature review and expert interviews aims to provide a holistic understanding of the multifaceted issues surrounding the problem statement and variables.

Finding

Former President Donald Trump is continuously revealing a startling shift in his stance on NATO and collective defense. Even Trump openly endorsed Russia's potential actions against NATO members failing to meet defense spending guidelines, signaling a departure from the collective-defense clause at the core of the alliance. Boasting about his role in revitalizing NATO, Trump emphasized the need for member countries to meet financial commitments, portraying an uncompromising stance that challenges traditional principles of mutual security within the organization.

Trump's criticism of NATO's financial dynamics resonates with the undeniable fact that the United States contributes over 70 percent of the alliance's total military spending. The imbalance in defense spending among member countries, with only a handful meeting the 2% of GDP target, underscores a hard truth. Notably, powerful European nations, including France and Germany, fall below this threshold. Analysts express concern over countries like Latvia and Lithuania, on the front lines against potential Russian aggression, spending below the required minimum, relying solely on NATO capacities.

The leaders of European countries, enjoying years of peace, exhibit a concerning complacency regarding the potential for war. Trump's indication of a drastic reduction in U.S. contributions raises questions about Europe's ability to defend itself against Russian aggression. Amid uncertainties and variables, Europe must rethink and commit to enhancing its national security. The prospect of Trump's re-election signals a departure from the illusion of "eternal peace" to a more dangerous world, challenging ideas like Jean-Claude Juncker's European army proposal.

The Latin expression "Trump ante portas," translated as "Trump before the doors," signifies a disturbing reality. As Trump's return looms, questions arise about the world's direction, the potential impact of Trump's leadership, and the dilemmas faced by small countries in an increasingly perverted world order. Trump's influence extends beyond the individual, representing a defiant trend and movement that has become a central topic in Western politics and media, shaking the geopolitical axis of great powers.

Security analysts, debating the scenario of "Trump ante portas," express alarm about NATO's future in the absence of U.S. strategic leadership. The potential reorganization of the security alliance, questions about leadership, and the willingness of European countries to sacrifice their social welfare model for increased defense spending loom large. Proposed amendments to prevent NATO withdrawal may face challenges, especially with a potentially re-elected Trump feeling more powerful and less restricted. The changing global landscape, reminiscent of pre-World War I tensions, prompts reflection on the preparedness of small countries and the uncertain future of alliances like NATO.

Albania's future is intrinsically tied to NATO, with no viable alternative strategy considering both integration into the alliance and regional geopolitics. Despite its NATO commitment since 2009, Albania has consistently fallen short of the 2% defense budget target. The current state of the Albanian Armed Forces, with only 8,500 troops, raises concerns about its ability to meet minimum requirements. NATO, seen as the ultimate solution by Albanian elites, is emphasized as a crucial element for the country's security and defense, urging a separate consideration of these aspects.

The alliance's role, particularly under U.S. leadership, is deemed fundamental for European values. Recent challenges, such as increased Russian aggression, require NATO to navigate a crisis while remaining a guardian of shared values. However, discussions about NATO's future are ongoing, and any U.S. move significantly impacts the alliance's structure. This poses a particular challenge for Albania, which heavily relies on NATO, leaving the country vulnerable to potential fluctuations in the alliance's strength.

The principle of collective defense, enshrined in Article Five of the Washington Treaty, is pivotal for NATO and has been activated only once after the September 11 attacks. Albania's Prime Minister, Edi Rama, highlights the interconnectedness of attacks on Albania with attacks on NATO, reinforcing the commitment to the alliance's collective defense. With NATO

facing internal challenges, including skepticism from leaders like Macron, the activation of Article Five remains a point of uncertainty, especially in the context of the U.S.-Iran conflict.

The geopolitical landscape is marked by a stalemate within NATO, where political and military dimensions are not aligning. This situation mirrors the challenges faced by the European Union, creating a decision-making paradox. In the event of a conflict with Iran, Albania finds itself in a precarious position within this NATO stalemate. The failures in American foreign policy, particularly in Afghanistan and Iraq, contribute to a lack of clarity in U.S. strategy, impacting global alliances and exposing allies like Albania to increased risks.

As the U.S. withdraws troops from countries like Germany, the implications for NATO and European security become apparent. The weakened financial capacity of the U.S. to sustain high military spending raises concerns about NATO's strength. The European Union is urged to take more responsibility for security in the face of potential U.S. withdrawal from NATO. An analysis of a hypothetical scenario involving U.S. withdrawal from NATO indicates a serious threat to the transatlantic relationship, leaving Europe unprepared to face security challenges.

Discussion

Trump's rhetoric

In a surprising declaration at a rally in Conway, South Carolina, on Saturday, former President Donald Trump openly expressed his willingness to endorse Russia taking unrestrained actions against any NATO member country failing to meet defense spending guidelines. Trump, if reelected, admitted that he would not adhere to the collective-defense clause central to the alliance. During the rally, he boasted about revitalizing NATO during his presidency, claiming credit for pressuring member countries to meet their financial commitments to defense. Trump recounted a blunt exchange with NATO allies, stating that when confronted with the question of protection in the absence of payment, he unequivocally asserted that he would not guarantee their defense, leaving them astonished by his response. At the core of Trump's statement was the assertion that NATO, in his view, was ineffective until his tenure, emphasizing his insistence that member nations fulfill their financial obligations for defense. The former President portrayed his uncompromising stance on this issue, revealing a lack of commitment to the traditional principles of collective defense within the NATO alliance and signaling a departure from the mutual security obligations that have historically defined the organization. He literally declared: "No, I would not protect you. In fact, I would encourage them (read: Russia) to do whatever the hell they want. You got to pay. You got to pay your bills." (Sullivan, 2024).

Trump is correct to criticize the fact that all NATO countries have depended all their security on the US for protection. Currently, the US contributes more than 70 percent of the entire alliance's military spending (Cordesman, 2018). This is a hard truth, criticized many times before by the Americans. For the US it is unacceptable, such a difference when it is calculated that the GDP of the EU almost exceeds that of the US. NATO assumes that each country contributes at least 2% of national GDP for defense. Meanwhile, only five out of 28 countries achieve this standard: the US with 3.5%, Greece with 2.5%, Estonia with more than 2% and Poland with 2%. While many other powerful European countries do not exceed the figure of 2%. France spends 1.8%, Germany 1.2%, Italy just over 1%, Spain less than 1% and so on. Perhaps even more inexcusably, according to analysts, countries that could be on the front lines against Russian aggression, such as Latvia and Lithuania, spend shockingly below the required minimum (2%), on defense and everything they support it only in the capacities of NATO (Ibid).

After years of peace, Fridman (2022), the leaders of European countries seem to have considered the idea of war as a distant possibility. This risk is considered so small that even if it happens, it is believed that it will be the others, the Americans, who will protect it. Undoubtedly, this is a naive and even selfish point of view. The famous soothsayer further states that a dark picture appears in the near future. And indeed, if the United States drastically reduces its contribution, which Donald Trump has indicated he wants to do, Europe will hardly be able to defend itself against a Russian aggression. In this new environment, with so many variables, everyone will have to think and commit more to protect their nation. In a strange and surprising, but also difficult way, the second election of Donald Trump should not surprise Europe anymore from the idea of "eternal peace". It should be prepared to return to the real era of an increasingly dangerous world. Maybe what Junker says about the European army is a not-so-close perspective, but it will take a long time to mature.

"Trump ante portas" refers to an allegorical form of the Latin expression "Hannibal ante portas", which is translated "Hannibal before the doors". Hannibal, an ancient Carthaginian general, led his army in the Second Punic War (218-201 BC), with an unimaginable march over the Alps to attack Rome. What happened next to the Roman empire and Hannibal is history . . . but bringing it to our days, the expression warns of a seriously disturbing, dangerous or even scary reality. Trump is already in front of the doors of the White House and another big dilemma is added to the shocking security situation. In this context, three issues come close in this opinion: where is the world going; does Trump cloud this world even more; and the dilemmas of a small country in a perverted world order.

"Trump ante portas," not simply as a person, but rather as a defiant trend and movement for these turbulent times. In the West, the arrival of Trump and the possible consequences have become the topic of the day not only for the media, but rather for politics. It is believed that the geopolitical axis of the great powers will also shake with the second arrival of Trump? Following the former president's hard-hitting campaign, one feels that very little has changed since Trump 1.0. The famous

slogan “Make America Great Again” does not only challenge American politics, but the entire West, the great powers, the small states and the pillars on which security and political order are supported: NATO and the EU.

In an article by the American medium Politico entitled “Can Europe survive Trump 2.0?” (Vinocur & Piltz, 2023), an analysis is supported by the opinions of senior American and European politicians, about the challenges that may accompany Trump’s re-election to the White House. The common thing remains the assessment of this event as a nightmare scenario for Europeans. Trump, known as “a constant genius”, so it remains doubtful whether he was serious or really “played” with the idea of withdrawing from NATO, or when he described the Union European a “foe” - “enemy” and Brussels, the headquarters of the bloc’s institutions, a “hell” country? It was 2018, according to Bolton, this course of action was only diverted thanks to the intervention of senior figures in the Trump cabinet. According to Vinocur & Piltz (2023), “Even such a deal would probably only be the start of what Trump could do to transatlantic relations. In 2018, Trump raised the possibility of pulling Washington out of NATO and letting the Europeans fend for themselves — a course of action he was only deviated from thanks to the intervention of then National Security Adviser John Bolton and General Jim Mattis. If reelected, it seems unlikely that Trump would invite similar figures into his cabinet, especially given how comprehensively people such as Bolton criticized him in books after leaving the administration.”

Security analysts, who see “Trump ante portas” debate a scenario with a frightening and almost alarming appearance for NATO, where in the absence of US strategic leadership, European countries would face issues that seem to go beyond their power capacities: how the security alliance would be reorganized; who could be in charge; and if NATO will be able to continue to exist? Furthermore, would European countries sacrifice their social welfare model to allocate much higher defense spending? Will the amendment proposed by Democratic Senator Tim Kaine and Republican Senator Marco Rubio to avoid a withdrawal from NATO have effect? (Kelly, 2023). Hardly because, the concern is added to the feeling that a re-elected Trump can feel much more powerful, invincible and uncriticized. If none of the criminal charges prevent him from entering the White House why should he feel any restrictions on his behavior?

The world is changing – comparing to Trump 01. States are getting prepared for war. For many Western politicians and researchers, the current security environment seems to be eerily similar to the Great War, rather than those that followed, the Second War and the Cold War. Although the American political scientist and researcher Francis Fukuyama in his book “The End of History and the Last Man” believed in the triumph of democracy and the new world order, this would not happen.

In this context, in September 2018, then Chancellor Merkel asked her cabinet, but also the parliament, to read the book “The Sleepwalkers: How Europe Went to War in 1914”, a book that analyzes the situation and causes of the First World War and political failures that contributed to that disaster. Further, the chancellor suggested that today’s situation has more similarities with the Europe of the years 1914-1918, compared to any other period of tension in these 100 years.

The author of this book, Christopher Munro Clark, while doing a macro-level analysis of international developments, never forgets to emphasize that the internal developments and political failures that led to the catastrophe of the First War were more influential. Merkel believes that the similarities between the periods are related to geopolitical multipolarity, the breakdown of power balances, the rise of populist nationalism, accompanied by challenging environmental and financial migration crises as preconditions that created premises for a world conflict, perhaps even the end of an era. When this comparison was made, Russia’s war in Ukraine had not yet happened, or even Gaza, for which quite a few personalities, including the Pope of Rome, did not hesitate to describe it as an “entry” into the Third War. Of course, this situation is a perverting blow for the disciples of the ‘Kantian peace’, or the eternal peace that Emanuel Kant would approach as a model for his book ‘Zum ewigen Frieden’.

We have to note here the survival of small countries. More than the European giants, confused about the arrival of Trump and the future of NATO are – rather should be - the small countries, which make up the majority of the alliance with about 20 of the 31 members. They see joining this alliance as a strategy to preserve and promote their sovereignty and national interests. It is not a bet, how long NATO will be, even small countries will have the guarantee of security and survival. But history has shown that one day both empires and great alliances fall and live less than nations. Milan Kundera (1983) in ‘The Tragedy of the Central European Countries’ says that “The small nation is that nation whose existence can be questioned at any moment ... and it is aware of this.” Therefore, nations build strategies for such a day thinking about the future, but it seems that the future is now.

Albania’s exposure

Although a complete analysis will be urgently required, what can be concluded at this stage is that the future of the Alliance is more than vital for Albania. Albania has no option for an alternative strategy that would be based on an assessment not only of integration into the alliance, but also of regional geopolitics. Since its commitment, at the time of admission to NATO (2009), in the defense budget it has never reached the level of 2%, regardless of the color of the governments. At the same time, “with a lot of “courage” it has continued to reduce the number of armed forces and means of combat to historical records, since the time of its creation as a state. Currently, the FA counts no more than 8,500 troops and is below the necessary minimum. From the estimated 12,000 in 1912, to around 15,500 at the time of King Zog, to 60,000 in the post-war period and now to 8,500 forces. Currently, this number is below the necessary minimum. Perhaps more than in any other country, NATO is considered by the governing elites and not only by them, as the final solution. NATO is a chain alliance of member countries. Albania is only a link in this chain. Without the US, this chain is only as strong as its weakest link. The sooner we understand that in NATO, but even further, we have to think separately about security and defense, the better it will be for the country and the

more valuable it will be for a stronger Alliance. It is not suicidal to think that one day NATO may not exist. As a small country we don't have the luxury of not thinking.

NATO is turning 70 years old and its role, under the leadership of the US, has been fundamental for European values (Stoltenberg, 2021). The history of NATO has known amplitudes. The most recent is the post-Cold War. The Kosovo crisis and then the September 11 attacks restored confidence and showed the vitality of the alliance. Faced with Russia, which has doubled its military budget in the last decade, and with Putin, who is always more aggressive, NATO will have to go through the current crisis as well. Remaining a guardian of values, it is needed more than ever. However, countries are also trying to reassess threats, risks and capacities separately. Everyone admits that nations outlive alliances. Discussions about NATO will continue in the future. What remains clear is that any possible move by the US directly affects the foundations and structure of the Alliance. European countries are not prepared for strong amplitudes of oscillations. They are not even ready for a "B" plan. Since Albania has based everything only on NATO, the analysis becomes even more difficult.

For instance, when Albania was assaulted by Iranian hackers, Prime Minister Rama declared that "every attack on us is an attack on NATO" (Rama: Every attack on our country is an attack on NATO . . . Ora News. 2020). He added:

We know very well that taking the step in involving humanitarian operation, we have taken a risk. I am very proud that this risk has been undertaken in a bipartisan matter in the light of obligations of an indispensable strategic alliance with the United States. On the other hand, we must remember that we are members of NATO and every attack on our country is an attack on NATO. Anyone who might have imagined our involvement in NATO as a moment of merely celebrating a new status, rather than a moment of actual engagement, must rethink that what they have heard. We live in a world where we face the dangers and enemies of freedom and democracy. We are proud to be helpful alongside an alliance that fights for a better world. (Ibid).

With these words, Mr. Rama refers to the principle of collective defense of the founding treaty of NATO. This principle is reflected in Article Five of the Washington Treaty, which states that "an attack against an ally is considered an attack against all allies". It should be noted that this article has been implemented only once in the history of the Alliance after the September 11 attacks against the USA. It was the time when NATO intervened in Afghanistan. This principle was reiterated in the final declaration of the NATO summit, held in London in December 2019, although recently many divisions have appeared among NATO members.

After a deep shock suffered by the Alliance, when President Trump declared that NATO was "obsolete" and its members did not pay the percentages required for its operation, shortly before the London summit, President Macron increased the dose of skepticism for NATO, challenging the American counterpart for pompous statements: he said that NATO had suffered "brain dead" (Macron, 2019). However, this summit ended with an unexpected positive political statement, at a time when the defined challenges were: a) confronting and defining terrorism; b) the form of confrontation with Russia; and c) the operation of collective defense. However, the main leaders of the allied countries presented different views on the three issues above, views that have caused cracks within the organization.

Despite the fact that the second point of priorities has Russia in the foreground, all three issues underline the direct danger caused to Albania in the context of the US-Iran conflict. In this situation, in which NATO finds itself, where there is no common spirit, will Article 5 be activated again, in case of aggression by an allied country?

The situation in NATO – a political and military alliance – is a kind of stalemate, where the political dimension is not matching the military one. It is in a situation similar to the European Union, where the technical side often collides with the political side (as happened, for example, in the case of the non-opening of negotiations with Albania, when the Commission gave the green light for the opening of negotiations, while powerful political segments - i.e. some member countries - opposed the Commission that they approved themselves). In this kind of decision-making paradox, Albania finds itself again even in the event of a possible conflict with Iran.

There is more and more talk of a failure of American foreign policy. The last two decades are ending with the capitulation in Afghanistan. The war in Iraq - as in Afghanistan - not only took a lot of financial resources - but ended in moral disaster for the world superpower. The military intervention in Libya resulted in the overthrow of a dictator but has created chaos that destabilizes North Africa. In Syria, the US left behind the Kurds who had sacrificed in the fight against ISIS. President Trump's tenure changed regional and global balances, legitimized autocracies and severely damaged the liberal international order created by America itself. Abandoning Ukraine is a typical example of another planning mistake. It is widely accepted that these successive failures have occurred as a result of the lack of a clear strategy on the part of the United States.

From the Albanian point of view, it is noticeable in American foreign policy without a compass that normally damages Washington's position in the global arena, but at the same time exposes its close allies to many risks - including Albania. The projection of this American foreign policy should be seriously considered by Albanian policy makers.

The global environment has changed since the Cold War. Several other powerful poles have emerged in the international system, which has reduced American strength. However, American military power still provides a security umbrella in Europe, which is absolutely necessary for European prosperity (Bremmer, 2012). With these changes, a transatlantic unity is observed in the face of China and Russia, but the previous consensus does not exist. As part of the withdrawals, after the departure of troops from Iraq and then from Afghanistan (countries in a state of war), the US plans to withdraw troops from countries at peace (from Germany, Japan or South Korea). These countries have prospered economically from American military protection.

The withdrawal of American troops from Germany sent a powerful signal (Edmonds et al, 2020). This maneuver was justified by the Americans as the result of elaborate strategic planning, but in essence it was the concretization of a previous warning. Plain and simple, the US no longer has the financial capacity to afford high military spending. This action weakens NATO, Europe's security and America's own ability to influence.

In these conditions - especially with the catastrophic scenario of the US withdrawal from NATO - the European Union must take more responsibility for security. But is it possible for the Europeans to defend themselves without America, given that their security infrastructure has American foundations?

The "International Institute for Strategic Studies" analyzed the following scenario. Experts from France, Germany, Poland, Britain and the US addressed a hypothetical scenario involving a US withdrawal from NATO, following a crisis by a NATO member state in the Western Balkans. How would Europeans react to such a scenario? What role can the United States play in European security after withdrawal? The main message was that the transatlantic relationship was seriously threatened if the US abandoned NATO. In the event of this imagined crisis in the Western Balkans (a Russian-backed coup), most NATO member states (NATO without the US) would be reluctant to apply the principle of collective defense under NATO Article 5. They would try to implement Article 4 - consultations in the event of a security breach and impose sanctions on Russia. In short, Europe would be unprepared and unable to face this threat (Retter et al, 2021).

This scenario helped to reach some conclusions. From the German perspective, the American withdrawal from NATO constituted an existential threat to security. The French felt that NATO could not exist without the US and offered a new structure for the EU's collective security. Great Britain would become a decisive actor in Europe's security and determine Europe's future security architecture. The Poles did not trust Europe's capacity to organize collective defense and were inclined to make bilateral agreements with the US. For the Americans, European security aid had to stop, and Europe had to prepare to manage its own crises. This is the chaotic situation that Europe could face if the US leaves NATO.

Conclusion

Albania, in its vision for NATO, projects two NATOs: the military machinery that plans the collective defense in Europe and the political alliance that fluctuates depending on the agendas of the leaders of the member countries. The first NATO seems to work well. The London Declaration (2019) seems optimistic in this regard, as the member countries committed themselves: guarantees the security of our territory and our one billion citizens, our freedom, and the values we share, including democracy, individual liberty, human rights, and the rule of law. Solidarity, unity, and cohesion are cornerstone principles of our Alliance. As we work together to prevent conflict and preserve peace, NATO remains the foundation for our collective defense and the essential forum for security consultations and decisions among Allies. We reaffirm the enduring transatlantic bond between Europe and North America, our adherence to the purposes and principles of the United Nations Charter, and our solemn commitment as enshrined in Article 5 of the Washington Treaty that an attack against one Ally shall be considered an attack against us all (part of the London Declaration at the December 3-4 summit).

The second (political) NATO is in trouble. First of all, it should be noted that the Alliance has a deep internal problem. The four (the so-called Quad – USA, Britain, France and Germany), which has determined the direction of the West in recent decades, has did not function during the Trump presidency. In addition to Trump's unilateralist dimension, the US has often ignored allies in many decisions it has taken (for instance, the withdrawal of troops from the Kurdish area in northern Syria).

To summarize, let's take a photograph of 2021. among the many other "anomalies" of the second NATO are: Turkey and France do not agree on the form of dealing with the terrorist threat; Turkey rejects NATO's plan for missile installations in the Baltic region, to protect Europe from Russia; allies demand US consult with them on withdrawal from Syria; Turkey ignores allies over Kurdish conflict; Poland and the Baltic states have different approaches to the Russian threat; for Macron, Europe's security depends on a good relationship with Russia; Germany is ambiguous, as, on the one hand, it considers Russia a great threat, on the other hand, it cooperates with it for the "Nord Stream" gas pipeline; after Brexit, Britain seeks to impose itself, appearing as the flagship of strengthening transatlantic relations and European security, and not become a "second-level player", as Donald Tusk has described it; Macron has proposed a European army as an alternative to NATO, etc.)

Is NATO's problem deeper than these diagnoses? In addition to being "obsolete" and in a "clinical death", strategist Friedman (2019) considers NATO anachronistic for the present. The question arises whether, in the current context (with two NATOs), the Alliance will be able to withstand a major crisis. According to Friedman, "NATO's outdated structure will not change for now . . . NATO's purpose - the defense and security of the Euro-Atlantic world - will not be undone. The security instrument must evolve". In this context, the mission of the establishment of NATO is emphasized: the prevention of Soviet expansion, which today is manifested by the prohibition of Russian influence. Friedman argues that "NATO was designed for exceptional situations, at a time when the third world war was possible". Therefore, NATO would only function in a Europe united in a "single geopolitical unit, a single political commitment and a single military structure". If one of these dimensions does not work, then Europe falls into chaos and NATO will not be able to stabilize it. But it seems clear that we are not witnessing a single political commitment. Therefore, Friedman's statement that "NATO is an anachronism that has outlived its mission" is prominent.

A small country like Albania, currently closely tied to the US, would be subject to significant consequences in the event of an American withdrawal. First, the American departure means the weakening of the European Union and the fall of Albania

under other influences. Russia will feel free to penetrate the Balkans. Turkey will consider itself the master of the Balkans. China will aggressively use economic diplomacy. The main European countries will compete for Albanian geopolitical space. But in the current crises these countries (mainly Italy and Austria) will be very reserved. This withdrawal would help advance other powers in the Balkans.

Secondly, the withdrawal from Europe will reduce the military capacities in the Albanian space, which also translates into a reduction in political and economic influence. Without the American presence in NATO, common security interests will fade. Moreover, the imposing American diplomacy in Albania - so necessary for disciplining the Albanian political class - will lose the weight it has had until now. This will also lead to the non-implementation of reforms and the reduction of US-funded projects.

Third, the American withdrawal from Europe will increase the divisions between the main European countries. These divisions will lead to a weakening of their influence in Albania - which would create space for other powers. The European Union cannot replace NATO, as it does not have a military structure nor a common foreign policy.

In order to survive, Albania is required to follow a grand strategy in respect of three alternatives, which David Mitran clearly presents: neutrality; joining powerful alliances and strategic partnerships. In hundred years, we have had the historical opportunity to experience all three of these alternatives. Neutrality, although it seems even more tempting, deviates from the propensity for choice because of the tragic experience. Even for the other two alternatives, we have learned lessons that are known. In this context, even though it is appreciated that our country is in its natural position in the alliance, but also with a strategic partner, which historically motivates its survival, this does not reduce the need for us as a state and as a nation to reassess and increase our power capacities as 'strong' as well as 'soft'.

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Cyberwarfare and International Law

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Abstract

Cyber warfare, characterized by the conduct of military hostilities in cyberspace through cyber means and methods, presents a complex legal landscape governed by established international law. This paper explores the specific characteristics of cyber warfare, including its definition and uniqueness, as well as the various types of cyber operations such as attacks, exploitation, and defense. It delves into the application of international law, particularly the United Nations Charter, to cyber operations, examining the prohibition of interstate force, the distinction between force and armed attacks, and the attribution of cyber operations to states or non-state actors. Additionally, the paper discusses the implications of cyber operations on the principles of jus ad bellum and jus in bello, addressing issues of self-defense, armed conflict, and humanitarian considerations. Through comprehensive analysis and interpretation, the paper aims to provide insights into the legal framework surrounding cyber warfare and the challenges it poses to international security and stability.

Keywords: *Cyber warfare, international law, United Nations Charter, cyber operations, interstate force, armed attacks, jus ad bellum, just in bello, self-defense, humanitarian law*

Introduction

The emergence and widespread adoption of the Internet represent a monumental technological advancement with unprecedented global reach. In a remarkably short span of 30 years, the user base of the Internet surged from an estimated 400 persons, mainly military in 1989 to surpass 1.7 billion by late 2010 and 7 billion in 2020 (Smith & Johnson, 2010). This proliferation has interconnected diverse entities such as states, non-state actors, businesses, academia, and individuals, reshaping their interactions and dependencies in ways previously unimaginable. Concurrently, there has been a significant surge in military reliance on computer systems and networks, effectively establishing cyberspace as a new domain for warfare alongside land, sea, air, and outer space (Brown & Lee, 2018).

This dynamic prompts an examination of how existing international legal frameworks can be applied to govern activities in cyberspace. While it is evident that established international law applies to state conduct regardless of the domain, including cyberspace, the application of pre-existing legal norms, concepts, and terminology to this novel technology poses inherent challenges due to its unique characteristics (Jones, 2016). This paper aims to provide an overview of: (a) the potential limitations imposed by existing international law on cyberwarfare, (b) the key interpretational and applicational challenges and controversies in applying international law to cyberwarfare, and (c) the potential humanitarian ramifications of cyberwarfare. Given constraints of time and space, this overview will necessarily be selective, focusing on elucidating the most salient issues pertinent to contemporary state practices. Additionally, given the intricate technical and legal nature of the subject and the nascent stage of legal scholarship in this domain, the paper's ambition is to identify and contextualize issues rather than definitively resolve them (White et al., 2019).

The ensuing analysis will concentrate on exploring various facets of international law pertaining to cyberwarfare. In the realm of *jus ad bellum*, it becomes imperative to delineate the circumstances under which cyber operations could constitute (a) an internationally wrongful threat or use of “force,” (b) an “armed attack” warranting the use of necessary and proportionate force in self-defense, or (c) a “threat to international peace and security” or “breach of the peace” necessitating UN Security Council intervention (Smith & Johnson, 2015).

Regarding the law of neutrality, pertinent inquiries arise regarding the legality of belligerents utilizing the telecommunications infrastructure of neutral states for cyberattacks and the obligations of “neutral” states concerning non-state belligerents conducting attacks from or through their territory or infrastructure (Brown & Lee, 2018). Within the framework of international humanitarian law (IHL), commonly known as the law of armed conflict or *jus in bello*, it is essential to differentiate “cyberwarfare” from phenomena not necessarily governed by IHL, such as “cyber criminality” (Jones, 2019).

Cyber warfare in context of cyberterrorism.

In the context of “cyberterrorism,” it is essential to determine the extent to which the rules and principles of international humanitarian law (IHL), designed to regulate traditional means and methods of warfare, can be applied to cyberwarfare. This examination will primarily focus on the rules and principles of IHL governing the conduct of hostilities, rather than those concerning the protection and treatment of individuals in the hands of a party to an armed conflict, as this aspect is less pertinent to cyberwarfare (Smith & Johnson, 2015).

It is crucial to recognize that there has been limited international dialogue regarding the interpretation and application of existing rules and principles of international law to cyberwarfare. Furthermore, the technological implications and military potential of this domain have not been fully explored. While it can be assumed that cyber operations do not occur in a legal vacuum, it is advisable to adopt a cautious approach to avoid prematurely prejudging legal issues in this rapidly evolving field.

It is worth noting the ongoing efforts of a group of international experts affiliated with the North Atlantic Treaty Organization (NATO) Cooperative Cyber Defence Centre of Excellence to draft a “Manual on the International Law of Cyber Warfare.” Although this manual may not necessarily represent a consolidated legal opinion of NATO or its member states, it is expected to significantly contribute to clarifying international law related to cyberwarfare. It is important to clarify that while the author participates in this process as an independent expert, the views expressed in this paper are solely those of the author and may not align with the consensus of the group of experts (Brown & Lee, 2018).

Defining Cyberwarfare

For the purposes of this discussion, “cyberwarfare” denotes military activities conducted in cyberspace through cyber means and methods. While “warfare” traditionally refers to armed conflict, “cyberspace” encompasses a globally interconnected network of digital information and communication infrastructures, including the Internet, telecommunications networks, and computer systems (Smith & Johnson, 2015). Consequently, actions like infecting an adversary’s computer network with a malicious virus constitute cyberwarfare, while activities such as bombing a military cybercommand from the air do not. It’s noteworthy that cyberwarfare isn’t confined solely to cyberspace; it can also yield non-electronic effects beyond this domain, potentially targeting individuals or systems reliant on computer infrastructure, such as power stations or medical equipment.

Unique Aspects of Cyberwarfare

In applying existing international law to cyberwarfare, it’s crucial to acknowledge the distinct features of cyberspace. Unlike other domains, cyberspace is entirely human-made, collectively maintained by public and private entities worldwide, and constantly evolving with technological advancements. Not bound by geopolitical or natural limitations, cyberspace enables instant transmission of information and electronic data across the globe via the electromagnetic spectrum. Data traverses through cyberspace as fragmented digital bits, routed unpredictably before being reassembled at their destination. Despite its accessibility to various entities, factors like IP spoofing and the utilization of botnets make it challenging to attribute cyber operations reliably, complicating identification processes (Brown & Lee, 2018).

Understanding Cyber Operations: Attacks, Exploitation, and Defense

The term “cyber operation,” also known as “computer network operation” (CNO), pertains to the transformation of information into electronic format and its movement across physical elements of cyber infrastructure (Smith & Johnson, 2015). These operations can be broadly classified into “computer network attack” (CNA), “computer network exploitation”

(CNE), and “computer network defense” (CND). CNA encompasses cyber activities aimed at disrupting, denying, degrading, or destroying information within computers or networks, or the networks themselves (Brown & Lee, 2018). On the other hand, CNE involves operations and intelligence collection to gather data from targeted or adversary automated information systems or networks. CND focuses on actions taken to protect, monitor, analyze, detect, and respond to unauthorized activity within information systems and computer networks. Essentially, CND aims to prevent CNA and CNE through intelligence, counterintelligence, law enforcement, and military capabilities (Jones, 2019). It’s crucial to note that these terms, specific to operations in cyberspace, should be carefully distinguished from established technical terms of international law such as “force,” “armed attack,” and “attack” (Smith & Johnson, 2015).

Cyber Operations and Jus ad Bellum

Jus ad bellum pertains to the body of law governing states’ resort to force in their international dealings, with the UN Charter serving as its primary source. While certain aspects, like the specific rules governing self-defense, may not be explicitly outlined in the Charter, they are derived from customary law based on state practice, *opinio juris*, and international jurisprudence. Within this framework, it’s crucial to assess under what circumstances cyber operations may constitute (1) an internationally wrongful threat or use of “force,” (2) an “armed attack” warranting necessary and proportionate self-defense measures, or (3) a “threat to the peace,” “breach of the peace,” or “act of aggression” warranting UN Security Council intervention.

The first question is significant because state-sponsored cyber operations categorized as a use of “force” against another state not only violate the general prohibition outlined in Article 2(4) of the UN Charter but also typically trigger an international armed conflict. On the other hand, cyber operations falling below the threshold of “force,” though prohibited under the customary principle of non-intervention, may constitute lawful countermeasures against internationally wrongful acts that don’t reach the level of an “armed attack” by another state. The second question is relevant as cyber operations amounting to an “armed attack” empower the attacked state to exercise its inherent right to self-defense, including the use of force prohibited under the Charter. Lastly, determining that cyber operations qualify as a “threat to the peace,” “breach of the peace,” or “act of aggression” enables the UN Security Council to take decisive measures, including military action, to maintain or restore international peace and security, regardless of whether the operations are classified as “force” or “armed attack” under Articles 2(4) and 51 of the UN Charter.

Is Cyber Operations a form of war?

According to Article 2(4) of the UN Charter, states are obligated to refrain from using or threatening force against the territorial integrity or political independence of other states. This raises the crucial question of whether cyber operations can be considered as “force” within the context of this prohibition. With no treaty definition available, the term “force” must be interpreted in line with the Charter’s objectives and purposes, taking into account its ordinary meaning. While “force” typically includes armed or military coercion, modern interpretations tend to equate it with such armed force. However, this doesn’t mean that the prohibition of interstate force is limited solely to conventional weapons. The International Court of Justice suggests that the prohibition extends to any form of force, regardless of the weapons employed. Consequently, cyber operations that result in effects similar to traditional weaponry fall within the scope of Article 2(4). For example, using cyber means to trigger a meltdown in a nuclear facility or disrupt air traffic control during adverse weather conditions would constitute the use of “force” due to the potential for significant harm and destruction (Smith & Johnson, 2015).

However, the challenge lies in determining whether cyber operations that don’t directly cause physical harm or destruction still qualify as the use of “force.” The drafting history of the UN Charter indicates that the prohibition of “force” was not intended to cover economic coercion or political pressure. Additionally, Article 41 of the UN Charter suggests that certain actions, like the interruption of communication, may not be considered as involving armed force. Nevertheless, the absence of violent effects doesn’t necessarily mean that all cyber operations fall outside the scope of armed force. While a comprehensive analysis is required, it’s essential to consider the potential impact and intent behind such operations (Brown & Lee, 2018).

A leading commentator has proposed a detailed set of criteria for distinguishing between armed force and economic or political coercion in the cyber realm, while recent critiques have highlighted weaknesses in these criteria, indicating ongoing ambiguity in this area (Smith & Johnson, 2015). From a teleological standpoint, the UN Charter can only fulfill its overarching goals of maintaining international peace and security by prohibiting any measures likely to incite military retaliation and, ultimately, international armed conflict (Brown & Lee, 2018). It logically follows that the Charter cannot permit the circumvention of its prohibition on interstate force through the use of non-violent means that effectively disrupt peace between states. For instance, consider the devastating impact of cyber operations that disable major city power grids, disrupt industrial production systems, or infiltrate malware to incapacitate an entire air defense system.

Furthermore, it’s essential to note that Article 2(4) of the UN Charter prohibits the resort to force between states regardless of scale or duration (Jones, 2019). As clarified by the International Court of Justice in the Nicaragua Case, even minor acts of interstate force are covered by the general prohibition of Article 2(4), irrespective of whether they also qualify as acts of

aggression or armed attacks triggering the right to self-defense (Smith & Johnson, 2015). This interpretation aligns with the stance that any use of force, regardless of its magnitude, violates the fundamental principles of the Charter.

In international humanitarian law (IHL), even minor instances of armed force between states can trigger an international armed conflict (Smith & Johnson, 2015). It would be illogical for Article 2(4) of the UN Charter, aimed at maintaining international peace and security, not to prohibit all forms of interstate conduct sufficient to lead to an international armed conflict, as defined in Article 2 common to the Geneva Conventions. Additionally, the UN Charter prohibits not only the actual use of force but also the mere threat of force in interstate relations. While the Charter doesn't explicitly define what constitutes a wrongful "threat" of interstate force, the International Court of Justice (ICJ) has stated that any threat of force that would be illegal if carried out is also illegal. In other words, the declared willingness of a state to use force must conform to the Charter to be lawful. However, there is still no consensus on the exact threshold at which cyber operations should be deemed as an internationally wrongful threat or use of force. Cyber operations often fall into a grey area between traditional military force and other forms of coercion, a concept not foreseen by the drafters of the UN Charter. Consequently, neither state practice nor international jurisprudence provides clear criteria regarding the threshold at which cyber operations, not resulting in death, injury, or destruction, must be considered prohibited under Article 2(4) of the UN Charter.

Moreover, a cyber operation doesn't need to constitute "force" within the meaning of Article 2(4) of the UN Charter to be internationally wrongful, nor would all cyber operations amounting to "force" necessarily be unlawful. The illegality of a cyber operation may stem from violating any obligation under international law. For instance, interstate computer network exploitation for intelligence gathering, electronic dissemination of hostile propaganda, or denial of service attacks would breach the affected state's sovereignty and the customary principle of non-intervention, even if they don't qualify as a use of force under Article 2(4) of the UN Charter (Jones, 2019). Similarly, non-destructive cyber operations intruding into computer-based archives or interfering with the free communication of a foreign diplomatic mission would violate international law regardless of their classification as "force" under the UN Charter.

The "Interstate" Dimension of Cyber Operations

Article 2(4) of the UN Charter specifically addresses states and prohibits their use of force solely within their "international relations" (Smith & Johnson, 2015). This implies that any use or threat of force must be legally linked to a state and directed toward one or more other states. In international law, actions are attributed to a state when carried out by individuals or entities acting on behalf of, or with authorization from, the state, thus implicating the state's international legal responsibility for their actions. These individuals or entities are termed "state agents." Conversely, those who aren't acting on behalf of a state or lack a sufficient link to a specific state cannot be considered state agents and are termed "non-state actors."

Determining state agency, which involves attributing individual conduct to a state, is guided by the international law of state responsibility, as articulated in the International Law Commission's Draft Articles on Responsibility of States for Internationally Wrongful Acts (2001) (Jones, 2019). While a comprehensive discussion of state agency exceeds the scope of this paper, it's important to note that state agents involved in cyber operations may include not only government personnel like members of the armed forces or intelligence agencies (*de jure* state agents) but also individuals authorized to act on behalf of a state, such as private contractors (*de facto* state agents). It's crucial to recognize that while the use of force, including through cyber operations, by individual hackers and other non-state actors may have implications under international humanitarian law and, in certain cases, international criminal law, it falls outside the scope of Article 2(4) of the UN Charter (Brown & Lee, 2018).

While states that provide significant support to non-state actors typically cannot be directly held responsible for cyber operations conducted by these actors, such support may constitute an "indirect" use of force in violation of Article 2(4) of the UN Charter and the principle of non-intervention (Smith & Johnson, 2015). It's important to differentiate between state agency, particularly *de facto* agency, and this "indirect" use of force. When *de facto* state agents engage in forceful actions, their conduct is directly attributed to the state they represent. However, "indirect" use of force refers to state support for non-state actors using force on their own behalf. Consequently, while the assisting state is accountable for its assistance, it isn't held responsible for the force employed by the aided entities or individuals (Jones, 2019).

Furthermore, it's possible that the use of force by non-state actors may pose a threat to international peace and security, necessitating the Security Council to undertake or authorize collective enforcement measures. However, the prohibition of actual recourse to force by and among non-state actors is primarily addressed by domestic criminal law and isn't the primary focus of Article 2(4) of the UN Charter (Brown & Lee, 2018).

Cyber Operations as "Armed Attacks"

Article 51 of the UN Charter stipulates that the inherent right of individual or collective self-defense remains intact if an armed attack occurs against a UN member (Smith & Johnson, 2015). This terminology suggests a distinction between the prohibition of "force" under Article 2(4) and the exception for "armed attack" under Article 51. Article 2(4) prohibits not only armed but also unarmed or indirect forms of force, as well as the mere threat of force. Consequently, not every threat or use

of force prohibited by Article 2(4) automatically qualifies as an armed attack justifying self-defensive action under the Charter (Jones, 2019).

This discrepancy is necessary and deliberate. Force below the threshold of an armed attack, though prohibited by Article 2(4), doesn't warrant a response deviating from the Charter's regime of collective enforcement, prohibition of unilateral force, and peaceful dispute resolution. The limitation of the derogatory clause in Article 51 to instances of armed attacks reflects the Charter's intent to prevent unnecessary escalation of interstate force, prioritizing the preservation of international peace and security over individual states' immediate protection of sovereign rights (Brown & Lee, 2018). Although there's no explicit derogatory clause for situations involving force below the threshold of an armed attack, the affected state still retains the right to self-defense through means not prohibited by the Charter, such as network communication interruptions or domestic security measures.

Article 51 may, in one aspect, surpass Article 2(4) by exempting states from Charter restrictions when faced with an armed attack, regardless of its attribution to another state. Consequently, an armed attack by non-state actors from within another state's territory, while not expressly prohibited under Article 2(4), could justify self-defensive action within that state, bypassing Charter restrictions. However, interpreting armed attacks to include acts by non-state actors remains contentious and lacks universal agreement (Smith & Johnson, 2015). Qualifying a state-sponsored cyber operation as an armed attack would empower the injured state to take self-defensive action, including military force, within and beyond the cyber realm, in deviation from treaty restrictions imposed by the UN Charter. Yet, determining the precise threshold at which cyber operations constitute a threat or use of force, let alone an armed attack, poses significant challenges (Jones, 2019).

Cyber Operations as “Armed” Attacks

From a textual standpoint, the term “armed attack” implies the use of weapons. The International Court of Justice (ICJ), in its advisory opinion on the legality of nuclear weapons, clarified that Article 51 of the Charter, like Articles 2(4) and 42, pertains “to any use of force, regardless of the weapons employed” (Smith & Johnson, 2015). While cyber attacks don't rely on traditional kinetic or other conventional weaponry, they are dependent on the infrastructure of cyberspace, prompting questions about its classification as a “weapon”. It's argued that the designation of a device as a weapon is determined by its intended use and effect rather than its formal designation or typical function. Therefore, any device or combination of devices causing significant loss of life or extensive destruction of property may be considered as fulfilling the conditions of an “armed” attack (Jones, 2019).

In this light, cyber operations possess the potential to qualify as an “armed” attack within the scope of Article 51 of the UN Charter. However, beyond this determination, the criteria for what constitutes an “armed attack” in the cyber realm remain unclear. The ICJ, in the Nicaragua case, distinguished between the most severe forms of force (constituting an armed attack) and less severe forms, such as a mere frontier incident, based on the scale and effects of the force involved (Brown & Lee, 2018). However, the Court's subsequent lack of elaboration on this distinction has led to more confusion than clarity and doesn't provide much guidance for applying the concept of “armed attack” to cyber operations today (Smith & Johnson, 2015).

Cyber Attacks Incapacitating “Critical Infrastructures”

To interpret the criterion of “scale and effects” in the absence of direct harm like death or destruction, the concept of “critical infrastructures” can offer valuable guidance. This concept has been central to discussions on cybersecurity, reflecting states' primary concerns in this area (Smith & Johnson, 2018). Critical infrastructures are those systems essential for the functioning of society, including energy generation and distribution, transportation, banking and finance, water supply, and public health services, among others (Jones, 2020).

Various international and national bodies have provided definitions of critical infrastructures, offering a common understanding despite some differences in interpretation. For instance, the UN General Assembly defines critical infrastructures as those vital for energy, transportation, banking, e-commerce, water supply, food distribution, public health, and the interconnected information systems that support them (Brown & Lee, 2019). Similarly, the United States categorizes critical infrastructures as systems crucial for the economy and government operations, such as telecommunications, energy, transportation, and emergency services (Taylor et al., 2017).

These definitions emphasize the essential nature of certain systems and assets for national security, economic stability, public health, and safety. Disruption or destruction of these infrastructures could have severe consequences, making them prime targets for cyber attacks. Therefore, cyber operations aiming to incapacitate critical infrastructures can be deemed as having significant scale and effects, even if they don't directly cause physical harm or destruction (Taylor et al., 2017). In summary, the concept of critical infrastructures provides a practical framework for assessing the severity of cyber attacks based on their potential impact on essential systems and services, helping to determine their qualification as “armed attacks” under Article 51 of the UN Charter (Jones, 2020).

Cyber Operations and Jus in Bello

International Humanitarian Law (IHL), also known as the law of armed conflict or jus in bello, is applicable exclusively in situations of armed conflict. It governs the conduct of hostilities between belligerent parties and provides protections for individuals who have fallen into the power of the enemy. The primary sources of IHL include the four Geneva Conventions of 1949 (GC I–IV), their first two Additional Protocols of 1977 (AP I and II), the Regulations annexed to the Fourth Hague Convention of 1907 (H IV R), and various treaties prohibiting or limiting the use of certain weapons. Additionally, customary international humanitarian law has developed over centuries of warfare and provides guidance in situations not covered by treaty law.

In the context of cyber operations, it is essential to differentiate “cyberwarfare” from other phenomena such as “cyber criminality” and “cyberterrorism,” which may not necessarily fall under the purview of IHL. When IHL is applicable, the key question is to what extent its rules and principles, originally designed for traditional forms of warfare, can be adapted to govern cyberwarfare. This examination primarily focuses on the rules governing the conduct of hostilities rather than those concerning the protection and treatment of individuals during armed conflict, as the latter may be less relevant to cyberwarfare scenarios.

Review of literature.

Cyber warfare presents a complex challenge to the international community, requiring careful consideration within the framework of existing international law. This paper explores key literature on the topic, delving into the legal aspects, policy implications, and practical realities of cyber operations. Scholars such as Schmitt and Ducheine provide insights into the applicability of traditional legal principles to cyber conflicts, offering guidance on issues such as the use of force, self-defense, and state responsibility. Libicki and Rid challenge prevailing narratives, questioning the inevitability and nature of cyber warfare. Meanwhile, works by Carr and Rosenzweig delve into the operational and strategic dimensions, mapping the cyber landscape and analyzing its impact on global security. Goodman and Miles highlight the legal and regulatory frameworks governing cybersecurity, emphasizing the need for comprehensive approaches to address emerging threats. Finally, Tsagourias examines the intersection of cybersecurity and international law, identifying areas of convergence and tension. Together, this literature underscores the urgent need for multilateral cooperation and adaptive legal frameworks to effectively address the evolving challenges of cyber warfare.

Conclusions

The phenomenon of cyberwarfare is not operating in a legal vacuum; rather, it is subject to established rules and principles of international law. However, applying these existing legal frameworks to cyberspace poses challenges and raises significant questions. Some of these questions can be addressed through traditional treaty interpretation and pragmatic reasoning, while others may necessitate unanimous policy decisions by the international community of states.

This paper has attempted to identify key questions arising from the intersection of cyberwarfare and international law, offering suggestions for potential avenues of resolution. Thus far, cyberwarfare has not resulted in catastrophic humanitarian consequences, but the potential for such outcomes looms large as societies become increasingly reliant on computer-controlled systems for daily functions. It is crucial for states to recognize their legal obligation to assess whether new cyberwarfare weapons and methods align with existing international humanitarian law. Moreover, they bear a moral responsibility to safeguard future generations from the potentially devastating impacts of cyber conflicts.

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The actual electoral system of the president in the republic of North Macedonia

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Abstract

Doctoral Thesis, “The Electoral System of the President in the Republic of Macedonia – the Latest”- focuses on the research of finding - reaching the path for as possible democratic elections - as one of the important tools - methods - for democratic election – peaceful elections are the criteria set forth by these bodies for rapid democratic development - in economics, politics, judiciary, etc., in the framework of the paper, is formed a precondition for the research about the role, but at the same time also of the effectiveness of the SEC for more democratic election and independent solutions from other state bodies, etc.

As a special study case in the interest of research, as well as for verification and empirical reliability is applied the case of the Presidential electoral system in this Republic and the constitutional and legal conditions which have to be completed before and during the presidential elections in this republic.- The principle will provide answers to research questions about how it could be conceived the role and efficiency of SEC and the voters before and during these elections, how can it be known that a third actor, in our case the SEC and the voters - was successful, how the elections are organized by the SEC of this republic - and should it be judged as effective the organizing of these elections in an effort to develop the successes of these elections - have lead to a successful conclusion - during the presidential elections in the Republic of Macedonia which would be the influencing factors in the role and effectiveness of the SEC as an independent and democratic institution - and will it achieve through these elections, so the desirable progress in overall development path of state organs –institutions and to improve the life of citizens within the state-Republic of North Macedonia, etc.

In other words, how could we define and operationalizate as a main dependent variable of this study - the effective mediating role of the SEC - voters in this particular case - Presidential Election in Macedonia, etc.

In the analysis of these elections, we find that these - until now and until the end according to the press and observers, are held democratically and independently from other bodies-however, there must be completed many criteria - important for the achievement of it's narrowly presented purpose, while in the future effective in achieving the longer-term goals in regarding the efforts that these elections always take place without any problems regardless of other institutions – of states.

The methodological side of this paper, in particular - the Electoral System of the President in the Republic of Macedonia-is studied with the help of qualitative research methods as are-normative juridical, historical, literature study, analytical, etc..

As a qualitative study, it focuses on a single case - The electoral system of the President in The Republic of Macedonia- to study, the ways and the role of these elections. This research shows that the success and efficiency of these bodies - can be examined with the possibility of a strong influence and strategy that SEC can have - from the cause of aspirations which also created conditions for this democratic development of elections etc. For the successes and achievements of the SEC and the auxiliary bodies on the one side and citizens- in the other role - have contributed to mutual understanding, etc

Key words - dialogue, good faith, Electoral System, etc.

Introduction

The first and second rounds of the sixth general presidential election in the Republic of North Macedonia were held on April 21 and May 5, 2019. In these two rounds - the first and the second, candidate Stevo Pendarovski won - supported by the ruling party LSDM - Social Democratic Union of Macedonia, then - from the Democratic Union for Integration - BDI - and 29 other political parties. During the elections in the first round, competed and Gorana Siljanovska -Davkova, a candidate supported by the opposition - Macedonian Internal Revolutionary Organization - Democratic Party for Macedonian National Unity - VMRO - DPMNE - and the coalition "For the best Macedonia" also and the candidate supported by the Alliance of Albanians - Besa - the other candidate Blerim Reka. - while in the second round entered and candidate - Stevo Pendarovski and Gordana Siljanovska Davkova .

A total of 1808,131 voters were registered - in the sixth presidential elections, etc., while on February 8, 2019, the presidential elections were announced, while on April 1, 2019, the election campaign began. It is characteristic that the candidates claimed that they were cross-party candidates with the support of political parties, etc. When the nominations of the three candidates were confirmed - by collecting signatures from citizens, etc.

In the first and second round, the elections were characterized by low participation, etc. - during which there was a risk of not reaching the necessary consensus of 40% in the second round, etc. While in the first round, there was a low participation in quality with more Albanian population.

While in the first round of the presidential elections, a total of 3,156 local observers and 463 foreign observers were observed, while in the second round, 3,321 local observers and 809 foreigners were observed in the second round, etc.

The number of observers in the previous presidential elections is lower. The observers' assessment is that the solutions have enabled the respect of basic human freedoms, in a correct and democratic atmosphere.

The objections has been - providing the ambiguities of the existing legal framework in the part of the long campaign - in the second round, etc.

In the following, this short scientific paper provides a detailed overview of the campaign, with the financing of the campaign of the presidential candidates, the announcement of the media, the results of the elections, the respect of the electoral rights, the evaluation of the elections by observers as well as by of political parties as well as summary conclusions for the entire election cycle, etc.

Electoral System of the President in the Republic of Macedonia-the Latest

According to the constitution - the President of the Republic of Macedonia represents the Republic - President of the Republic of Macedonia is the commander of the Armed Forces of Macedonia.

The President of the Republic exercises his rights and duties on the basis and within the framework of the constitution and laws, etc. before taking the task, the President of the Republic makes a solemn declaration before the assembly with which he obligates to respect the constitution and laws - according to art. 8 of the Macedonian constitution.

In cases of death, resignation, permanent inability to exercise the function or termination of the mandate according to the power of the constitution, until the election for the new president of the republic, the function of the president of the republic is exercised by the president of the assembly - Existence of conditions for the termination of the function of the President of the Republic is verified by the Constitutional Court of the Republic of Macedonia according to the official duty - and in case of inability to exercise the function, the President of the Republic is replaced by the President of the Assembly - and when the President of the Assembly exercises the function of the President of the Republic and he participates in the work of the assembly without the right to vote, etc.

Electoral System

Entry into the elections - on April 21, 2019, will be held the sixth regular elections for the president of the Republic of Macedonia. For the President of the Republic of Macedonia will compete several candidates , such as - Blerim Reka, Gordana Siljanovska-Davkova, who was supported by the opposition party - the Internal Macedonian Revolutionary Organization - the Democratic Party for Macedonian National Unity - party - VMRO-DPMNE - and coalition "For a better Macedonia", which was led by this party. While Stevo Pandarovski was supported by the Social Democratic League of Macedonia - LSDM - then the Democratic Union for Integration - BDI - and 29 other political parties. The elections were announced on February 8, 2019, where the President of the Parliament, Talat Xhaferi, in accordance with the obligations derived from the constitution and the laws on this issue - signed the decision for the presidential elections - which were foreseen - that the elections will be held on April 21, - at that time - the possible second round will be held two weeks later - on May 5,,

Voting abroad which is held in diplomatic and consular offices - ZDK - etc.

It is provided for one day before, for example on April 20, depending on the time zone in the country mentioned above. While on April 20, for example, the helpless and sick people also vote in their homes, people who are imprisoned or detained in prisons, people detained in detention, displaced people who vote in collective houses or reception centers - in the case of a second round, these categories of voters also vote one day before the elections, etc.

While the collection of signatures for presidential candidates in this republic began on February 23 and ended on March 9 - a total of eight - at that time, presidential candidates began the process of collecting letters - three of them successfully collected the number of necessary, of the signatures - while the other candidates - Dimce Petrovski, Filip Petrovski, Josif Mircevski, Gospodin Popovski - did not manage to collect the necessary signatures. while one candidate - MP Amdi Bajrami, president of the League of Macedonian Roma has left the race - while from VMRO-DPMNE - Filip Petrovski was initially the candidate for president - but at the party convention he lost to Professor Gordana Siljanovska Davkova - while he has Filip Petrovski accused the state election commission - SEC - of manipulating the procedure for collecting signatures - according to him - citizens were given invalid lists for signatures with the intention that the valid list would remain empty, while SEC denied such accusations.

While - three candidates Blerim Reka, Gordana Siljanovska-Davkova and Steve Pandarovski have successfully completed, Separately we will present data from statistics - Blerim Reka announced his candidacy for president through social networks on February 28, 2019. while on March 5, 2019, in the electoral headquarters, it was announced that Blerim Reka has collected the necessary number of signatures - more than 11,000 signatures - but in less than 15 hours - he has collected them. For these successes, he thanked the Alliance of Albanians and Besa as a political party that helped him to collect the necessary signatures,- This candidacy of Blerim Reke came as a result of the failure of an agreement between the parties -Alliance of Albanians and Besa with BDI- in power and LSDM for joint "consensual" candidate for president.

While Gordana Siljanovska -Davkova, a professor at the Faculty of Law, announced her candidacy after 27 professors publicly demanded that she be published as president - she announced for a while that she would run in the VMRO-DPMNE convention. In the congress which was held on February 16 in Struga, she competed among a total of 8 candidates, among them and deputy Vlatko Gjorcev, Filip Petrovski, who competed in this convention as a candidate proposed by the central committee of the United Macedonia party - she won 408 from 519 votes and officially became the presidential candidate of VMRO-DPMNE. After the convention, on February 22, Siljanovska -Davkova - she started the procedure of signatures and the next day she announced that she managed to collect a total of 16,000 signatures.

While the candidate three

Stevo Pendarovski, who was a candidate of LSDM in the previous presidential elections as early as 2014, joined the presidential race as the last candidate. His candidacy was announced on March 1, 2019, after LSDM, BDI and 29 other political parties announced that they had reached an agreement for a joint candidate in the elections - Earlier, Stevo Pandarovski was in a close race within LSDM party with three ministers of the current cabinet, Nikola Dimitrova, Oliver Spasovski and Radmilla Shekerinska. -candidacy of Stevo Pendarovski was formalized at the LSDM congress held on March 3 in Skopje - where he won the unanimous support of all 712 delegates - Even though he received support from a political party, Stevo Panderovski, same as Blerim Reka and Gordana Siljanovska Davkova also collected signatures for his candidacy.

After the closing of the predicted deadline for the signature, Pendarovski had collected 31,267 signatures.

The most uncertain was the choice of the LSDM and BUI candidate, Stevo Pendarovski. Several statements preceded his election, as well as inter-party negotiations between LSDM and BDI - BDI continued to stand in the position it developed for the previous presidential elections - at that time - in 2014 for the so-called "consensus president", which is acceptable president for all ethnic communities in Macedonia, who will represent all citizens in Macedonia.

After the initial failure to reconcile with LSDM, on January 30, BDI announced that in the presidential elections they will compete with their candidate, while the possibility of supporting another candidate exists, but only if they reach an agreement with the other party. etc.

Specific for these presidential elections is that the three presidential candidates confirmed their candidacies by collecting signatures-the presidential elections are held in the atmosphere of a turbulent political atmosphere-The change of the constitutional name of the country, thawing of the euro integration processes and aspects still unresolved issues of the previous political crisis, the political and judicial process of the incidents in the parliament on April 27, 2017, the status of the special public prosecutor's office-PSP- the trial processes arising from the work of the PSD, as well as the necessary reforms for the start of the date for the talks on membership in the EU in June of that year - these were the dominant topics addressed by the political community. In this context of party polarization, the presidential candidates have emphasized that they are in fact non-party candidates and will be independent in their work, even though they are officially supported by political parties.

According to the constitution, the duty of the president of the republic does not agree with the exercise of the function, other public profession or the function in a political party, etc. - while - for the removal of the immunity of the president of the republic, the Constitutional Court of the Republic of Macedonia decides by a majority of two thirds of the votes from the total number of female judges, etc. - according to this article.. the president of the republic holds responsibility for the violation of the constitution and laws during the exercise of his rights and duties. The procedure for dismissing the president according to the constitution of the republic - according to art. 87 procedure for verifying the responsibility of the president of the republic by the assembly with a majority of two-thirds of the votes from the total number of deputies - for the responsibility of the president, the Constitutional Court decided with a majority of two-thirds of the votes from the total number of female judges. If the Constitutional Court verifies the responsibility of the president of the republic, the function is terminated by the power of the constitution, etc.

Preparations for the Presidential Elections

The State Election Commission - SEC - approves the deadline for electoral activities for the holding presidential elections, etc.

The SEC continuously fill in the members of the Municipal Election Commissions - MEC - to replace those whose mandate was terminated or requests for dismissal - but no later than February 21. - According to the schedule, the municipal Elections Commission - MEC - will form The Electoral Council - and until that - the SEC - are also created by the missions of the ECs in the diplomatic and consular missions.

Meanwhile, the public viewing of voter lists in the regional offices, on the website of the CSE, as well as in the diplomatic and consular missions abroad - voting, is open in a certain period before, etc.

The President of the Republic of Macedonia can be elected a person who on the day of the elections has reached 40 years of age - for President of the Republic cannot be elected a person which until the day of the elections has not been a resident of the Republic of Macedonia at least ten years in the last 15 years.

According to this constitution - article 81 - for president of the republic can propose a candidate at least 10,000 voters or at least 30 deputies, etc., - For president of the republic is elected the candidate who won the majority of votes from the total number of voters, etc.,

Those citizens who, during this period, determine that they are not on the voters list and fulfill the conditions for the right to vote, may request to be registered, while in the period from the announcement of the elections to the close of public viewing, citizen voters of Macedonia who live abroad and who qualify for voting abroad can apply to realize this right.

According to Article 80 of the constitution of the Republic of Macedonia - the President of the Republic is elected in general and direct elections, by secret ballot, for a period of five years. For the president of the republic, the same person can be elected at most twice - according to this constitution - the president must be a citizen of the Republic of Macedonia according to the constitution.

The election of the president of the republic takes place in the last 60 days of the mandate of the previous president.

In cases of termination of the mandate of the president of the republic for any reason, the election of the new president is done within a period of 40 days from the day of the termination of the mandate - according to art. 81 of the constitution of the Republic of Macedonia, etc.

As for the legal term of the elections - for example, According to the legal deadlines and in accordance with the schedule of the SEC for the implementation of the presidential elections during the year 2019, the election campaign for this election lasted from April 1 to April 19, 2019.

While According to the schedule, the financial reports - with the specification of the cost of income and expenses in the bank account - the organizers of the election campaign must submit them to the SEC, the state audit office - SAO, and the State Commission for the Prevention of Corruption - SCPC - until in the following terms such as income and expenses for the first 10 days of the campaign, -after 10 days- and campaign expenses in the first round, if there are no second voting round after 10-14 days or if there are second round, the income and expenses of the second part of the election campaign, while -

The general financial report is presented no later than 30 days after closing the bank account and is submitted to the SEC, SAO, SCPC and to the assemblies also, the broadcasters, print media and electronic media and internet portals are obliged to send reports to the Ministry of Finance - MF, SEC, SAO and SCPC for the advertising space used by each of the participants in the election campaign and within 14 days, if the second round is not held, and not later - if the second round of voting takes place, etc.

And also according to the constitution of the Republic of Macedonia - if in the first round any candidate for president has no won the necessary majority of votes, in the second round will voted for two candidates who have won the most votes in the first round - and t the second round of voting is held within 14 days from the end of the first round of voting - according to Article 81 of the Constitution of the Republic of Macedonia. - how is elected the candidate who won with the majority of the votes of the voters who voted, if more than half of the voters have voted, etc. - If even in the second round of voting, none of the candidates has won the necessary majority of votes, was repeating the entire election procedure.

On the other side, for example - on March 12, began the period provided for in Article 8-a of the Electoral Code, according to which no public events can be held to celebrate the start of the construction or use of an object or infrastructure financed by the budget, the public fund, and funds of public enterprises with state capital.

According to the schedule, requests for election observation by local and foreign observers can be submitted approximately within 2 days, etc.

The latest changes for the Electoral Legislature

In the past period, some changes were made regarding to the provisions of the election code of the Republic of Macedonia. The changes have to do with the state electoral bodies, financing of political campaigns, the participants in the campaign, as well as the legal provisions of audio-visual media services.

State Election Commission

In Macedonia, in May 2018, the parliament approved 80 amendments to the Electoral Code. These changes are supported by the government and the opposition, and many articles of the electoral code that regulate the work of the state electoral commission- SEC were changed. With the additions to Article 26, the SEC now has seven members with a defined composition - the Chairman, the Vice-Chairman now and the five members of the commission. The mandate of the Commission starts from the day of the elections, and lasts

until the election of the following members of the SEC, but no more than two years may pass.

The conditions that must be fulfilled by the members of the SEC are described by the changes in the electoral code. With the recent changes in these positions, a citizen of the Republic of Macedonia - RM - with permanent residence in the country, who has a university degree diploma with at least eight years of experience and is not a member of a political party, the assembly publishes the announcement for the election of the president, vice-president and members of the SEC, the Official Gazette of R.M. ,, and in the daily press. the notification last eight days from the day of publication in the Official Gazette.

The procedure for the election of members is prepared by the commission for the approval of elections and appointments in the assembly of the Republic of Macedonia.

This commission prepares a draft list of candidates and presents it to the assembly. As for the candidates on the list, the opposition proposes one president and two members, while the parties in power propose a vice - president and three members. All members are elected by a two-thirds majority of the total number of deputies.

The changes have also been made regarding the conditions for the termination of the operation of SEC members. with recent changes, the ending could be-

1. By force of law,
2. At their request,
3. Due to the unprofessional and unethical exercise of the function,
4. Due to completion of the requirements for retirement at the age set by law,
5. Due to death and
6. If convicted with a final sentence of more than six months.

While with two thirds of the total number of SEC members, can propose to the selection and appointment committee, the dismissal of a member due to unprofessional and unethical behavior in office, etc.

-Regarding the SEC - in the changes, it is related to the deadline for the proposal of the members of this body -According to this - the Speaker of the Assembly informs the political parties that within three days they must submit their proposals for chairperson and two members - for the opposition - respectively, the vice-president and three members of the SEC - of the parties in power.

And if the opposition and the parties in power do not use the right to propose the candidate, in that case, the candidates will be appointed by the committee for issues of elections and appointments of the Assembly.

Financing of the political party

In the Parliament of the Republic of Macedonia in July 2018, the last changes were made regarding the financing of political parties. In the law on financing of political parties changes have been made in some provisions regarding the specification of property and the financing of political parties - movable and immovable property - the sum of the total amount of activities for the annual financing of political parties in the amount of 0.15 / of the budget, private funding sources, the amount of individual donations should not be greater than the sum of 60 monthly salaries as donations from legal entities and 30 monthly salaries if the donations come from natural persons. from the funds for financing political parties provided by the Budget of the Republic of Macedonia, 30/ are distributed equally to all political parties that have won at least 1/ of the total number of votes from the last parliamentary or local elections . And 70/ of the funds allocated to political parties based on the number of members of Parliament elected in the last parliamentary elections and the number of councilors elected in the last local elections, etc.

-While in the part about the control of the financing of the political parties, the Article 26 of the law has been completed with several paragraphs, where it is emphasized the possibility that the political parties have only one bank account, and the case of financing by securing funds from a loan from commercial banks. , except for the party's main bank account. These may have a separate concrete account for party funds secured through a loan. Also, the political party has the right to transfer funds between its accounts, while the research-analytical center of the party -RACP- has a separate account.

Funds from the budgets of the Republic of Macedonia in the amount of 280,000 in equivalents denar are also provided for the annual financing of the anp, which are formed according to the law, as part of the internal organization of the party.

Also, the recent changes in the law created an obligation to present a financial report on the material and financial performance of the party, which includes the financial operations of the account - the account of the political party. the changes as an additional part of the financial report recognize the articles, sponsorship,. Whereas, the changes provide that

the funds intended for the financing of political parties are paid in accordance with the budget possibilities - but not later than March 1 of each current year.

While, along with the Law on the financing of Political Entities, the Electoral Code of the Republic of Macedonia has changed in the field of fundraising for the financing of political campaigns, etc. by completing this paragraph, political parties can deposit funds from

the basic turnover account in the transaction account opened for the financing of the election campaign. The Political Party is authorized to transfer from the transaction account for the financing of the campaign to the basic turnover account of the party.

Public Bulletins

With the changes in the Electoral Code of 2018, it was foreseen that from the day the elections were announced, until the beginning of the election campaign, broadcasters, print media and electronic media - portals - could not broadcast or publish paid political advertisements, with the exception of announcements and notices for the collection of signatures to support the candidacy of a group of voters, etc.

The media during the Presidential elections in the Republic of Macedonia

In the media environment in the country that consists of 250 media houses, including 130 broadcasters and 1000 Internet pages, television still remains as the main source of information - except for the Agency for Audio and Audiovisual Media Services, whose legal obligation is to monitor the coverage of media during the election process, media coverage during the election campaign was supervised by the international election observation mission, the OSCE/ODIHR showed impartial reporting by public broadcasters that enabled voters to be adequately informed before exercising their right to vote. of them to vote. The OSCE international monitoring report - which notes an improvement in the state of press freedom, despite the discovery of a case in which the TV 21 team was subjected to threats and intimidation, etc..

The monitoring of the media coverage of the election process was done from the day the elections were announced, including the beginning of the pre-election silence that took place before the second round, etc.

- This monitoring was carried out by the Agency for AUDIO and Audio-visual Media Services - AAVMU, as a body legally responsible for monitoring this process. AAVMU reports for media monitoring covering all forms of media coverage of the elections - daily information programs, special information programs - interviews, TV/radio debates, current affairs programs, documentary and specialized thematic programs and informative programs dedicated to the elections, etc

Protection of Electoral Rights

The Constitution - as well as the Electoral Code guarantees the protection of the right to vote - according to the Electoral Code, each submitter of a list of candidates and each voter has the right to submit a complaint to the State Election Commission if they consider that their right has been violated.

From the submitters of the list, complaints may refer to the voting procedure, tabulation and determination of results, while voters may make remarks if the right to vote has been violated in the procedure. For the protection of the right to vote, it is urgent - so the filing of the complaint and lawsuit in this case cannot be sent by post. whereas the submission of the list to the SEC, the submitted complaints must be submitted within 48 hours after the end of the voting, while after the announcement of the preliminary results and the SEC is obliged to make a decision within 48 hours after receiving the complaint. The SEC informs the applicant about the decision taken of the complaint by electronic mail and the decision is considered to have been delivered within five hours from the sending of the electronic mail. And if the complainant is not satisfied with the answer, he has the right to submit a complaint to the Administrative Court within 24 hours after receiving the decision - whereas the court must make a decision within 48 hours if after receiving the complaint, etc.

While in cases of violation of the voter's right to vote, the same can submit a complaint to the SEC within 24 hours and the SEC must make a decision within 4 hours after receiving the complaint, etc.

Assessments of Elections by Observers

The presidential elections in the first round were monitored by a total of 3619 observers - and in the second round by 4130 observers. Of them, 3,156 local observers were local observers and of 463 foreign observers in the first round, respectively 3,321 local foreign observers in the second round of elections.

- As local observers, the largest number was from the MOST civic association, respectively 1994 observers in the first

district and 2032 observers in the second district, etc. Then the Association for the Affirmation of Human Values and the Integration of Youth MAK-SONCE - Skopje had 583 observers accredited in the first round and 768 observers in the second round. While the third accredited organization is the Association for the Development and Promotion of Tourism, sustainable development and human rights AXIOS 2017 Skopje with 329 observers in both rounds of the elections, while the other organization that observed the elections was the Center for Civil Liberties from Skopje with 160, respectively 163 observers in the second round, Inkluziva from Gostivar 44, National Roma center from Kumanova 20, Association of Persons with Disabilities, Together we can with 10 and the Macedonian Center for Culture and Development and the Institute for Economic Strategy and International Relations - Oher with eight observers.

The Organization for Security and Cooperation in Europe / Office for Democratic Institutions and Human Rights - OSCE / ODIHR - had 195 observers in the first round and 249 observers in the second round, which was the largest foreign observer mission.

Likewise, the embassies of the United States, Canada, Italy, Albania, Hungary, Sweden, Great Britain, the Netherlands, Kosovo and the EU delegation in North Macedonia observed the elections with a smaller number of observers.

- The first round was attended by 48 foreign journalists - from RUPTLI Agency, Orf-Radio and Austrian television, Bulgarian National Television, Voice of America, RTV Vojvodina, German state television, T 7 Pristina television, Turkish state television -TRT.

While in the second round, the number of journalists has increased to 60, journalists from TRT-World correspondent, RTVM etc. were also accredited.

In the preliminary reports for the first and second round, the OSCE/ODIHR mission assessed that the elections were implemented with good respect for freedoms and fundamental rights and voters were able to be informed, etc. - It was assessed that the day of the elections passed without problems and in transparently etc

The association most estimated that the citizens were free to cast their votes and that the voting took place in a fair and democratic atmosphere//

Assessments of elections by political parties

Political parties from the government and positions, and from the presidential candidates, come out with different assessments for these presidential elections in the first district - the ruling LSDM party assessed the elections as democratic elections, noting that such elections are important for Euro-Atlantic integration - while VMRO-DPMNE parties -, on the other hand, accused of pressure from the government and the use of illegal means to collect information in some cases, etc.

While LSDM assessed that the elections in the first round took place in a calm, democratic, honest atmosphere and that the first round of these elections was "crystal clear". LSDM congratulated the citizens for the free exercise of their right of voting, demonstrating in a democratic way the maturity and democratic responsibility before society and dignified and in front of the state, etc. - it evaluated that the institutions with all their capacities were able to pass the elections in a better order, etc. and for the second round, it called the citizens from all ethnic communities to support their candidate, etc.

Whereas the VMRO - DPMNE opposed this assessment which accused of irregularities and pressure on voters from the government, etc. one of the accusations was the existence of a request with which LSDM attempted to collect data on citizens, etc.

- What did this party say - what made the citizens say no to crime, corruption and nepotism of the government. Those from the citizens asked that in the second district they come out in great support for Gordana Siljanovska-Davkova.

While in the elections in the second district, Gordana Siljanovska-Davkova won, with the aim of confirming that the citizens are the ones who vote, etc.

- While the day of the Elections was evaluated as peaceful and democratic by the electoral headquarters of Blerim Reka - who evaluated them as fair, free and democratic and emphasized that the result exceeded their expectations, etc. - according to Blerim Reka, due to the list of to the uninformed voters, which did not take into account 250,000 citizens who have emigrated, is low participation, etc.

And on the day of the decisions, the head of the Alliance for Albanians, Zijadin Cela, stressed that fair and democratic elections are important for the country, but accused that during the campaign they witnessed intimidation, blackmail and bad propaganda from the media close to the government - Alliance for Albanians and Besa, which supports the candidate Blerim Reka, held a joint press conference immediately after the elections, where Zijadin Cela emphasized that they are satisfied with the result since in all settlements and municipalities with an Albanian majority, Blerim Reka won with a convincing victory, etc.

- In the second round, LSDM and VMRO-DPMN, as well as for the first round, assessed differently, differently for the election day and the electoral process as a whole, etc.

- For the second round, VMRO-DPMN qualifications were tough, pointing out a number of irregularities - an organized vote, family vote, pressure, threats and blackmail, as well as allegations of bribes to voters. While for LSDM, the solutions were democratically successful, rights that allowed citizens to exercise their right to vote in a peaceful and dignified manner - the Republic of North Macedonia held clear and democratic elections with a peaceful and democratic day.

- After holding the second round of elections, LSDM and VMRO-DPMNE held press conferences together with the

candidates they support, etc. In an LSDM press conference, the prime minister and head of LSDM - Zaev emphasized that the elections were successful and democratic and that both electoral districts were clean and that Macedonia demonstrated democratic capacities, etc. He congratulated the victory of Stevo Pendarovski and thanked all the ethnic communities, all parties and political entities that participated in the elections.

Conclusions

These above presidential elections for 2019 and the current one. In the Republic of North Macedonia, in general, they took place in a democratic and correct atmosphere - where citizens freely expressed their right to vote. the campaign was assessed as peaceful. What contributed to the respect of the basic freedoms of expression - the largest part of the campaign was characterized by the positive promotion of the candidates - but with contradictions between the candidates supported by VMRO-DPMNE and LSDM, especially at the end of the campaign for the second round etc. Especially the main topic during the campaign was the question about the Prespes Agreement and the name change, etc.

The winner was Stevo Pendarovski, who was supported by LSDM, BDI and 30 smaller political parties - where he directed his campaign directly towards the Euro-Atlantic future of the country and the need - for a president who unites, etc.

While the other candidate, Gordana Siljanovska Davkova, who was supported by VMRO-DPMNE during the campaign was especially focused on - the damage from the Prespes Agreement and then the need for a legal decision, emphasizing the problems faced by society in the Republic of Macedonia - during the rule of LSDM leadership.

While on the other hand, Blerim Reka, mainly focused the campaign in the areas with majority Albanian population, even though during the campaign in the framework of the television stations, the crowds were addressed to all the citizens of the Republic of Macedonia - while defending the concept of the Euro-Atlantic and multi-ethnic republic.

- Regarding financing - the most expensive election campaign is that of Stevo Pendarovski - until the end of the second round, he spent 47,890,399 denars - 778,704 Euros, etc.

While in the first round, the elections were characterized by low participation - the low participation is due to several factors, such as - the low motivation of the voters, especially the Albanian ones, etc.

- While in the first round of voting, 41.68% of registered voters came out - participation increased slightly in the second round - voter turnout increased by 46.65% - which is less than the turnout in the presidential elections in 2014 when two elections were held at the same time - simultaneous parliamentary and presidential.

In the first round, the candidate Stevo Pendarovski won the most votes -42.53%, then Gordana Siljanovska Davkova won 42.25%, while the Albanian candidate Blerim Reka won 10.6% of the votes - while 4.34% votes were declared invalid, etc.

While the difference between them was apparently higher in the second district, etc. in this district, stevo pendarovski won the most votes - a total of 51.65% of the votes, while his opponent Gordana Siljanovska -Davkova -44.75%. while 3.6% votes were declared invalid, etc..

Stevo Pendarovski in the second round was elected and won 51.65% of the votes, representing 24.09% of the total number of voters registered in the electoral list within the Republic of North Macedonia, etc.

For the first round, a total of 14 complaints were submitted - five of them were accepted, in the state commission of elections - kshz - etc. while in the second district 12 complaints were presented while 4 of them were accepted - while all complaints were submitted to VMRO -DPMNE and Gordana Siljanovska -Davkova - in all cases the voting was canceled but there was no re-voting - that in those places voting did not affect the overall results, etc.

- As for the watchers - the first round was attended by 3,156 local watchers - 463 foreign courses, etc. also for the second round of these elections, the number of local observers increased to 3,321, while the number of foreign observers was brought to 809 observers, etc.

General assessments

The general assessment of the monitoring missions, especially the OSCE/ODIHR and the local MOST, is that the elections were held in a democratic and correct atmosphere - they were conducted in an efficient manner with respect for fundamental rights and they were allowed to be informed about with the candidates before they make their choice, etc.

- It was assessed that the elections on that day were going without problems in relation to the procedure and it went in a transparent manner even though there were some isolated cases of irregularities and there were some remarks about the electoral code with a focus on the financing of the campaign in the second round, etc. And enjoying the trust of the majority of the interested parties - the work of the SEC was evaluated by the observers as impartial and an open solution, etc.

While there were remarks, the SEC noted that it was late in certain technical preparations and also that some of the sessions were held in a closed form - the MOST report noted that the SEC canceled the voting without opening the material in four cases, etc. .

The European Union has assessed noting the need for further reforms in the electoral legislation and has assessed these solutions as calm and transparent - while the US embassy welcomed the preliminary findings of the OSCE/ODIHR and assessed the elections as a competitive solution and that the respect of fundamental freedoms are contributors to a democratic

process.

While BDI welcomed the development of the electoral process by evaluating the country's capacities for conducting European elections - while the candidate Blerim Reka evaluated the solutions as democratic and free rights, which during the campaign was supported by Besa and the Alliance of Albanians.

Whereas the opposition VMRO-DPMNE blamed for the irregularity and pressure on the voters from the government-LSDM in power assessed the elections as exceptionally fair, peaceful and democratic, etc.

While the media reporting has been evaluated as professional and impartial, with particular emphasis on the perceived tendency of the media to adhere to the principles of equal, fair and accurate information. - the OSCE/ODIHR monitoring mission.

During these elections, most of the media in the campaign period have respected not only the Electoral Code and the law for AUDIO and individual media services, but also the standards and principles of impartial journalistic reporting, making it possible for citizens to have the right information immediately before exercise the right to vote

- The fifth president Stevo Pendarovski was inaugurated as president on May 12, 2014. - unlike the inauguration of President Ivanov in 2014, when the LSDM - then the opposition party did not participate - Pendarovski's inauguration was followed by the opposition and the parliament, etc.

- The inauguration session was attended by the President of Serbia, Aleksander Vucice, the President of Albania, Ilir Meta, Rumen Radev of Bulgaria and Hashim Thaci of Kosovo, etc. - the Ministries of Foreign Affairs of Greece, Montenegro, etc. took part in the inauguration.

- Congratulations for his election came the day after the elections - from the Secretary General of NATO, Jon Stoltenberg, the Commissioner for Enlargement, the Austrian Chancellor, the British Prime Minister and the Minister of Foreign Affairs of Great Britain - congratulations for this decision came from the United States, as well as from the President of the European Commission Jean-Claude Juncker, etc.

In parallel to the presidential elections of April 21, 2019, early elections were also held for the mayors of the municipalities of Ohrid, Diber and Novo Sello, etc.

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“Candidate Petrovski accuses him of manipulating the CSC, which the CSC denies. Access to <https://24.mk/details/kandidatat-petrovski-obnvinuva-za-manipulation-vo-dik-a-attam-go-demontirat> .

“Thank you citizens, I join the leadership - I will be a dignified president of all - you will be proud - press statement, LSDM - after the 2019 elections, etc.

Programmaticism, the leader charisma or clientelism: What incentivizes more the Albanian electorate?

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Abstract

One of the characteristic features of the Albanian party system during three decades of pluralism and political competition has been its stability and consolidation, with two main parties (the Socialist and the Democratic Party) dominating the political scene and securing the majority of votes of the Albanian electorate. Despite this stability of the party system with two main parties that have dominated it, it cannot be said the political system in Albania has enjoyed satisfactory levels of representation of the electorate, and it is also characterized by low levels of political accountability of the political parties to segments of the electorate that votes for them. In the mixture of different linkage strategies that political parties use to ensure votes from the electorate, Albanian political parties steadily more (especially during the end of the first decade of the 2000s and beyond, which also coincides with the introduction of the proportional regional electoral system in Albania) have relied on strategies that are increasingly moving away from the programmatic appeals to certain segments of their (traditional) electorates. This has come not only as a change prompted at the institutional level (by the introduction of a new electoral system in 2008 in Albania), but also as a functional adaptation to the demands of a large part of the Albanian electorate. The aim of this article is to highlight the nature of Albanian political parties as seen by the Albanian citizens and which linkage strategies dominate the relationships between political parties and the electorate in Albania.

Keywords: *Linkage strategies, programmaticism, charismatic personality, clientelism, political parties, accountability.*

Introduction

More than three decades after the overthrow of the communist dictatorship, democracy in Albania continues to function with deficits and in „a low-level equilibrium trap” (Rose & Shin, 2001) where the citizens’ disappointments with the endemic and systematic political corruption and failures in their political representation do not translate into political change or improvement of the democratic system of the country. Endemic and systemic corruption, weak rule of law, the low levels of political accountability and the low levels to which political parties in Albania link to voters on a programmatic basis are some of the factors that condition the quality of democracy in Albania today. A distinctive characteristic of the party system in Albania after the overthrow of the communist dictatorship in 1991, which distinguishes Albania from many other post-communist countries in Eastern Europe, has been the stability and consolidation of its party system, with two main parties (the Socialist and the Democratic Party) dominating the political scene and securing the majority of votes of the Albanian electorate for more than three decades.

However, in the case of Albania, we can say that there is a kind of paradox since the literature of political science assumes that a higher degree of institutionalization and stability of a party system within a country is positively correlated with the consolidation and quality of democracy, as this allows political parties to fulfill their functions better. “In more institutionalized systems, parties have strong roots in society and the voter-party linkage is closer. Political actors see parties as a legitimate,

necessary part of democratic politics, and party organizations are not dependent on charismatic leaders but have acquired an independent status. Weakly institutionalized party systems generate more uncertainty of electoral outcomes and are inimical to electoral accountability” (Ufen, 2007: 6). Also, it is emphasized that “institutionalized party systems are characterized by continuity among party alternatives and enhanced electoral accountability” (Randal & Svåsand, 2002: 7). Despite the high degree of stability and institutionalization of the party system, political parties in Albania do not link to voters on a programmatic basis, show very low levels of political/electoral accountability, have a strong, almost symbiotic identification with their leaders, and they employ mostly clientelistic strategies through the use of the particularistic and targeted use of public (but also private) resources to win votes and succeed in the electoral arena. Albanian political parties can be categorized as mass clientelistic parties; they are broad-based but not funded by the membership and use state power to reward their members and sympathizers for their campaign support (Xhaferaj, 2016: 4). “Phenomena such as party members exclusions, no-challenging policy to the party leader, attempts to silence opposing voices within the party, efforts to control political rivals, contested internal party elections, internal party struggles and personalised conflicts are a few examples of the clientelistic and charismatic leader centered party system in Albania (Bino, 2017: 44-45).

Given the paradox that exists between the stable and relatively consolidated party system since the overthrow of the communist dictatorship (with Socialist and the Democratic Party dominating the political scene and securing the majority of votes of the Albanian electorate) and the weak levels of programmatic links, together with the low political accountability of political parties, the aim of this article is to highlight the nature of Albanian political parties as seen by the citizens, and which linkage strategies dominate in the relationships between political parties and their electorate in Albania. Among different researchers of post-communist politics in Albania, there is a consensus that in the party system consolidation in Albania, the party system is centered on clientelistic or charismatic parties rather than programmatic cleavages. (Kitschelt, 1995; Kajsiu, 2010; Xhaferaj, 2016; Sqapi, 2020). However, there is a theoretical deficiency in the explanation of the nature of political parties in the Albanian political system that has also come from the lack of empirical studies on the characteristics of these political parties as seen by the Albanian citizens, as well as whether or not the Albanian electorate is responsive to clientelistic incentives offered by the main political parties. Before explaining these characteristics of the main political parties (which are currently also parliamentary parties) as seen by the Albanian citizens, an inventory of the main types of linkage strategies between political parties and voters (alignment) in democratic systems as well as the main characteristics of these linkage strategies are given in the next section.

The Main Types of Citizens-politicians Linkage Strategies in Democratic System

“Democracy is the only political regime in which institutional rules of competition between candidates aspiring to exercise political authority make rulers accountable and responsive to the political preference distribution among all competent citizens” (Kitschelt, 2000: 845). In order for them to win votes and to come to power, which is the primary goal of every political party, the democratic rules of competition and periodic elections (usually once every four years) force politicians to be accountable to their voters and to take into account the latter’s demands. The political accountability of politicians in front of their electorate takes different forms depending on the dominant linkage strategy between a political party and their electorate and the promises made in exchange for securing votes during the period of election campaigns. “In democratic elections, political parties and/or individual candidates offer citizens some mix of policy promises, material benefits, and symbolic cues, in exchange for which they hope to secure votes, labor, campaign contributions, etc.” (Kitschelt & Kselman, 2010: 2). In general, the dominant form of exchange relations that political parties and the electorate have with each other as a „contractual” mechanism is generated by considering the historical-political, socio-cultural, and economic context of a particular setting (country). However, what should be emphasized is that the linkage strategies that parties choose in the relationships with their electorate are often in opposition and not complementary to each other, with the dominance of one linkage strategy at trade-off relations to the other linkage strategy deployed by the same political party. As Kitschelt and Kselman point out, “A political party’s linkage strategy is defined as the relative allocation of organizational resources towards the cultivation of distinct, and often mutually undermining, patterns of electoral exchange” (2010: 3). Below, we will briefly describe the three main types of linkage strategies that political parties might deploy or that the electorate might appreciate to vote for a party.

The first linkage strategy that political parties might deploy in order to secure votes from the electorate is the linkage through the charismatic authority/personality of their leaders. Voters may be enchanted by the unique personal qualities of a politician/leader of a party to arouse affection, faith, or loyalty in his leadership (linkage through “charismatic” authority) as a psychological mechanism that pushes voters to vote for a specific individual (Kitschelt & Freeze, 2010; 5). “Charisma pertains to an individual’s unique personal skills and powers of persuasion that instill followers with faith in the leader’s ability to end suffering and create a better future” (Kitschelt, 2000: 849). Typically, the linkage through “charismatic” authority is based on personalistic grounds and is not based on any direct or indirect benefit of the voters but on their belief that a specific „leader” will solve society’s problems and that „he”, better than anyone else, can do this. Many scholars of democracy have often pointed out the danger it carries for democracy and democratic accountability, the linkage through „charismatic” authority between the electorate and the leader as a „savior”, since the latter tends to go beyond the articulation of concrete political programs and to promise „big things” to all people, in populism, and also ultimately to have discrete political authority similar to

that of authoritarian leaders. This eventually leads to the erosion of democratic institutions and norms, further division and polarization of the electorate, undermining of the rule of law, and constitutional constraints on pursuing political goals.

In contrast with linkage through “charismatic” authority, democracy theorists have emphasized the importance of programmatic or ideological attitudes [the programmatic linkage] for political accountability in a democratic system. Theorists of representative democracy have generally concentrated on this form of political accountability, namely the programmatic accountability associated with parties’ commitments and promises to promote and implement particular positions on fairly broad-based issues of public policy (Kitschelt & Kselman, 2010: 4). “Programmaticism emerges as the effort politicians make to attract voters based on commitments to general policies, delivering public goods or large-scale club goods that benefit classes and social strata” (Kitschelt & Freeze, 2010: 6). The logic of programmatic linkage is built on a universalistic conception of citizenship and the distribution of goods and services (promised by politicians) in a universalistic way based on specific criteria and not on a particularistic or targeted basis. In short, in the programmatic linkage, “political parties offer packages (programs) of policies that they promise to pursue if elected into office. They compensate voters only indirectly, without selective incentives. Voters experience the redistributive consequences of parties’ policy programs regardless of whether they supported the governing party or parties” (Kitschelt, 2000: 850). The programmatic parties provide large-scale club goods or collective goods on issues of defined, universalistic public policy that applies to every constituency member, regardless of whether he/she voted or not for that party.

Contrary to the programmatic policy commitments as a linkage strategy, but not necessarily at trade-off relations with the „charismatic” linkage, political parties can also use the clientelistic strategy. The clientelistic linkage has as its main feature the targeted delivery of benefits to certain individuals or small groups in exchange for votes they can give. Thus, in the clientelistic efforts that parties or political entrepreneurs can undertake:

“rather than providing collective or club goods to large groups, without checks on whether individual members or groups of members did or did not vote for the party allocating goods, politicians offer private, targeted benefits to individual citizens or small groups (families, street neighborhoods) in exchange for citizens’ partisan support (votes, participation in rallies, campaign work, etc.). What is different from programmatic politics is not only *the scale* of goods delivered (small, targeted), but also the *contingency of the exchange*. Benefits ideally accrue only to those who stick to the (implicit) contract: targeted benefits, if votes are delivered” (Kitschelt & Freeze, 2010: 4).

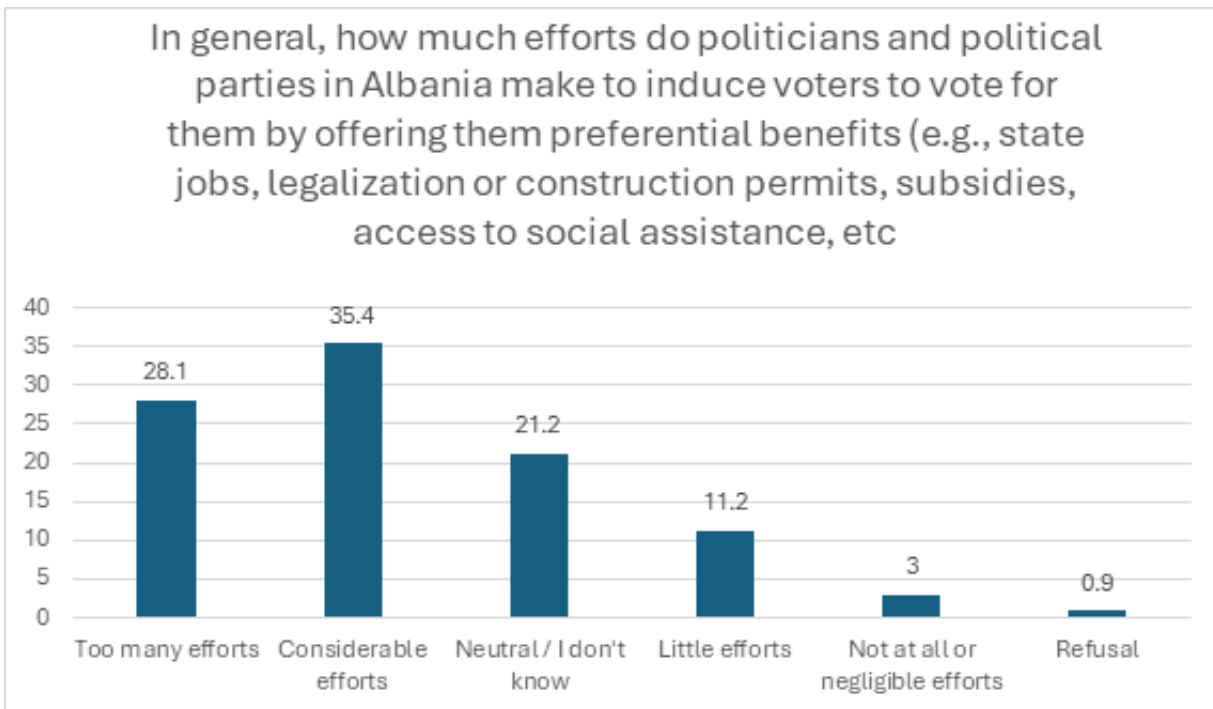
These targeted exchanges and particularistic benefits involved in the clientelistic linkage that political parties can use to secure electoral support can take many forms, including direct or indirect vote-buying from the people, jobs in public administration, legalization of informal/illegal dwellings, preferential access to social programs and various public services, exemptions from fines or taxes, construction permits, procurements contracts for certain firms, tailor-made laws, etc. The list of these targeted clientelistic rewards that can be given is long and the above examples offered are by no means an exhaustive list. What should be emphasized about this type of linkage strategy between political parties/politicians and voters is that the exchange is based on instrumental-material relations, on the benefit of the moment, on a *hic et nunc* accountability, which does not last beyond the moment of the transaction (which is the giving of a vote in exchange for a particularist benefit). This type of linkage strategy based on direct, particularistic, and typically material side payments between political parties/politicians and the electorate is harmful to democracy as the former’s accountability towards the latter „ends” at the moment of providing the requested service in exchange for the vote. The argument here is that clientelist parties, in contrast to cleavage-based ones [that are based on the abovementioned programmatic linkage], have the potential to stall democracy or to undermine democratic consolidation... because, on average, accountability is eroded (Hicken 2011, 302) and political parties/politicians have great discretion after taking power since they are no longer limited in “maintaining programmatic commitments [to certain classes and social strata] intertemporally in responsible ways and act reliably on pre-election commitments, once elected to office” (see in Downs 1957: 105). The clientelistic linkage directly challenges the logic of programmatic politics, which is predicated on a universalistic understanding of citizenship and equality under the law, by emphasizing the distribution of targeted material benefits (particularistic ones under the “private implicit contract”). It constitutes a logic of exchange with asymmetric but mutually beneficial and open-ended transactions (Roniger, 1994: 3). In short, to sum it up, clientelistic exchanges, in general, are detrimental to democracy, as they directly undermine the quality of representation of the interests of different groups/social strata and further undermine political accountability; they violate the universalistic conception of citizenship based on equality and impartiality in the distribution of good and services, as well as it gives politicians a great discretion after taking power, eventually leading to rent-seeking and political [grand] corruption.

The Citizens-politicians Linkage Strategies as perceived by the Albanian Electorate

This section presents empirical data on how the Albanian electorate perceives the linkage strategies that political parties in Albania deploy to secure votes in the parliamentary elections and how Albanian citizens see the main political parties in relation to their programmatic/ideological profiling. The generation of the data presented below was made from a study conducted in the period of January-April 2024 with over 1800 citizens with the right to vote in all 61 municipalities of Albania, in their administrative units that included both urban and rural areas, entitled: “*The Social Basis of Voting in Albania: The*

Influences of Structural Social Factors and Political Cleavages in Determining the Vote of the Albanian Electorate” (see in Sqapi & Xhindi, 2024). Some of the questions that comprised the questionnaire are directly related to the aims of this article, which are how citizens in Albania perceive political parties in their efforts to win votes and whether the main political parties in the country make more efforts to link with the electorate through a *clientelistic strategy*, through the “*charismatic*” authority of their leaders, or the *programmatic linkage strategy*. The figures below (no. 1, 2, and 3) present the data regarding how the Albanian citizens surveyed in this study see political parties and politicians in Albania regarding their efforts to win votes from the electorate in parliamentary elections.

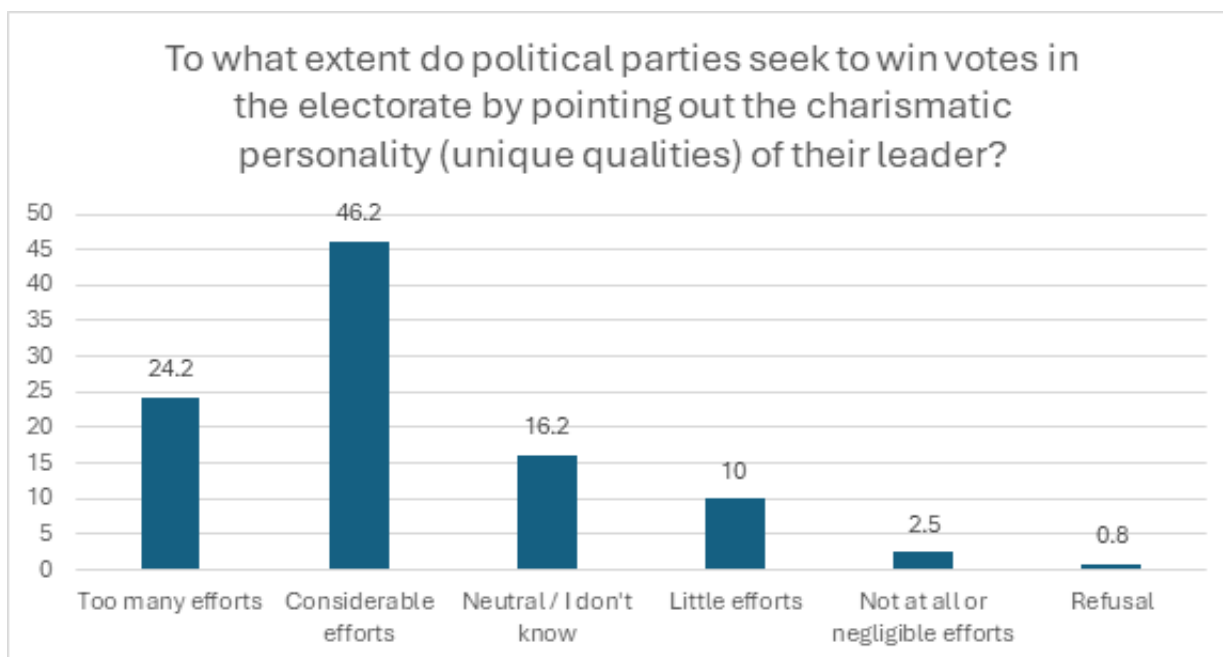
FIGURE 1: *The clientelistic linkage* – Question on the survey: In general, how much effort do politicians and political parties in Albania make to induce voters to vote for them by offering them preferential benefits (e.g., state jobs, legalization or construction permits, subsidies, access to social assistance, etc.



Source: Sqapi & Xhindi, 2024: 102.

The data in Figure 1 show the percentages of Albanian citizens’ responses regarding their perception of the clientelistic strategy that political parties and politicians in Albania deploy to secure votes by offering the voters particularistic benefits (targeted delivery of benefits). From the total number of 1812 Albanian citizens (with the right to vote) surveyed at the national level, 63.5% of them think that political parties and politicians in Albania make too many and considerable efforts to induce voters to vote for them by offering them preferential/particularistic benefits, compared to only 14.2% of those who think that political parties in Albania make little and negligible efforts to secure votes by following clientelistic tactics/strategies that deliver targeted benefits to voters. This significant difference emphasizes that the electorate in Albania perceives that it is targeted to a substantial extent by this linkage strategy based on direct, particularistic, and typically material side payments by political parties. As argued above, this strategy is detrimental to democracy as it undermines the quality of representation and political accountability and gives politicians too much discretion after coming into power.

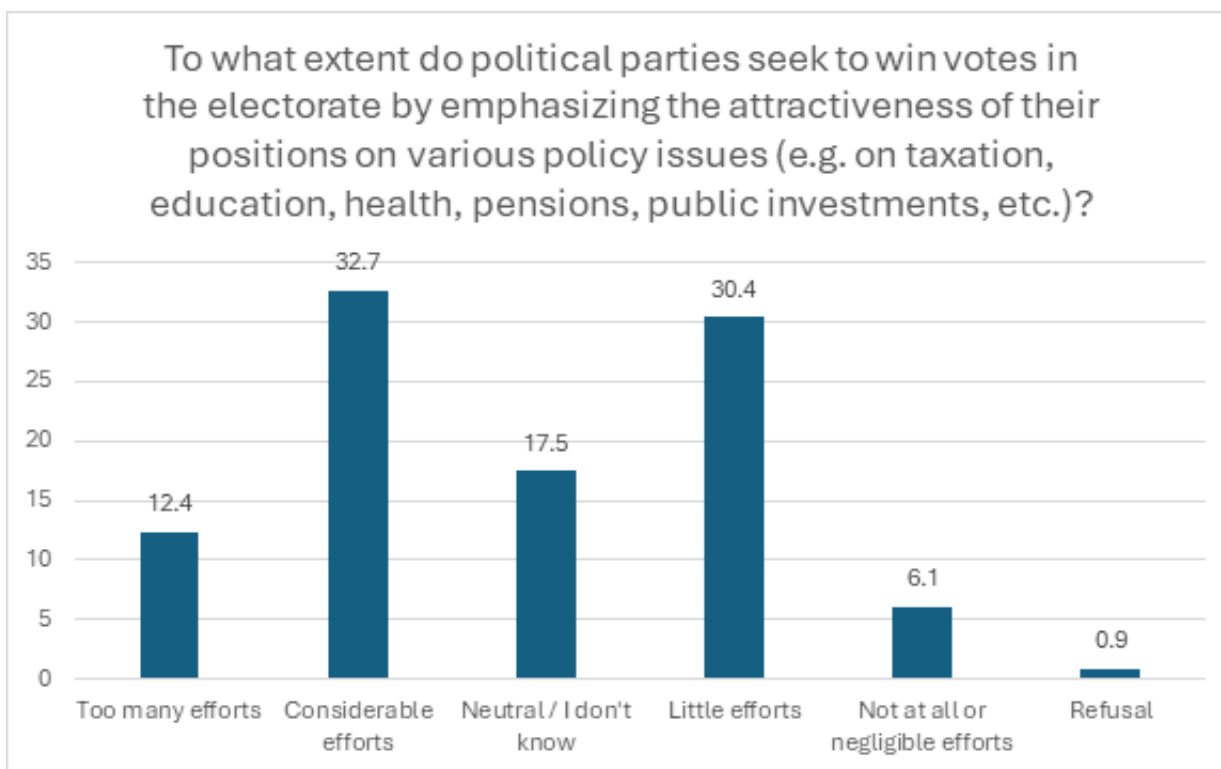
FIGURE 2: *Linkage through charismatic authority/personality of party leaders* – Question on the survey: To what extent do political parties seek to win votes in the electorate by pointing out the charismatic personality (unique qualities) of their leader?



Source: Sqapi & Xhindi, 2024: 103.

The data from Figure 2 highlight the linking strategy through charismatic authority/personality (of their leaders) that political parties pursue. They show that this remains the main way in the perception of the Albanian electorate, where the parties focus their efforts to ensure votes. Thus, the data in Figure 2 shows that 70.4% of the Albanian citizens surveyed by the study have expressed that political parties make too many and considerable efforts in seeking votes from the electorate by pointing out the charismatic personality (unique qualities) of their leader, compared to a small percentage of 12.5% of those who think that Albanian parties make little and negligible efforts to secure votes by highlighting the personality/charismatic authority of their leaders. Thus, it can be said that in the linkage strategies that political parties follow with the electorate, the clientelistic and charismatic strategies dominate Albanian political parties' efforts to incentivize Albanian voters to vote for them.

FIGURE 3: *The programmatic linkage* – Question on the survey: To what extent do political parties seek to win votes in the electorate by emphasizing the attractiveness of their positions on various policy issues (e.g. on taxation, education, health, pensions, public investments, etc.)?



Source: Sqapi & Xhindi, 2024: 103.

Figure 3 shows data regarding programmatic linkage as a strategy that political parties and politicians pursue—to attract voters based on commitments to general policies, delivering public goods, or large-scale club goods. Here, there is a somewhat more balanced representation of how the surveyed citizens perceive political parties and politicians in Albania regarding the latter’s efforts to win votes by emphasizing the attractiveness of their positions on various policy issues. Thus, 45.1% of the surveyed citizens perceive that political parties in Albania make too many or considerable efforts in seeking votes by emphasizing the attractiveness of their positions on various policy issues, compared to an also a significant number of respondents - 36.5% - who they think that political parties in Albania make little or negligible efforts in winning votes mainly focusing on the attractiveness of their positions on various policy issues. These percentages, as perceived by the surveyed citizens, are somewhat more balanced but again show a slight dominance of efforts (45.1% including too many and considerable ones answers) compared to those who emphasize that these programmatic efforts by political parties in Albania are 36.5% - including little or negligible efforts answers. However, they somewhat contradict the findings of Figure 1 - where 63.5% of citizens think that political parties and politicians in Albania make too many or considerable efforts on the clientelistic strategy. As argued above, the programmatic policy commitments as a linkage strategy are at trade-off relations with the clientelistic linkage, which would have to translate into a smaller percentage (than 45.1%) of citizens who emphasize too many or considerable efforts by the political parties in Albania in seeking votes by emphasizing the attractiveness of their positions on various policy issues. However, the wording of the question should also be noted questions in the Albanian political setting - when the question begins with the words: “To what extent do political parties seek to win votes...”, the response of the citizens has a reflective tendency to be oriented towards the answer of too many and considerable efforts since the primary goal of political parties everywhere is to win votes. Anyhow, despite this somewhat higher percentage of Albanian citizens who perceive large or significant efforts of the political parties in Albania to offer packages (programs) of policies - programmatic appeals to specific segments of their (traditional) electorates in getting their vote - this linkage strategy in the Albanian political setting is perceived in lower percentages if compared to two other linkage strategies (the clientelistic and charismatic ones) as an incentive strategy that parties use to attract votes from the Albanian electorate.

Another dimension that tends to confirm the low programmatic/ideological profiling of the main political parties in Albania, as well as the not very effective use of programmatic linkage by political parties as a strategy to attract votes from the Albanian electorate, can also be seen in the answers of the respondents in the study in question conducted with a national sample of more than 1800 Albanian citizens. Thus, another question in this study concerns how the electorate sees the main political parties in terms of their programmatic/ideological profiling: whether they are left-wing, non- The question in the questionnaire was formulated: considering the left-right ideological divisions, as well as the stances that the political parties take publicly, where would you ideologically position the Albanian political parties from 01 (corresponds to the leftmost

position in the political spectrum) to 05 (corresponds to the rightmost position in the political spectrum)? (Position 03 corresponds to the position that sees political parties as ideologically unprofiled). The percentages of responses to this question regarding the four main political parties in Albania, which are also parliamentary parties securing seats in parliament from the last parliamentary elections held on April 25, 2021, are as follows. Regarding the ideological position of the Socialist Party, 54.8% of respondents positioned it in the leftmost (1) and the left (2) of the political spectrum; 35.8% of the respondents answered that this party is ideologically unprofiled, while 9.3% positioned it in the right (4) and in the rightmost (5) position of the political spectrum. Regarding the Democratic Party, a party that claims to represent the center-right and that it is a conservative party in the Albanian political scene, the respondents placed as follows regarding its ideological positioning: 6.2% positioned the DP in the leftmost (1) and left (2) of the political spectrum; 36.5% of the respondents answered that this party is ideologically unprofiled; while 57.3% positioned it in the right (4) and in the rightmost (5) position of the political spectrum. It should be noted that these two parties, SP and DP, are the two main parties that have dominated the Albanian political scene and have governed by altering power between them in Albania during the entire period after the overthrow of the communist dictatorship in 1991. These parties have the largest electorate in Albania, given the results they had in the parliamentary elections held in Albania from 1992 until today, and the figure of 54.8% of those who see the Socialist Party as a party of the spectrum political left and 57.3% of respondents who see the Democratic Party should also be related to the connotation that exists in the minds of ordinary citizens (SP - left party) - (DP - Right party) since these two parties were founded and to the media-public discourse in Albania after the overthrow of the communist system, but which has not been reflected in the political programs or the respective political stances that these parties have held in relation to certain policies. What is important to emphasize at this point is that more than 1/3 of the respondents (respectively 35.8% for the Socialist Party and 36.5% for the Democratic Party) see the two main political parties as ideologically unprofiled, which do not implement particular positions on fairly broad-based issues based on the left-right spectrum, making once again programmatic linkage as a not very reliable strategy in promises to secure votes from the Albanian electorate.

The situation is even more gloomy if we examine the answers regarding the ideological position of the other two parties (Freedom Party and Social-Democratic Party) in Albania, which have a smaller electorate than the two big parties. Thus, in relation to the ideological position of the Freedom Party¹ by Albanian citizens surveyed, only 19.1% of the surveyed citizens positioned it between the leftmost (1) and the left (2) of the political spectrum (as this party claims to be); 65.2% of the respondents answered that this party is ideologically unprofiled, while 15.5% positioned it between the right (4) and the rightmost (5) position in the political spectrum. As for the Social-Democratic Party (SDP), which also claims to be a party that represents the social-democratic ideology in Albania, only 24.8% of respondents affirm this by positioning it between the leftmost (1) and the left (2) of the political spectrum; 65.2% of the respondents answered that the SDP is ideologically unprofiled; while 10.0% positioned it between the right (4) and the rightmost (5) position in the political spectrum. Thus, almost 2/3 of the respondents do not perceive these two parties, the Freedom Party and the Social-Democratic Party, as ideologically profiled at all. The relatively balanced division of the percentages of respondents who perceive these parties as both left parties (as they claim to be) and right parties makes them even less reliable in offering credible packages (programs) of policies as a linkage strategy to attract votes from the Albanian electorate. Thus, examining the percentages of respondents who perceive the main parties in the country as ideologically unprofiled and not clearly positioned with political stances across the political spectrum, we may say that the strategy based on programmatic linkage of political parties with the electorate in Albania is not so attractive for winning votes as the clientelistic and charismatic linkage strategy.

Conclusions

Among the post-communist democracies, Albania can be classified as an interesting case study that challenges some of the theoretical assumptions of political science scholars who claim that a higher degree of institutionalization and stability of a party system within a country is positively correlated with the consolidation and the quality of democracy. In Albania, the relative stability and consolidation of the party system after decades of party competition [with two main parties, the Socialist and the Democratic Party, dominating the political scene and securing the majority of votes of the Albanian electorate] has not translated into a deeper rooting of these parties in society through programmatic linkages with certain social groups/strata, in higher levels of electoral accountability, as well as in the better quality of political representation and democracy in the country. This is because in Albania, the strategies pursued by political parties to win votes in the electorate, especially after the 2000s, taking into account the social and cultural conditions and the institutional changes with the introduction of the new electoral system in 2008, have increasingly have moved away from programmaticism as a way to attract voters based on commitments to general policies, by delivering public goods or large-scale club goods that benefit classes and social strata. Instead, the main political parties in Albania are increasingly relying on other strategies, especially those that involve clientelism and linkage through the charismatic personality of their party leaders, to attract votes in the Albanian electorate. The nature of the evolution and dominance of linkage strategies, such as clientelistic and charismatic ones, between political parties and the Albanian electorate, which is also demonstrated by the data of the study that we referred to in this article, is also one of the main factors that have hindered the well-functioning of democracy in the Albanian political environment. Much more attention should be paid to the study of the nature of these linkages that dominate the relations between political parties and the electorate in Albania since they are an important conditioning factor for the quality of democracy.

¹ Its previous name has been the Socialist Movement for Integration, and it was changed to Freedom Party ne July 2022.

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The impact of digitization on tax administration in Albania: Reducing the fiscal burden

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Abstract

This paper conducts a detailed analysis of the transformative effects of digitization on Albania's tax administration, specifically examining its role in reducing the fiscal burden for taxpayers and the government. The research centers on the integration of digital technologies within Albania's tax framework, referencing specific laws and procedural reforms. It highlights key initiatives such as the implementation of the online tax filing system under Law No. 9920 and the introduction of electronic invoicing procedures as mandated by recent amendments to the tax code.

The methodology of this study involves a comprehensive review of these legislative changes, coupled with an analysis of data on taxpayer compliance and administrative efficiency post-digitization. Through this approach, the paper assesses the effectiveness of digital platforms in streamlining tax payment processes, enhancing transparency, and combating tax evasion in the Albanian context.

Additionally, the research explores the broader economic implications of these digital interventions in tax administration. It evaluates how these technological advancements contribute to economic growth and the formulation of sustainable fiscal policies in Albania. The study employs a mixed-method approach, combining qualitative analysis of policy documents with quantitative data on fiscal outcomes post-digitization.

The findings present an in-depth understanding of the specific impact of digitalization on Albania's tax system. This paper not only underscores the critical role of digital technologies in developing a more efficient and equitable tax administration but also provides practical insights into the successful implementation of digital strategies in the Albanian fiscal landscape.

Keywords: Digitalization, modern tax system, fiscal burden, tax payment, Albania

Introduction

In the 21st century, digitization has fundamentally changed the way public administrations operate and interact with citizens. For Albania, the adoption of digital technologies has been a decisive step towards modernizing public services, increasing administrative efficiency, and enhancing transparency and accountability. This paper will examine the impact of digitization on the tax administration of Albania, focusing on reducing the tax burden for taxpayers and the government.

The digital transformation of the Albanian tax system has involved a series of initiatives and legislative reforms aimed at streamlining tax processes and combating tax evasion. Among these initiatives, especially important are the online tax declaration system and the introduction of electronic invoicing procedures, as provided for by recent changes in tax legislation.

This study analyzes in detail the effects of these changes, evaluating how digital platforms have contributed to improving tax compliance and increasing administrative efficiency. At the same time, the paper also examines the broader economic impacts of these technological interventions, assessing their contribution to economic growth and the formulation of sustainable fiscal policies for Albania.

In conclusion, the study aims to provide a comprehensive overview of the importance of digitization in creating a more efficient and fair tax administration, offering a practical model for the successful implementation of digital strategies in the Albanian public sector.

Methodology

The methodology of this study includes a detailed analysis of legislative changes and data on tax compliance and administrative efficiency after digitization. To assess the effectiveness of digital platforms in simplifying tax payment processes, increasing transparency, and combating tax evasion in the Albanian context, a mixed methodological approach combining qualitative and quantitative analyses has been used.

The study begins with a detailed review of policy and legal documents related to the digitization of the tax administration in Albania. This includes an analysis of Law No. 9920 on online tax declaration and recent changes in tax legislation involving electronic invoicing procedures.

To measure the impact of digitization on administrative efficiency, data on the time and resources needed for processing tax requests and other related services have been analyzed. The study explores the impact of technological interventions on the economic growth of Albania by analyzing macroeconomic data and indicators of economic development after the digitization of the tax administration.

To assess how technological advancements contribute to the formulation of sustainable fiscal policies, the study examines reports from financial institutions and recommendations for policymakers.

In conclusion, the methodology used in this study provides a comprehensive and in-depth overview of the impact of digitization on the tax administration in Albania. The combination of qualitative and quantitative analysis enables a comprehensive assessment of the benefits and challenges of this technological transformation.

Voluntary compliance with tax legislation

Voluntary compliance with tax legislation is a fundamental element for the sustainable functioning of a state and the construction of a fair and equal society. This compliance implies that citizens and businesses declare and pay taxes in accordance with the laws in force, without being compelled by tax authorities (Alm, J., & Torgler, B. 2011). This paper examines the importance of voluntary compliance with tax legislation, the factors influencing it, and strategies for improving this compliance. Voluntary compliance with tax legislation is essential for several reasons: First, Taxes are the main source of revenue for governments, which are used to finance public services such as education, healthcare, infrastructure, and security. Without widespread compliance with tax legislation, these services would suffer from financial shortages and a decrease in quality. Second, voluntary compliance with tax legislation promotes social justice. When everyone contributes equally to the tax system, a sense of fairness and equality is created in society. This helps reduce inequalities and build a more just society. Third, a well-administered and respected tax system helps create economic stability. This includes an increase in investor and enterprise confidence in the sustainability of a country's fiscal policies.

There are several factors that influence voluntary compliance with tax legislation. Knowledge of tax legislation and its importance is critical. Tax education helps citizens and businesses understand their obligations and the importance of fulfilling them. Trust in the tax system and the institutions that administer it is a key factor. When citizens believe that their taxes are used fairly and effectively, they are more inclined to respect tax laws (OECD. 2010). In this sense, a simple and clear tax system makes it easier for citizens and businesses to fulfill their obligations. Excessive complexity often leads to errors and intentional or unintentional evasion. The effectiveness of enforcement and punishment mechanisms for non-compliance with tax legislation is also an important factor. When these mechanisms are strong and fair, they encourage compliance with laws (Kirchler, E. 2007). Voluntary compliance with tax legislation is a vital component for the functioning of a sustainable and just state. It helps finance public services, promote social justice, and economic stability. To achieve such compliance, investment in education, transparency, simplicity, and strong enforcement mechanisms is necessary. Only in this way can we build a tax system that benefits the entire society.

Digital governance: embracing the future

In the 21st century, digital governance has become a vital component for the development and modernization of public administrations worldwide. The evolution of digital governance represents an effort to improve efficiency, transparency, and access to public services using Information and Communication Technologies (ICT). This work examines the evolution of digital governance, its benefits, and the challenges that need to be addressed to ensure a successful transition towards a modern and efficient administration. Digital governance has gone through several stages of development, each with its specific characteristics and challenges. In the initial stage, governments began to use the internet and basic information technologies to provide information and simple services to citizens. Government websites and simple communication systems were typical for this period.

In the Integration stage, governments started to integrate various information systems to create centralized portals and interactive services. This phase includes the development of electronic platforms for various public services, such as vehicle registration, document applications, and online payments (Margetts, H., & Dunleavy, P. 2013). In the Participation and Collaboration stage, citizens and businesses are encouraged to participate in government processes through digital platforms. Social technologies and collaboration platforms allow citizens to contribute to policy-making and share information with the government. The Transformation stage represents a fully digital governance, where all public services are offered in a digital and integrated manner. Artificial intelligence, data analysis, and new technologies like blockchain are used to improve efficiency and transparency (United Nations. 2020).

By using digital technologies such as automation of administrative processes, governments can provide faster and more cost-effective services, increasing their efficiency and avoiding bureaucratic obstacles. Digital governance increases transparency by providing easy access to public information and facilitating the monitoring of government activities by citizens and civil society organizations. Through digital technology, the access and participation of citizens and businesses in accessing public services at any time and from anywhere are improved. In this sense, a more transparent and efficient governance increases citizens' trust in public institutions and improves the relationship between citizens and the government (United Nations. 2020).

Although the benefits are numerous, digital governance faces the challenge of cybersecurity. With the increase in digitization, cyber threats have become more frequent and sophisticated (West, D. M. 2005). Securing digital systems and protecting citizens' data are key challenges for governments. Digital transformation requires a change in organizational culture within public administrations. Staff needs to be trained and adopt new ways of working to meet the requirements of digital governance. In this sense, the construction and maintenance of a sustainable and advanced digital infrastructure require significant financial and technological investments. Another challenge to overcome is Digital Inequality. Not all citizens have equal access to technology. Governments must ensure that the benefits of digital governance are available to all, regardless of their income level or location (European Commission. 2019).

Digital governance represents the future of public administration, bringing significant benefits in efficiency, transparency, and citizen participation. However, to achieve a successful transition, governments must address the challenges of cybersecurity, organizational culture change, digital infrastructure, and digital inequality. Only through a joint and sustainable effort can we fully embrace the digital future and build a public administration suitable for the 21st century.

Development of digital services in albania

In recent decades, Albania has taken significant steps towards the modernization and digitalization of public services. This effort to develop digital services is driven by the need to improve the efficiency of public administration, increase transparency, and facilitate citizens' access to public services. This paper examines the development of digital services in Albania, the benefits of this development, and the challenges that remain to be addressed.

The development of digital services in Albania has gone through several key stages. In the early 2000s, the Albanian government began using the internet to provide basic information and simple services to citizens (AKSHI, 2021). The first websites of public institutions were created, and it became possible to offer some online services, such as obtaining information on taxes and fees. In the following years, a more structured effort was made to digitalize public services. The Albanian government started to invest in digital infrastructure and develop new platforms for service delivery. One of the major achievements was the creation of the e-Albania portal, a platform that provides centralized access to a range of public services. Currently, Albania is in the integration and participation phase, where digital services are interoperable, and citizens have the opportunity to actively participate in administrative processes. Through the e-Albania portal, citizens can apply for documents, pay taxes and fees, and access various information from various public institutions (AKSHI, 2020).

The development of digital services has brought a number of benefits to citizens and public administration in Albania. Digital services have made it possible to improve the efficiency of public administration by reducing the time and resources needed to process requests and provide services. Digital services have made it possible for citizens to access public services from anywhere and at any time, eliminating the need to physically go to public administration offices. With the digitalization of services and the automation of administrative processes, the possibility of corruption and abuse in public administration has been reduced (United Nations. 2020).

Despite significant progress, there are still some challenges to be addressed in order to achieve full and effective digitalization of public services in Albania. With the increasing digitalization, cybersecurity challenges become more critical. Strong measures are needed to protect data and digital systems from cyber threats (OECD. 2018). Additionally, citizens need to be informed and capable of using digital services. In this sense, it is important to ensure that public administration staff are trained and capable of using new technologies (OECD. 2018). Investment in digital infrastructure is key to the further development of digital services. It is necessary to ensure that digital networks and platforms are resilient and to ensure that all citizens, regardless of their location or income level, have equal access to digital services (European Commission. 2019).

The development of digital services in Albania represents a significant step towards the modernization and improvement of the efficiency and transparency of public administration. Despite considerable progress, challenges remain to be addressed to achieve full and effective digitalization. With continuous investments in infrastructure, security, and education, Albania can fully embrace the potential of digital governance and ensure significant benefits for citizens and society as a whole.

The impact of digital services on reducing corruption

Corruption is one of the biggest challenges faced by many countries, including Albania. It undermines public trust in state institutions, hinders economic development, and damages social justice. In recent years, the digitalization of public services has shown great potential in combating corruption. This paper examines the impact of digital services on reducing corruption, analyzing the mechanisms through which they help in creating a more transparent and accountable public administration.

One of the main ways in which digital services help reduce corruption is by increasing transparency (Mungiu-Pippidi, A. 2015). Digital platforms offer easy and immediate access to public information, allowing citizens and the media to monitor government activities and uncover any possible misconduct. For example, online publication of tenders and government contracts reduces opportunities for manipulation and favoritism. The digitalization of public services and the automation of administrative processes reduce direct interaction between citizens and public officials, thus reducing the likelihood of corruption. For example, applying online for documents and permits eliminates the need for intermediaries and reduces the risk of bribery.

Digital technologies enable real-time tracking and auditing of actions and transactions. This makes it easier to identify and punish violations. Digital information management systems and databases can be used to track financial activities and detect suspicious patterns. Digital platforms encourage active citizen participation in governance (United Nations, 2020). Citizens can report cases of corruption through mobile applications and websites, creating a more accountable and monitored environment. Furthermore, online public consultations and discussion platforms increase citizen involvement in decision-making processes, reducing the space for corruption (OECD, 2018).

Digital services have great potential to help reduce corruption by increasing transparency, accountability, and efficiency in public administration. However, to realize this potential, it is necessary to address challenges related to cybersecurity, organizational culture change, and equal access to technology (Transparency International, 2019). With continuous investment and commitment, governments can harness the power of digital services to create a more just, transparent, and reliable governance environment.

Government portal e-albania

In the digital age, governments around the world are embracing information and communication technologies to improve public services and increase transparency and efficiency. Albania is no exception to this trend, and one of the most significant achievements in this direction is the e-Albania government portal. This portal has revolutionized how citizens and businesses interact with the public administration, offering a wide range of online services. This paper will examine the history, functionalities, benefits, and challenges of the e-Albania portal. The e-Albania portal was first launched in 2013 as part of the efforts of the Albanian government to modernize public administration and improve citizens' access to public services (AKSHI. 2021). Since its inception, the portal has evolved significantly, continuously adding new services and improving the user interface to provide a better user experience.

The e-Albania portal offers a range of functionalities covering a wide range of public services (AKSHI. 2021). Citizens can apply for various documents such as birth certificates, marriage certificates, passports, and identity cards. This eliminates the need to physically visit public administration offices and reduces waiting time. Through e-Albania, citizens and businesses can make payments for various services, including taxes, vehicle registration fees, and public service bills. Businesses can use the portal to register their activities, apply for permits and licenses, and submit various documents to state institutions. The portal provides access to a range of public information, including laws, regulations, and statistical data. This increases the transparency and accountability of public institutions (AKSHI. 2021). Although the e-Albania portal has brought significant benefits, there are still some challenges that need to be addressed to achieve its full potential. With the increasing digitization, the risk of cyber attacks also increases. It is necessary to take strong security measures to protect data and digital systems from cyber threats and to continue improving the user interface to ensure that the services are easy to use and accessible to all citizens.

The e-Albania government portal represents a major step towards the modernization and digitization of public administration in Albania (OECD. 2018). It has brought many benefits by increasing efficiency, transparency, and citizens' and businesses' access to public services. However, to achieve its full potential, it is necessary to address challenges such as cybersecurity, education and training, equal access, and improving the user interface (European Commission. 2019). With continued investment and dedication, the e-Albania portal can continue to be a key tool for the development of a more modern and efficient public administration in Albania.”

Fiscalization of transactions with fiscal effect in albania

In recent years, Albania has undertaken a series of reforms to improve its fiscal system and combat informality in the economy. One of the key measures of these reforms is fiscalization of transactions. Fiscalization involves the use of advanced technologies to automatically record and report every commercial transaction to the tax authorities in real time. This paper will examine the process of fiscalization of transactions in Albania, its fiscal effects, benefits, and challenges.

Fiscalization is a process that involves several components and key steps. Every business is required to use certified fiscal devices to record every transaction (Ministry of Finance and Economy, 2020). These devices are directly linked to the tax authorities' systems and transmit data in real time. In addition to fiscal devices, businesses must use specific software that is licensed and certified by the tax authorities. This software ensures that all transactions are accurately recorded and reported (AKSHI, 2021). Each registered transaction is automatically transmitted to the tax authorities in real time. This ensures continuous and detailed monitoring of the economic activities of businesses. To ensure the security and integrity of the data transmitted, each business is equipped with a digital certificate that uniquely identifies every trading entity.

Fiscalization of transactions has several positive effects on the fiscal system in Albania, contributing to the increase in tax revenues. Fiscalization ensures that all transactions are accurately recorded and reported, contributing to the reduction of tax evasion. The technologies used in the fiscalization process improve tax administration, making it more effective and transparent. This reduces opportunities for corruption and abuses within the tax administration.

However, the process of fiscalization is not without challenges. Fiscalization devices and software may have a significant initial cost for businesses, especially for small and medium-sized ones. This can be a burden for some trading entities. Businesses and their staff need to be trained to use the new devices and software. This requires time and other resources that may be challenging for some businesses (IMF, 2019). With the increasing digitalization, the risk of cyber-attacks also increases. It is essential to take strong security measures to protect business and citizen data (OECD, 2018).

Fiscalization of transactions in Albania represents a significant step towards improving the fiscal system and combating informality in the economy (IMF, 2019). This process brings great benefits by increasing tax revenues, improving tax administration, and providing transparency and credibility for businesses and citizens. However, to realize its full potential, it is necessary to address the challenges of initial cost, training, and cyber security. With continued investments and commitment, fiscalization can significantly contribute to economic development and bring benefits to the entire Albanian society."

The impact of technological interventions on economic growth

Technology has become an indispensable force in the economic growth of countries in the 21st century. Technological interventions have deeply transformed the economy by impacting productivity, competition, and innovation. This paper analyzes how technology has influenced economic growth, focusing on the authors and studies that have defined this process.

Authors Erik Brynjolfsson and Andrew McAfee, in their book „The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies” (2014), argue that the use of information technology and automation has led to increased productivity and efficiency in many sectors of the economy. They emphasize that this has improved companies' ability to create value and compete in global markets. Other researchers like Michael Porter, in his book „Competitive Advantage: Creating and Sustaining Superior Performance” (1985), analyze that technology has created new opportunities for businesses and job seekers by heralding a new era of innovation and economic growth. According to him, technology has allowed for the development of new products and services that have enhanced the quality of life and increased market efficiency.

Many authors like Joseph Schumpeter in his book „Capitalism, Socialism and Democracy” (1942) have argued that technological innovations help in economic growth by stimulating competition and improving the quality of products and services. Schumpeter called this process „creating added value” that comes from innovations and technological changes in the market. The impact of technology is not only local but also global. In their study „Globalization and Technological Change” (2006), David Autor and David Dorn analyze that technology has influenced the increase in productivity and overall economic growth at a global level by spreading innovations and skills worldwide. Technology has become a critical component for economic growth in the 21st century. With its continuous innovations and their impact on productivity and efficiency, technology has transformed the way businesses operate and how economies develop. The use of technology must be carefully managed to maximize the possible benefits of technological advancements, while addressing the social and economic challenges and consequences that come with it.

Conclusions and Recommendations

Digitalization has brought a major transformation in the tax administration of Albania, positively impacting several key aspects:

Reducing the Tax Burden: The implementation of an online system for tax declaration and e-invoicing procedures has eased the process for taxpayers, reducing the time and effort required to fulfill their tax obligations.

Increasing Transparency: Digital platforms have significantly improved transparency in the tax administration. The online publication of information and the use of technologies for tracking and auditing transactions have reduced opportunities for corruption and abuse.

Improving Administrative Efficiency: The digitalization of processes has increased the efficiency of the tax administration, reducing bureaucracy and processing time for requests. This has led to a significant improvement in the services offered to citizens and businesses.

Combatting Tax Evasion: Digital systems have enabled better monitoring of economic activities and a significant decrease in tax evasion. The use of fiscal devices and certified software has ensured accurate registration and reporting of all transactions.

Based on a detailed analysis of the impact of digitalization on the tax administration of Albania, several key conclusions can be drawn:

Digitalization as a Fundamental Pillar for Modernization: Digitalization represents a key component in the modernization of the Albanian public administration, bringing significant benefits in efficiency, transparency, and accountability.

Need for Continuous Investments: To achieve full and effective digitalization, it is essential for the Albanian government to continue investing in digital infrastructure, staff training, and cybersecurity systems.

Improving Access and Citizen Participation: The government should ensure that digital services are accessible to all citizens, regardless of their location or income level, addressing digital inequality.

Integration of New Technologies: The use of advanced technologies such as artificial intelligence and blockchain can further improve the efficiency and transparency of the tax administration, offering faster and secure services.

Role of Sustainable Fiscal Policies: Digitalization contributes to the formulation of sustainable fiscal policies, which are essential for economic development and improving the business climate in Albania.

In conclusion, the digitalization of the Albanian tax administration has proven to be a decisive step towards a more efficient, transparent, and fair system, offering a model for other countries aspiring to enhance their public services through technology.

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Diplomacy in the Context of Contemporary Security Issues: Strategies and Challenges

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Abstract

Diplomacy, the art and practice of conducting negotiations between representatives of states or organizations, has been a cornerstone of international relations for centuries. Traditionally, diplomacy has been employed to manage interstate relations, negotiate treaties, and resolve conflicts peacefully. However, the nature of security threats has drastically evolved in the 21st century, necessitating a corresponding evolution in diplomatic strategies. Contemporary security issues are multifaceted and transnational, encompassing a wide range of threats such as terrorism, cyber attacks, climate change, and global pandemics. These issues do not respect national borders and often require coordinated international responses. In this context, the role of diplomacy is more critical than ever. As states and international organizations grapple with these complex and interconnected challenges, effective diplomacy becomes indispensable in fostering cooperation, building trust, and devising comprehensive strategies to mitigate security threats.

This essay argues that diplomacy plays a crucial role in addressing contemporary security issues by facilitating international cooperation, promoting conflict resolution, and enhancing global governance. In an era where security threats are increasingly transnational and multifaceted, diplomacy serves as a vital tool for navigating the complexities of the modern security landscape, ensuring peace and stability in an interconnected world.

Key words: *Diplomacy, security, Cyberspace, Governments, International Organizations, Actors in Diplomacy*

Introduction

Defining Contemporary Security Issues

Contemporary security issues have expanded beyond traditional military threats to encompass a wide range of non-traditional challenges that threaten the stability and safety of nations and the international community. These issues are often characterized by their transnational nature, complexity, and the need for comprehensive and coordinated responses. The following are some of the most pressing contemporary security issues:

Diplomacy and Traditional Security Threats. Diplomacy plays a crucial role in addressing traditional security threats, which encompass military aggression, territorial disputes, and interstate conflicts. Historically, diplomacy has been instrumental in averting war and managing crises between states by facilitating dialogue, negotiation, and the establishment of treaties and alliances (Hamilton & Langhorne, 2011). For instance, during the Cold War, diplomatic efforts such as arms control agreements between the United States and the Soviet Union helped mitigate the risk of nuclear confrontation, demonstrating the efficacy of diplomatic engagement in managing high-stakes security challenges (Gaddis, 2005).

Moreover, diplomacy fosters confidence-building measures and conflict resolution mechanisms that promote stability and reduce the likelihood of armed conflict. Through diplomatic channels, states engage in dialogue to clarify intentions, address

grievances, and find mutually acceptable solutions to disputes over resources, borders, and sovereignty (Kissinger, 1994). These diplomatic engagements are underpinned by principles of international law and norms, emphasizing the peaceful settlement of disputes and the preservation of territorial integrity, which are foundational to maintaining global security (Berridge, 2015).

In contemporary international relations, traditional security threats persist alongside emerging challenges, reinforcing the enduring relevance of diplomatic strategies in safeguarding national and global security interests. Diplomatic efforts continue to evolve to address modern security dynamics, including asymmetric warfare, terrorism, and regional conflicts fueled by geopolitical rivalries. By adapting diplomatic practices to respond to evolving threats, policymakers and diplomats can effectively mitigate risks, build cooperative relationships, and promote peace in an interconnected global landscape (Rittberger, 2012).

Terrorism. Terrorism remains a significant global security threat, characterized by the use of violence and intimidation to achieve political, ideological, or religious objectives. Terrorist groups operate across borders, exploiting global communication networks and financial systems to recruit members, plan attacks, and spread propaganda (Cronin, 2019). The rise of extremist ideologies and the proliferation of small arms have exacerbated this threat, making it a persistent and evolving challenge.

Cyber Threats. Cyber threats encompass a range of malicious activities conducted through digital means, including hacking, data breaches, and cyber espionage. These threats target critical infrastructure, government systems, and private sector entities, aiming to steal sensitive information, disrupt services, or cause economic damage (Libicki, 2017). The increasing dependence on digital technologies has amplified the potential impact of cyber attacks, making cybersecurity a paramount concern for states and organizations.

Climate Change. Climate change represents a long-term, existential threat to global security. It contributes to environmental degradation, resource scarcity, and extreme weather events, which in turn can exacerbate social tensions, migration, and conflicts (Gleditsch, 2012). The security implications of climate change are far-reaching, affecting food and water security, public health, and economic stability, necessitating international cooperation and comprehensive policy responses.

Pandemics. The outbreak of global pandemics, such as COVID-19, has highlighted the profound security risks posed by infectious diseases. Pandemics can overwhelm healthcare systems, disrupt economies, and strain social and political systems (Gostin & Wiley, 2020). The rapid spread of diseases across borders underscores the need for robust international health governance and cooperation to manage and mitigate these threats effectively. These contemporary security issues illustrate the complex and interconnected nature of modern security threats. Addressing these challenges requires not only traditional security measures but also innovative diplomatic strategies and international collaboration.

Evolution of Security Threats in the 21st Century. The nature of security threats has undergone significant transformation in the 21st century, shifting from traditional state-centric conflicts to more complex and multifaceted challenges. This evolution reflects changes in global dynamics, technological advancements, and the increasing interconnectedness of the world.

Shift from Traditional to Non-Traditional Threats. In the 20th century, security threats were predominantly characterized by interstate conflicts and the threat of nuclear war. The Cold War era, for instance, was marked by the fear of superpower confrontation and arms races (Gaddis, 2005). However, with the end of the Cold War, the nature of security threats began to diversify. Traditional military conflicts have become less common, giving way to non-traditional threats such as terrorism, cyber attacks, and transnational organized crime (Kaldor, 2013).

Technological Advancements. The rapid pace of technological advancement has introduced new dimensions to security threats. Cybersecurity has emerged as a critical area of concern as states, organizations, and individuals increasingly rely on digital technologies. Cyber attacks can disrupt critical infrastructure, steal sensitive information, and influence political processes, posing significant challenges to national and international security (Singer & Friedman, 2014). Additionally, the proliferation of advanced weaponry and the potential misuse of artificial intelligence further complicate the security landscape (Altmann & Sauer, 2017).

Globalization and Interconnectedness Globalization has intensified the interconnectedness of states and societies, leading to both opportunities and vulnerabilities. The ease of global travel and communication has facilitated the spread of ideas, goods, and services, but it has also enabled the rapid transmission of threats such as infectious diseases and terrorism (Held & McGrew, 2007). The COVID-19 pandemic is a stark reminder of how quickly a localized health issue can escalate into a global security crisis, affecting economies, public health systems, and social stability (Kluge et al., 2020).

Environmental degradation and climate change have emerged as significant security threats in the 21st century. These issues contribute to resource scarcity, forced migration, and social unrest, which can destabilize regions and exacerbate existing conflicts (Homer-Dixon, 2010). Moreover, societal challenges such as inequality, political instability, and demographic shifts add layers of complexity to the security environment, requiring holistic and multidimensional approaches to address them effectively.

Hybrid Threats and Warfare. The concept of hybrid threats has gained prominence, referring to the blend of conventional and unconventional tactics used by state and non-state actors to achieve strategic objectives. These tactics include propaganda, cyber operations, economic pressure, and irregular warfare, making it difficult to identify and counteract threats effectively (Hoffman, 2007). Hybrid warfare challenges traditional notions of conflict and necessitates adaptive and innovative responses from the international community. The evolution of security threats in the 21st century underscores the need for adaptive strategies and international cooperation. Addressing these complex challenges requires a comprehensive understanding of the changing security landscape and the development of innovative diplomatic and policy responses.

Key Characteristics of Contemporary Security Issues. Contemporary security issues are defined by a set of distinguishing features that reflect the complexities and nuances of the modern global landscape. These characteristics highlight the multifaceted nature of current security threats and the challenges they pose to international stability and peace.

Transnational Nature. One of the most defining features of contemporary security issues is their transnational nature. Unlike traditional security threats, which were often confined within national borders, modern security challenges such as terrorism, cyber threats, and pandemics transcend geographical boundaries. These threats require coordinated international responses and collaborative efforts among states, international organizations, and non-state actors (Kaldor, 2013).

Complexity and Interconnectedness. Contemporary security threats are characterized by their complexity and interconnectedness. Issues such as climate change, cyber security, and global health crises are interlinked, with each threat influencing and exacerbating others. For instance, climate change can lead to resource scarcity, which in turn may drive migration and conflict (Homer-Dixon, 2010). The interconnected nature of these threats necessitates comprehensive and multifaceted approaches to security.

Non-State Actors. The rise of non-state actors is another key characteristic of modern security issues. Terrorist groups, transnational criminal organizations, and cyber hackers operate beyond the control of any single state, posing significant challenges to traditional security frameworks. These actors can leverage global networks to carry out their activities, making it difficult for states to counter their threats effectively (Cronin, 2019).

Technological Influence. Technological advancements have dramatically altered the security landscape. The proliferation of digital technologies has introduced new vulnerabilities, particularly in the realm of cyber security. Cyber attacks can target critical infrastructure, steal sensitive data, and disrupt economic activities, posing significant risks to national and international security (Libicki, 2017). Additionally, the potential misuse of emerging technologies such as artificial intelligence and biotechnology further complicates the security environment (Altmann & Sauer, 2017).

Asymmetry. Contemporary security threats often involve asymmetric tactics, where non-state actors or smaller states use unconventional methods to challenge more powerful adversaries. This asymmetry is evident in the tactics employed by terrorist groups and cyber attackers, who exploit vulnerabilities in open societies and technological systems to achieve their objectives (Hoffman, 2007). Asymmetric threats require innovative and adaptable responses from the international community.

Rapid and Unpredictable Changes. The rapid pace of change in the global environment is a hallmark of contemporary security issues. The speed at which threats can emerge and evolve, such as the rapid spread of infectious diseases or the sudden escalation of cyber attacks, requires states to be agile and responsive in their security strategies (Kluge et al., 2020). This unpredictability challenges traditional security planning and necessitates a proactive and flexible approach.

Multidimensional Impact. Modern security threats have multidimensional impacts, affecting not only military and political domains but also economic, environmental, and societal spheres. For example, climate change poses risks to food and water security, public health, and economic stability (Gleditsch, 2012). Addressing these threats requires an integrated approach that considers the broader implications for human security and development.

These key characteristics underscore the need for innovative and comprehensive strategies to address contemporary security issues. Diplomacy plays a crucial role in fostering international cooperation, building resilience, and developing effective responses to these complex challenges.

The Role of Diplomacy

Diplomacy is the practice of managing international relations through negotiation, communication, and representation. It involves the conduct of relationships between sovereign states, as well as between states and other international actors, including international organizations, non-governmental organizations (NGOs), and multinational corporations. Diplomacy aims to promote national interests, resolve conflicts, and foster cooperation among states and other global actors (Berridge, 2015).

Diplomacy can be broadly categorized into several forms, each with distinct methods and objectives:

Traditional Diplomacy. Traditional diplomacy, also known as classical or bilateral diplomacy, involves direct interactions between official representatives of states, usually conducted through embassies, consulates, and formal negotiations. This form of diplomacy focuses on state-to-state relations and often takes place behind closed doors, where diplomats engage in negotiations, treaties, and alliances to manage conflicts and advance their national interests (Barston, 2014). Traditional diplomacy has been the cornerstone of international relations for centuries, emphasizing the importance of confidentiality and strategic negotiation.

Public Diplomacy. Public diplomacy refers to the practice of engaging and influencing foreign publics and opinion leaders to shape the international environment in favor of a country's national interests. Unlike traditional diplomacy, which operates primarily through government channels, public diplomacy involves a broader range of actors, including cultural exchanges, international broadcasting, and social media campaigns. It aims to build mutual understanding, foster goodwill, and promote a positive image of a country abroad (Nye, 2008). Public diplomacy is essential in the modern era, where public opinion and media influence can significantly impact international relations.

Digital Diplomacy. Digital diplomacy, also known as e-diplomacy or cyber diplomacy, utilizes digital technologies and social media platforms to conduct diplomatic activities. This form of diplomacy leverages the internet to enhance communication, transparency, and engagement with global audiences. Digital diplomacy includes activities such as online campaigns, virtual meetings, and the use of social media to convey messages and gather support for diplomatic initiatives

(Manor, 2019). The rise of digital diplomacy reflects the increasing importance of technology in global communication and the need for states to adapt to the digital age.

Multilateral Diplomacy. Multilateral diplomacy involves multiple countries working together within international organizations or frameworks to address global issues and promote collective interests. This form of diplomacy is conducted through institutions such as the United Nations (UN), the European Union (EU), and the World Trade Organization (WTO), where states collaborate on issues ranging from peace and security to trade and human rights (Rittberger, 2012). Multilateral diplomacy emphasizes the importance of international cooperation and collective decision-making in addressing complex global challenges. Each form of diplomacy plays a vital role in the contemporary international system, contributing to the maintenance of global order, the resolution of conflicts, and the promotion of international cooperation.

Historical Context. Evolution of Diplomacy in Response to Changing Security Landscapes

Early Diplomacy. The practice of diplomacy dates back to ancient civilizations, where envoys and messengers were dispatched to negotiate peace treaties, trade agreements, and alliances. Early examples include the diplomatic practices of Mesopotamian, Egyptian, Greek, and Roman civilizations, which established protocols and norms for conducting international relations (Hamilton & Langhorne, 2011).

Renaissance and Early Modern Period. The Renaissance era marked a significant evolution in diplomacy, with the establishment of permanent diplomatic missions and the formalization of diplomatic practices. Italian city-states, such as Venice and Florence, pioneered the use of resident ambassadors to maintain continuous diplomatic relations with other states. This period also saw the development of diplomatic immunity and protocols, as outlined in works like “The Art of Diplomacy” by François de Callières (De Callières, 2000).

19th Century: Congress of Vienna and Balance of Power. The 19th century was characterized by the balance of power system, epitomized by the Congress of Vienna in 1815. This congress aimed to restore stability in Europe after the Napoleonic Wars by establishing a framework for diplomatic negotiations and conflict resolution. Diplomacy during this period focused on maintaining equilibrium among great powers to prevent the outbreak of major wars (Kissinger, 1994).

20th Century: World Wars and the League of Nations. The two World Wars in the first half of the 20th century highlighted the limitations of traditional diplomacy and the need for more structured international cooperation. The establishment of the League of Nations after World War I represented an early attempt at multilateral diplomacy aimed at collective security and conflict prevention. Despite its shortcomings, the League set the stage for more comprehensive international organizations (Mazower, 2009).

Post-World War II: United Nations and Cold War Diplomacy. The end of World War II ushered in a new era of diplomacy with the creation of the United Nations (UN) in 1945. The UN aimed to promote peace, security, and cooperation among states through multilateral diplomacy. The Cold War period (1947-1991) saw intense diplomatic activities characterized by ideological rivalry between the United States and the Soviet Union. Diplomacy during this time included a mix of confrontation and negotiation, exemplified by events such as the Cuban Missile Crisis and arms control agreements (Gaddis, 2005).

Late 20th and Early 21st Century: Globalization and New Security Challenges. The late 20th and early 21st centuries have seen a transformation in the nature of security threats and the corresponding evolution of diplomacy. The end of the Cold War and the rise of globalization have introduced new challenges such as terrorism, cyber threats, climate change, and pandemics. Diplomacy has adapted to these changes by incorporating new strategies and tools:

Counterterrorism Diplomacy: Post-9/11, diplomacy has played a critical role in international efforts to combat terrorism through intelligence sharing, joint operations, and multilateral agreements (Cronin, 2011). **Cyber Diplomacy:** The increasing prevalence of cyber threats has necessitated the development of cyber diplomacy, focusing on establishing norms and agreements for cybersecurity and cyber conflict prevention (Singer & Friedman, 2014). **Climate Diplomacy:** Global environmental issues have led to the emergence of climate diplomacy, with international agreements like the Kyoto Protocol and the Paris Agreement aiming to address climate change through cooperative efforts (Bodansky, 2016). **Health Diplomacy:** The COVID-19 pandemic underscored the importance of health diplomacy in coordinating global responses to health crises, promoting vaccine distribution, and strengthening international health regulations (Kickbusch, 2020). The evolution of diplomacy in response to changing security landscapes highlights its adaptability and essential role in managing international relations. As security threats continue to evolve, diplomacy remains a crucial instrument for fostering cooperation, resolving conflicts, and addressing global challenges.

Key Actors in Diplomacy

Diplomacy involves a diverse array of actors, each playing critical roles in shaping international relations, negotiating agreements, and addressing global challenges. These actors can be broadly categorized into states, international organizations, and non-state actors, each contributing uniquely to the diplomatic process.

States. States are the primary actors in diplomacy, representing sovereign entities with defined territories and populations. Diplomatic activities between states are conducted through formal channels such as embassies, consulates, and diplomatic missions. States engage in diplomacy to pursue national interests, negotiate treaties, resolve disputes, and build alliances. Examples of key diplomatic actors among states include:

- **Great Powers:** Nations like the United States, China, Russia, and European Union member states play significant roles in shaping global diplomacy due to their economic, military, and political influence.
- **Regional Powers:** Countries like Brazil, India, and South Africa exert influence within their respective regions and participate in regional diplomacy initiatives.
- **Small States:** Even smaller states with limited resources engage in diplomacy to protect their interests and promote stability in their regions.

International Organizations. International Organizations serve as platforms for multilateral diplomacy, enabling states to collaborate on global issues and coordinate collective actions. These organizations play essential roles in setting international norms, providing humanitarian aid, mediating conflicts, and promoting global cooperation. Key international organizations involved in diplomacy include:

United Nations (UN): The UN serves as the primary global forum for diplomacy, promoting peace, security, human rights, and sustainable development through its specialized agencies and peacekeeping operations.

European Union (EU): As a supranational organization, the EU engages in diplomatic activities to advance economic integration, promote democracy, and address regional and global challenges.

North Atlantic Treaty Organization (NATO): NATO facilitates collective defense and security cooperation among member states, conducting diplomacy to manage security threats and promote stability in Europe and beyond.

Non-State Actors. Non-State Actors encompass a wide range of entities that influence diplomatic processes and outcomes without being sovereign states. These actors include:

Non-Governmental Organizations (NGOs): NGOs such as Amnesty International and Greenpeace participate in diplomacy to advocate for human rights, environmental protection, and humanitarian aid.

Multinational Corporations (MNCs): MNCs engage in economic diplomacy to promote trade and investment, negotiate business agreements, and influence international policies affecting their operations.

Civil Society Organizations: Grassroots movements, advocacy groups, and social media influencers play roles in shaping public opinion, mobilizing support for diplomatic initiatives, and holding governments and international organizations accountable.

Transnational Criminal Organizations: Criminal networks involved in illicit activities such as drug trafficking, human trafficking, and cybercrime challenge state sovereignty and security, necessitating diplomatic responses to combat transnational crime. The diverse array of diplomatic actors reflects the complex and interconnected nature of contemporary international relations. Effective diplomacy requires collaboration and engagement among states, international organizations, and non-state actors to address global challenges, promote peace and stability, and foster sustainable development worldwide.

Diplomacy and Security Nexus Interdependence. Diplomacy and security issues are intricately interconnected, with diplomacy serving as a crucial tool for managing and mitigating security challenges in the international arena. At its core, diplomacy facilitates communication, negotiation, and cooperation among states and other actors to address common security threats. Diplomatic engagements enable the establishment of mutual understandings, agreements, and frameworks that contribute to stability and conflict prevention on a global scale (Berridge, 2015).

Effective diplomacy fosters trust-building and confidence-building measures, which are essential for reducing tensions and promoting peaceful resolutions to disputes. By facilitating dialogue and negotiation, diplomacy helps states navigate complex security landscapes characterized by diverse threats such as terrorism, cyber warfare, climate change-induced conflicts, and pandemics. The interdependence between diplomacy and security underscores their complementary roles in promoting international peace and stability.

Challenges. Despite its importance, utilizing diplomacy to address security issues faces several challenges that hinder its effectiveness. One significant challenge is the divergence of national interests among states, which can complicate efforts to reach consensus on security-related matters. States prioritize their own security concerns, sometimes at the expense of collective efforts towards international cooperation and conflict resolution (Hamilton & Langhorne, 2011).

Trust deficits among states also pose a critical challenge to effective diplomacy in security affairs. Historical rivalries, ideological differences, and perceptions of threat can erode trust and hinder diplomatic efforts to build consensus or negotiate agreements. Additionally, resource constraints, both financial and diplomatic, limit the capacity of states and international organizations to engage in comprehensive diplomatic initiatives to address complex security challenges (Gaddis, 2005).

Opportunities Despite these challenges, diplomacy presents significant opportunities to enhance security through proactive and cooperative approaches:

Conflict Resolution: Diplomatic efforts play a pivotal role in facilitating dialogue and mediation processes to resolve conflicts peacefully. Through negotiation and dialogue, diplomats can help parties find common ground, de-escalate tensions, and prevent conflicts from escalating into violence (Kissinger, 1994).

International Cooperation: Diplomacy promotes international cooperation and collaboration among states, international organizations, and non-state actors to address shared security threats. Multilateral initiatives and agreements, such as arms control treaties and joint military operations, exemplify how diplomacy can foster collective responses to transnational security challenges (Rittberger, 2012).

Preventive Diplomacy: Diplomacy can serve as a preventive tool to anticipate and mitigate security risks before they escalate. Early engagement through preventive diplomacy involves proactive measures to address underlying causes of instability, strengthen governance capacities, and build resilience against potential security threats (United Nations, n.d.).

By leveraging diplomatic channels and mechanisms, states can enhance their capacity to manage security risks, promote peacebuilding efforts, and advance global security objectives collaboratively.

The interplay between diplomacy and security underscores their symbiotic relationship in addressing contemporary global challenges. While challenges such as differing national interests, trust deficits, and resource constraints persist, diplomacy offers vital opportunities for conflict resolution, international cooperation, and preventive action. By enhancing diplomatic strategies and engagements, states can strengthen their collective capacity to navigate complex security landscapes and promote global peace and stability.

Policy Recommendations

Enhancing the effectiveness of diplomacy in addressing security issues requires strategic initiatives aimed at overcoming existing challenges and leveraging diplomatic strengths:

Enhanced Dialogue and Communication: Promote regular and structured dialogue among states and stakeholders to build trust, share information, and foster mutual understanding of security concerns (Hamilton & Langhorne, 2011).

Conflict Prevention and Mediation: Prioritize preventive diplomacy by engaging early in potential conflict situations, facilitating mediation processes, and supporting peaceful resolution of disputes (United Nations, n.d.).

Capacity Building and Training: Invest in diplomatic training programs and capacity-building initiatives for diplomats and policymakers to enhance negotiation skills, cultural competence, and crisis management abilities (Berridge, 2015).

Utilization of Digital Diplomacy: Embrace digital tools and platforms for diplomatic engagements to reach broader audiences, facilitate public diplomacy efforts, and enhance transparency in international relations (Manor, 2019).

Promotion of Multilateral Approaches: Strengthen commitment to multilateralism by supporting international organizations, frameworks, and treaties that promote collective security, cooperation, and adherence to international norms (Rittberger, 2012).

Effective management of contemporary security threats through diplomacy requires adherence to best practices that optimize diplomatic engagements:

Evidence-Based Diplomacy: Base diplomatic strategies and decisions on comprehensive analysis of security threats, including intelligence assessments, risk evaluations, and impact assessments (Kissinger, 1994).

Adaptability and Flexibility: Remain adaptable to rapidly changing security landscapes by adjusting diplomatic approaches, strategies, and priorities to address emerging threats and challenges (Gaddis, 2005).

Inclusivity and Stakeholder Engagement: Foster inclusive diplomacy by engaging diverse stakeholders, including civil society organizations, private sector entities, and non-governmental actors, in collaborative efforts to address security issues (Berridge, 2015).

Cultural Sensitivity and Contextual Understanding: Demonstrate cultural sensitivity and understanding of local contexts when engaging in diplomatic negotiations and interactions to build rapport and facilitate effective communication (Hamilton & Langhorne, 2011).

International Cooperation

Multilateralism and global governance play pivotal roles in addressing transnational security issues through coordinated diplomatic efforts:

Shared Responsibility and Burden-Sharing: Promote burden-sharing among states and international organizations through collective security arrangements, joint initiatives, and mutual assistance frameworks (Rittberger, 2012).

Normative Frameworks and Rule-Based Order: Uphold international law, norms, and agreements that govern state behavior in addressing security threats, thereby reinforcing global governance and promoting stability (United Nations, n.d.).

Capacity-Building in Developing States: Support capacity-building initiatives in developing countries to enhance their ability to address security challenges, strengthen governance structures, and promote sustainable development (Gaddis, 2005).

By implementing these strategies and practices, policymakers and diplomats can enhance the efficacy of diplomacy in addressing contemporary security threats, promoting international cooperation, and fostering global peace and stability.

Conclusion

Throughout this essay, we have explored the dynamic relationship between diplomacy and contemporary security issues, highlighting their interdependence, challenges, opportunities, policy recommendations, and best practices. Diplomacy serves as a pivotal instrument for managing and mitigating security challenges on a global scale. It facilitates dialogue, negotiation, and cooperation among states, international organizations, and non-state actors to address diverse threats such as terrorism, cyber warfare, climate change-induced conflicts, and pandemics. The evolution of diplomacy from ancient civilizations to modern-day practices underscores its adaptive nature in responding to changing security landscapes.

Looking ahead, the role of diplomacy in addressing evolving security challenges is poised to become even more critical.

As global interconnectedness deepens and new threats emerge, such as cyber threats and environmental degradation, diplomacy must continue to innovate and adapt. Future diplomatic efforts will likely focus on enhancing preventive diplomacy, strengthening international cooperation through multilateral frameworks, and leveraging digital tools for effective communication and transparency. Moreover, as geopolitical dynamics evolve, the need for inclusive and collaborative diplomatic approaches will grow. Building trust, fostering dialogue, and promoting shared responsibility among nations will be essential in managing complex security issues and promoting sustainable peace.

Final Remarks

In conclusion, adaptive and proactive diplomatic strategies are indispensable in ensuring global security in the 21st century. By prioritizing conflict prevention, promoting multilateralism, and embracing technological advancements in diplomacy, policymakers and diplomats can navigate the complexities of contemporary security challenges effectively. Diplomacy remains a cornerstone of international relations, offering avenues for peaceful resolution of conflicts, collective action against threats, and sustainable development. As we confront the uncertainties of the future, investing in robust diplomatic capabilities and frameworks will be crucial for fostering a safer and more secure world for generations to come.

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Through the challenges of International Law during times of crisis

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Abstract

This paper analyzes the challenges confronting international legal frameworks amidst contemporary geopolitical shifts, economic changes, and cultural tensions, eroding the consensus that characterized liberal internationalism. As efforts to adopt new international regulations through binding agreements face persistent hurdles, this study delves into the factors contributing to this deadlock and examines potential advancements in the law of armed conflict that could yield substantial benefits despite current global obstacles.

Two distinct approaches are highlighted within legal scholarship: the “inspirational” approach, advocating for idealized legal frameworks, and the “entrepreneurial” or ‘rational’ approach, where leading states act as norm to influence global norms and practices. Each approach carries inherent advantages and drawbacks, with the inspirational approach emphasizing ideal outcomes but risking delays, while the ‘rational’ approach risks norm divergence and global divisions.

Focusing on international humanitarian law, the study underscores that states projecting military force into conflicts tend to adopt ‘rational’ norms more readily. Considering obstacles hindering conventional law-making processes, particularly concerning armed conflicts and cyber operations, the paper argues that the ‘rational’ approach offers immediate efficacy and paves the way for enhanced international cooperation. By delineating both approaches, the study contends that the ‘rational’ approach represents the most viable course of action amidst the impasse in international law-making consensus, providing a pragmatic path forward until broader consensus can be achieved.

Kew words: *International Law, Non-traditional Armed Conflicts, Inspirational Approach, Future Approach, Norm Entrepreneurship, Cyber-Operations*

Introduction

In the realm of international relations, endeavors to construct international legal frameworks and institutions have encountered significant obstacles worldwide. The consensus that once characterized liberal internationalism in the 1990s has eroded, giving way to a multifaceted crisis marked by geopolitical shifts, economic fluctuations, and cultural tensions (Smith, 2018). Consequently, the formal adoption of novel international regulations through binding agreements confronts persistent hurdles. This study undertakes a succinct exploration of the factors contributing to this deadlock, highlighting areas where

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advancements in the realm of the law of armed conflict could yield substantial advantages, despite the formidable barriers to formal legal accords under current global conditions.

Legal scholars confront a pivotal choice in the absence of efficacious mechanisms for formalizing international law. One approach, termed “inspirational,” involves the advocacy for idealized legal frameworks grounded in principles of justice and feasibility. Notably, a considerable body of scholarly literature has embraced this approach in recent years, envisioning these frameworks as catalysts for inspiring relevant stakeholders to adopt them when conducive circumstances for international agreements materialize (Brown, 2020). Conversely, elucidated herein, the “entrepreneurial” approach entails leading states assuming the role of “norm entrepreneurs.” These states advocate for and adhere to norms in practice, aiming to influence other states to follow suit. Unlike the inspirational approach, which appeals to the broader international community, including significant non-state actors, the entrepreneurial approach relies on demonstrating preferred practices by leading states (Johnson, 2019). Both approaches possess inherent advantages and drawbacks. While the inspirational approach strives for ideal outcomes, it risks prolonged delays and potential disillusionment. Conversely, the entrepreneurial approach risks diverging norms, potential global divisions, and the possibility of inaction. Moreover, it tends to favor larger states with greater involvement in international or non-international conflicts over others (Jones, 2021). In the realm of international humanitarian law, this dynamic suggests that states projecting military force into conflicts are more inclined towards adopting entrepreneurial norms than those that do not. In the absence of a consensus approach to international law-making, states confronted with armed conflicts unfolding on their territory against their will are compelled to seek alternative strategies for advancing regulatory frameworks. This paper outlines the prevailing obstacles hindering conventional international law-making processes, wherein states convene to formulate multilateral treaties governing pertinent conduct. Afterward, it sheds light on urgent matters in the realm of the law of armed conflict that call for regulatory action. These include unconventional armed conflicts like non-international armed conflicts (NIACs)³ that involve armed actions against foreign nations, as well as cyber operations that jeopardize peace and security without qualifying as the use of armed force. By delineating both inspirational and entrepreneurial approaches to addressing these issues, this paper contends that while the former may offer theoretical idealism, the latter holds greater promise for immediate efficacy and sets the stage for enhanced international cooperation in the long term. Until the impasse in the consensus approach to international law-making is resolved, the entrepreneurial approach represents the most viable course of action.

Methodology

This paper employs a dual-pronged approach to examine the challenges facing establishing new international laws and institutions during times of crisis. A comparative analysis of the “inspirational” and “future” strategies in international law-making delineates each approach’s potential benefits and drawbacks. This study includes a synthesis of existing scholarly discourse, legal frameworks, and case studies to propose strategies for advancing international legal initiatives despite prevailing global circumstances. This study uses historical examples and legal analyses to explore the evolution of armed conflicts from traditional interstate wars to non-traditional conflicts involving non-state actors. Case studies, such as the dissolution of Yugoslavia and the events following September 11, 2001⁴, illustrate the changing nature of armed conflicts and their legal implications. By examining international responses and legal frameworks, the article highlights the challenges posed by non-traditional armed conflicts, such as issues of combatant status and detention, within the framework of international humanitarian law. Top of Form

Different position to legal context...

The current global landscape is fraught with division and the looming threat of international conflict, reminiscent of some of the most volatile periods in recent history. Geopolitical tensions, particularly those stemming from unresolved issues lingering since the end of the Cold War, pose significant threats. Russia’s involvement in the post-Soviet sphere and the unresolved status of Taiwan exacerbates these tensions. We emphasize that in the 1990s, the erosion of the international order was established because of numerous economic conflicts in that period, have prompted influential states to challenge the existing international framework, advocating for substantial revisions in international relations and law. Concurrently, the emergence of cyberspace as a realm of peril and a platform for malicious activities has further polarized the world, with factions divided between defending the perceived post-Cold War settlement and challenging the contemporary international order (Smith, 2019).

Numerous explanations abound for the current situation, each offering its own perspective on the underlying causes of global turmoil. In this narrative, our research work is focused on two fundamental aspects: (1) geographical and political transformations brought about forcibly because of disputes between nations and (2) the transformative role of information technology. While these factors do not encompass the entirety of the complex geopolitical landscape, they serve as focal points for contemplating the future trajectory of international humanitarian law (Jones, 2020).

3 NIAC- is described as prolonged armed clashes that take place between a state’s armed forces and the forces of one or more-armed groups, or between such groups within the borders of a State.

4 The September 11 attacks, often referred to as 9/11, were four synchronized suicide terrorist attacks orchestrated by Al-Qaeda against the United States on September 11, 2001.

Conventional and Non-Traditional Armed Conflicts

The Cold War conclusion, marked by the June 1989 Polish election ushering in opposition leadership and culminating in the disintegration of the Soviet Union in December 1991 seemed like a sign to the demise of the bipolar world order that had dominated global security since World War II. This pivotal moment heralded the prospect of a new international order grounded in the principles of international rule of law, envisioning a world where the resort to armed force would be guided by international consensus, predominantly manifested through the actions of the United Nations Security Council, and consequently becoming increasingly infrequent (Stephan, forthcoming). An episode toward the end of the Cold War imbued optimism regarding the potential of international law to constrain the use of force at the global level. The Security Council took up jurisdiction over the conflict and gave the international community permission to use “all necessary means” to end the problem after Iraq invaded and allegedly annexed Kuwait in 1990. After Kuwait was liberated, the Soviet Union and China both expressed unequivocal support for the subsequent liberation of Kuwait, as well as for the imposition of reparations and international monitoring over Iraq; the latter did not oppose. This collective action was viewed optimistically as a departure from the bipolar paradigm, with many envisioning a new era characterized by collective security, democratic peace, and the prevalence of international law in resolving disputes (Smith, 2019).

However, the ensuing years saw these hopes gradually dwindle. Rather than witnessing a decline in armed conflict post-1991, conflicts underwent a transformation. While some national liberation wars, like the one in South Africa, resulted in real democratic reform and the end of organized violence, other battles arose that progressively acquired non-traditional features. This change was most shown by the dissolution of Yugoslavia, which resulted in intrastate wars, most notably in Bosnia-Herzegovina and Serbia (especially Kosovo). Furthermore, the bloody Chechen civil war in Russia served as an example of the growth in major non-international armed conflicts during this time.

The unresolved Palestinian-Israeli conflict worsened, and the disintegration of Ethiopia resulted in atrocities. Overall, while interstate conflicts became less prevalent, the proliferation of entrenched and perilous armed conflicts within states surged (Jones, 2020).

The events of September 11, 2001 (9/11) and the protracted conflicts that ensued further underscored this trend. Terrorist attacks in prominent global cities like New York, Madrid, London, and Paris prompted paradigm shifts in international responses, resembling traditional interstate conflicts. Coalitions intervened in Afghanistan and Iraq, encountering prolonged insurgencies reminiscent of old wars of national liberation. In subsequent years, states intervened in Syria’s civil war, invoking a right to collective self-defense against non-state actors within Syria’s borders, while others entered the conflict at the behest of the Syrian government (United Nations Security Council, 1990; Smith, 2019).

These events exemplify what we term non-traditional armed conflicts—conflicts that deviate from conventional patterns of national liberation struggles or confined civil wars. Instead, these conflicts entail armed struggles by non-state actors seeking regime change beyond the borders of the contested territory. Organizations like Al-Qaeda and Daesh⁵ epitomize such non-state actors, operating across borders and challenging traditional conceptions of armed conflict (Stephan, forthcoming).

Between International Law and Humanitarian Law

It is becoming more and more clear as 2020 goes on that the collapse of the bipolar world system has not signaled the end of catastrophic military wars. Furthermore, the information revolution has ironically benefited those in positions of power as much as reformers calling for more open and honest societies, despite being hailed as a force for democratization and transparency. These developments breed instability and leverage threats to global peace and prosperity, raising pertinent issues for international humanitarian law (IHL) (Jones, 2020). Legal complications are common in non-traditional armed confrontations, especially when it comes to the legal standing of those taking part in extraterritorial strikes on behalf of non-state entities. There are no definitive answers provided by the current frameworks of international humanitarian law that apply to both international and non-international armed conflicts (NIACs and IAs). Pertinent issues include the determination of combatant privilege, liability for providing material support, and the authority to detain during hostilities. However, satisfactory resolutions under current legal frameworks still need to be discovered (Smith, 2019).

A concrete example illustrates the challenges of applying existing legal norms to non-traditional armed conflicts. Detainees who are too sick or injured to be released are permitted to return home under Article 110 of the Third Geneva Convention. However, in the context of NIACs, neither the Convention nor its Additional Protocols directly address repatriation issues. Detained individuals in such conflicts, often nationals of the detaining power, may face repercussions if returned to their home country, complicating the application of Article 110 principles (United Nations Security Council, 1990). The need for more specific international legal frameworks regarding cyber-operations poses significant challenges. While some experts argue that cyber-activities resulting in substantial material harm fall under the purview of international humanitarian law, considerable ambiguity persists. Applying general principles such as non-interference to cyber-operations remains unsettled, with debates over their scope and application (Brown, 2020).

⁵ The Islamic State (IS), also known as ISIL or ISIS and by its Arabic acronym Daesh, is a transnational Salafi jihadist group and former unrecognized quasi-state. It originated from the Jaish al-Taifa al-Mansurah organization founded by Abu Omar al-Baghdadi in 2004. The group gained global prominence in 2014 by capturing significant territories in northwestern Iraq and eastern Syria during the ongoing Syrian civil war.

A notable example of cyber-operations complexities is the proliferation of malicious cyber-activities worldwide. Attackers often target stored data, disrupting normal operations or threatening to expose sensitive information. Attribution of such attacks is often challenging, with affected states sometimes attributing them to geopolitical adversaries or states with ongoing armed conflicts. For instance, the disabling of Ukrainian official websites during January–February 2022 amid the armed conflict between Russia and Ukraine exemplifies the intersection of cyber-operations and armed conflict dynamics (President of Russia, 2022).

International law and challenges

The contemporary world grapples with various threats necessitating concerted collective action for effective mitigation. Foremost among these challenges are climate change, the proliferation of weapons of mass destruction, and the looming specter of future pandemics, potentially engineered using advanced technology. Of particular concern is the prospect of such devastating weaponry falling into the hands of non-state actors, heightening the urgency for robust international cooperation and response mechanisms. Concurrently, pressing issues within international humanitarian law (IHL) ⁶demand attention and decisive action (Brown, 2020).

Against the backdrop of escalating international tensions and apprehensions, specific issues about international humanitarian law assume heightened significance. This study delineates two challenges reflective of the evolving landscape of global conflicts and technological advancements delineated in the preceding section.

First off, there has been a noticeable increase in the frequency and intensity of non-traditional armed conflicts during the last 20 years, which has challenged preconceived notions about the role of the state and the nature of warfare. It is critical that the legal frameworks governing governments that engage in direct military combat or aid non-state entities during such wars are made clear. Equally crucial are the mechanisms constraining non-state actors directly involved in these conflicts (Smith, 2019).

Secondly, there is an urgent need for comprehensive rules governing international cyber-operations, encompassing not only those precipitating physical violence but also those inflicting significant economic or personal harm. The absence of clear legal guidelines in this domain poses profound challenges, demanding concerted efforts to formulate frameworks capable of addressing the multifaceted complexities of cyber-operations within the purview of international humanitarian law (Jones, 2020).

Non-Traditional Armed Conflicts and Legal Challenges

The evolving landscape of global conflicts underscores the inadequacy of traditional legal frameworks to address the complexities of contemporary armed conflicts. Recent decades have witnessed a surge in non-traditional armed conflicts, where states and organized groups employ force on a large scale, often diverging from conventional norms delineated by the armed conflict legislation. Non-state actors, especially those aiming to topple an existing regime, have demonstrated the capacity to orchestrate attacks against states perceived as supporting their adversaries, as exemplified by notorious incidents such as the 9/11 attacks in New York, the Madrid bombings in March 2004, and similar assaults in London and Paris in subsequent years. In response, states increasingly resort to military interventions, utilizing remote weapons like drones, albeit with flawed targeting mechanisms that exacerbate humanitarian risks, as evidenced by the tragic incident during the US evacuation from Hamid Karzai International Airport in August 2021 (President of Russia, 2022). These non-traditional armed conflicts present multifaceted legal challenges, ranging from determining lawful targets to treating detainees. The existing legal framework governing non-international armed conflicts, encompassing Article 3⁷, common to the 1977 Additional Protocol II and the four Geneva Conventions, must be revised with interpretive ambiguities and jurisdictional limitations. Moreover, critical gaps persist, exacerbated by the reluctance of central states to ratify, or comply with international protocols, rendering customary rules and customary international humanitarian law subject to contentious debates (United Nations Security Council, 1990). Efforts to address these legal lacunae through treaty formation face formidable obstacles, compounded by escalating mistrust and adversarial dynamics among states most likely to be embroiled in non-traditional armed conflicts.

States' reluctance to engage in reciprocal cooperation and the absence of viable mechanisms for dialogue with non-state actors further impede the prospect of reaching a consensus on international legal norms governing armed conflicts (Smith, 2019). In navigating this intricate terrain, it is imperative to recognize that compliance with international law cannot solely hinge on the expectation of reciprocity. While reciprocity may bolster adherence to legal norms in specific contexts, it is not a panacea for ensuring compliance, as evidenced by states' adherence to human rights commitments, irrespective of reciprocal

⁶ IHL-is referred to international humanitarian law (IHL) consists of regulations designed to mitigate the consequences of armed conflicts. It defines the duties of states and non-state armed groups in times of armed conflict.

⁷ Article 3 of the Geneva Conventions addresses non-international armed conflicts. It requires humane treatment for those not participating in hostilities, prohibits acts such as murder, torture, and taking hostages, mandates care for the wounded and sick, and encourages agreements to uphold other provisions of the Conventions. Impartial bodies like the International Committee of the Red Cross may help, and applying these rules does not change the legal status of the parties involved.

assurances. Nonetheless, the absence of reciprocity diminishes the incentive for states to honor international obligations, underscoring the urgent need for innovative diplomatic initiatives to bridge divergent interests and foster collective adherence to international humanitarian law (Jones, 2020).

New approach to International Law

The quest for expanded international humanitarian law (IHL) faces significant hurdles, particularly in regulating non-traditional armed conflicts and the proliferation of cyber-operations within armed conflicts. Traditional avenues for international law-making appear increasingly untenable in these domains. In this section, we examine and juxtapose two inspirational and entrepreneurial approaches to address these challenges and propose potential avenues for progress.

The Inspirational Approach

In international law, socialization underscores the power of articulated norms to shape behavior, irrespective of direct incentives or sanctions. The adage, “If you build it, they will come,” popularized in W. P. Kinsella’s novel *Shoeless Joe*, encapsulates this concept, emphasizing how the articulation of a social norm can catalyze emulation and compliance (Kinsella, 1982). Individuals are inclined to conform to norms perceived as desirable to avoid social stigma and garner acceptance from their peers.

Accordingly, proponents of the inspirational approach advocate for disseminating compelling narratives and reasoned arguments advocating for adopting specific legal frameworks. These narratives, often articulated in written form, elucidate how adherence to specific rules can foster a more equitable and harmonious world order. Nonstate factors, such as groups like the Red Cross International Committee (ICRC)⁸, play a pivotal role in advancing these narratives, positioning themselves as champions of universal values rather than narrow state interests. Scholarship within the realm of IHL frequently aligns with the inspirational model, wherein the persuasive power of well-reasoned proposals is deemed instrumental in shaping state behavior.

Initiatives such as the Tallinn Manuals exemplify this approach, leveraging the expertise of independent scholars to garner legitimacy and influence state decision-making.

Despite its appeal, the inspirational approach has limitations. While effective in fostering normative consensus among compliant states, it risks marginalizing dissenting voices and may falter in the face of entrenched state interests resistant to normative change (International Committee of the Red Cross, n.d.).

Moreover, its efficacy hinges on the assumption that states prioritize their reputational standing and global acceptance, which may only sometimes align with strategic imperatives or domestic political considerations.

Evidently, non-governmental organizations (NGOs) composed of experts would gravitate toward this perspective. It makes sense that the International Committee of the Red Cross (ICRC), a well-known authority on international humanitarian law, would support it. What’s wrong with making thoughtful, cogent, and convincing arguments, after all?

However, while good proposals have merit, it is crucial to acknowledge their limitations. The socialization argument, rooted in sociology, posits that the international community functions akin to other social structures, with nations exhibiting a similar aversion to being perceived as antisocial. This premise holds weight during periods of peace and stability. Nevertheless, the effectiveness of socialization could decrease amidst political and technological upheavals, leading to heightened uncertainty and detachment from normative frameworks.

In today’s contemporary geopolitical landscape, characterized by pronounced divisions rather than cohesive alliances, nations may prioritize articulating their positions along ideological fault lines rather than seeking consensus. Revisionist regimes, perceiving systemic injustices and dysfunction within the established international order, may oppose reasonable proposals, perceiving compliance as a concession of weakness that contradicts their overarching goal of restructuring global relations.

Consequently, widespread adoption of proposed norms seems unlikely. Historical patterns suggest that prolonged non-endorsement of a proposal can indicate its perceived lack of societal significance, dissuading states from supporting it even if they find it attractive. Consequently, efforts to inspire change become ineffective, hindering the emergence of new regulatory frameworks.

Even international norms offering potential benefits across conflicting factions would face challenges in gaining acceptance, as opposing groups may interpret endorsement by one side as a biased assertion inconsistent with their own narrative and values.

⁸ ICRC -The International Committee of the Red Cross, headquartered in Geneva, Switzerland, has been honored with the Nobel Prize three times. This humanitarian organization has been crucial in shaping the laws of war and advocating for humanitarian principles.

Future Strategy and state actor

The future approach to shaping international legal norms involves a State taking the lead by setting an example, even if it means promoting a norm that others may initially reject as transgressive or destabilizing (Kinsella, 1982). This State firmly believes in the righteousness of its cause and is willing to endure criticism and opposition in the short term, confident that over time, evidence will emerge demonstrating the positive impact of the norm, eventually leading others to adopt it.

This approach relies heavily on State behavior and self-justification rather than external narratives (Moyn, 2021). The entrepreneurial State asserts that its actions align with international law and should serve as a model for future legal mandates. In this process, the State's ownership of its choices plays a crucial role in paving the way for its preferences to become accepted as international norms. One such norm adjustment pertained to the principle of territorial sovereignty to combat international cartels effectively. The prevalence of cartels during the interwar period led to consumer harm through reduced competition, inflated prices, and limited product choices (Deeks, 2012). Despite traditional jurisdictional limitations, the United States asserted a new norm, extending prescriptive jurisdiction beyond territorial boundaries to address extraterritorial behavior affecting the well-being of its citizens (Blakesley, 1982). Initially met with strong opposition, by the 1980s, most States recognized the threat posed by international cartels, leading to a broader acceptance of unilateral actions by affected States to combat them.

A few instances illustrate how certain norm-advocates could handle cyber-operations and unconventional military engagements. First, let's look at the problem of targeting in unconventional battles. States equipped to carry out over-the-horizon operations, like drone strikes, have developed intricate standards and evidence-based rules to limit military actors in selecting targets they perceive as involved in imminent armed attacks (Horton, Lamothe, & Demirjian, 2021). The objective is to restrict the use of force to individuals posing an immediate threat to innocent lives while minimizing collateral damage. Despite efforts to refine these rules, incidents like the US strike in Kabul in August 2021 highlight ongoing challenges. To turn this tragedy into a catalyst for positive change, the United States could enhance and publicize improved procedures for assessing targets in drone strikes, urging its allies and partners to do the same (Horton, Lamothe, & Demirjian, 2021). If these practices spread beyond US-led coalitions to friendly nations involved in non-conventional conflicts, such as Israel, it could signal the emergence of an informal norm in the law of armed conflict.

Another potential norm could address a specific form of cyber-operation: ransomware attacks. While there is nothing inherently illegal about a State or private entity extorting payments through such attacks, there is growing concern over the use of state-sponsored capabilities by private actors.

Given the increasing cyber capabilities of certain states, there is a call for developing due diligence standards for states with significant surveillance capacities whose citizens engage in criminal ransomware activities (Deeks, 2012).

Establishing an expert group by the White House and the Kremlin in June 2021 to address this issue underscores the need for concerted efforts in this domain. State cyber-operations necessitate the development of comprehensive rules, drawing upon established principles of international law, particularly those concerning State responsibility (Deeks, 2012).

Given the dynamic technological landscape and evolving threats, collaboration among cyber powers may be essential in formulating practical standards to curb internationally harmful cyber-actions originating within their jurisdictions (Deeks, 2012). Through trial and error and tacit agreements, these cyber powers could devise effective measures to fulfill their obligation to suppress such actions.

Conclusion

In conclusion, the divergent approaches of inspiration and norm-entrepreneurship in crafting new international humanitarian law hinge on the rationales behind the rules and the roles assigned to published works and non-State actors, including influential legal scholars.

It is crucial to recognize that these approaches are not mutually exclusive; they complement each other and are both indispensable. While an inspiring proposal may capture attention, its effectiveness ultimately hinges on state acceptance and implementation.

Conversely, introducing and enforcing new norms gains credibility and coherence through the discourse provided by legal experts and commentators.

The underlying principle is that, amidst ongoing conflicts and shifts in global relations, states must explore novel avenues for identifying shared interests and signaling adherence to specific norms.

Creating guidelines that governments will abide by while preserving plausible deniability regarding their greater commitment to cooperation or the normative effect of the rule of law may be one way to do this. While this may not align with idealistic aspirations within international law, the overarching goal of mitigating the brutality and inhumanity of armed conflict may necessitate such pragmatic compromises.

In essence, even if we cannot achieve everything we desire, incremental progress is still preferable to stagnation.

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Analysis of the Functions and Role of the Suretyship

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Abstract

The Constitution of the Republic of Albania establishes that its economic system is founded on both private and public ownership, as well as market economy principles and the freedom of economic activity. The notion of economic freedom includes the right of individuals or legal entities to willingly engage in civil legal relations, form contracts, and manage the circulation of goods, services, or capital, thereby acquiring rights and assuming obligations. Contracts, fundamental to both individual lives and society at large, aim to fulfill mutual interests within the civil legal relationships that are formed, modified, or dissolved by contracting parties. This analysis will consider the institute of suretyship or the contract of surety as one of the means to ensure the fulfillment of obligations. The contract of surety significantly impacts the legal relationship of obligation, functioning as an accessory contract but possessing substantial value in instances where the debtor fails to fulfill their obligation. The role of surety or guarantor is stipulated in various provisions of civil legislation. Judicial practice often varies in interpreting these legal provisions, especially in cases that are presented for resolution. Courts tend to emphasize creditor protection, frequently leaving the party acting as a surety for the debtor's obligation unprotected. This paper will refer to the analysis of legal provisions concerning the institute of surety, the role of surety in the tripartite creditor-debtor-surety relationship. Additionally, the paper will include judicial practices related to the contract of suretyship.

Keywords: Surety, Creditor, Debtor, Law, Judicial Decision, Court, Contract.

Introduction

In the constitutional context, the freedom of economic activity is understood as the right to enter into contracts, to have rights, and to undertake obligations, both individually and collectively, freely and based on personal will.¹ At the highest level, economic freedom expresses an absolute freedom without any limitations in the circulation of capital, goods, freedom of investment, etc.² The interpretation of civil legislation provisions that regulate legal obligation relationships, primarily the legal relationship of suretyship, which we will analyze in this paper, should ensure the freedom of these subjects in accordance with constitutional principles and relevant jurisprudence.

According to constitutional provisions, it often happens in our daily lives that we become guarantors/sureties for a debt/obligation initiated by family members, friends, individuals with other social connections, partnerships, etc. This guarantee is usually a bank guarantee contracted under standard conditions, formulated by the bank. Sometimes, as guarantors, we sign the contract without being aware of the financial risk associated with the guarantee or may not even know what a guarantee is. In other circumstances, as guarantors, we may be aware of the financial risk but accept the guarantee due to emotional ties

¹ The Constitution of the Republic of Albania, Official Publications Center Edition, Tirana 2023. Article 11/1. The economic system of the Republic of Albania is based on private and public property, as well as on the market economy and the freedom of economic activity.;

² Ibid., article 11/3. 3. Restrictions on the freedom of economic activity can only be imposed by law and only for important public reasons. ;

with the primary debtor, such as family or friendship connections. These emotional ties can influence our decision-making as guarantors, thus reasoning why we undertake a financial risk that we might not otherwise take.

In summary, the Civil Code³ (CC) defines suretyship as an additional means or an accessory contract to secure the main obligation, with the promise to fulfill the obligation individually. Therefore, suretyship is a legal act through which a person (the surety) agrees to secure the execution of an obligation taken by another person (the principal debtor) in favor of a creditor. This act is valid even in cases where the principal debtor is not informed that a person is acting as a guarantor or becoming a surety for the fulfillment of their obligation. Specifically, the surety agrees to be jointly liable with the principal debtor for the obligation, committing to pay the obligation in case the principal debtor cannot fulfill it. This means that, according to the suretyship agreement, the creditor has the right to demand the surety to pay the amount of the obligation instead of the principal debtor.

The surety, when fulfilling the obligation, must inform the principal debtor as a legal obligation, an action that serves several purposes as follows. Firstly, it ensures transparency by providing necessary information to all parties involved, thereby preventing misunderstandings or conflicts regarding the current status of obligations to the creditor. Secondly, notifying the fulfillment of the obligation helps prevent potential situations where the surety may have unwarranted claims against the debtor. By ensuring that the debtor is informed about the fulfillment of the obligation, risks of future conflicts are minimized. Thirdly, it respects the legal rights of the parties involved in this contract. The surety is obligated to fulfill legal obligations, including the duty to notify the debtor of the repayment of their obligation. Non-compliance with this obligation may result in legal restrictions or consequences for the surety in the future. Therefore, notifying the principal debtor of the repayment of the obligation is a preventive measure that contributes to ensuring sustainable relationships and respects the rights of all parties.

The primary purpose of suretyship is to provide an additional economic resource for the creditor in case the obligation is not fulfilled by the debtor, thereby directing them towards the surety's assets to realize their credit. This imposes significant responsibility on the surety in securing the creditor's credits, making it an important means for securing obligations.

However, the law provides that if the creditor does not demand the execution of the obligation within the specified period, the surety is discharged. This time limit ensures that the creditor has a limited period to seek legal actions, such as filing a lawsuit within six months in court, to ensure the realization of the obligation from the surety.⁴ If the repayment deadline is not specified in the surety agreement, the general deadline is one year. This provides a clear determination of the available time for the creditor to demand the execution of the obligation if it is not repaid within this period. These measures are established to protect the rights of the creditor and ensure that the surety fulfills its obligations accurately, in accordance with the agreement made, respecting the deadlines set by law.

Court practice often varies in the interpretation of legal provisions in the issues presented for resolution. In their interpretations, courts often prioritize creditor protection, frequently leaving the surety, who becomes liable for the debtor's obligation, without protection. This paper will analyze the legal provisions of suretyship, the role of the surety in the tripartite relationship of creditor-debtor-surety. The study will also include judicial practice regarding suretyship contracts.

Identification of Functions and Characteristics of the Suretyship Institute

Suretyship is a legal relationship that always maintains the character of an accessory⁵ relationship in connection with and in function of a principal obligation that exists between the creditor and the debtor. Suretyship ensures an effective obligation and can be given for both a future obligation and a conditional obligation.⁶ The institute of suretyship is integrally and functionally linked to the main legal action, which means that its creation and termination occur in accordance with the actions or inactions of the debtor of the principal obligation.

Suretyship is a conditional legal relationship⁷ because the surety is activated in the repayment of the principal debtor's obligation only if the latter does not fulfill his obligation. Therefore, the moment of activation depends on the fulfillment or non-fulfillment of the conditions specified in the suretyship contract. As a general rule, suretyship contracts can be in the form of a banking contract or other financial contracts, in which the involved parties determine their obligations and rights.

If we analyze the cases and methods of securing a loan, we will see that, in addition to real guarantees, referring here to pledge and mortgage as assets of the debtor or a third party, suretyship stands out as a personal guarantee⁸, where a person guarantees with his assets the fulfillment of the obligations of another person.

Another characteristic is that for the fulfillment of an obligation, several sureties can undertake to fulfill it, who respond either individually or for the entire obligation undertaken by other sureties. In the latter case, the surety who may have

³ Civil Code of the Republic of Albania, Official Publications Center Edition, Tirana 2023. Articles 585-600;

⁴ Civil Code of the Republic of Albania, Edition of the Center for Official Publications, Tirana 2023. Article 600: *The suretyship is extinguished if the creditor has not filed a lawsuit against the surety within six months from the date of expiry of the deadline for the execution of the obligation. When the deadline for the execution of the obligation is not specified either in the bailment contract or in another agreement, the bailment expires after one year from the date of signing the bailment contract.*

⁵ <https://www.jura.uni-hamburg.de/media/die-fakultaet/personen/wurmnest-wolfgang/wurmnest-contract-law-in-zekoll-wagner-introduction-to-german-law.pdf>. Introduction to German Law, Third Edition, Edited by Joachim Zekoll, Gerhard Wagner, fq.267-268;

⁶ Civil Code of the Republic of Albania, Edition of the Center for Official Publications, Tirana 2023;

⁷ https://www.gesetze-im-internet.de/englisch_bgb/englisch_bgb.html#p4048. German Civil Code. Article 765-778;

⁸ Galgano F., 2006, E Drejta Private, Luarasi, pg.466-469;

paid the entire obligation turns into a creditor of the other sureties, having the right of recourse against them. In this case, we should not confuse it with joint obligations, despite the conclusion of the relationship between the sureties, which has similarities with the claim of the obligation by one of the debtors when the obligation is paid by the latter.⁹ The surety can turn into a debtor, but his obligation will remain a secondary obligation in connection with the principal obligation. Another aspect is that the obligation of the surety is valid only if the obligation of the principal debtor is valid.¹⁰

One of the main differences between suretyship and joint liability is the purpose or economic function of the suretyship institute, which is the securing of the obligation by the guarantor. By becoming a supporter of the debtor, the guarantor increases the creditor's/bank's confidence to extend credit to the debtor. The interests in this three-party relationship, if we can call it that, are interrelated, where the creditor's interest is to have an additional possibility from a third party such as the guarantor, to fulfill the debtor's obligation within the time period specified by the parties. On the other hand, the debtor is interested in having someone who will help in case of insolvency or lack of security assets for the fulfillment of the obligation. The jointly liable debtor is directly connected to the creditor, where the latter can seek the execution of the same obligation either entirely or partially from the debtors together, or from each of them separately.¹¹ Unlike the debtor in joint obligations, the guarantor enters into a contract to secure the obligation, which only comes into effect in case of non-payment by the debtor of the primary obligation¹².

A guarantee/surety is a promise or agreement made by one party that the debts and financial obligations will be paid by the guarantor - thus taking responsibility for fulfilling the financial obligations in case the debtor fails and is unable to make the payments. As guarantors, in addition to physical persons, legal entities can also act - insurance companies, which can provide guarantees, even by issuing security bonds¹³, which are legal contracts that obligate one party to pay if the other party fails to fulfill the agreement.

In procedural terms, surety can be considered an executive title. This happens only when the legal requirements provided in the Civil Procedure Code are met, especially concerning acts for granting bank loans or acts for granting loans by non-bank financial institutions. This can result in two types of judgments: one for contesting the surety contract as an executive title and one for contesting it as a bilateral legal action. On the other hand, the law "On Financial Leasing"¹⁴ foresees that the lessee's obligations can be assumed by a guarantor, and in this case, the contract is bilateral because it is made between the lessee and the guarantor.

Analysis of Legal Relationships Between the Guarantor, Creditor, and Debtor

Suretyship is an instrument or a guarantee aimed at covering or mitigating the risk of non-fulfillment of an obligation. On the other hand, this security instrument/measure becomes a selection criterion for the granting of credit by the bank¹⁵. Therefore, the guarantee is a financial instrument that protects against financial losses (the creditor) that may result from an unfavorable event, which disrupts or prevents the completion of a contract.¹⁶

According to the provision of the Civil Code in Article 585: Suretyship is a legal action by which a person (the guarantor) undertakes to secure for the creditor the fulfillment of the obligation of a third party (the principal debtor). Suretyship is valid even when the debtor is not aware of it. Analyzing the first part of the provision, it emerges that the parties to this contract are the guarantor and the creditor, while the debtor is aware of the action that has been carried out between these two to secure the obligation. Any person who enjoys legal capacity to act can serve as a guarantor.¹⁷ Usually, close relatives, family members, spouses, partners, etc., of the principal debtor, who undertake to guarantee the fulfillment of the obligation to the creditor, can act as guarantors.

⁹ Civil Code of the Republic of Albania, Edition of the Center for Official Publications, Tirana 2023. Joint and several obligations, Articles 423-435;

¹⁰ Ibid., article 588;

¹¹ Ibid., article 423;

¹² https://www.europarl.europa.eu/workingpapers/juri/pdf/103_en.pdf. The private law systems in the EU: Discrimination on grounds of nationality and the need for a EUROPEAN CIVIL CODE. European Parliament;

¹³ <https://www.investopedia.com/terms/s/surety.asp>. By Will Kenton, Updated October 12, 2023;

¹⁴ Ligji Nr.9396, dt. 12.5.2005, "Për Qiranë Financiare" I ndryshuar me:Ligjin nr.9823, dt. 29.10.2007, Ligjin nr.9966, dt. 24.07.2008. Article 3:*The lessee's obligations can be assumed by a guarantor through a surety contract, concluded between the lessee and the guarantor. Article 28:Termination of the contract by the lessor.*

¹⁵ *The lessor has the right to terminate the lease contract if the guarantor presented by the lessee is insolvent or has declared bankruptcy, and the lessee fails to replace the guarantor with another acceptable guarantor to the lessor within thirty days from the lessor's written request to perform such a replacement.;*

¹⁶ https://aecom.eu/wp-content/uploads/2016/01/guarantee-schemes-keys-for-their-implementation-pv13_english-VF-3.pdf. Guarantee Systems. Keys for their implementation, pg.6;

¹⁷ <https://www.investopedia.com/best-surety-bond-companies-5100872>. By Brian Carmody, Updated January 29, 2022;

¹⁸ Civil Code of the Republic of Albania, Edition of the Center for Official Publications, Tirana 2023. Article 6: *When a person reaches the age of eighteen, he has the full capacity to acquire rights and assume civil obligations through his actions.;*

The second part of Article 585 of the Civil Code excludes informing the debtor, where the guarantor can secure the obligation even without the debtor's consent¹⁸, thus concluding that the suretyship contract has only two parties¹⁹. Therefore, an important point to emphasize is that suretyship is valid even in cases where the debtor is not aware of this agreement. This means that even if the debtor is not informed of the fact that a guarantor is guaranteeing their obligations to the creditor, the suretyship agreement remains valid and the guarantor remains obliged to fulfill the debtor's obligations in case of non-performance by the debtor. This establishes an additional level of responsibility for the guarantor, making them a strong guarantee for the creditor to ensure the fulfillment of the obligation by the debtor.

The question we can raise regarding how much guarantee a creditor, typically a bank, has if the guarantor passes away?. The guarantor who assumes the risk in the guarantee contract has guaranteed the execution of the obligation with his entire wealth, without pledging a specific asset as collateral. Therefore, unlike pledges or mortgages, which are created and are inseparably linked to the specific property and assets envisaged in the contract, this refers to the entirety of the guarantor's assets. Subjects of law entering into legal relationships with each other are not always indistinguishable, but in case of change, they retain their legal identity²⁰. Rights and obligations pass/succeed to heirs or persons who acquire rights by taking the place of the respective party, such as the creditor, guarantor, or debtor.

Guaranteeing is a legal act that must be performed in writing.²¹ This means that the surety contract, as an agreement between the guarantor and the creditor, must be a written document that includes all the terms and obligations of the parties.²² This document must clearly specify the guarantor's obligations to the creditor, including the amount of the debt the guarantor agrees to guarantee, as well as the terms and deadlines for fulfilling this obligation. The obligations of the creditor to the guarantor must also be defined here, as well as the rights of each party in the event of non-compliance with the agreement. This document must be signed by the parties, including the guarantor, creditor, and debtor if the latter is aware of this agreement. The law, not without purpose, has provided for the preparation and implementation of a document of the surety contract, which can also be in the form of a notarial act²³, through which the rights and obligations of all parties are ensured and respected, as well as to prevent misunderstandings or conflicts in the future. For a surety/guarantee contract to be valid, the following must be fulfilled:

1. The subject/guarantor must express their consent to provide the guarantee in the name of the guarantor.
2. The guarantee must be clear, specific, and quantified in monetary value.
3. It must be irrevocable, so that there are no clauses allowing the guarantor to unilaterally revoke payment of the debt to the main debtor, increase defense costs against him, limit the maturity of the claim, or hinder payment on time.
4. It must be unconditional, without clauses regarding the method of payment to the creditor.
5. Finally, every clause of the contract must be supported by law.

In relation to the validity of the surety contract, we are discussing a decision of the Court of Cassation²⁴ in Italy, which identifies three specific clauses in the standard contracts of the Italian Banking Association that are in conflict with antitrust rules.²⁵ The decision analyzes how these clauses violate Italian antitrust law (Law No. 287/9026). In this decision, the Court refers to its analysis in Decision No. 55/200527 of the Italian Banking Association, which determines the invalidity of three key clauses included in guarantee agreements drafted by ABI.

The first clause specifies payment upon simple request by the bank. The guarantor is obligated to immediately pay the bank, upon a simple written request, any amount due as principal, interest, expenses, taxes, and any other accessories. This clause ensured that the bank could demand payment from the guarantor without first addressing the main debtor.

The second clause pertained to waiving the deadlines stipulated in Article 1957 of the Italian Civil Code²⁸. This means that the rights of the bank arising from the surety remain unaffected until the total settlement of the debtor's obligations, without

¹⁸ <https://www.altalex.com/documents/codici-altalex/2015/01/02/codice-civile>. The Italian Civil Code provides in article 1936: The surety is effective even if the debtor has no knowledge of it;

¹⁹ Semini M., 2016, E Drejta e Detyrimeve dhe Kontratave, Pjesa e përgjithshme dhe Pjesa e Posaçme, Real-Stamp, Tiranë, pg.183;

²⁰ Decision No. 455, dated 28.10.2015, Civil College of the Supreme Court;

²¹ Civil Code of the Republic of Albania, Publication of the Center of Official Publications, Tirana 2023. Article 587: *The deposit must be made in writing;*

²² https://www.europarl.europa.eu/workingpapers/juri/pdf/103_en.pdf. The private law systems in the EU: Discrimination on grounds of nationality and the need for a EUROPEAN CIVIL CODE. European Parliament;

²³ https://www.ssoar.info/ssoar/bitstream/handle/document/89626/ssoar-pos-2023-5-pratië_et_al-Personal_Guarantee_as_Legal_Protection.pdf?sequence=1&isAllowed=y;

²⁴ https://i2.res.24o.it/pdf2010/Editrice/ILSOLE24ORE/QUOTIDIANI_VERTICALI/Online/_Oggetti_Embedded/Documenti/2022/04/07/Cassazione_41994_2021.pdf;

²⁵ <https://www.altalex.com/documents/news/2022/01/25/fideiussione-omnibus-nulle-le-clausole-che-violano-le-norme-antitrust>;

²⁶ Law 10 October 1990, n. 287, Rules for the protection of competition and the market. (Last update to the act published on 12/30/2023). <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1990;287>;

²⁷ https://www.bancaditalia.it/compiti/vigilanza/avvisi-pub/tutela-concorrenza/provvedimenti/prov_55.pdf;

²⁸ <https://www.altalex.com/documents/codici-altalex/2015/01/02/codice-civile>. Art. 1957. *Maturity of the principal obligation. The guarantor remains obliged even after the expiry of the principal obligation, provided that the creditor has brought his claims against the debtor within six months and has continued them with diligence. The provision also applies to the case where the guarantor has expressly limited his guarantee to the same term as the principal obligation. In this case, however, the application against the debtor must be filed within two months. The request brought against the debtor also interrupts the limitation period against the guarantor;*

being required to exercise its rights against the debtor or guarantor within the deadlines set by Article 1957. The third clause concerned the guarantor's obligation, which remained in force until the debtor was released from final obligations to the bank, even if the debtor's payment was canceled, declared invalid, or revoked.

As a result, the court argued in this decision that these clauses create inequality/unfairness between the parties and harm competition by favoring banks at the expense of guarantors and debtors. Therefore, contracts containing these clauses are invalid even under antitrust rules.

The performance and efficiency of the institute of security interest in judicial practice.

Civil litigation practice in Albania has encountered challenges and uncertainties regarding certain issues of the institute of security interest, which, despite having specific regulation in law, have been interpreted differently by courts in our judicial system. To address these challenges and ensure a consistent interpretation and application of the provisions of the Civil Code concerning the institute of security interest, a thorough legal analysis through unification or harmonization by the Supreme Court (SC) has been deemed necessary. The Civil College has argued that ongoing uncertainties in judicial practice are inconsistent with the principles of the rule of law and legal certainty. Additionally, the European Court of Human Rights (ECtHR) in its decisions has recognized that uniform application of the law by the entire judiciary²⁹ of a country constitutes a guarantee for legal certainty and promotes the rule of law. The ECtHR has concluded that violations of Article 6 of the European Convention on Human Rights³⁰ (ECHR) concerning the exercise of the nomofilactic³¹ function of the highest judicial authority in a country result from several circumstances, including the existence of different positions in jurisprudence on the same legal issue and the lack of legal and procedural mechanisms aimed at eliminating the lack of coherence³².

The High Court's Civil Panel³³, in a case brought for reconsideration before this court, has decided to examine it in a plenary session and unify judicial practice. The Supreme Court analyzed first the issue of equalizing the quality of the guarantor with that of the debtor in terms of when this equalization can occur, addressing thus the uncertainties in the legal regime of the guarantor's civil liability. The creditor has an interest in securing an additional means to guarantee the fulfillment of the obligation by the main debtor, while the debtor has an interest in having a trusted person to assist in fulfilling the obligation. On the other hand, the guarantor acts from a social and humanitarian interest, supporting the debtor in fulfilling the obligation. It is important that the parties recognize and understand their rights and obligations well to prevent unnecessary risks.

Based on the decision of the Supreme Court and referring to articles 589, 590, and 591 of the Civil Code, the quality of the guarantor is equated with that of the debtor when the obligation becomes enforceable, except in cases where the parties have provided otherwise in the contract. This equality occurs in two types of guaranties: subsidiary and solidary. In subsidiary guaranties, the guarantor is activated only after the creditor has exhausted all means to recover the credit from the main debtor and has failed to do so.

In French Civil Code³⁴, Article 2298 stipulates that the guarantor is liable to the creditor only when the debtor fails to fulfill the obligation, and the guarantor's obligation arises when the creditor has exhausted all means to recover the debt from the debtor's assets. Similarly, Article 2299 continues with the same meaning, emphasizing the creditor's obligation to exhaust all means to enforce the debt from the main debtor's assets. I believe that our Civil Code also prioritizes this, regardless of the parties' provisions in the contract.

In solidary guarantee, the guarantor responds simultaneously with the main debtor when the obligation matures, giving the creditor the opportunity and a favorable position to choose between the debtor's assets and those of the guarantor to fulfill the debt. However, the legal system or the contract formulated by the creditor often complicates the guarantor's protection, posing a challenge both legally and practically.³⁵ In the case³⁶ unified by the High Court (GjL) regarding the judicial practice, the parties were in a solidary guarantee relationship, where the creditor was within the time limits (referring to the facts of this case) to seek debt repayment.

Secondly, in some cases, there have been claims that the activation of the guarantor's asset liability can only occur after the creditor has initiated legal action, especially when the main obligation is not an enforceable title. This position is supported by a literal interpretation of Article 600 of the Civil Code. In the subsequent case³⁷ brought before the High Court, it was rightly argued that a guaranty contract can take the form of a banking or non-banking financial institution contract and is considered an enforceable title if it meets the legal requirements of Article 510 of the Code of Civil Procedure³⁸ (KPrC). These enforceable titles are executed through an enforcement order under Article 511 of the KPrC.

²⁹ Chapman v. The United Kingdom (Application no. 27238/95). <https://www.eschr-net.org/caselaw/2008/chapman-v-united-kingdom-application-no-2723895>;

³⁰ The European Convention on Human Rights, amended by Protocols No. 11, 14 and 15 accompanied by Protocols No. 1, 4, 6, 7, 12, 13 and 16, Rome, 4.XI.1950. Article 6, The right to a due process.;

³¹ Lupuş and Others v. Romania, <https://hudoc.echr.coe.int/eng#%7B%22itemid%22:%5B%22001-78568%22%5D%7D>;

³² Judgment Mariyka Popova and Asen Popov v. Bulgaria - case-law discrepancy has been corrected by the Supreme Court of Cassation, 11/04/2019. <https://hudoc.echr.coe.int>;

³³ Decision No. 106, dt. 02.03.2023, Civil College of the Supreme Court;

³⁴ https://www.trans-lex.org/601101/_/french-civil-code-2016/. ;

³⁵ https://www.ssoar.info/ssoar/bitstream/handle/document/89626/ssoar-pos-2023-5-pratiwi_et_al-Personal_Guarantee_as_Legal_Protection.pdf?sequence=1&isAllowed=y;

³⁶ Decision No. 106, dt. 02.03.2023, Civil College of the Supreme Court, paragraph 149,150;

³⁷ Decision No. 477, dt. 19.07.2023, Civil College of the Supreme Court;

³⁸ Civil Procedure Code, Publication of the Center of Official Publications, Tirana 2023, article 510,511;

Guarantee, as a security measure for bank credit contracts, does not require separate legal action by the creditor, who exercises their rights through an application for an enforcement order. This procedure equates to the legal action mentioned in Article 600 of the Civil Code and ensures the creditor's rights are fulfilled through the coercive force of the state. The interpretation of this procedural rule resolves claims by guarantors for the extinction of obligations in bank credit contracts or non-banking financial institutions, while the security agreement is considered an enforceable title under Law No. 8537, dated October 18, 1993³⁹.

In this decision, the High Court argued that: the Court of Appeal should assess the guarantee contract as evidence and determine whether the security agreement is an independent or accessory security instrument. This step is necessary to accurately identify the subject of the dispute, based on the factual and legal reasons for which the plaintiff has sought annulment of the enforcement actions, and to evaluate whether the guarantee and the security agreement have been extinguished. The plaintiff in this case sought the annulment of the guarantee arguing that the action was not filed within the deadlines provided by Article 600 of the Civil Code, while the security agreement was null due to the expiration of the 5-year guarantee period stipulated in the credit contract.⁴⁰ The High Court concluded that the courts had not separately addressed these claims but had confused them by considering the security agreement as an accessory contract to the guarantee. This led to an incorrect assessment, ignoring the clear distinction between the cause of action raised by the plaintiff and remanding the case for reconsideration by the Court of Appeal.

Thirdly, there have been various models of interpretation regarding the six-month or one-year deadline stipulated in Article 600 of the Civil Code, where some consider it a prescriptive period and others consider it a barring period. In the case appealed to the High Court⁴¹, the decisions of the lower and appellate courts were upheld, arguing that the main obligation and the guarantee related to it were fulfilled according to the subcontract agreement, and the claim was filed outside the 6-month deadline stipulated for the guarantee. Additionally, the High Court supported the courts' analysis referring to Article 600 of the Civil Code, emphasizing that the guarantee is extinguished if a year has passed since the contract was concluded and during that time, the creditor did not seek enforcement of the obligation. Therefore, in conclusion, we support the argument of the High Court⁴², which states that the six-month deadline specified in Article 600 of the Civil Code is a deadline related to the extinction of the right to use the procedural tool, the claim, for the realization of rights, and not the loss of the subjective right itself. As such, this is a prescriptive period and not a barring period⁴³.

Regarding the above analysis, we also bring a decision of the Court of Appeal of Milan, No. 3115 dated 7/11/2023, which has changed how secured creditors seek payments from guarantors/guarantees in Italy. This court decided that an out-of-court claim by the creditor may interrupt the statutory limitation period to seek payment from the guarantor. This decision established new standards for guarantee contracts, emphasized the importance of contractual deadlines, and improved transparency and accountability in banking practices. In the banking sector, it influenced the review of contractual practices and risk management to enhance trust in the financial system. Thus, this decision marks a significant step towards a more sustainable, reliable, and fair legal system in Italy.⁴⁴

Fourthly, the question raised for analysis by the Civil College of the High Court is whether the application for an enforcement order can be equated with a lawsuit in both substantive and procedural terms, referring to Article 600 of the Civil Code. Also under discussion is whether Article 600 employs the same logic for obligations that are the subject of executive titles, considering that their enforcement must occur solely through the initiation of a lawsuit and mandatory execution of the final court decision. If this holds true, then there is a need for a clear and accurate interpretation of this legal provision to understand its application process in practice.

For an enforcement order to be issued, there must be an executive title clearly specifying the obligations and it must be enforceable. If the guarantee constitutes an executive title, the application for an enforcement order equates to a lawsuit under Article 600 of the Civil Code. When the guarantee is not an executive title, the creditor may utilize Article 600 to file a foundational claim against the guarantor, respecting the deadlines stipulated therein.

The College assesses that Article 600 of the Civil Code does not consider the lawsuit as a procedural means to initiate court proceedings, but rather as a foundational claim in a substantive sense, as a legal avenue to address the court to ensure the respect of rights and legitimate interests. The right to initiate court proceedings for mandatory execution is encompassed within the concept of a foundational claim in a substantive sense, aiming to realize a legitimate right, such as the creditor's right to seek fulfillment of the obligation from the guarantor. Meanwhile, the creditor's request for an enforcement order equates to a foundational claim in a procedural sense⁴⁵, thereby initiating a legal process.⁴⁶

Based on the High Court analysis, we can conclude that activating the enforcement of the guarantee by the creditor,

³⁹ Ligji Nr. 8537, date 18.10.1999, "Për barrët siguruese" i ndryshuar;

⁴⁰ Decision No. 477, dt. 19.07.2023, Civil College of the Supreme Court, paragraph 40,41;

⁴¹ Decision No. 223, dated 28.03.2013, Civil College of the Supreme Court;

⁴² Decision No. 106, dt. 02.03.2023, Civil College of the Supreme Court, paragraph 142/3;

⁴³ Nuni A., 2009, *E Drejta Civile (Pjesa e Përgjithshme)*, pg. 355-381. Prescription is the inaction of the holder or holder of the subjective right and the passing of the time within which he should have exercised this right. The pre-privilege leads to the extinction of the subjective right of the right holder.;

⁴⁴ Court of Appeal of Milan, Judgment No. 3115 of 2023, November 7, 2023. <https://www.italiafideiussioni.it/the-role-of-the-extrajudicial-request-in-suretyship-the-revolutionary-decision-of-the-milan-court-of-appeal/>. The Role of the Extrajudicial Request in Suretyship: The Revolutionary Decision of the Milan Court of Appeal;

⁴⁵ Lamani A.,1962, *Procedura Civile e Republikës Popullore të Shqipërisë*, Universiteti Shtetëror i Tiranës, Tiranë, pg.101;

⁴⁶ Manual i së Drejtës Procedurale Civile Italiane, 2016, Kumi, Tiranë, pg.340-349.

to prevent its expiration due to the statutory deadline stipulated in Article 600 of the Civil Code, must be done through the judicial process for issuing an enforcement order or mandatory execution of the executive title. These legal measures can enforce the obligation against the main debtor or the guarantor. According to Article 600 of the Civil Code, a foundational claim and a request for an enforcement order are equated when the guarantee itself constitutes an executive title.

Conclusion

The analysis of the legal relations regarding suretyship and the interpretation of the law concerning this matter demonstrate that suretyship is a crucial institution in legal practice, especially in the field of financial relationships. Suretyship provides guarantees for creditors and facilitates safer lending practices, making it a key element in the country's financial system.

In this analysis, it is emphasized that the law should support economic freedom of action and protect the right to enter into contracts based on the personal will of the parties involved. Throughout the interpretation of the law, these constitutional principles should be respected, ensuring uniformity in its application in practice.

Furthermore, this paper underscores the importance of suretyship as a highly significant tool for securing obligations, albeit carrying a range of responsibilities for all parties involved. This includes the responsibility to fulfill obligations in accordance with the law and the contractual agreement of the parties, as well as informing interested parties about their obligations and responsibilities that may arise during contract performance.

To ensure a sustainable and fair interpretation of legal provisions regarding suretyship, GjL has unified and clarified them. Additionally, it is crucial that our judiciary exercises caution to ensure a proper interpretation of the law, avoiding misunderstandings in its application, and most importantly, adhering to the unifying decisions of GjL in their rulings.

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PANEL III

**THE FUTURE OF LEARNING,
INFORMATION, AND
KNOWLEDGE IN A DIGITAL AGE**

Addiction as an attachment disorder

Dr. Brunilda HOXHAJ

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Abstract

In recent years, Bowlby's attachment theory has spurred the conduct of studies aiming to explain the connection between attachment and various socio-emotional and mental health issues, such as the link between insecure attachment and addiction.

The purpose of this qualitative study is to address the link between an insecure attachment style developed in childhood and the addiction developed in adulthood. This was achieved by identifying attachment styles and analyzing early attachment-related experiences in five subjects aged 25-50. Additionally, this study focuses on analyzing early attachment-related experiences. Through a semi-structured interview applied to five individuals with different addictions and using the Adult Attachment Scale (AAS) instrument, a noticeable connection between the lack of secure attachment and addiction was observed.

Four out of five participants exhibited signs of an insecure attachment style, specifying that their relationships with parents and a challenging family environment were among the main factors leading to substance abuse or engagement in addictive behaviors. The presence of inconsistent parental figures was also noted, fulfilling children's basic needs but lacking closeness, warmth, or consistency in their presence. These parental figures were indifferent, passive, and threatening, fostering feelings of fear, anxiety, loneliness, and inadequacy in their children.

Keywords: Attachment, attachment style, addiction.

Introduction

Originally explicated by Bowlby, attachment refers to the emotional bond formed between a child and their primary caregiver, enabling the child's protection and security (1982). This bond is foundational for a child's development, serving not merely to fulfill basic needs like food and shelter but also to provide a secure base from which the child can explore the environment and seek comfort during times of emotional distress (Waters & Cummings, 2000). Although early psychologists, particularly psychoanalysts, recognized the significance of early relationships, it was John Bowlby who expanded the concept of attachment into a comprehensive theory that highlighted its critical role in human development. Further developed by his colleague Mary Salter Ainsworth, this theory revolutionized the understanding of human relationships and psychological health, emphasizing the profound impact of early attachment on a person's emotional and social well-being. Ainsworth's empirical work, particularly her development of the "Strange Situation" assessment, provided robust evidence of different attachment styles and their long-term effects.

Over the years, Bowlby and Ainsworth's attachment theory has paved the way for numerous studies that have explored various dimensions of human behavior and psychological processes. This body of research has expanded our knowledge on how early relationships influence a wide range of outcomes, from emotional regulation to interpersonal relationships and mental health. In recent times, attachment theory has catalyzed the development of new theories that seek to elucidate the connections between attachment patterns and various psychological, emotional, and mental health issues.

One such theory, which we will focus on in this thesis, investigates the link between insecure attachment and addiction. Researchers propose that individuals with insecure attachment styles are more predisposed to develop addictive behaviors (Liese, Kim & Hodgins, 2020). The hypothesis is that insecure attachment may leave individuals more vulnerable to seeking out substances or behaviors that provide a sense of security or emotional regulation, albeit in maladaptive ways.

Through this study, the aim is to contribute to the expansion of knowledge on this topic by examining the early childhood experiences of individuals aged 25-50 who have been diagnosed with attachment disorders. By focusing on their relationships with primary caregivers, we seek to identify patterns and connections that may bridge these early experiences with the later development of dependency and addiction. This research endeavors to offer insights that could inform therapeutic practices and interventions, ultimately enhancing the support provided to individuals struggling with the dual challenges of attachment issues and addiction.

Literature review

Attachment Theory

John Bowlby dedicated his life to the study of attachment, an innate behavioral system driven by biological forces and essential for ensuring survival (1969). According to Bowlby (1969; 1982), infants are born with a set of behaviors, called attachment behaviors, developed as a result of evolution to secure closeness with other individuals, attachment figures, who provide protection from physical and psychological threats, encourage healthy exploration of the surrounding environment, and help the child learn how to regulate their emotions effectively. The child's proximity-seeking behaviors, activated by the attachment behavioral system, enhance the species' likelihood of survival and reproduction. This is particularly important as offspring are born with underdeveloped abilities to independently locate food, navigate their environment, or protect themselves from predators, stressors, and other potential threats. Although the attachment system is more critical during the early years of life, Bowlby (1988) believed it extends its function throughout life and manifests in behaviors and thoughts related to seeking human closeness in times of need. During early childhood, the primary caregivers of the child, mainly parents, subconsciously and instinctively take on the role of attachment objects. In childhood, individuals seek closeness with the primary caregiver when they feel tired or ill (Ainsworth, 1973), but also when they seek comfort (Heinicke & Westheimer, 1966). In adolescence and adulthood, partners and close friends become the main objects of attachment, replacing caregivers, to offer emotional support. According to Bowlby, the primary function of the attachment system is to enhance an individual's sense of security. This sense of security fosters the belief that the world is a safe environment, where individuals can rely on others for protection and support, enabling them to explore their surroundings and engage in social interactions without fear of harm. During childhood, primary attachment strategies include nonverbal expressions such as crying, tantrums, or gestures like reaching out arms to establish and maintain closeness with the primary caregiver (Ainsworth et al., 1978). In adulthood, these strategies include other methods to establish contact such as conversation, continuous messaging, being present, etc. (Mikulincer & Shaver, 2014). Bowlby (1988) regarded the need for security and closeness as essential for building and maintaining healthy relationships, as the sense of security strengthens the emotional bond with the partner. Additionally, successful attachments teach individuals how to regulate and control negative emotions such as anger, anxiety, or sadness, maintaining an emotional balance during stressful periods (Bowlby, 1973).

Attachment Styles

According to attachment theory (Bowlby, 1988; Fraley & Shaver, 2000; Shaver & Hazan, 1993), the consolidation of internal models leads to the development of stable individual characteristics in attachment style - patterns of expectations, needs, emotions, and behaviors in close interpersonal relationships (Hazan & Shaver, 1987). Attachment styles can be classified into four categories: secure, anxious, avoidant, and disorganized. For individuals with insecure attachment styles, several issues have been highlighted.

Individuals who develop a *secure attachment* style in childhood as a result of sensitive and available attachment figures have predispositions to form a more optimistic approach to dealing with life difficulties and are more capable of managing emotions and developing problem-solving skills (Berant et al., 2001; Birnbaum et al., 1997). Other subsequent studies have also shown that individuals with a secure attachment style have a more positive view of human nature and are more predisposed to trusting their partners (Collins & Read, 1990; Hazan & Shaver, 1987).

Individuals with *avoidant attachment* style restrain themselves from expressing negative emotions such as anxiety, stress, or internal concerns and minimize the displayed closeness towards romantic partners (Fraley, Davis, & Shaver, 1998). They are less emotionally connected to their partners, do not prefer physical and emotional intimacy, and experience separation more easily compared to adults who do not have an avoidant style, resulting in short, cold, and emotionally insignificant relationships for the individual (Fraley & Shaver, 1999).

As the name suggests, individuals with *an anxious attachment* style are involved in relationships characterized by continuous anxiety about whether the relationship will end, concern that the partner does not reciprocate feelings of love, and fear that they will never find a romantic partner who meets their high expectations (Mikulincer & Shaver, 2007). They

continuously struggle with these internal conflicts, which they cope with using various mechanisms such as excessive and continuous expression of love, continuous virtual or physical contact with the partner, continuous demands for security or excessive expression of closeness. These mechanisms help them deal with the fear of abandonment and unconsciously gain a security they have never received in relationships with primary caregivers (Simpson, 1990).

Regarding the *disorganized attachment* style, children with this attachment style have a higher predisposition to display negative developmental outcomes. In latest studies, a link has been distinguished between the disorganized attachment style and different mental health problems such as aggression (Fearon et al., 2010, Sroufe et al., 2009). In romantic relationships, individuals with a disorganized attachment style exhibit unstable and conflictual behaviors, similar to their childhood. They also have difficulty regulating their emotions, showing constant and strong mood swings and difficulty expressing their emotions as a result of difficulty understanding them, which may create ongoing conflicts in relationships (Paetzold, Rholes & Kohn, 2015).

Addiction

The term addiction refers to a state of psychological and/or physical dependence on the use of drugs or other substances, such as alcohol, or on activities or behaviors, such as sex, exercise, and gambling (APA, 1994). This definition can also be equated to the DSM-V definition of Substance Use Disorder: “A range of cognitive, behavioral, and physiological symptoms indicating that an individual has difficulty controlling substance use despite adverse effects” (2013). It is important to specify precisely in which cases the term “addiction” can be used. For this paper, we will rely on the criteria presented in DSM-V regarding addiction disorders, criteria that serve as a basis for determining whether a specific behavioral syndrome can be considered addiction.

Alcohol Use Disorder is characterized by a range of behavioral and physical symptoms, including substance craving, tolerance, and the need for consumption. Disorder emerges when a repetitive and intensive pattern of alcohol consumption develops.

The diagnostic criteria are as follows¹:

A. A maladaptive pattern of alcohol consumption leading to clinically significant impairment or distress, as evidenced by at least two of the following manifestations within a 12-month period:

1. Alcohol is frequently consumed in larger quantities or over a longer duration than initially intended.
2. There is a persistent desire or repeated unsuccessful attempts to reduce or control alcohol consumption.
3. A substantial amount of time is dedicated to activities related to obtaining, consuming, or recovering from the effects of alcohol.
4. A strong craving or urge to consume alcohol is experienced.
5. Recurrent alcohol use results in a failure to meet major responsibilities at work, school, or home.
6. Continued alcohol use occurs despite ongoing or recurrent social or interpersonal problems caused or exacerbated by alcohol's effects.
7. Social, occupational, or recreational activities are either reduced or abandoned due to alcohol use.
8. Alcohol use recurs in situations where it is physically dangerous.
9. Alcohol consumption persists despite the awareness of a physical or psychological problem likely caused or worsened by alcohol.

Tolerance, as indicated by one of the following:

1. A need for significantly increased amounts of alcohol to achieve intoxication or the desired effect.
2. A markedly diminished effect when the same amount of alcohol is consumed.

Withdrawal, as demonstrated by one of the following:

1. The characteristic withdrawal syndrome for alcohol (refer to Criteria A and B for alcohol withdrawal, pp. 499–500).
2. Alcohol or a related substance (e.g., benzodiazepine) is consumed to alleviate or avoid withdrawal symptoms.

Gambling disorder: The primary criterion for *gambling disorder* is persistent maladaptive gambling behavior that affects personal, occupational, and familial domains (Criterion A). Although some non-substance-related behavioral disorders bear similarities to substance use disorders, only one disorder—gambling disorder—has sufficient empirical evidence to be included in this section.

The diagnostic criteria are as follows²:

A. A persistent and recurrent pattern of maladaptive gambling behavior leading to clinically significant impairment or distress, as evidenced by the individual exhibiting four (or more) of the following symptoms within a 12-month period:

1. A need to gamble with increasing amounts of money to achieve the desired level of excitement.
2. Restlessness or irritability occurs when attempting to reduce or cease gambling activities.
3. Repeated, unsuccessful attempts have been made to control, reduce, or stop gambling.
4. Frequent preoccupation with gambling, such as persistent thoughts about reliving past gambling experiences, planning the next gambling venture, or finding ways to obtain money for gambling.
5. Gambling often occurs in response to distress (e.g., feelings of helplessness, guilt, anxiety, or depression).
6. After losing money, there is a tendency to return another day in an attempt to recoup losses (“chasing” losses).
7. The individual lies to conceal the extent of their gambling involvement.
8. Significant relationships, employment, or educational or career opportunities have been jeopardized or lost due to gambling.
9. The individual relies on others to provide financial assistance to alleviate desperate situations caused by gambling.

B. The gambling behavior is not better explained by a manic episode.

Opioid Use Disorder: Opiates include heroin, synthetic opioids such as fentanyl, and prescription medications used for the relief of physical bodily pain, which are dispensed only by prescription, such as oxycodone, hydrocodone, codeine, and morphine.

The diagnostic criteria are as follows³:

A. A problematic pattern of opioid use leading to clinically significant impairment or distress, as evidenced by at least two of the following criteria occurring within a 12-month period:

1. Opioids are frequently consumed in larger amounts or over a longer duration than initially intended.
2. There is a persistent desire or unsuccessful attempts to reduce or control opioid use.
3. A substantial amount of time is dedicated to activities necessary to obtain, use, or recover from the effects of opioids.
4. A strong craving or urge to use opioids is experienced.
5. Recurrent opioid use leads to failure in fulfilling major responsibilities at work, school, or home.
6. Continued opioid use occurs despite ongoing or recurrent social or interpersonal problems caused or worsened by the substance’s effects.
7. Social, occupational, or recreational activities are reduced or abandoned because of opioid use.
8. Recurrent opioid use takes place in situations where it poses physical hazards.
9. Continued opioid use persists despite awareness of a physical or psychological problem likely caused or exacerbated by the substance.

Tolerance, as demonstrated by one of the following:

- a) A need for significantly increased amounts of opioids to achieve intoxication or the desired effect.
- b) A markedly diminished effect with continued use of the same amount of the opioid.

Note: This criterion does not apply to individuals taking opioids solely under appropriate medical supervision.

Withdrawal, as indicated by one of the following:

- a. The characteristic opioid withdrawal syndrome (refer to Criteria A and B of the criteria for opioid withdrawal, pp. 547–548).
- b. Opioids (or a closely related substance) are taken to relieve or avoid withdrawal symptoms.

Sedative, Hypnotic, or Anxiolytic Use Disorder: Sedative, hypnotic, or anxiolytic substances include benzodiazepines, benzodiazepine-like drugs such as zaleplon, carbamate drugs such as meprobamate, barbiturates such as secobarbital, and barbiturate-like drugs such as methaqualone. This class of substances encompasses all sleep-inducing medications or those intended for the treatment of anxiety. Given that sedative, hypnotic, or anxiolytic substances are pharmaceutical drugs dispensed on the recommendation of healthcare professionals, criteria numbers 10 and 11 cannot be met if the substances are used for medicinal purposes. The diagnostic criteria are as follows⁴:

A. A problematic pattern of sedative, hypnotic, or anxiolytic use leading to clinically significant impairment or distress, as evidenced by at least two of the following symptoms occurring within a 12-month period:

1. Sedatives, hypnotics, or anxiolytics are often consumed in larger quantities or over a longer duration than originally intended.
2. There is a persistent desire or unsuccessful attempts to reduce or control the use of sedatives, hypnotics, or anxiolytics.
3. A substantial amount of time is devoted to activities necessary to obtain, use, or recover from the effects of sedatives, hypnotics, or anxiolytics.
4. A strong craving or urge to use sedatives, hypnotics, or anxiolytics is experienced.
5. Recurrent use of sedatives, hypnotics, or anxiolytics leads to a failure to meet major responsibilities at work, school, or home (e.g., frequent absences from work or poor performance related to substance use; school suspensions or expulsions due to use; neglect of household duties or childcare).
6. Continued use of sedatives, hypnotics, or anxiolytics occurs despite persistent or recurrent social or interpersonal problems caused or exacerbated by their effects (e.g., arguments with a partner about intoxication, or physical altercations).
7. Social, occupational, or recreational activities are reduced or abandoned due to sedative, hypnotic, or anxiolytic use.
8. Recurrent use of sedatives, hypnotics, or anxiolytics in physically hazardous situations (e.g., driving or operating machinery while impaired).
9. Continued use persists despite awareness of a physical or psychological issue likely caused or worsened by the substance.

Tolerance, as demonstrated by one of the following:

- a. A need for significantly increased amounts of sedatives, hypnotics, or anxiolytics to achieve intoxication or the desired effect.
- b. A markedly diminished effect with continued use of the same amount.

Withdrawal, as evidenced by one of the following:

- a. The characteristic withdrawal syndrome for sedatives, hypnotics, or anxiolytics (refer to Criteria A and B of the withdrawal criteria, pp. 557–558).
- b. Sedatives, hypnotics, or anxiolytics (or a closely related substance, such as alcohol) are used to alleviate or avoid withdrawal symptoms.

Compulsive sexual behavior disorder: Compulsive sexual behavior disorder is defined by a persistent inability to regulate intense, repetitive sexual impulses or urges, leading to recurrent sexual behaviors. This condition may manifest through various symptoms, such as engaging in repetitive sexual activities that become a central focus, resulting in the neglect of personal health, self-care, and other important interests, activities, or responsibilities. Additionally, individuals may make numerous unsuccessful attempts to significantly reduce their repetitive sexual behaviors. Despite experiencing adverse consequences or gaining little to no satisfaction, the individual continues to engage in these behaviors. The inability to control intense sexual impulses or urges, accompanied by the resulting repetitive behaviors, persists over an extended period (e.g., six months or more) and leads to significant distress or impairment in personal, familial, social, educational, occupational, or other critical areas of functioning. Importantly, distress stemming solely from moral judgments or disapproval of sexual impulses, urges, or behaviors does not satisfy the criteria for this disorder.

It is not considered a standalone diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), and sometimes diagnosed only as part of other disorders such as impulse control disorder. Proposed diagnostic criteria were not accepted (Kafka, 2010), due to several reasons that may have contributed to this decision, such as insufficient data collection (Piquet-Pessôa, Ferreira, Melca & Fontenelle, 2014). However, the disorder may be found in the International Classification of Diseases, 11th Revision (ICD-11), which we will rely on for this work. The diagnostic criteria are as follows⁵:

1. A persistent inability to regulate intense, repetitive sexual impulses or urges, leading to repetitive sexual behavior, as evidenced by one or more of the following:
2. Repetitive sexual behavior has become a central focus in the individual's life, to the extent that it results in the neglect of personal health, self-care, or other important interests, activities, and responsibilities.
3. The individual has made numerous unsuccessful attempts to control or significantly reduce repetitive sexual behavior.
4. The individual continues to engage in repetitive sexual behavior despite adverse consequences, such as marital conflict, financial or legal issues, or negative health impacts.
5. Repetitive sexual behavior persists even when the individual derives little or no satisfaction from it.
6. The inability to control intense, repetitive sexual impulses or urges, and the resulting repetitive sexual behavior, occurs over an extended period (e.g., six months or more).

7. This pattern of behavior cannot be better explained by another mental disorder (e.g., Manic Episode), a medical condition, or the effects of substances or medications.
8. The repetitive sexual behavior leads to significant distress or impairment in personal, familial, social, educational, occupational, or other vital areas of functioning. Distress solely based on moral judgments or societal disapproval of sexual impulses, urges, or behaviors does not meet this criterion.

It is important to emphasize that addictions are complex, not only because of their variety and difficulty in treatment, but also because it is often difficult to find the root cause that has driven the individual to engage in harmful behaviors that can later turn into addiction. In addition to attachment, there are other factors that may increase individuals' predispositions to develop addictions and collectively influence the decision to engage in certain behaviors, where mental disorders can be mentioned as a key factor (Santucci, 2012).

The Relationship between Addiction and Attachment Styles

Individuals who have not formed secure attachments with their caregivers in childhood display clear signs of emotional or psychological distress in adulthood for which coping mechanisms are necessary. One of these mechanisms is replacing the lack of intimacy with substances that can be considered fulfilling by individuals who consume them. Specialists focused on treating addictions and are familiar with attachment theory assert that there is a connection between addiction and attachment (Kohut, 1978). Since it is biologically impossible for individuals to regulate their own emotions for an extended period, individuals who have difficulty forming secure and effective attachments are more predisposed to using drugs and alcohol to compensate for the lack of intimacy in their lives (Flores, 2004). Due to the difficulties certain individuals may encounter in maintaining emotional intimacy with others, the likelihood of engaging in a series of obsessive behaviors such as sex, drugs, alcohol, gambling, work, video games, etc., where the latter serve as a form of distraction from feelings of emptiness and internal conflicts, is higher (Louie, 1966). As a result, when one specific obsessive behavior is extinguished, another behavior will replace it.

Recent literature has shown a possible link between different addictions and attachment difficulties. For example, studies on substance addiction have shown a close connection between anxious and avoidant attachment and excessive substance use. In a study focusing on substance-dependent couples (Finzi, Cohen, Iwaniec, Sapir & Wizman, 2003), it was observed that the majority of males (60.7%) had an avoidant attachment style, followed by those with secure attachment style (26.8%) and anxious attachment style (12.5%). Among females, it was observed that more than half of them (53.6%) had a secure attachment style, followed by avoidant style (42.9%) and anxious style (3.6%).

Researchers have also focused on studying less common addictions, such as sex addiction. In a study conducted by Leedes (1999) on attachment styles in sex addicts, it was observed that these individuals had a higher predisposition (95%) to display insecure attachment styles in their relationships compared to a study by Hazan and Shaver (1987), where the percentage was only 44%. Given that individuals with insecure attachment styles are more likely to engage in problematic relationships (Marchand, 2004), individuals addicted to sex are expected to be at higher risk of building romantic relationships without strong or healthy foundations.

In all the aforementioned studies, it is noted that although addictions vary, the coping mechanism they use is the same. All individuals with insecure attachment styles have developed addictions on substances or different behaviors in which they are involved.

Methodological framework

The aim of this study is to address the potential link between insecure attachment to the primary caregiver in childhood and the subsequent development of dependency behaviors in adulthood. By examining the early attachment experiences and the quality of the child-caregiver relationship, this research seeks to uncover how these formative interactions may influence an individual's propensity to develop dependency on substances or behaviors as coping mechanisms later in life. This study will explore the psychological pathways and mechanisms through which insecure attachment may predispose individuals to addiction, providing a deeper understanding of the long-term impacts of early relational dynamics on adult mental health and behavioral outcomes.

This study aims to determine the significance of early relationships in the development of dependencies. By investigating the role of attachment between a child and their primary caregiver, this research seeks to understand how the quality and nature of these early relationships can influence the likelihood of developing dependency behaviors later in life. The study will delve into various attachment styles, exploring how secure and insecure attachments can differentially impact emotional regulation, coping strategies, and vulnerability to addiction. Through a comprehensive analysis of early relational dynamics, the study aspires to elucidate the long-term effects of these formative bonds on adult dependency and mental health outcomes.

This study aims to analyze the similarities and possible differences between different types of addictions as a result of a common factor: attachment in childhood. By examining how childhood attachment styles correlate with various forms of addiction, including substance abuse, gambling, and other behavioral dependencies, this research seeks to identify overarching

patterns and distinct variations. The study will compare and contrast how secure, anxious, and avoidant attachment styles might predispose individuals to specific addictive behaviors. Additionally, it will explore the underlying psychological mechanisms that link early attachment experiences to later addictive tendencies, offering insights into how these foundational relationships shape the trajectory of addiction development across different domains.

This study involves examining two key variables: attachment style, which serves as the independent variable, and addiction, which acts as the dependent variable. By investigating how different attachment styles potentially lead to varying levels and types of addictions, this study aims to uncover the intricate connections between early relational experiences and subsequent dependency outcomes in adulthood.

This study includes a mixed research method, combining both quantitative and qualitative approaches to gain a comprehensive understanding of the research questions. Despite the relatively small number of participants, the study employed quantitative questionnaires to determine their attachment styles, ensuring a structured and measurable assessment. Participants in this study were adults aged between 25 and 50 years, with an average age of 30.6 years, providing a diverse age range for analysis. All participants were randomly selected to minimize selection bias and enhance the study's validity.

A total of five participants underwent both a questionnaire and a semi-structured interview, each lasting between 30 to 45 minutes. This dual approach allowed for the collection of rich, detailed data. The sample consisted of four males and one female, offering a gender perspective to the findings. The aim of utilizing these instruments and conducting interviews was to gather comprehensive information about the participants' early experiences with their primary caregivers. This data was crucial in creating a broader picture of the relationships formed in childhood and highlighting the possible connection between early attachment styles and the development of dependency behaviors in adulthood.

Given the limited number of participants, the conclusions drawn from this study are not intended to be generalized to a wider population. However, the insights gained provide a valuable foundation for understanding the intricate links between childhood attachment and later dependency. These findings underscore the need for further research with larger sample sizes to validate and expand upon the initial results. The study's outcomes may serve as a catalyst for more extensive quantitative studies, encouraging researchers to explore these connections in greater depth and across diverse populations.

For this study, five individuals with various types of addictions were considered, specifically those addicted to benzodiazepines, alcohol, sex, gambling, and heroin.

Findings

The hypothesis of this study has been substantiated by the five cases considered. Positive results are reflected in our findings. Four out of five participants with existing addictions—specifically cases 1, 2, 3, and 5—exhibited signs of an insecure-anxious attachment style. These participants identified relationships with parents and a troubled family environment as key factors contributing to their substance use or involvement in addictive behaviors. In all four cases, it was noted that parental figures were unstable, meeting basic needs but failing to provide closeness, warmth, or consistency. These figures were often indifferent, passive, or even threatening, which fostered feelings of fear, anxiety, loneliness, and inadequacy in the children. The lack of healthy relationships with parental figures, resulting in the absence of a guiding and supportive presence in their lives, likely triggered the need to seek support from other sources. This hypothesis is corroborated by similar studies that highlight the importance of parental warmth for the complete well-being of individuals (Simpson, 2017).

One clear observation in this study was the similarities among the participants, despite the differences in their early experiences and the types of addictions they developed. As mentioned, all study participants reported experiencing strong feelings of loneliness and isolation, viewing their dependency not only as an escape mechanism but also as an object to which they could connect emotionally. However, case four was an exception, as this individual viewed gambling simply as a means of escape. The lack of secure attachment, as seen in cases 1, 2, 3, and 5, increases the predisposition to form dependencies on substitute objects for primary figures (Unterrainer, Hiebler-Ragger & Rogen, 2018). Another common factor among these cases was the importance of social groups in coping with family stress, with these groups often encouraging individuals to try coping mechanisms such as drugs or alcohol. Additionally, there was an unconscious tendency among the individuals to replace problematic parental figures, which aligns with findings from studies indicating that people can easily replace family figures with social ones when family figures fail to fulfill their roles properly (Allan, 2008).

However, it should be noted that several issues encountered during the semi-structured interviews may have influenced the study results. In the interview with case number two, there was an inconsistency between the given answers and the results obtained from the Adult Attachment Scale (AAS). This case showed signs of an avoidant attachment style according to the answers, which may imply confusion or conscious avoidance during the completion of the AAS questionnaire. During the interview with case number five, the subject displayed reluctance to delve deeply into childhood experiences, limiting the depth of our analysis. For case number four, the subject showed noticeable improvement due to regular therapy, which may have influenced the perception of early situations and the results obtained from the AAS. No issues were observed during the interviews with the other cases.

While the small sample size limits the generalizability of the study's findings, the insights gained provide a valuable foundation for understanding the link between early attachment styles and the development of dependencies. These findings underscore the need for further research with larger sample sizes to validate and expand upon the initial results, potentially informing therapeutic practices and interventions for those struggling with attachment issues and addiction.

Four out of the five reviewed cases revealed an anxious attachment style, displaying characteristics consistent with this attachment style, as described and elaborated throughout this study. These four cases highlighted dualistic early experiences, marked by a pronounced lack of security and stability during childhood. The participants frequently emphasized their unmet need for a stable, supportive base, a theme that resonated strongly across all four cases. This need for stability and security, which was largely absent in their early lives, appeared to significantly influence their later development of addictive behaviors.

Findings from similar studies reinforce the connection between addiction and an anxious attachment style. For instance, a study conducted by Marshall, Albery, and Frings (2018) demonstrated a similar link, where individuals with anxious attachment styles were found to have a higher propensity for developing addictions. These studies suggest that the anxiety and insecurity rooted in early attachment experiences may predispose individuals to seek solace in addictive substances or behaviors as a maladaptive coping mechanism.

The participants' early experiences were often characterized by a lack of reliable and nurturing caregivers, contributing to a sense of instability and insecurity. This absence of a consistent and supportive parental figure left the individuals feeling unanchored and vulnerable. Consequently, as they grew older, they sought out alternative sources of comfort and stability, often turning to addictive substances or behaviors to fill the emotional void left by their early experiences.

The four cases reviewed vividly illustrate the impact of an anxious attachment style on the development of addictions. The dualistic nature of their early experiences, combined with a significant lack of security and stability, underscores the critical role of early attachment in shaping later life behaviors. These findings align with the broader body of research, including the work of Marshall, Albery, and Frings (2018), which highlights the importance of addressing attachment issues in the context of addiction treatment and prevention.

In this study, the hypothesis that there would be a connection between avoidant attachment style and addiction was not proved, as none of the cases demonstrated an avoidant attachment style. Although we relied on the results of the Adult Attachment Scale (AAS), it is important to note that an inconsistency was observed in the responses of case study number 2. According to the answers obtained during the interview, case number two showed signs of an avoidant attachment style. This discrepancy suggests that there may have been confusion or conscious avoidance in completing the AAS questionnaire accurately.

Even though our study did not provide evidence to support the hypothesis, existing literature indicates a connection between addiction and avoidant attachment style. For instance, studies conducted by Schindler and Bröning (2015) and De Rick and Vanheule (2007) demonstrate that individuals with an avoidant attachment style in interpersonal relationships are prone to developing substance dependence. These individuals often turn to substances as a way to establish a connection without the associated feelings of insecurity and fear that come with close personal relationships.

The studies by Schindler and Bröning (2015) and De Rick and Vanheule (2007) highlight that those with avoidant attachment styles tend to rely on substances to manage their emotional needs and to avoid the discomfort of intimacy. Their research shows that avoidant individuals may use substances as a coping mechanism to maintain a sense of control and distance in their relationships, thereby mitigating feelings of vulnerability.

Although our study did not confirm this hypothesis, the findings from other research underline the importance of considering avoidant attachment styles in the context of addiction. These studies suggest that therapeutic interventions for addiction might benefit from addressing the underlying attachment issues, particularly for those with avoidant tendencies. This approach could help individuals develop healthier ways to connect and cope with their emotions, ultimately reducing their reliance on substances.

Discussion

Despite the results of this study that supported the raised hypothesis, they are not sufficient to reach a definitive conclusion. The findings, while insightful, highlight the complexity of the relationship between insecure attachment styles and addiction, indicating the need for further research. To build a stable and robust correlation between insecure attachment styles and addiction disorders, including different types of dependencies, additional qualitative and quantitative studies are recommended. These future studies should aim to include larger and more diverse sample sizes to enhance the generalizability of the findings.

Moreover, it is crucial to consider the influence of gender on the study results. Gender differences may play a significant role in how attachment styles manifest and how individuals develop addiction behaviors. In this study, the small number of participants, coupled with an uneven gender distribution, limits the ability to draw meaningful inferences about the impact of gender. Future research should ensure a more balanced representation of male and female subjects to explore potential gender-specific patterns and nuances in the relationship between attachment and addiction.

Expanding the scope of future studies could also involve longitudinal designs to track the development of attachment styles and addiction behaviors over time. This approach would provide a deeper understanding of how early attachment experiences influence long-term outcomes and the potential intervening variables that may affect this relationship. Additionally, incorporating a wider range of attachment styles, including secure and disorganized attachment, could offer a more comprehensive view of how different attachment patterns contribute to addiction risk.

It is also recommended that future research explore the role of environmental and contextual factors, such as socioeconomic status, cultural background, and family dynamics, in shaping attachment styles and addiction tendencies. These factors may interact with attachment styles in complex ways, influencing the development and manifestation of addiction disorders.

In summary, while this study provides valuable insights into the connection between insecure attachment styles and addiction, its limitations underscore the need for further research. By addressing these limitations and expanding the scope of investigation, future studies can contribute to a more nuanced and comprehensive understanding of the interplay between attachment and addiction, ultimately informing more effective prevention and intervention strategies.

Conclusion

The conclusions of this study underscore a significant connection between insecure attachment styles and the development of addiction disorders. The findings revealed that four out of the five cases reviewed exhibited an anxious attachment style, highlighting the profound impact of early relationships marked by instability and lack of security on the development of addiction behaviors in later life. These participants frequently reported early experiences of emotional neglect, inconsistent caregiving, and an absence of a stable, supportive base, which are hallmarks of anxious attachment. Such early relational dynamics appear to play a critical role in predisposing individuals to seek out substances or behaviors as coping mechanisms to fill the emotional void and manage their insecurities.

Despite the study's support for the hypothesis, several limitations must be acknowledged. The small sample size, consisting of only five participants, and the gender imbalance, with four males and one female, restrict the ability to generalize these findings to a broader population. Additionally, inconsistencies observed in the responses of some participants, particularly in case study number two, suggest that the results may have been influenced by factors such as confusion or conscious avoidance during the completion of the Adult Attachment Scale (AAS) questionnaire. This points to the necessity of employing more rigorous and comprehensive research methods in future studies.

Consequently, this study underscores the need for further research that incorporates both qualitative and quantitative approaches with larger and more diverse samples. Future studies should aim to include a balanced representation of male and female participants to explore potential gender-specific patterns in the relationship between attachment styles and addiction. Longitudinal studies could provide deeper insights into how early attachment experiences influence long-term outcomes and the development of addiction over time. Additionally, considering the role of environmental and contextual factors, such as socioeconomic status, cultural background, and family dynamics, could offer a more comprehensive understanding of the complex interplay between attachment and addiction.

These insights are crucial for developing effective prevention and intervention strategies that address the underlying attachment issues contributing to addiction. By identifying and targeting the root causes of insecure attachment, such strategies can help individuals develop healthier ways to connect and cope with their emotions, ultimately reducing their reliance on addictive substances or behaviors. The study's findings highlight the importance of early intervention and the need for a supportive and stable caregiving environment to foster secure attachment and prevent the development of addiction disorders.

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Redefining Education in Albania: An Analysis of Competency-Based Teaching and Learning Outcomes

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Abstract

The purpose of this paper is to inform educators, policymakers, students, and stakeholders about the major aspects, goals, and outcomes of Albania's Competency-based Teaching method. It aims to highlight the transition from traditional teacher-centered methodologies to a student-centered paradigm that focuses on students learning outcomes, practical, real-world application of information and skills. Furthermore, this article tries to emphasize the importance of this educational reform in promoting active citizenship, social inclusion, and long-term personal development among students.

Design/Methodology/Approach: This paper adopts a qualitative research methodology, analyzing the curriculum framework produced by Albania's Ministry of Education and Sports. This article aims to determine the effectiveness of constructivist theory in improving student learning experiences and outcomes when compared to standard teaching techniques.

Findings: The results indicate that CBT in Albania has resulted in a more engaging and relevant learning environment for pupils. It places a greater emphasis on practical skills, critical thinking, and real-world problem solving. The findings show that students performed better in key areas, as well as being more engaged and motivated overall. However, obstacles such as limited resources, teacher training, and adapting to new teaching approaches have been highlighted.

Value: This study contributes to the existing literature on educational reform by providing a comprehensive analysis of the shift toward Competency-based Teaching in Albania. It provides useful insights into the design, implementation, and effects of CBT in a changing educational environment. The findings highlight the importance of using a competency-based approach to better prepare students for the challenges of modern life and work.

Key words: Competency-based Teaching, Student Centered Learning, Curriculum, Education

Competency-based teaching

Competency-based teaching is not simply a method in the field of teaching, but a new theory or school in the field of education and, moreover, a choice within the education policy of a state. Since 2014, the Republic of Albania has chosen Competency-based education theory as an education policy to bring us closer, more integrated and connected to EU standards and criteria. Competency-based education emphasizes the attitudes and values of the Albanian pre-university education system, as well as higher education.

The five main reasons education institutes turn toward CBE are: Firstly, CBE supports lifelong learning. Second, it fosters an empowered and inclusive learning culture. Thirdly, it provides appropriate teaching and support on a timely and individualized basis. Fourth, it employs instructional ideas that match students' needs and objectives. Finally, CBE places a premium on transparency and sets out explicit expectations. Our findings indicate that competency-based education is the outcome-driven approach in today's engineering education. It encourages students to know what to do upon graduation rather than what they know. ((Malhotra, Massoudi, & Jindal, 2023)

Competency-based approach is usually seen as an alternative to more traditional educational methods, shifting the focus from teaching to learning. The purpose of the competency-based approach is to ensure that students acquire the knowledge, understanding, habits and skills that are essential for success in education and life. (Baartman et al., 2006; Voorhees, 2001.) This definition has powerful implications: acquiring knowledge by itself is not enough to ensure learning. In competency-based education, students must be able to demonstrate that they can apply what they have learned to real-life situations. In the competency-based approach, teaching becomes more student-centered; when we plan education, the competency-based approach means that we should focus on what we want students to learn, rather than what the teacher intends to explain. In addition, students must be involved in all parts of education: planning, execution, and assessment. (UNIPS, 2022.)

Many institutions around the world are shifting toward competency-based education (CBE), thus encouraging their educators to start evaluating their students under this paradigm. Previous research shows that structured assessment models are fundamental in guiding educators toward this adoption. (Vargas, Heradio, Farias, Lei, & de la Torre, 2024)

As for the professional development of teachers, expectations for continuous competency-based teacher training are even higher. Continuous training providers should implement a competency-based model in their training sessions and take responsibility for all participants to possess after the training the competencies that are accepted by all to acquire. Participants must demonstrate these competencies through action, so that they not only master the theoretical side of the content but also can apply the theories in their work environment. (UNIPS, 2022; cf. Baartman et al., 2006.)

The competency-based approach to in-service teacher training also requires cognitive alignment, meaning that learning outcomes, teaching and learning activities and methods, and assessment of learning are consistent with each other (UNIPS, 2022). Also, Baartman et al. (2006, p.154) state clearly in their study: “If teaching and learning are based on the acquisition of competencies, then the constructivist approach implies that assessment must also be based on competencies.”

Thus, a competency-based approach to professional development should definitely change the assessment as well. Assessment should not only be an assessment of learning; it should also include an assessment for learning and an integral assessment of learning. Assessment is at the heart of all competency-based education: “Competency-based assessment must measure more than just what a student knows; assessment must also determine whether students can apply what they know to real-life problems or situations”. (UNIPS, 2022)

Therefore, the use of traditional tests as the sole method of assessment in professional development is not in line with a competency-based approach. The reasons for using a traditional test are not necessarily related to learning. Testing is often used because it is widely known, easy to use, and is expressly required by educational regulations. The acknowledged problem with traditional tests is that they lead participants to a superficial approach to learning. (Cf. Baartman et al., 2006) This is why tests are not suitable for professional development, where the aim is to foster deep personal and professional growth.

Using authentic learning tasks as the basis of assessment supports competency-based learning. According to the core ideas of authentic assessment, assessment should include concrete tasks that are carried out in real-life situations (UNIPS, 2022). By ‘authentic’ learning, we refer to situations in which teaching and learning take place in real-world contexts, solving complex problems, using role exercises and problem-based activities, case studies, as well as participation in virtual or concrete contexts. Learning environments are inherently multidisciplinary. A learning environment is similar to some ‘real world’ applications or disciplines: teaching a classroom, managing a city, building a house, flying an airplane, drawing up a budget, solving a crime (see for example Herrington et al., 2014). Thus, authentic assessment requires the demonstration of the application of new knowledge, skills and competencies in authentic real-life situations, in this case, in the teacher’s own work. The results of authentic learning tasks must be demonstrated, documented, and reflected upon.

Research Question

How do Albanian pre-university education institutions and their service providers perceive and distinguish the value of competency-based education from objective-based education within the framework of educational policies?

Hypothesis

In the Republic of Albania, there is still an imperative need to clarify the concept, theory and practice of school-based/ education based on Competencies and its difference with education based on Objectives.

Pre-university: Albania - case study. What is competency-based teaching? What are the key learning competencies?

In 2014, the Ministry of Education and Sports (MAS) of the Republic of Albania, changed the way Albanian teachers teach by making some legal changes to the curriculum framework.

The primary written document for the design and implementation of Albanian pre-university education is the curriculum core, which contains the following essential guidelines and instructions: the goal of education, critical learning competencies, learning outcomes, learning levels, student-centered teaching, etc.

The goal of this framework curriculum is to create an Albanian knowledge society

- to integrate Albanian society into the digital age,
- to increase the mobility and interdependence of communication, culture, and new social developments,
- to have a new conception of the learning process,
- to increase the importance of the community, in order to have sustainable social and cultural development, and so on. (Albanian Curriculum Framework, 2014)

Even though this theory has been included in the curriculum in Albania since 2014, the shift from the Teaching and Learning Objectives theory has not been implemented effectively yet by teachers at the pre-university level.

The Shift from Cognitivism to Constructivism

Constructivism makes students learn new things through experience. They build knowledge through experiences and interactions.

Students are encouraged to discover something on their own; this is known as self-directed learning. The major difference is that cognitive learning is about building on prior knowledge, and *constructivism* is about building new ideas and concepts based on your own discoveries.

Cognitivist elements are still present in competency-based schools, but the Constructivist school has been adding two more layers that match EU approach to new education practices.

Conclusions and Recommendations

Teachers' professional development standards are considerably greater, with a focus on continuing competency-based training.

Continuous training providers should implement a CB model in their training sessions.

Participants must demonstrate these competencies through action, so that they not only master the theoretical side of the content but also can apply the theories in their work environment. (UNIPS, 2022 cf. Baartman et al., 2006)

Baartman et al. (2006, p.154) state clearly in their study: "If teaching and learning are based on the acquisition of competencies, then the constructivist approach implies that assessment must also be based on competencies."

Thus, a competency-based school should definitely change assessment as well.

State boards of education and other state leaders should investigate the reasons and entities that support these student-centered solutions, and work to improve their systems. State boards that are serious about preparing students for success in the future economy should embrace whole-system reform, recognizing that truly student-centered systems require considerable policy and practice changes. Pedagogy, structures, and culture must transition away from traditional student ranking and sorting, which leaves many with significant learning gaps. On the other hand, competency-based education is built on empowering students to take ownership of their objectives and learning while ensuring that teachers recognize needs, pinpoint gaps, use data, and intervene swiftly to meet student needs. (Patrick, 2021)

"Competency-based assessment must measure more than just what a student knows; assessment must also determine whether students can apply what they know to real-life problems or situations". (UNIPS, 2022)

Tests

Traditional tests, often used as the sole method of assessment in professional development, are misaligned with a CBT. While their prevalence stems from familiarity, ease of use, and regulatory requirements, these tests encourage superficial learning, making them unsuitable for fostering the deep personal and professional growth central to professional development.

Using *authentic learning tasks* as the basis of assessment *supports competency-based learning*. According to the core ideas of authentic assessment, it should include concrete tasks that are carried out in real-life situations (UNIPS, 2022).

By *'authentic' learning* we refer to situations in which teaching and learning take place in real-world contexts, solving complex problems, using role exercises and problem-based activities, case studies, as well as participating in virtual or real contexts.

- Learning environments should be inherently multidisciplinary.
- The results of authentic learning tasks must be demonstrated, documented, and reflected upon.
- Competency-based teaching is very important for the pre-university education system of the Republic of Albania. Important to mention is the fact that competency-based curriculum and teaching focuses mostly on learning situations and learning outcomes.
- The learning situation includes something practical, for example: a dialogue, a painting, a video, a presentation, a poster, etc.. Whereas, learning outcomes represent the final product of learning, which in short: represents the attitude, knowledge, skills and abilities that the student already possesses theoretically and practically.

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“The other” in albanian literature

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Abstract

Literature in its entirety, both at the level of artistic discourse and even as it pertains to the semantic aspect, considering it not only as a form but at the same time as a communication code in the most different periods and sizes, generally adheres to the relationship that is established between oneself and the other., seeing this as a means of meaningful coexistence and interaction. This report has been and remains not only a formula that establishes the principle that precisely defines a general state of relations between people, but at the same rhythm and temporal resonance it is also felt as a necessary tool of artistic practice, while maintaining the conceptual balance of conception of the subject, the form in the construction of the structure of the literary work, both in the poetic narration and in the field of prose according to gender; story, short story or novel.

One of the most important tests that human beings have faced since prehistoric times until modern times, has been and remains the confrontation with himself and with the other me, on the other hand, the change in eras, evolutionary stages and such. from the extremes, where the destinies, life trajectories of many of the characters or protagonists have shifted, and even the principles on which a future is conceived, having in this way the meeting points with the past not only as a metaphor remembers it but on it. all, as communication happens with the human consciousness itself.

Key words; *literature, another, gender, novel, short story.*

Literature in its entirety, both at the level of artistic discourse and even as it pertains to the semantic aspect, considering it not only as a form but at the same time as a communication code in the most different periods and sizes, generally adheres to the relationship that is established between oneself and the other., seeing this as a means of meaningful coexistence and interaction. This report has been and remains not only a formula that establishes the principle that precisely defines a general state of relations between people, but at the same rhythm and temporal resonance it is also felt as a necessary tool of artistic practice, while maintaining the conceptual balance of conception of the subject, the form in the construction of the structure of the literary work, both in the poetic narration and in the field of prose according to gender; story, short story or novel.

One of the most important tests that human beings have faced since prehistoric times until modern times, has been and remains the confrontation with himself and with the other me, on the other hand, the change in eras, evolutionary stages and such. from the extremes, where the destinies, life trajectories of many of the characters or protagonists have shifted, and even the principles on which a future is conceived, having in this way the meeting points with the past not only as a metaphor remembers it but on it. all, as communication happens with the human consciousness itself.

As critic Henry James poses the question in his article *The Art of Fiction*: What is a character, if not a determinant of events? What is an event, if not an illustration of a character? However, at this stage where the Albanian novel had entered, where schematism, illustrative Ness, and descriptivism of aesthetic concepts had taken over both the form and the content as generalized phenomena within the epoch that nourished this literature, it was not embodied with realistic details and figures,

which would reflect a rich and deep individual worldview. Precisely at this level of evolution where the Albanian novel had been stuck for years, another important aspect emerged concerning the pronounced deficiencies observed in the compositional poverty, where, from time to time, against the backdrop of standard expressions and prefabricated phrases in the ideological realm, artifices appeared, which in most cases outlined a non-functional format, especially in the organization of the rich material in those works characterized by multiple plotlines and a wide scope of action. Being both truthful and dreamy, visionary, thus as romantic as revolutionary, this kind of literary hybrid was perfectly suited to the method of socialist realism. For this reason, Albanian novelists, being themselves communists or their supporters, adhered strictly to this principle. This trend, seen in all spheres of art, but particularly in literature, certainly had its own significance because, during that period, Albanian writers, thrilled by the praise and awards given to them by state institutions, could not see beyond their time. They failed to understand that the time when their works would be judged for uniformity, schematism, and truncated realism was not far off. A sort of rigid aesthetic epidemic and similar creative experience affected not only those creators who published their works within the administrative territory of Albania but also surprisingly influenced writers living in the West, whose work had significantly impacted the directions that Albanian literature would take throughout the 20th century.

Thus, although Ernest Koliqi had envisioned his novel *Shija e bukës mbrume* (The Taste of Kneaded Bread) with a very clear political and moral intention, preserving many representative features of his lyrical and figurative style, unlike his earlier short stories and novellas, in this work, he inadvertently remained generally trapped in the parameters of schematic creativity. In Albania, not only due to the low level of readership and the limited number of published works but also due to the regime's circumstances, these works would be included in school curricula and later necessarily mentioned in academic activities, gaining more and more ground both in their dissemination and propaganda, not only in educational institutions but also across the broader social consciousness. However, judgment and detachment from them would not be far off. When readers began to familiarize themselves with the great European realist novels, they realized that the stories in their subjects conveyed all sorts of messages, not only through the moralizing predetermination of characters' traits but through the gradual revelation of characters who would experience unpredictable fates. With the increase in their cultural level, Albanian readers inevitably made comparisons and saw that the treatment of the individual in European realist writers was much more complex than they had encountered in the realist novels of their own literature. In an attempt to align with the models propagated by the ideology of the communist regime, transforming into the so-called "new man," even though they still did not understand much of the universality as a distinguishing feature of great works, they nevertheless strove to find common ground between their worldview and the psychology of the characters they were coming to know through foreign literature. This happened because they recognized between the lines of foreign authors' novels a truthfulness that Albanian novels did not fully reveal. Even though they could not openly express it, readers became aware that with limited themes, with the happy endings of subjects, and even with the envisioning of tragic fates that still remained morally within a triumphant framework, the novels of those years provided one-sided life impressions.

Naturally, a significant category of readers understood that prose writers wrote in this way, not because they were adherents and agreed with the principles of the method promoted as the most useful for breaking away from the old archaic forms of writing, but also because they were unable to cultivate their prose in more varied forms and be part of other literary directions that the world accepted as integral to the literary process. Nevertheless, even this realization played no significant role in changing the readers' experiences, which increasingly deepened especially toward the expansion of the spectrum and the multi-dimensional characteristics that realism as a literary direction brought. From the late 1950s, especially with the start of the 1960s, that is, a decade and a half after the liberation, the first steps would be taken to break away from this template in Albanian literature. In this context, it is worth mentioning the year 1958 when Petro Marko published his first novel *Hasta la Vista*, which brought a different theme to the Albanian novel, a different spirit, and sensitivity in the portrayal of characters, even though they were placed on opposing fronts. Two years later, he published the novel *Qyteti i fundit* (The Last City) with a tendency to avoid schematism. After him, Ismail Kadare published his novel *Gjenerali i ushtrisë së vdekur* (The General of the Dead Army), a work that significantly impacted the direction already hinted at by Petro Marko's novels, elevating it to an international level.

In contrast to the models and basic principles upon which the characters of the main protagonists in socialist realism novels were built, the characters created by Petro Marko and Ismail Kadare, unlike the types and temperaments of the characters in the socialist realism novels, differ in several very specific characteristics. What makes them different from the literary climate surrounding them is undoubtedly a highly representative trait because they enter Albanian literature of that period as characters generally constructed with a nature diametrically opposed to literary and artistic realism. In these circumstances, the clash of the individual with the reality they are part of creates heavy situations, sometimes described by states of depression. For much of the time covered by the novel's subject, the characters find themselves in a state of loneliness, withdrawing from the atmosphere of collective optimism and excitement that exceeds the limits of absurdity, which increases the tendency to expand the space for monologues, significantly reducing the size of dialogues, stretching and treating them in short and concise paragraphs, and in most cases, embedding them in the textual content without interpretive space for the author. At the same time, there is an increase in the presence of debate and the clash of profiles and characters with opposing worldviews and the clash of different thoughts. The confrontation between two different social categories, with opposing worldviews and aspirations, reveals a reality experienced but also viewed from afar through literature and art in the Western world.

Insecurity and the experience of temporariness remain one of the main indicators of wandering in turbulent currents and full of challenges for the central protagonists in these novels. At the same time, these novels are not characterized by solidarity among the protagonists of the literary work; on the contrary, they prominently feature the moments of defeat of the individual

and the cause he represents as an individual and a social group. Just as often happened with the fate of protagonists in the novels of Ernest Hemingway or Erich Maria Remarque, where the hero had to endure disappointments and defeats along his life path, in the harsh terrain of Albania in the works of Ismail Kadare or Petro Marko, the central hero of the novel experiences various and almost inevitable defeats, such as the defeat in the mission to be free, while at the same time experiencing defeat in love, as well as defeat in reaching the truth through a close touch with reality and the dramatic nature of life. In this way, defeats are interconnected and create unstable situations and at the same time the fates of characters condemned to temporariness. After the novels of the two mentioned authors, Petro Marko and Ismail Kadare, during the 1960s, Jakov Xoxa would publish the novel "The Dead River," which, from another aspect, would consolidate the trend of Albanian novels to seek new ways in presenting the Albanian world. After Jakov Xoxa, Dritëro Agolli would present himself in Albanian novelistic prose with a series of novels, along with Dhimitër Xhuvani, Ali Abdihojha, Skënder Drini, Sabri Godo, Vath Koreshi, etc. As for lyrical poetry, the names of poets such as Fatos Arapi, Ismail Kadare, and Dritëro Agolli not only gave a new dimension to this genre but also opened unprecedented paths for a generation of young talented poets like Bardhyl Londo, Xhevahir Spahiu, Frederik Rreshpja, etc. What constitutes an extremely essential distinction in the myriads of changes that Albanian literature was experiencing during these years consisted of the fact that, in a special way, prose reached a high level in terms of formal aspects and many of its constituent elements. It is worth emphasizing that these transformations are particularly evident in the genre of the novel, which becomes a dominant form in the entire corpus of contemporary Albanian literature. "The novel as a form never codified created opportunities for literary treatments with breadth that touched on themes ranging from the dilemmas of individuality, an opening of the broad view of social and national life, to symbolic and allegorical writing". (Sabri Hamiti: *Thematology, Study, Academy of Sciences and Arts of Kosovo, Pristina 2005, page. 84.*)

For readers of those years, the emergence of the novels by Petro Marko "Hasta la vista" and "The Last City" was experienced as a true event not only in the field of Albanian letters but in the entire world of art. This innovation manifested in Albanian novels could not escape the attention of critics, who noted that Marko's novel "Hasta la vista" had skillfully deviated from schematism. The use of rich vocabulary and rare words sometimes transcended the so-called moral limits. Given that a conservative mindset largely dominated Albanian society at the time, Marko, through these fragments taken from real life, dressed in intimate and sensual hues of love scenes, left it to the readers to imply that what was real was entirely human and that this should be accepted by everyone as such, aimed at openly demystifying the patriarchy that had stifled the further social and cultural development of the country. With characters like Puçeli and Xhuzepaja in the novel "Hasta la vista," and i Paemri (the Nameless), Malombra, Ugo, Mara, and Bejko in the novel "The Last City," Petro Marko revealed the extreme divisions that existed within human nature, which literature could not leave outside its treatment. Meanwhile, with characters like Gori Gjinleka and Anita Gonzales Seto, and Leka and Ana Maria Monti, he narrated the force that nearly approached the superhuman limits that love unfolded between two young people, even though it was lived in the most unimaginable conditions. During the descriptions he provides of the situations and landscapes around the lives and psychology of the characters, the author is aware, both from the perspective of the protagonist directly involved in the events of the war and from the positions of the writer, of the tragic and inevitable end that their love would suffer. The links between universal literature and national literature are reciprocal and dialectical. "The common features of European artistic thought appear in various ways in different countries, and besides this, each country has its own radiant centers of significance, its own distinguished artists, who diverge from the common path and determine the differences of one national tradition from another". (Sabri Hamiti: *Thematology, Study, Academy of Sciences and Arts of Kosovo, Pristina 2005, p. 84.*)

Since the Albanian reader was already familiar with the most notable works and representatives of realism in foreign literature, they would certainly read with pleasure and would not hold back their evaluations of the discovery and construction of the novel *The Last City* by Petro Marko. Through this work, they encountered for the first time a concrete example of a novel in Albanian literature, whose subject was developed by characters and events that took place within a very short time frame, where the created situations were suddenly overturned, leading to a self-change in the realities and atmosphere that prevailed around, simultaneously reflecting within the inner world of the characters.

Until that time, despite numerous translations and publications from foreign literature, Albanian readers still did not possess a complete and clear panorama of the entire literary process, especially the developments of the novel on the European continent as well as in the United States. Thus, when they encountered the liberated style, the concise and extremely succinct sentences of the prose writer, many believed that this feature was due to Petro Marko's long engagement with journalism. Others, knowing that he had spent a significant amount of time in Spain where he had mastered the Spanish language, had reasons to speculate that through it, he must have been influenced by the literary works of Hemingway, whom he had met in Spain and whom Marko had declared he greatly admired as a world-class writer.

Regardless of the situation created within the literary space and outside of it, Albania did not lack talents that aspired to a different view of literature and an overturning of the previously established schemes, and this was because, in addition to talent, they were already familiar with and coherent with the way and progress of what was happening with the influence of Hemingway on German literature. It was precisely Petro Marko and Ismail Kadare who influenced the recognition of Hemingway in the appropriate measure in Albania. Given the stage that Albanian prose had reached with the publication of *The Last City*, even the critics of the time could not remain indifferent to this phenomenon that had emerged in Albanian literature; in fact, for the first time, they managed to formulate, albeit with much tact, the modern term to characterize the stylistic qualities of Petro Marko's prose. It was now clearly seen that the socialist realist critique hesitated to accept and use the term "modern," a term that could bring significant consequences in undermining the ideological contours of the system, as it created parallels through which the use of such a term could easily be identified with modernism.

In these circumstances, one of the most prominent critics of that time, Drago Siliqi, had the ability and significant merit to dare to define the work of Petro Marko as the prose of a modern novelist, and at the same time continued to elaborate his opinion with expression in the good sense of the word. Such a situation certainly could not encompass the literary contributions cultivated outside the administrative territory of Albania. The clear modernist proclamations of the novel *Djella* by Martin Camaj, written between 1956 and 1958, were not only completely unknown but also, after a long time of recognition and reflections on phenomena of this kind, no one would undertake the initiative to express themselves about them. Albanian prose had previously encountered modernity, even more visibly, especially with the stories and novellas of Faik Konica and Migjeni. Faik Konica would call his story *Lulia e maleve* (The flower of the mountains - 897) a "fairy tale"; *Katër përralla nga Zullulandi* (Four Tales from Zulluland - 1922) was the title he had in mind for a cycle of his satires; finally, even his longest work, *Doktor Gjilpëra zbulon rrënjët e dramës së Mamurrasit* (Doctor Gjilpëra reveals the roots of the drama of Mamurras -1924), Konica would again refer to as a "fairy tale." As is known, he was the first writer who insisted on calling his prose a "fairy tale." What stands out in this treatment is related to the narrative structures contained in the early pages of the work *Doktor Gjilpëra zbulon rrënjët e dramës së Mamurrasit* (Doctor Gjilpëra reveals the roots of the drama of Mamurras): the long biography of the main character, the physical but also spiritual portraits of other characters, especially the beginning of the text that evoked a specific place and time, create the impression that the novella *Doktor Gjilpëra* (Doctor Gjilpëra reveals the roots of the drama of Mamurras), was intended to resemble the European realistic novel of the 19th century. One of the elements of the pre-text of the work, its title, the names of the characters, and then the dialogues where the main character speaks much more to thoroughly and calmly explain not only his views on medicine but also his extensive knowledge in other fields by often referring to renowned scholars and philosophers, make it inevitable to speculate that Konica must have found the models of *Doktor Gjilpërës* (Doctor Gjilpëra reveals the roots of the drama of Mamurras). in the prose of the English and French writers of the 17th and 18th centuries, especially in Voltaire. With *Doktor Gjilpërën* (Doctor Gjilpëra reveals the roots of the drama of Mamurras), Albanian prose began to introduce from its very beginnings' materialistic visions, which, in Migjeni's work, particularly in his narrative prose, turned into ingrained beliefs. This prose model primarily aimed to reveal that at the foundation of human relationships lay an economic essence, namely, the means of distributing material goods. In this context, many scholars of this period understood that Migjeni's work as a whole marked the turning point that literature in the 1930s needed to take toward realism. Likewise, concerning themes, Migjeni showed that he wanted to be analytical and to perform the anatomy of the human soul, thus joining those writers whose creative narrative relied equally on imagination and direct knowledge of the individual and social life of man and on scientific data about them. "A logical consequence of these beliefs, which now took shape through creative intuition, was his prose; a prose that noted the degree of frequency of the concrete and, on this basis, imagined the characters and situations through which they had to pass". (Ali Xhiku: *Letërsia shqipe si polifoni*, study, Shtëpia Botuese "Dituria", Tirana 2004, pages. 231–249).

Focusing mainly on the social settings of Shkodra, Migjeni's prose managed to construct profiles of the unemployed, the lost, the Philistine trader, the wild fanatic, the prostitute, which were conveyed in a form and manner entirely ordinary in the atmosphere that dominated the life of that city. Whether he managed to recognize or not the notions of types created in literature throughout the 19th century, Migjeni extensively explored this artistic procedure that fundamentally identified realism with his prose. However, after the war, Albanian prose followed traditional modes of discourse, and only with the novels of Petro Marko, especially with *The Last City*, did it begin to employ an internal monologue constructed even with sentences (enunciations) that, intermittently interrupting the logical continuity, conveyed spiritual states so troubled that they appeared chaotic. With his prose, a dense and rapid dialogue reemerged, which did not require authorial explanations to enhance its meanings. "The texts of Petro Marko also revived the possibilities that punctuation marks, whiteness, and the change of font type had for conveying the subtleties of the sudden complications of the characters' souls and their transition from one state to another. For all these reasons, structuralist criticism would say that the author functionalized other linguistic signs as well. This term is certainly acceptable because the author genuinely considered the ways of using those signs. Precisely such an indicator in which literature aimed to gradually draw not only art but also Albanian society out of passivity in a specific way would mark the overcoming of aesthetic and literary norms, which would be seen as a kind of "danger" for the deformation not only of the Albanian literary system and its method but also for disturbing tastes and distracting public viewpoints." (Ali Xhiku: *Letërsia shqipe si polifoni*, study, Shtëpia Botuese "Dituria", Tirana 2004, pages. 231–249).

This process, as an aesthetic and literary phenomenon, cannot be summarized only in the duration and physiognomy that characterize a current or literary direction cultivated over a specific decade; rather, it would orient not only the aim of this movement itself, its vision, and its overall worldview but would also touch upon the ideology and interests of the entire political system in Albania, for which Kadare would later point out that "all great literatures are dangerous for totalitarian regimes."

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The Effects of Physical Activity on Academic Performance in Albanian Students

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Abstract

This study examines the impact of physical activity on academic performance among students at the European University of Tirana. Utilizing a quantitative research design, the study surveyed 100 students across various academic disciplines, employing self-administered questionnaires to collect data on physical activity habits, academic performance, and beliefs about the benefits of physical activity. The findings reveal a significant positive correlation between regular physical activity and higher-grade point averages (GPAs). Specifically, students engaging in physical activity at least three times a week demonstrated higher GPAs, with a Pearson correlation coefficient of $r = 0.52$ ($p < 0.01$) and a Chi-square test confirming the association ($\chi^2 = 10.67$, $p < 0.01$). Regression analysis further supports these results, indicating that physical activity significantly predicts academic performance, explaining 30% of the variance in GPA. The study underscores physical activity's cognitive and stress-reducing benefits, aligning with existing literature on its positive effects on concentration, memory, and decision-making. Based on these findings, the study advocates for integrating physical education into university curricula to enhance academic outcomes and overall student well-being. Recommendations include implementing mandatory physical education courses and increasing awareness about the benefits of physical activity for academic success. Further research is suggested to explore the long-term effects and broader implications across different educational settings.

Introduction

Academic performance serves as a primary indicator of student learning and success in university settings. As education systems strive for higher academic achievement, researchers and educators have explored various factors that influence student performance. Among these, physical activity has emerged as a significant determinant of academic outcomes. Numerous studies have established a positive correlation between regular physical activity and improved cognitive abilities, such as concentration, memory, decision-making, and perception, which are critical for academic success. Moreover, physical activity has been shown to enhance brain development, neurotrophic factors, and overall health, all of which contribute to better learning capabilities.

This study aims to explore the relationship between physical activity and academic performance among students at the European University of Tirana. We hypothesize that regular physical activity positively impacts academic performance by enhancing cognitive functions and reducing stress. In this context, the study also assesses students' beliefs about the role of physical activity in improving their academic outcomes. The findings of this research will contribute to the ongoing discussion on the importance of integrating physical education into university curricula.

Literature Review

Previous research has highlighted the importance of physical activity in enhancing cognitive functions, which in turn improves academic performance. For instance, studies consistently demonstrate that students who engage in regular physical activity tend to experience improvements in concentration, memory retention, and decision-making abilities. These cognitive benefits are often attributed to increased blood flow to the brain, the stimulation of neurotrophic factors, and the positive effects of exercise on the nervous system (Basch, 2010; Hillman et al., 2008).

A study conducted by Hillman et al. (2008) demonstrated that students who participated in vigorous physical activities, such as sports or aerobic exercises, exhibited better executive function and higher academic achievement compared to their peers who were less active. This is further supported by a meta-analysis by Fedewa and Ahn (2011), which found a positive correlation between physical activity and academic performance across students of various age groups. Several studies reinforce this finding by showing that physical activity stimulates various cognitive processes, ultimately leading to improved academic outcomes (Mahar et al., 2006; Donnelly & Lambourne, 2011; Singh et al., 2012).

In Taiwan, Chih and Chen (2011) conducted a study that also highlighted the significance of physical activity in improving cognitive performance and academic results. Similarly, research by Grieco et al. (2009) and Bartholomew and Jowers (2011) pointed out that engagement in physical activities supports the development of cognitive skills such as focus, problem-solving, and memory, all of which contribute to better academic performance.

In the context of higher education, physical activity is not only beneficial for cognitive performance but also plays a crucial role in managing stress—a significant factor that negatively impacts academic success. By promoting better mental health, physical activity helps students focus more effectively on their academic responsibilities (Strong et al., 2005; see Chapter 3). It is suggested that physical activity improves students' overall well-being, which, in turn, enables them to handle the academic demands of university life (National Academies Press, 2013).

Further research has explored the broader implications of physical activity on various populations. For instance, Sirin (2005) examined how socioeconomic status and physical activity interact to affect academic performance, while Fan and Chen (2001) focused on the role of family involvement alongside physical activity in predicting student success. Both studies underscore the complexity of factors that influence academic performance and emphasize the crucial role of physical activity in this framework.

In summary, a vast body of literature demonstrates the direct and indirect benefits of physical activity on academic performance. Physical activity not only enhances cognitive functioning by improving memory, concentration, and executive functions, but it also helps students manage stress and improve mental well-being. These findings suggest that universities should consider implementing structured physical activity programs to foster better academic outcomes.

Methodology

This study investigates the effects of physical activity on academic performance among university students at the European University of Tirana during the academic year 2022-2023. A structured quantitative research methodology was employed, utilizing a self-administered questionnaire and statistical analysis to measure correlations between physical activity and academic outcomes.

Participants

A total of 100 students were randomly selected from various faculties at the European University of Tirana. The participants represented diverse academic disciplines, including engineering (20.9%), physical education and sports (15.4%), economics (13.2%), nursing (11%), computer science (9.9%), architecture (6.6%), medical imaging (6.6%), psychology (4.4%), law (2.2%), and other disciplines (9.8%). This stratified sampling technique ensured that the sample reflected the diversity of the student body.

Data Collection

Data were collected through a 10-item, largely self-administered questionnaire distributed both online and in person. The questionnaire was designed to capture the following variables:

- **Demographic Data:** Gender, age, and academic discipline.
- **Academic Performance:** Measured by students' self-reported grade point average (GPA), divided into four categories (9-10, 8-9, 7-8, below 7).
- **Physical Activity Habits:** Frequency of physical activity, where regular activity was defined as engaging in physical exercise at least three times a week.

- **Beliefs About Physical Activity:** Students were asked to rate on a Likert scale (1 to 5) how strongly they believed physical activity contributes to improved academic performance, with 1 being “no impact” and 5 being “significant impact.”

The data collection period spanned two weeks, allowing for ample time for students from all disciplines to participate.

Data Analysis using SPSS

After data collection, the responses were entered into the Statistical Package for the Social Sciences (SPSS) version 25 for analysis. The following steps were taken during the analysis process:

Data Cleaning: The dataset was carefully reviewed for any missing or inconsistent data. Invalid responses were removed to ensure data integrity, and outliers were identified to ensure they did not skew results.

Descriptive Statistics:

- Descriptive statistics were computed to summarize the characteristics of the sample population. Frequencies and percentages were used to describe the distribution of students across disciplines, their GPA categories, and physical activity levels.
- The belief data (on the role of physical activity in academic performance) were also summarized to provide an overall view of student perspectives.

Correlation Analysis:

- A **Pearson correlation coefficient** was calculated to determine the strength and direction of the relationship between regular physical activity and GPA. The GPA was treated as a continuous variable (on a scale from 1 to 10), while physical activity was categorized into regular vs. non-regular activity.
- A correlation matrix was generated to explore potential relationships between physical activity frequency and GPA scores.

Chi-Square Test:

- A **Chi-square test of independence** was conducted to explore whether regular physical activity and higher GPA scores were statistically associated. The four GPA categories were compared with students who engaged in regular physical activity and those who did not.
- The null hypothesis (H_0) posited that there is no significant association between physical activity and academic performance, while the alternative hypothesis (H_1) suggested a significant relationship.

Regression Analysis:

- To further assess the influence of physical activity on academic performance, a **multiple linear regression** was performed. This model assessed the effect of physical activity (independent variable) on GPA (dependent variable), controlling for other factors such as age, gender, and academic discipline.
- **The beta coefficients** were analyzed to determine the extent to which physical activity predicted GPA.

Results of the SPSS Analysis

Descriptive Statistics:

- Of the 100 students, 46.2% reported engaging in regular physical activity, with 68% of students in the highest GPA category (9-10) reporting regular exercise.
- The mean GPA of students engaging in regular physical activity was higher than that of students who did not, supporting the hypothesized positive correlation.

Pearson Correlation:

- A Pearson correlation coefficient of $r = 0.52$ ($p < 0.01$) was found, indicating a moderate positive correlation between physical activity and GPA. This suggests that students who engage in regular physical activity tend to have higher GPAs.

Chi-Square Test:

- The Chi-square test yielded a **statistically significant result** ($\chi^2 = 10.67$, $p < 0.01$), confirming that regular physical activity and higher GPA scores are significantly associated.

Regression Analysis:

- The regression analysis revealed that regular physical activity was a significant predictor of GPA ($\beta = 0.45$, $p < 0.01$), even after controlling for demographic factors. The model had an **R² value of 0.30**, meaning that 30% of the variance in academic performance could be explained by physical activity and the control variables.

Reliability and Validity

To ensure the reliability of the questionnaire, a **Cronbach's alpha test** was conducted, yielding a value of 0.78, indicating acceptable internal consistency. Content validity was established by reviewing the questionnaire with experts in the fields of physical education and cognitive psychology before its distribution.

Limitations

While the study established a significant relationship between physical activity and academic performance, several limitations should be noted:

- **Self-Reported Data:** The reliance on self-reported GPA and physical activity may introduce bias.
- **Cross-Sectional Design:** The cross-sectional nature of the study limits the ability to infer causality between physical activity and academic performance.
- **Sample Size:** The relatively small sample size (n=100) may limit the generalizability of the results to other student populations.

Results

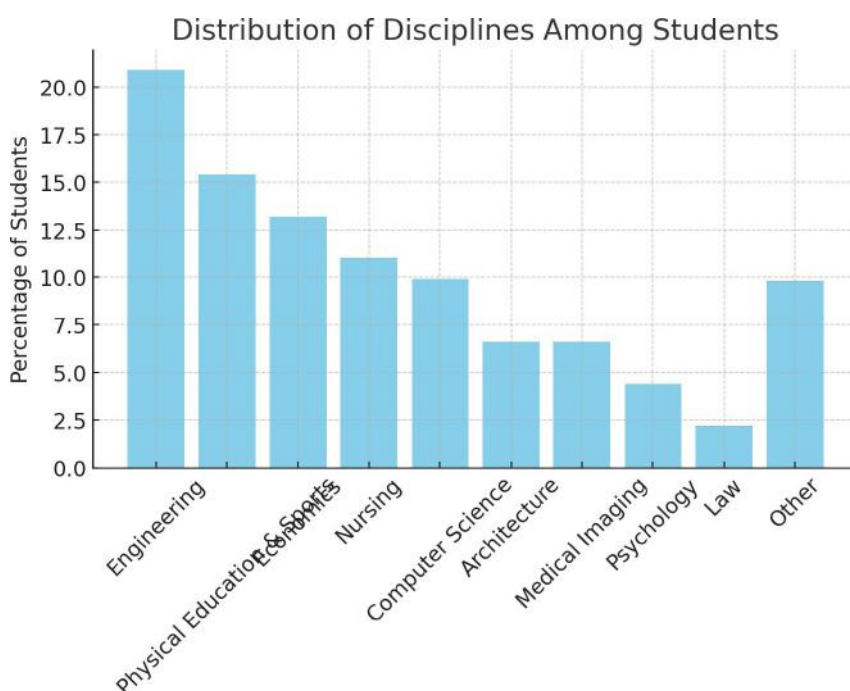
Among the 100 students surveyed, the distribution of disciplines was as follows: 20.9% were studying engineering, 15.4% physical education and sports, 13.2% economics, 11% nursing, 9.9% computer science, 6.6% architecture, 6.6% medical imaging, 4.4% psychology, 2.2% law, and the remaining 9.8% were from various other fields of study.

In terms of academic performance, 20.9% of students reported having a GPA between 9 and 10, 26.4% had a GPA between 8 and 9, 31.9% had a GPA between 7 and 8, and 20.9% had a GPA below 7.

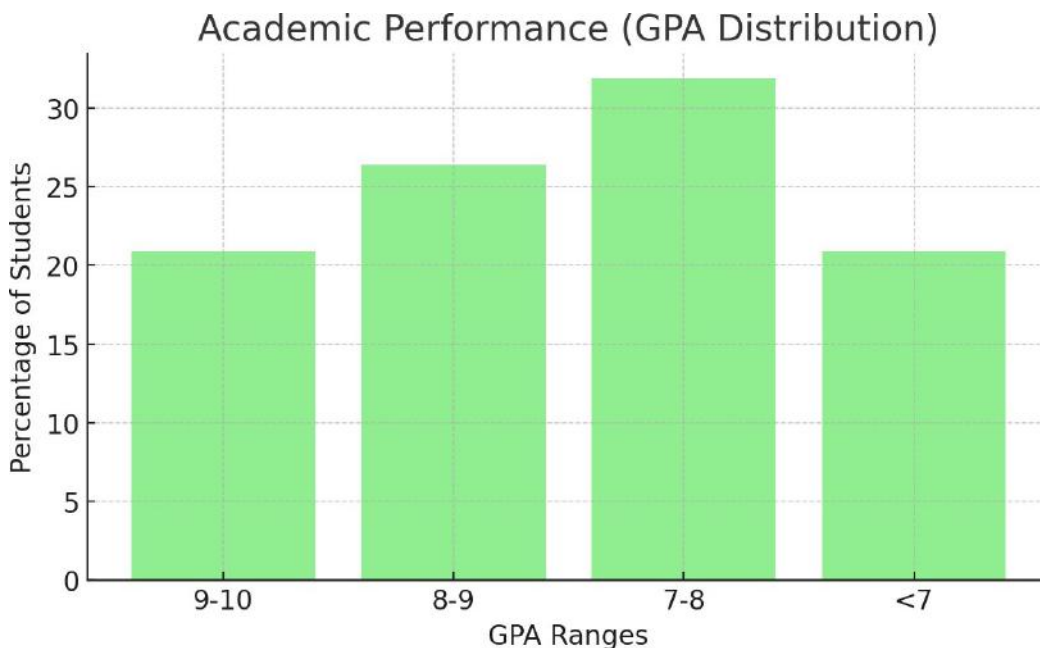
Regarding physical activity, 46.2% of the students reported engaging in regular physical activity, defined as participating in physical exercise at least three times a week. A significant correlation was observed between regular physical activity and higher GPA. Students who engaged in regular physical activity tended to have higher academic performance compared to those who were less active. Among the students who had a GPA between 9 and 10, a majority (68%) reported regular physical activity.

When asked about their beliefs regarding the role of physical activity in improving academic performance, 44% of students expressed the highest level of agreement (5 on a scale of 1 to 5), indicating that they strongly believed that regular physical activity contributes to better academic results. This suggests that students recognize the benefits of physical activity for their cognitive and academic development.

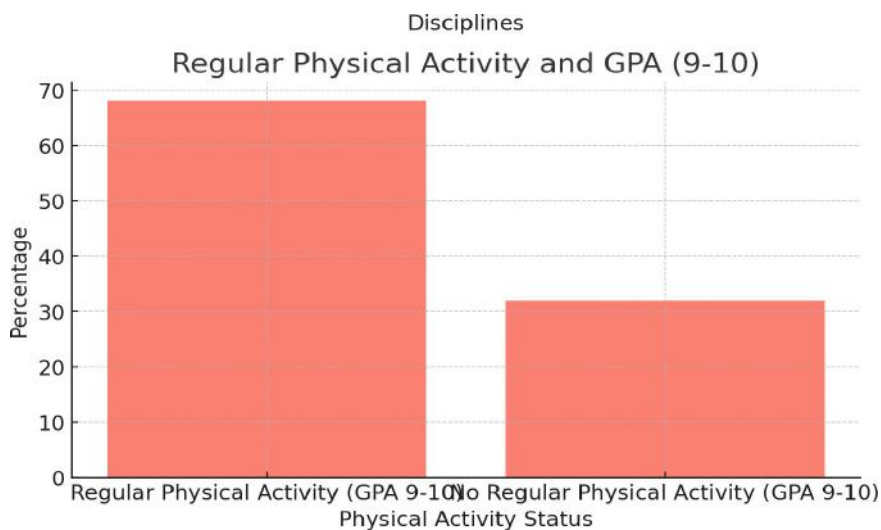
DISTRIBUTION OF Disciplines Among Students: This graph shows the percentage of students across various disciplines, with engineering and physical education being the most represented fields.



ACADEMIC PERFORMANCE (GPA Distribution): This graph highlights the distribution of GPAs among students, with the majority falling between 7 and 8.

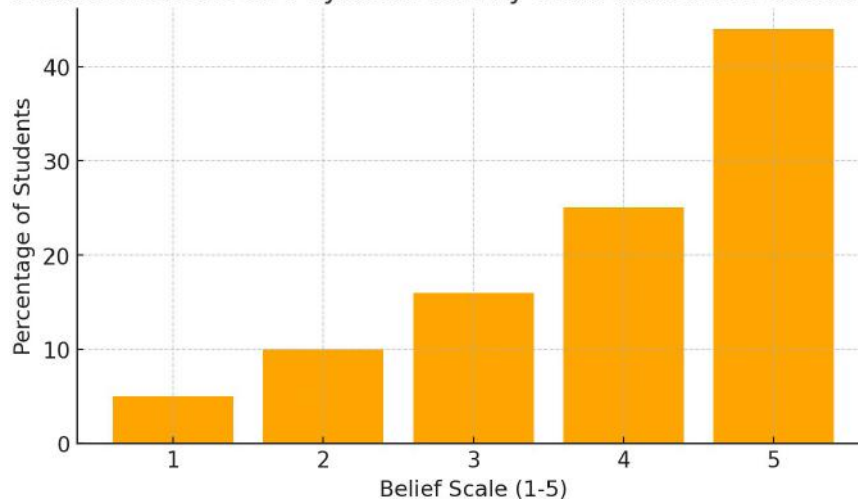


REGULAR PHYSICAL Activity and GPA (9-10): This graph demonstrates that 68% of students with high GPAs (9-10) engage in regular physical activity, indicating a significant correlation.



STUDENT BELIEFS ON PHYSICAL ACTIVITY AND ACADEMIC PERFORMANCE: This graph shows that 44% of students strongly believe (5 on a scale of 1 to 5) that physical activity positively impacts academic performance.

Student Beliefs on Physical Activity and Academic Performance



Discussion

The results of this study support the hypothesis that regular physical activity has a positive impact on academic performance among university students. The significant correlation between physical activity and higher GPA aligns with previous research, which has established that physical activity improves cognitive functions, such as concentration, memory, and decision-making. These cognitive enhancements are likely to translate into better academic performance.

Moreover, the study highlights that a large proportion of students believe in the beneficial effects of physical activity on academic outcomes. This awareness is crucial, as it suggests that students are open to incorporating physical activity into their routines to improve their academic performance.

One of the key findings of this study is the recommendation to integrate “physical education and health” as part of the university curriculum. Given the demonstrated benefits of physical activity for cognitive and mental health, introducing a formal physical education component in higher education could lead to improved academic outcomes and a healthier, more balanced student population.

Conclusions

This study demonstrates that regular physical activity is positively correlated with higher academic performance among students at the European University of Tirana. The benefits of physical activity extend beyond physical health, contributing to improved cognitive functions and reduced stress levels, both of which are essential for academic success.

The findings of this study suggest that universities should consider incorporating physical education and health into their curricula across all disciplines. By doing so, students will not only achieve higher academic results but also benefit from a more well-rounded, socially engaging university experience.

Recommendations

- 1. Integration of Physical Education in University Curricula:** Universities should introduce mandatory physical education courses to promote a balanced lifestyle among students.
- 2. Awareness Campaigns:** Institutions should raise awareness about the positive impact of physical activity on academic performance, encouraging students to engage in regular exercise.
- 3. Further Research:** Future studies should explore the long-term impact of physical activity on academic performance across different age groups and educational settings.

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The use of artificial intelligence from the perspective of Generation Z students in higher education

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Abstract

The aim of this article is to explore how Generation Z university students relate to artificial intelligence, with a particular focus on its use in their higher education studies. Artificial intelligence is pervading our days in many ways. Its impact on the economy, society and education is undeniable. Technological progress brings many benefits, but the exact limits and consequences of its use and application are not yet fully understood. The focus of this manuscript is on artificial intelligence and its generation-specific analysis. We wanted to find out how Generation Z, which has grown up in the online world and is so open to technological innovations, views the issue of artificial intelligence, what advantages it has and what its disadvantages are, and how it sees its future. We chose Generation Z because it represents the largest proportion of young people in higher education, so as an educational institution, it is important for us to hear their views and attitudes. Moreover, they will be the workers and managers of the future, so we are talking about a generation that will play an important and decisive role in the labour market.

The paper presents the results of qualitative research based on individual in-depth interviews with marketing students at the BGE Faculty of Foreign Trade and the Keleti Károly Faculty of Economics at Óbuda University. The 64 interviewees expressed their views by answering a guide of 16 questions.

Keywords: generation Z, AI, qualitative research

Literature review

The use of new technologies and artificial intelligence in higher education not only makes the learning process more efficient and interactive, but also helps students to be better prepared for the challenges of the digital age. Generation Z members have been in close contact with technology since childhood, so for them online learning and the use of smartphones and computers in education is natural (Danyi et al, 2020). Adaptive learning platforms and AI-based tools can help students to have a learning experience tailored to their specific needs, which can make education more motivating for them. In addition, online courses provide the opportunity to learn in a more flexible way, even at their own pace. It is important to stress that the use of AI does not replace human trainers, but complements and supports their work. This allows instructors to spend more time on individual support and mentoring of students, while using AI to monitor student progress more effectively (Vuorikari, R., Kluzer, S. & Punie, Y., 2022), (Lo, C. K., 2023), (. Crompton, H. & Burke, D., 2023).

The versatile use of artificial intelligence is clearly revolutionising the way companies operate. The general demand for AI and Big Data stems from the generation of ever-increasing amounts of data and the need to store it. Generation Z employees prefer companies with flexible working opportunities and competitive benefits, and many companies are experiencing difficulties in retaining them. By using AI, businesses can save time and money while also increasing the engagement of Generation Z employees, who have very high expectations of companies' technological advances. With AI, companies can

effectively tailor their communication strategies to stay in constant contact with a younger workforce (Behaviour.hu, 2023; Bencsik, 2021; Hill et al. 2019)

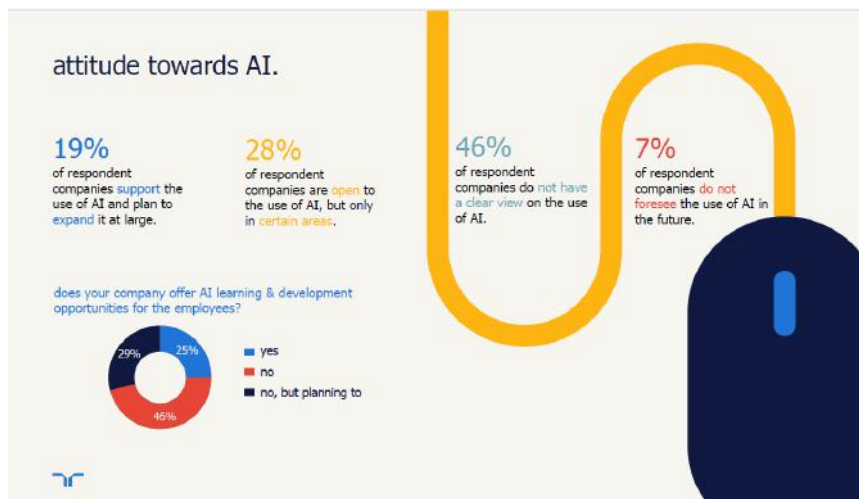
<https://behaviour.hu/igy-lesz-vonzo-egy-ai-t-hasznosito-munkhely-a-z-generacio-szamara/>

The world of work is changing rapidly, with technological advances, changing industries and global dynamics shaping the future job market. According to the article, some of the most in-demand and highest-paying career opportunities over the next ten years include: data analysts and data scientists, healthcare professionals, cybersecurity experts, renewable energy specialists, software developers, sustainability experts, virtual reality and augmented reality developers, e-commerce and digital marketing specialists, robotic engineers and mental health professionals. AI experts will be among the most sought-after and highest paid career opportunities in the next ten years (Vicsek, et al. 2022, Boyd & Holton R.J., 2018) <https://www.gallup.com/workplace/389807/top-things-employees-next-job.aspx>

Randstad's HR Trends 2023 November-December research <https://www.randstad.hu/hr-kutatasok/hr-trends-survey/hr-trends-survey-2024/> surveyed nearly 353 senior executives in domestic companies across a variety of industries. One of the key issues was related to artificial intelligence and its application (Randstad HR Trends Survey 2024).

47% of respondents are in favour of or open to the use of AI, 46% have no position on the use of AI and 7% do not see a way to use AI in the future. Somewhat surprisingly, only 25% of managers provide AI training for staff, while 46% do not currently and 29% do not plan to do so in the future.

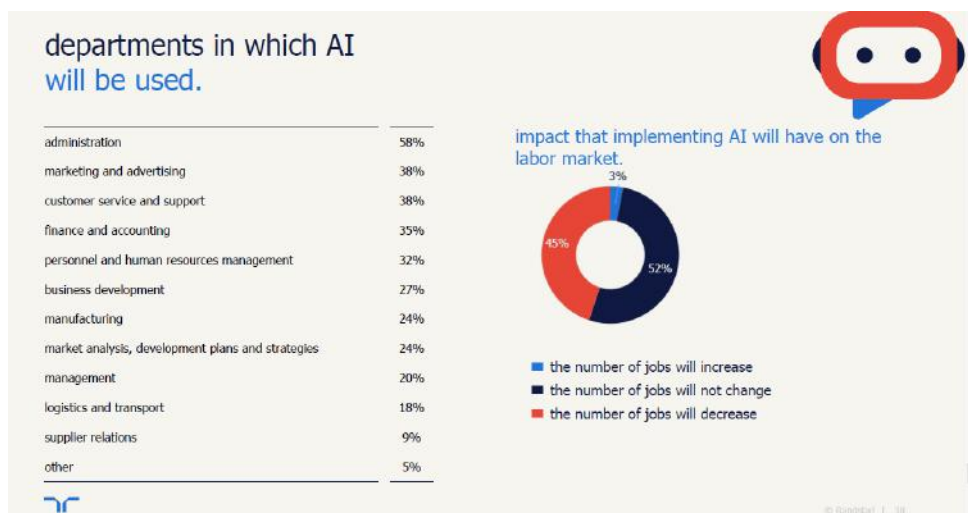
FIGURE 1: Attitude towards AI



Source: Randstad HR Trends Survey, 2024

When asked in which areas AI will be used most, 58% said administrative, but marketing and advertising, customer service support, finance and HR were also predicted to play a major role.

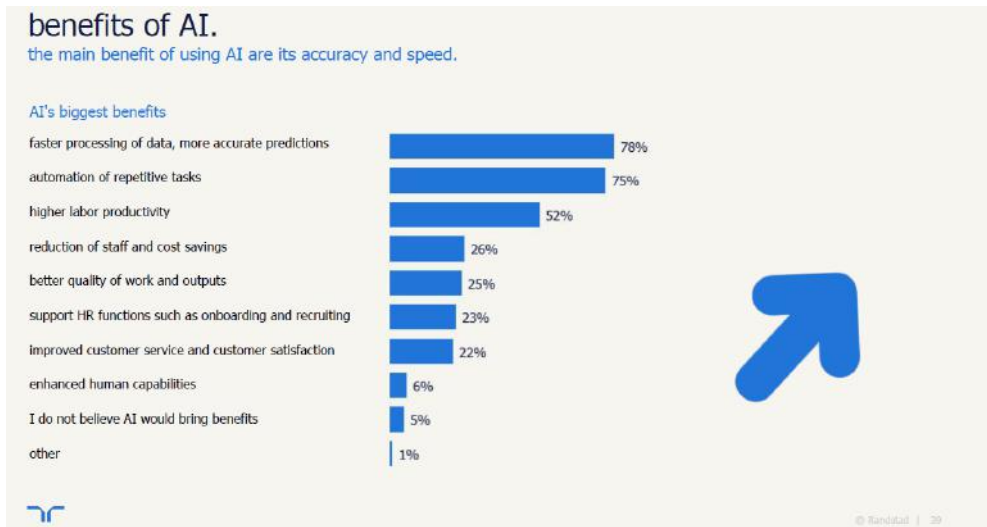
FIGURE 2: AI supported terrains



Source: Randstad HR Trends Survey 2024

The main benefits of AI were faster data and information processing, more accurate prediction and analysis, and automation of repetitive tasks.

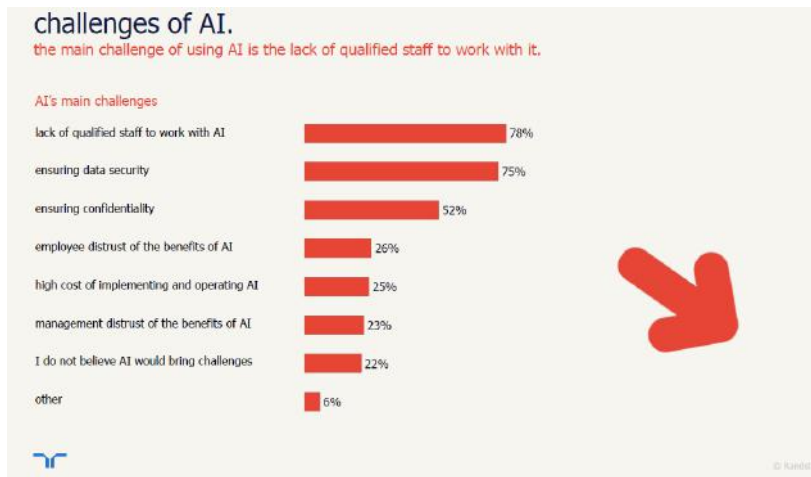
FIGURE 3: Benefits of AI:



Source: Randstad HR Trends Survey 2024

As for the biggest challenges facing AI today, three-quarters of respondents said there is a lack of skilled workers who can use AI, and data security is also seen as problematic.

FIGURE 4: Artificial intelligence challenges



Source: Randstad HR Trends Survey 2024

Generation Z workers are almost in tune with the world of technology, and as a result, employers prefer modern, AI-enabled jobs that are comfortable, well-paid, humane and offer plenty of free time.

Deloitte's latest Digital Consumer Trends research, published in January 2024, asked the questions: what do we know about the metaverse and artificial intelligence? How much do we know and how much do we fear it? If we use these technologies, what do we use them for and how? The survey revealed that the awareness of the technologies is growing and the number of users is increasing, but there is a lack of knowledge among domestic respondents on several key questions. Artificial intelligence (AI) is used for educational purposes by the largest proportion of respondents, 82%. More than half of the respondents, 54%, use it for personal purposes, while 34% use it for work. In terms of frequency of use, the proportion of respondents who have used or tried this new technology only a few times is high, at 40%. A significant 21% use AI at least once a week. The data shows that the more someone knows about AI, the less they fear that it will take away their job prospects in the future. It is also clear that the more a group knows about AI, the more positive their employer's attitude towards its use. The question on AI responses was interesting: whether AI gives biased answers or not, we see a similar pattern across all groups surveyed, with the majority unable to decide. In comparison, 30% of respondents who have used AI are more likely to agree that AI gives

unbiased answers. <https://www2.deloitte.com/hu/hu/pages/technologia-media-telekommunikacio/articles/ha-megismerjuk-az-ai-t-kevesbe-tartunk-tole.html>

Bolyai Research at NKE, in collaboration with Corvinus University and the University of Amsterdam, has recently published a representative study in January 2024, which explores where artificial intelligence will be by 2050. The experts who responded predict that by 2050 AI will have an impact on all aspects of socio-political and everyday life, supporting human well-being, guiding human cognition and communication. They believe that we will have access to democratically accessible, automated, personalised, unbiased and reliably interpreted information everywhere in the world, and that the ethical functioning of AI will be effectively regulated. They believe that in two to three decades, AI will be able to replace humans, substitute for conversations, remove language barriers and support everyday routines. Some respondents said that it is possible to combine animal and plant communication with big data and intelligence systems, so that nature could be a source of further AI development. Several respondents also suggested that religions could become more open and tolerant if people increasingly communicate on AI-driven platforms.

The media and ICT experts interviewed also perceive that there is a lot of uncertainty about AI and that it could have drawbacks. Most notably, people will become dependent on machines, there will be a higher risk of downtime, information wars may break out, inequalities may increase, smaller languages and cultures may be disadvantaged, and the carbon footprint of AI may increase. They say that human communication and freedom of speech and democracy could be reduced, and changes in the labour market could accelerate. They expect that AI will not be able to change current socio-cultural values and norms on its own, but may reinforce or suppress them, leading to new forms of abuse and violence. It is believed, however, that technology-driven abuse, misinformation, filter bubbles, information overload can be curbed - even with the help of AI. They believe this is a task for future generations, who already know how to live with AI. They also believe in the power of NGOs and art to solve problems. <https://hrpwr.hu/cikk/hova-fejlodik-a-mesterseges-intelligencia-2050-re-az-mi-veszelyeit-majd-feloldja-maga-az-mi>

In an article published in Economx.hu on 12 February 2024, it is reported that a recent survey shows that a new generation of British business students is open and ready to use artificial intelligence (AI) in customer service. 78 percent of students feel prepared to enter the AI-driven world, and 45 percent say they are motivated by the role AI plays in their work. The study shows that AI could have a significant impact on customer service jobs, and businesses are increasingly planning to introduce AI technologies into their everyday workflows. Students believe that AI can be a useful tool to support work, especially in sales and related fields. They also stress that although AI can cause excitement and anxiety in the workplace, it is important to accept and use it appropriately, as it is not currently a full replacement for human actors in work processes.

According to the hrnews article, these results will come as a relief to British businesses looking to hire the next generation, as

- nearly 90 percent of them already use AI,
- And 82 percent want to introduce more AI technology into everyday work processes.

Artificial intelligence in the workplace has caused both excitement and anxiety in UK offices, but 69 per cent agree that AI can be a useful tool and it is important that it is embraced.

95 percent of students surveyed say they understand artificial intelligence and its role in business. <https://www.economx.hu/gazdasag/mesterseges-intelligencia-uj-generacio-ugyfelszolgalat.785009.html>

Material and method

The aim of the research was to find out what Generation Z respondents think about happiness.

Thematic qualitative interviews were conducted with marketing students at the BGE Faculty of Foreign Trade and at the University of Óbuda. The subjects were aged 18 to 23 years old. About 70% live in rural areas and 30% in Budapest. The interview consisted of 16 questions and took about 50 minutes. 64 interviews were conducted in November 2023.

In the data collection, the following questions were asked of the selected subjects during the interview.

1. What *new learning methods and AI applications* do you use in your university studies?
2. How *effective* do you find new methods and AI applications? (Pros and cons)
3. How do new methods and AI applications *affect your learning experience*?
4. What *challenges* do you face in applying new methods and AI applications in higher education?
5. What *future opportunities* do you see for the application of new methods and AI applications in higher education?
6. How can new methods and AI applications *be more effectively introduced* into higher education?
7. What role do you think *teachers* play in the introduction of new methods and AI applications?
8. What role do you think *students* play in the introduction of new methods and AI applications?
9. What *impact* do you think new methods and AI applications *could have on the higher education system*?
10. What *impact* can new methods and AI applications have *on your chances in the labour market*?

The results are presented in aggregated form, based on the question-answers, using a traditional content analysis method.

Research results

ChatGPT- almost all interviewees mentioned that they use it, but they said they know not everything they say is true, they can't provide sources, they prefer to use it for inspiration, as a starting point, or if they don't understand something, they ask for an explanation.

6 students said they prefer traditional learning methods but have not used AI before. They are afraid of failure or that if a machine does the task, they will not learn the material.

3 students said that they do all their work using AI, citing speed and convenience as advantages.

Only one mention was made of the use of Bing AI, Google Bard and Perplexity AI.

Among the learning apps, the Goodnotes app, Quizlet, Duolingo, Forest, Canva, PhotoMath, YouTube videos, Kahoot, image maker AI, Pictory ai, Durable co, were the most mentioned.

The following snippets indicate that students know that the use of AI supports the learning process, but that it also carries many risks.

„I think if you use AI well, it can help learning a lot, but it can also take away the magic of prior research” „You can get very lazy, you don't develop as an individual”. „It often gives you a superficial, flawed, mechanical approach” „It gets stuck in 2021-22” „We fool ourselves” „You have to find the happy medium and then you can benefit from it” „It doesn't help active learning, but it's good for brainstorming”

As for the use of AI in higher education, respondents said that sooner or later there will be a subject that will teach the correct use of AI, promotion. Several said they believe that fewer teachers will be needed, and that it will be enough for students to learn on-line, from anywhere in the world, in a non-present format.

„A couple of years ago we didn't even know what Chat GPT was, and now everyone uses it.” „I had a class in the Netherlands where we analysed the responses generated by ChatGpt, discussed how much we agreed with it”. „Teachers are also accepting that students are now relying on AI, we will have to adapt the curriculum accordingly”. „If we do it right, it helps everyone, teacher, student”. „It can personalise the learning process”.

Respondents believe that learning to use AI effectively is a common learning process for both teachers and students. *„It will integrate nicely into education” „If I get immediate and continuous feedback on my work, I'm more likely to learn from it and correct mistakes - my learning is more effective”*

Students believe that the professional use of AI in marketing will be essential in the world of work. They are under no illusions, they know that AI helps work and therefore only the most creative and skilled workers can achieve real success. Many jobs will be filled by robots. They are not afraid of not having a job, but they know that it will not be easy to compete and excel in an AI-dominated world.

Naturally, some people expressed serious concerns:

„It's scary how much AI is taking over, I'm especially worried that it will bring big social changes, many people's lives will become meaningless” „AI will solve everything, humanity will fail” „Students find it easier to navigate the world of AI, older teachers either don't want to or can't meet this expectation”

Among the ethical issues highlighted by the students were data protection and ensuring equal opportunities in the use of the tools.

Summary findings

- Respondents know that AI can help learning, but they also acknowledge that it can provide flawed, superficial approaches.
- Students believe that AI should be integrated into the learning process and that teachers and students should learn to use it effectively together.
- Students believe that AI is essential in the world of work, but that knowledge and creativity will be of greater value in the future.
- Serious concerns have been expressed about ethical issues, in particular data protection and equal opportunities security in the use of the tools.

Generation Z Hungarian students generally value the use of AI and see its importance in the workplace of the future. However, many young people still do not fully understand how AI works and how it could change the world of work.

The results of the qualitative research described in the manuscript are local in nature, valid for the sample. In the continuation of the research, we plan to collect quantitative data to quantify the results and to investigate generation-specific approaches to individual attitudes towards AI.

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Management of the educational process through the application of coordination exercises.

MSc. Marjo SHABANAJ

MSc. Bora SULKA

By coordination ability we mean special tendencies that help the athlete (student) to realize, transform and coordinate movement actions according to technical requirements, in space and at the right time.

They help the athlete to flexibly apply the moving forces according to the respective angles and directions, to be oriented in space and time, to have a sense of the rhythm and dynamics of the movements, to be balanced during different situations. These skills affect the athlete in a specific way in the direction of increasing the quality of mobile action.

Coordinating skills do not produce movement, therefore, like flexibility, they are not included in the group of defining physical skills, although their role is necessary in the implementation and quality coordination of the determining factors of movement.

Coordinating skills appear in specific ways in all athletic disciplines, especially in those that are associated with complex technique, with large nerve-muscular efforts and in short periods, such as: speed runs, jumps and throws.

Coordinating abilities depend directly on the central nervous system and on the conscious activity of the athlete to act and to anticipate technical actions during training and competition.

Coordination skills serve as the primary tendency to learn, to actively build and model physical-movement actions, which strongly influence the growth of the quality side of athletic technique. They create the right opportunities and spaces for the formation of new movement habits. general and special character.

Coordination skills develop rapidly in young athletes.

Basic coordination skills are learned from the age of 8-12 years and are rapidly enriched in the age group of 12-14 years.

Determining factors of the preparation of coordination skills

As determining factors in terms of the preparation of coordination skills, we distinguish:

1. Motor skills
2. Properties of flexibility
3. Determining physical ability
4. Moving luggage
5. Psychological factors

Motor skills

The physiological basis for the formation and development of coordination skills lies in the activity of the motor center in the nervous system, which produces motor skills. Motor skills are applied in practice, producing movement skills. The better the motor centers in the nervous system function, the more the higher the level of coordination skills, the more beneficial the process of the athlete's interaction with the surrounding environment.

Properties of flexibility

Good flexibility avoids hindering influences for the correct demonstration of coordination skills in practice. It makes the athlete flexible, as well as able to perform large-width movements, according to technical requirements.

Complete action of movement

Through the combination of movement skills and coordination skills, they are closely and directly connected. The totality of movement skills is enriched through coordination skills, but once it helps to improve them. the more actions are learned, the easier the process of training coordination skills is implemented.

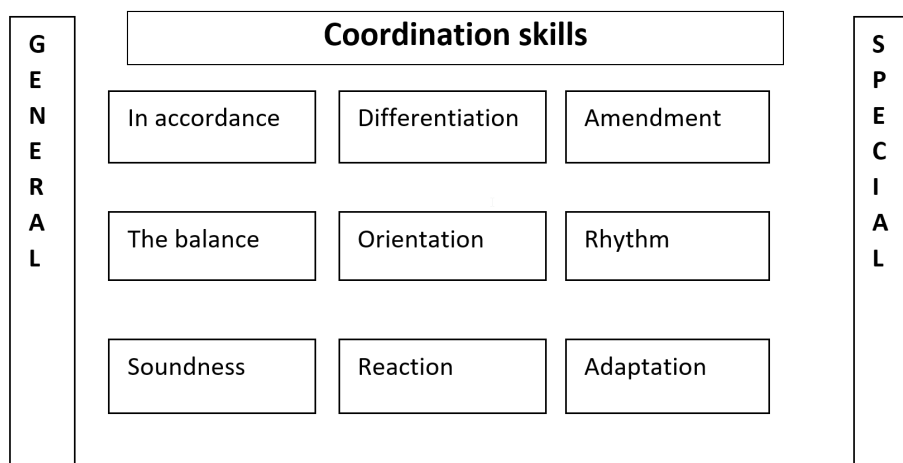
Psychological factors

Psychological factors, especially perceptions, memory, thinking and active visualization create important conditions for the demonstration and preparation of coordination skills.

These factors help in the recognition and correct representation of actions, as well as in their coordination in space and at the right time.

Types of coordination skills

Coordinating skills are diverse and have specific characteristics.



(According to Blume 1981) Regarding their field of activity, coordination skills are divided into:

1. General coordination ability
2. Special coordination ability

General coordination skills

By general coordination skills, we mean certain tendencies that help the athlete to carry out coordinated actions, outside of the nature of the chosen discipline. General coordination skills contain special elements. Thus, they help to indirectly increase the level of special coordination skills.

Special coordination skills

By special coordination skills we mean special tendencies, which help the athlete in the realization of coordinated actions, which correspond to the technical requirements of the chosen discipline. Special coordination skills serve as primary factors in the processing of physical skills according to the technical requirements of the chosen discipline, they also serve in the continuous improvement of the technique.

In the aspects of learning physical-movement actions, coordination skills are grouped as:

- **Management and control skills: which includes the special skills of transformation, kinesthetic difference and balance.**
- **Adaptive skills: including special skills of rhythm, accuracy, reaction and synchronization.**

Specific coordination skills are:

1. Change
2. Differentiation
3. Coordination
4. Orientation
5. Rhythm
6. Accuracy
7. Feedback
8. Adaptation

Change refers to the coordination ability that helps the athlete to change the form and purpose of the movement according to the requirements of the technical action. The change stands out especially during acyclic actions, when the athlete is forced to implement movement actions that are different in form and content. This ability helps the hurdler to master the skills of running and overcoming obstacles.

Differentiation means that coordination ability, which helps the athlete to accurately distinguish the way of performing the action in terms of form and content. Differentiation helps to increase the perceptive and evaluative skills during the displacement of the body links, especially those that are not well controlled, during the implementation of the technical schemes. Thus, the differentiation helps in the evaluation, in the determination and in the implementation of the actions during the backwardness of the tool and the throwing hand (in throwing).

Accordance refers to the coordination ability that helps the athlete in the organic connection of physical-movement actions according to technical requirements. Accordance gives valuable impacts on the dynamics of technical athletic schemes, in accordance with biomechanical requirements. It is the main condition for the connection and coordination of elements and of the technical phases, in the schemes of running, jumping and throwing.

Orientation refers to the coordination ability that helps the athlete to perceive the movements and positions of the body's links in space and time. Orientation stands out especially in the most technical disciplines, such as: obstacle courses, jumping and athletic throws. It provides close connections and fair relationships between the athlete and the external environment, as well as helping him to recognize the positions of body parts in the space of action schemes, creating opportunities for self-control, for correcting and improving movements.

Rhythm means that coordination ability that helps the athlete to go through the physical-movement actions in certain time divisions, according to the technique of the movement action. The rhythm depends on the feeling and perception of the time spaces, on the predictive ability, on the intuition and sensitivity of the athlete during the realization of physical-movement actions. The ability of rhythm is applied in the rhythmicity of movement actions, which appears in different forms and ways. In this case, it also serves as a factor for predicting and evaluating the result of the exercise performed according to time and space requirements .

Accuracy means that coordination ability, which helps the athlete to go through physical-movement actions according to technical and biomechanical requirements. Through accuracy and content there are close connections because accuracy is an expression of quality, it is demonstrated as a specific ability that stands out especially in prepared athletes. Accuracy also helps the athlete to perform actions according to the requirements of form and content indicators, with the required rhythm, rhythm and beauty.

Reaction refers to the coordination ability that helps the athlete to act at the level in time and at the right moment for the use of physical and psychological opportunities. The reaction stands out especially in the application of the moving forces during the displacement of the different links of the athlete which directly help the level quality of action.

Adaptation means that coordination ability that helps the athlete to transform and process in a useful way the physical-movement action, according to the created circumstances. Adaptive abilities appear especially in situations unforeseen before. The athlete with adaptive ability is flexible and knows how to deal with hindering factors, he even knows how to turn situations to the benefit of the sports result. He has the ability to change the structure and rhythm of the action, as well as to be balanced during the situations of performing physical-movement actions in the conditions of training and competition.

Coordination skills preparation methodology

The coordination skills preparation methodology includes competition-type exercises, auxiliary preparatory exercises (general and special), game exercises and acrobatic exercises, which are applied to those instructions as in the preparation of speed.

These exercises are mainly applied through the methods of the race and the game, where the first prepares more special skills, while the second prepares general coordination skills.

Coordination skills are mainly developed through the complex method, which is implemented through training units composed of physical and coordination elements.

The exercise unit contains exercises such as:

- running with knees up
- running with a rotating step
- kercimesis exercises
- jumping over obstacles
- running 30 m in 30 steps (timed)
- acrobatic exercises (tumbling, somersaults, etc.)

Assessment of coordination skills

To prepare coordination skills, first of all, you have to rely on special criteria, such as: difficulty, accuracy and completeness of physical-movement actions. (Zaciorski, 1980)

From this it follows that for the assessment of coordination skills we must rely on the realization of special exercises, bearing in mind these criteria:

- The difficulty of the exercise
- The accuracy of the exercise
- Time of learning the exercise
- Amount of learned exercises

The difficulty of the exercise is a criterion based on which the athlete who solves the most difficult movement tasks will be evaluated as the most prepared.

The accuracy of the exercise is the criterion on the basis of which the athlete who performs the movement task with the right precision and skill will be evaluated as the most prepared.

The time of learning the exercise is the criterion on the basis of which the athlete who learns and acquires the physical-levitation task faster will be evaluated as prepared.

The amount of exercises learned is the criterion based on which the athlete who learns more physical-movement elements and actions will be evaluated as more prepared.

Coordination skills are evaluated objectively through measurable exercises and special tests. Among them, the following stand out:

- Complex test
- Specific test
- EUROFIT test

Complex test

The complex test contains sustainable exercises that are applied under the same methodical conditions, according to the age group or chosen athletic discipline.

Thus, the speed runner can implement such a test that can be measured and evaluated in time. Running 30 m over 8 pyramids, jumps over 8 obstacles, flying jumps on a birch tree with a certain height, running with a “gallop” step. and arrival. The faster the test is completed, the higher the level of physical and coordination skills.

Specific test

The specific test contains special exercises that are carried out under conditions determined according to the requirements of the chosen discipline. Thus:

- Speed runners perform exercises such as running 30-40 m for 30-40 running steps or 30 running steps in place with knees up (with time) or exchanging feet on the ground with collision, from standing still on the bench, etc.
- Obstacles accomplish the passage of 10-12 obstacles with one step of running between the vehicle (with time), the movement of the pushing leg, leaning on an object (with time), etc.

- Dancers perform 8-9 flying jumps over objects (timed), or jumps with two legs over 6-10 obstacles (timed), etc.
- Throwers perform 12-15 lifting of the shaft from a lying position (with koe) or throwing the weight at a certain object (from time to time), etc.

EUROFIT test

The EUROFIT test foresees exercises and the evaluation of coordination skills, such as: Hitting the plate, which is performed by beating the clock on the table, which passes to the left and right of the other hand, which is placed on a disc-shaped plate. The exercise is evaluated on the number of hits in time.

Flamingo, which is performed for the assessment of balance. The athlete stands with one leg for a certain time on a beam 5 cm wide. The assessment is based on the longest standing on the beam (with time).

Running 10 x 5m (walking), which is evaluated by time, etc.

Introduction

Physical activity and sports disciplines are a significant part of human activity as they occupy a very important space and have an indisputable influence on the psycho-social and physical health of the person.

Physical-motor activity and sport have always been considered as an inseparable part of physical and mental formation, of spiritual wealth and of that part of human culture that gives a certain response to entertainment, health, aesthetic and sports-companion sensations for the person in it. all stages of life.

The subject of physical education, based entirely on the concepts and content of movement activity and sports, will strengthen the knowledge of each student and will provide him/her with new experiences, skills and knowledge, which will expand even more beyond cultural, physical and health education.

Recognizing, realizing and evaluating physical-motor and sports activity by all students is a form of acting in a group, and affects the strengthening of social and communicative relations.

Physical education requires that through the study of other subjects in the social, scientific and arts fields (these are integral parts of the core curriculum) to achieve the creation and general completion of the culture and formation of students, formation which is achieved through several lines main part of the teaching process of physical education.

The process of physical education plays the fundamental role in preparing students for the realization of school cultural-sports and artistic activities. This process takes special importance especially in the realization of competitions, matches or other activities combined with artistic, social and health activities.

The organization and implementation of this course will help students to appreciate its indisputable effects in many directions, not only in the physical and sports aspect but also in the relationship between each other, in the expansion of knowledge in the field of tradition cultural of the provinces and different countries, in that of creating a more social environment since in these activities there should be no losers but everyone wins. This constitutes in its essence the goal and the greatest value of the educational process in the subject of physical education.

Discussion on the study

The selection of sports subjects is the initial work, which carried out with great care according to scientific parameters will surely lead us to talent. around the sports facilities in the physical education class and even around the squares of the palaces, you can find and discover the talents of the future. Given that coordination exercises play a very important role in the progress of every individual who sees himself in the field of sports in we have decided that in this micro thesis we will deal with this important part of the sports activity.

Purpose of the study

The coordination of the work of the physical education teacher with parents and children, which through coordination exercises in the teaching process and outside it, naturally leads to the achievement of the required results. In the achievement of sports excellence.

Objectives of the study

- Identification of subjects
- Increasing the coordination level in children
- Drawing conclusions from the knowledge obtained during the educational process

Object of the study

The object of the study will be the physical-movement activity of the students of the 9-year cycle so that through coordination exercises they can conclude in the achievement of perfection.

Study methodology

In order to achieve this study in methodological-organizational and scientific standards, this working methodology will be followed, through the implementation of these methods:

- Observation method
- Method of practical implementation
- Comparison method

The content of the study will be addressed in these parts:

- **First part:** Familiarity with the study, where these issues will be addressed: introduction, purpose, goals of the study, object, discussion and methodology of the study.
- **The second part:** We will deal with the factors that need to be known and that help us to reach the required level of coordination skills
- **The third part:** It will close with the conclusions, recommendations and bibliography

Conclusions

At the end of this topic, we have reached the conclusions that coordination skills help the athlete (student) in increasing mental skills and psychological factors, especially perceptions, memory, thinking and active visualization.

These factors help in the recognition and correct visualization of actions.

They serve to differentiate between an athlete (student) who has high coordination skills and one who does not.

An athlete (student) who has high coordination skills learns the exercises of different sports faster and more accurately than an athlete (student) who has weaker these skills.

Coordinative skills make the athlete (student) flexible, as well as able to perform large-width movements, according to technical requirements.

Coordinative skills increase mobility.

They increase the malleability and as a result of the good malleability he/she avoids the hindering influences for the correct demonstration.

Coordinating skills help in the formation and development of mental activity. The better the motor centers (mental activity) in the nervous system function, the higher the coordination.

Basic coordination skills are learned from the age of 8-12 years and are rapidly enriched in the age group of 12-14 years.

They help the athlete (student) to realize, transform and coordinate movement actions according to technical requirements, in the right space and time.

Coordinating skills help the athlete to flexibly apply the moving forces according to the respective angles and directions, to be oriented in space and time, to have a sense of the rhythm and dynamics of the movements, to be balanced during different situations. These skills affect the athlete in the following ways: specific in terms of increasing the quality of mobile action.

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Quality of life and perceived loneliness influenced by the place of residence among the elderly in Albania

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Abstract

Background: The place of residence is one of the main elements of the quality of life, which in the late third age under the influence of increased life expectancy is usually near the family or in nursing homes. The purpose of this study was to evaluate the relationship between the four domains of quality of life with the type of place of residence under the influence of perceived loneliness among the elderly in Albania. Methodology: The participants were 100 Albanian elders (40% lived in nursing homes and 60% with their families) and all participants were over 65 years old. The measuring instruments were the WHOQOL: Measuring Quality of Life and the UCLA Loneliness Scale. Findings: The results showed that the place of residence near family members was significantly correlated with three domains of quality of life, physical health, psychological health and social relationships. While the residence in nursing homes was significantly correlated with all domains of quality of life, physical health, psychological health, social relationships and the environment. The results also showed important findings concerning the level of perceived loneliness of the elderly in the Albanian context. These results have important implications in the design of social policies that directly affect the elderly in Albania.

Keywords: quality of life, nursing home, perceived loneliness, elderly

Introduction

Quality of life is individuals' perception of their life position in the context of the cultures and value systems they live in, related to their goals, expectations, standards, and concerns. However, what this concept implies for each of us varies from one individual to another due to individual perceptions and cultural factors in which we were raised and live. Despite individual perceptions, the life stage or age of the individual also has a considerable influence.

Quality of life is divided into four main areas: physical health, psychological health, social relationships, and the environment, each of which consists of several specific elements. Based on the constituent elements of these life areas, it is clear that the overall quality of life and particularly the quality of life of individuals in late-stage life is related to the place of residence, its conditions, and quality due to physical decline, cognitive decline, and other losses that accompany this stage, such as loss of employment, loss of independence and autonomy, loss of a partner, loss of close friends, etc.

But the profound changes society is experiencing lately regarding the role and position of the elderly in families and the increase in elderly longevity have brought changes in the way and quality of long-term care, considering formal care more than before and the relocation of their elderly loved ones to elderly homes due to the pace of life and lack of time. However, for the elderly, home is much more than a physical environment where tasks and functions are performed, causing not everyone to experience the relocation to an institution very well while many others adapt from their beginnings, a detail that directly affects the quality of life.

During the final stage, the individual faces achieving ego integrity versus despair. This stage is mainly characterized by reflection on life, memories, achievements, and especially regrets about wrong decisions or mistakes that should have been avoided. According to Erikson's theory, the final psychosocial conflict is precisely the reconciliation of the elderly with the way they have chosen to live their lives. One of the individual's main psychosocial needs during late-stage life is related to transmitting or donating experiences to loved ones so that they are constantly remembered and never forgotten by them. However, the absence of relatives during this stage of life and neglect due to various commitments of their loved ones have resulted in many unmet psychological needs, causing the perceived level of loneliness in the elderly to increase.

Literature review

Quality of life

Quality of life may be a common goal for the majority of individuals today, but what this concept specifically entails for each of us sets us apart from one another. As a highly subjective concept, it is linked to individual perceptions, adding to the influence of cultural factors (Tripathi, Rai & Rompay-Bartels, 2021). The most widely accepted definition of quality of life is from the World Health Organization:

„Quality of life is defined as individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns.” (WHO).

The evolution of the concept over the years has resulted in the recognition of quality of life as multidimensional (Felce & Perry, 1995). However, four broad health domains (each with its subfields) have been widely accepted, including: physical health, psychological health, social relationships, and the surrounding environment (Marcel Post, 2014). Nevertheless, a major misconception lies in the fact that the field of physical health is often considered more important than the others (especially for the elderly) according to Wilhemson, Andresson, Waern, & Allebeck (2005). The field of physical health is divided into: physical health and physical abilities necessary for daily functioning (Gill, Hammond, Reifsteck, Jehu, Williams, Adams, Lange, Becofsky & Rodriguez, 2013), which are directly affected by the aging process through significant muscle mass loss leading to decreased strength and the presence of chronic diseases due to internal organ dysfunction as well as problems with insomnia (Berk, 2017; Drewnowski & Evans, 2001; Tyler, 2020; Reid, Martiovich, Finkel, Statsinger, Golden, Harter & Zee, 2006). These changes directly impact another area of quality of life, that of psychological health. Functional limitations resulting from declining physical health combined with contributing factors to psychological health such as reduced support from family or other social that lead to loneliness, particularly at high levels among the elderly (Hawkey & Kocherginsky, 2017), closely related to psychological well-being or mental health, dependency, stress levels, and depression due to functional degradation resulting in role modification and retirement (Hawkey & Kocherginsky, 2017; Kharicha, Iliffe, Manthorpe, Chew-Graham, Cattan, Goodman, Kirby-Barr, Whitehouse, Walters, 2017; Aylaz, Aktürk, Erci, Öztürk, Aslan, 2012; Gerino, Sechi, Rollè & Brustia, 2017).

The field of social relationships, although social engagement decreases with age due to the lack of replacement of lost relationships with new ones and are not included equally as before in creating new relationships, is very important (García, Arizala & García, 2018; Van Groenou, Hoogendijk, and Van Tilburg, 2012; Bildtgård & Öberg, 2014). The social networks of individuals in late adulthood are much smaller compared to other age groups; generally, kinship relationships tend to last longer compared to relationships with friends or neighbors concerning the elderly (Lang & Carstensen, 1994; Van Tilburg & Ikkink, 1999). In late adulthood, individuals exhibit higher levels of perceived loneliness due to losses accompanying this phase of life, such as the loss of a partner and friends or relatives, loss of economic independence, and the decline in health and various bodily functions (Kharicha, et al., 2017).

Loneliness is considered a subjective experience (Heinrich & Gullone, 2006), fundamentally characterized by a discrepancy between the relationships one has or would like to have (Dykstra, 2009). Based on its subjective nature, there are individual differences in how it is experienced by different individuals (Heinrich & Gullone, 2006), as loneliness begin and experience are particularly closely linked to the fulfillment of personal relationship standards, where existing relationships often fail to meet the individual's needs (Dykstra, 2009). On the other hand, its subjective nature also influences the different experiences of the burden of loneliness, specifically for many elderly individuals, the experience of loneliness is so severe that urgent intervention and assistance are needed according to a study conducted by Hauge & Kirkevold (2012). Taube, Jakobsson, Midlöv, and Kristensson (2015) concluded that lonely elderly individuals feel as if they are living within a bubble constantly, due to losses that occur during late adulthood, which simultaneously bring about emotional loneliness caused by the loss of a partner and social loneliness resulting from the loss of a broader circle of friends, providing a sense of belonging and integration into the community (Dykstra, 2009). This is closely related to the field of the surrounding environment, where environmental factors specifically influencing: social, psychological, and physical functioning are crucial (Gobbens & Van Assen, 2017). Specifically, noise, safety, and ease of crossing roads in public environments are significantly associated with the quality of life of the elderly (Parra, Gomez, Sarmiento, Buchner, Brownson, Schimd, Gomez, & Lobelo, 2010) due to sensory impairments that cause issues in the normal hearing and vision processes at this age.

Erik Erikson's Psychosocial Development Theory

According to Erikson, individuals in each stage confront a psychosocial crisis that involves the psychological needs of the individual in conflict with the demands of society, where each stage consists of 2 opposite extremes representing failure or successful transition of the stage (Syed & McLean, 2017; McLeod & Guy-Evans, 2023). Specifically, the final stage ends with old age (65 years - death), and the individual is between two extremes, integrity versus despair (Syed & McLean, 2017). This phase is mainly characterized by reflection on life, memories, achievements, and especially by regret for wrong decisions made or mistakes that could have been avoided (McLeod & Guy-Evans, 2023). The final psychosocial conflict according to Erikson's theory is precisely the reconciliation of the elderly with how they have chosen to live their lives (Syed & McLean, 2017). The elderly who have generally successfully resolved previous stages feel complete and satisfied, but on the other hand, many elderly individuals lean towards despair when, upon reflection, they conclude that they have made many wrong decisions and have missed out on much joy in life (Berk, 2017; Syed & McLean, 2017; McLeod & Guy-Evans, 2023).

Living at home with family or in the home of the elderly during late adulthood.

Influenced by historical and social factors, the meaning of home has changed due to the embrace of an individualistic culture, which has led to continuous modifications in the family model, a decline in family interdependence, and caregiving among family members (Dupuis & Thorns, 2007; Sheng & Settles, 2006). Care for parents has become a stressful experience for children, and for the elderly, the family is no longer a safe place and reliable source of support (He & Ye, 2014). Furthermore, rapid modernization has consistently increased negative attitudes towards the elderly, considering them economically unproductive and a threat or hindrance to development (Gorman, 2017).

Increased longevity has brought more years with poor health and disability for many elderly individuals (Hussein & Ismail, 2016), as well as the risk of spending these years alone (Nicholson, Meyer, Flatley & Holman, 2013), thus, the need for formal care involvement has arisen, consisting of care provided by professionals for a fee, and informal care provided by children or other relatives of the elderly without payment (Sundström, Malmberg & Johansson, 2006; Bianchi, 2011). Consequently, the number of elderly individuals living near the home of the elderly has increased (Kemper & Murtaugh, 1991).

The definition of the home of the elderly and the care it provides vary between different countries (Sanford et al., 2015). In the choice of the home of the elderly, not only economic factors and geographic position should be considered, but special attention should be paid to social values and norms (Lewin, 2010). This is because for the elderly, home is much more than a physical environment where tasks and functions are performed (Tanner et al., 2008), and it constitutes one of the main areas as determinants of the quality of life of the elderly according to Borglin, Edberg & Hallberg (2005). Therefore, the proper importance of the environment of the home of the elderly should be given so that it feels like home for the elderly living there, and the decision should be made while the elderly are still capable of participating in the decision-making process (Chang, 2013; Mattimore, Wegner, Desbiens, Teno, Hamel, Liu, Califf, Connors, Lynn & Oye, 2015). Mostly, even today, the elderly do not have a positive attitude towards the home of the elderly; among the main reasons for moving are more fear of becoming a burden to the family and the burden of maintaining the home, but not relocation by choice to an institution (Seddigh et al., 2020; Groger & Kinney, 2007; Pramesona & Taneapanichskul, 2018).

It is precisely the unfulfilled needs of residents for meaningful relationships that play a key role in the feeling of loneliness among the elderly living in the home of the elderly (Paque, Bastiaens, Van Bogaert & Dilles, 2018). Family members are very minimally involved in caring for their relatives or parents, leaving the responsibility for most of the tasks to the institution's staff and mainly engaging only in monitoring and assessing the quality of care provided, while their involvement is crucial for the elderly because it helps preserve the sense of identity (Davies & Nolan, 2006; Bowers, 1988). Contributing to the feeling of loneliness, which is considered the most negative feeling in the home of the elderly with a negative impact on the health and quality of life of the elderly (Paque et al., 2018). In fact, the home of the elderly itself aims to socialize for the elderly who feel lonely (Paredes, Lee, Chik, Gupta, Palmer, Palinkas, Kim, Jeste, 2020). The social support offered in the home of the elderly helps improve psychological problems (Seddigh et al., 2020) and consequently also increases the level of quality of life through social interactions (Winningham & Pike, 2007).

2.2.1. Studies on the Relationship between Living with Family or in Elderly Homes and Loneliness

Around the world, the aging population and social and economic changes are shifting the location of long-term care from home care provided by family members to care in elderly homes provided by professionals (Fan, 2007). Despite informal care always being considered more important, formal care has also gained significance in recent years (Nocon & Pearson, 2000). However, although this shift has affected almost all countries, due to cultural influences not all elderly individuals in late-stage life are experiencing this change in the same way. For example, elderly individuals living in collectivist cultures, such as Arab culture where interdependence among individuals and family ties are tighter, are finding it more challenging compared to elderly individuals living in individualistic cultures (Hussein & Ismail, 2016). This conclusion reached by Hussein & Ismail is also in line with many other studies focused on the loneliness experienced by the elderly due to the shift of long-term care to elderly homes in collectivist cultures in Malaysia (Larsson & Silverstein, 2004), Singapore (Wong & Verbrugge, 2008), Thailand (Knodel, Saengtienchal & Sittitrai, 1995), Egypt (Barakat, Elattar, Zaki, 2019), China, and India (Alavi, Sail, Idris, Samah &

Omar, 2011). In contrast to Australia, Germany, and Lebanon where elderly individuals choosing to live alone represent a considerable portion of the population (Sheng & Settles, 2006; Zebhauser, Baumert, Emeny, Ronel, Peters, & Ladwig, 2014). However, despite the fact that elderly homes offer care by professionals and aim to socialize peers with each other, studies show that elderly individuals continue to feel very lonely (Paredes, Lee, Chik, Gupta, Palmer, Palinkas, Kim & Jeste, 2020). This happens due to the interaction of various factors. For example, Kane (2001) expresses that the greatest weakness and the key factor influencing the perceived level of loneliness of the elderly is precisely focusing on the technical quality of the physical environment, leaving behind what is most important, precisely the poor quality of life. According to Schols, Crebolder, and Van Weel (2004), medical care receives the greatest attention in elderly homes, however, Fahej (2003) expresses that medical care in elderly homes does not meet the health needs of the elderly in a qualitative manner, supported by the findings in which Beyrami, Goradel, Ansarhosein and Moharrampour (2014) concluded that the overall health of elderly individuals living in the community near family members is at higher levels than that of institutionalized elderly. The perceived poor quality of life also results from the imposition of lifestyle and living conditions by others, making elderly individuals feel as if they have lost independence and autonomy (Morley & Silver, 1995). Hellström & Hallberg (2004) concluded that the quality of an individual's life in late-stage life is closely related to living with someone, whether formal or informal care is involved. This conclusion is consistent with conclusions drawn from many other studies that emphasize that life in late-stage life is associated not only with low quality of life but also with a higher level of perceived loneliness (Fukunaga, Abe, Nakagawa, Koyama, Fujise & Ikeda, 2012; Lim & Kua, 2011; Larsson & Silverstein, 2004). Whereas elderly individuals living with family members are associated with better quality of life (Shin & Sok, 2011; Sok & Yun, 2011). Unlike those in elderly homes who exhibit higher levels of perceived loneliness due to experiencing life in the homes of the elderly as abandonment by the family (Wijesiri, Maliga, Samarasinghe & Edberg, 2019) and the support offered which is at very low levels (Kotlikoff & Morris, 1990) accompanied by relationships created within the institution, which are generally superficial according to Gardiner, Laud, Heaton and Gott (2020).

Methodology

Aim of the study: to research the quality of life of the elderly in Albania depending on the place of residence where they live (either in elderly homes or in their own homes near family members), in relation to the experienced level of loneliness.

Research Question 1: How is the place of residence (elderly home or home near family members) related to the quality of life of individuals in the late third age?

Research Question 2: How is the place of residence (elderly home or home near family members) related to the perceived level of loneliness?

Hypothesis 1: The place of residence is related to the quality of life of the elderly.

Hypothesis 1.1: Living in elderly homes is negatively associated with physical health.

Hypothesis 1.2: Living in elderly homes is negatively associated with psychological health.

Hypothesis 1.3: Living in elderly homes is negatively associated with the field of social relationships.

Hypothesis 1.4: Living in elderly homes is positively associated with the environmental field.

Hypothesis 2: Quality of life is associated with loneliness.

Hypothesis 2.1: Living in homes near family members is negatively associated with the perceived level of loneliness.

Variables: independent variables: living in elderly homes and living in homes near family members, and **dependent variables:** quality of life and perceived level of loneliness.

Participants

The participants in this study were 100 Albanian elderly, 40 of whom were institutionalized, near the elderly home, and 60 other elderly were not institutionalized, living with their families. In addition to the place of residence, collected demographic data included gender, age, highest level of education, and marital status. Regarding gender, 53% were female (N=53) and 47% were male (N=47), all participants were over 65 years old. Regarding the level of education, 7% had higher education (university), 33% had secondary education (high school), and 60% had primary education. Regarding marital status, 59% were widowed, 40% were married, and 1% were divorced.

Procedure

The study was conducted in person. Initially, necessary approvals were obtained from the relevant institutions to communicate with the elderly. Then all participating elderly were informed that the entire procedure was anonymous and were given necessary instructions regarding the understanding and completion of the questionnaire, as well as necessary assistance to complete the questionnaire for the elderly who could do not, due to physical and health problems present at this age. The

selected study sampling consisted of 2 groups of elderly: those living in elderly homes and those living with their families. Also, the selection criterion was age over 65 years. This age was chosen because it is considered that loneliness increases with age (Dykstra, 2009) and the elderly are more vulnerable to feeling lonely due to the many losses that accompany this age (Ausín, Muñoz & Castellanos, 2017). Initially, a pilot questionnaire was conducted, and after the completion of the pilot testing, a meeting and face-to-face communication with the elderly were conducted to complete the questionnaires, which were completed within a timeline of 40 days.

Instruments

Instrument 1: WHOQOL-BREF - Measuring Quality of Life, developed by the World Health Organization (WHO) and published in 1995, is a shortened version of WHOQOL-100 (1999). WHOQOL-100 and WHOQOL-BREF have emerged as a result of WHO's initiative to create an instrument that encompasses all elements of quality of life, not just physical health and absence of disease. It consists of 26 questions, and for a comprehensive assessment, one item from each of the 24 aspects of WHOQOL-100 and 2 items from the General Quality of Life aspect („How would you rate your quality of life?“) and General Health („How satisfied are you with your health?“) according to Harper & PoWer (1998). The instrument is on a 5-point Likert scale, where the response scale ranges from 1) not at all, 2) a little, 3) moderately, 4) very, to 5) extremely. The total scores of the WHOQOL-BREF results are obtained by recoding some of the given answers (question $x=6$ -points of response to question x). For example, physical health is measured by 7 questions, including question 10, 15, 16, 17, 18, and the two recoded questions: question 3=6-points of response and question 4=6-points of response. Psychological health is measured by 6 questions, social relationships by 3 questions, and the environment by 8 questions. Finally, the total scores are compiled according to respective domains (physical health, psychological, social relationships, and environment), and the raw scores are converted into transformed scores according to the guidelines provided by WHO. Scores ≤ 45 are considered low quality of life, 46-65 are considered average quality of life, and >65 are considered high quality of life.

In cases where 20% of the data were missing, they were not considered. When up to two responses were missing, they were replaced by the average of other responses in the respective field, while if more than two responses were missing from a field, the result of that field should not be calculated. Subscales showed good internal consistency with $\alpha = .92$.

Instrument 2: UCLA Loneliness Scale (Version 3), developed by Daniel Russell, Letitia Peplau, and Mary Ferguson (Russell, 1996), with improvements resulting from necessary modifications over the years has turned it into a simple instrument that can be understood by individuals with different levels of education, and it has been considered a useful and appropriate tool for measuring loneliness in individuals during late adulthood (Velarde-Mayol, Fragua-Gil & García-De-Cecilia, 2016). The instrument is designed to measure subjective feelings related to loneliness and social isolation. The questions of this measuring instrument are constructed to assess the extent to which the individual feels accepted and part of society or the people around them, for example: „How often do you feel part of a group of friends?“ and „How often do you feel that your ideas and interests are not the same as those of the people around you?“. There are also some direct questions included, such as „How often do you feel lonely?“ or „How often do you feel isolated from others?“. It consists of a total of 20 questions with a 4-point Likert scale format, where the response scale includes segments from 1 (never), 2 (rarely), 3 (sometimes), and 4 (always). The total scores of the UCLA Loneliness Scale (Version 3) are obtained by positive recoding (for example, 1=4, 2=3, 3=2, 4=1) of the given responses from questions 1, 5, 6, 9, 10, 15, 16, 19, 20. Finally, all questionnaire responses are aggregated. Total scores range from 0 to 80 points. Higher scores indicate higher levels of loneliness. The most commonly used categorization is: 20–34= low loneliness scale, 35–49= moderate loneliness scale, 50–64 moderately high loneliness scale, and 65–80 high loneliness scale (Weeks & Asher, 2012).

Internal consistency of the questionnaire scales was at acceptable levels, $\alpha = .94$.

Results and Discussions

Demographic Data, Quality of Life, and Place of Residence

Table 1 (page 15-16) shows statistically significant correlations between demographic data (age, gender, education level, marital status), four domains of quality of life (physical health, psychological health, social relationships, environment), and perceived loneliness. The domain of psychological health and environment did not show statistically significant correlations with any of the aforementioned demographic data. However, statistically significant positive correlations were found between age ($r=.24$, $p<.01$) and marital status ($r=.32$, $p<.05$) with the domain of physical health. These findings are consistent with many other foreign studies that have reached the conclusion increasing age and having a partner among the elderly are associated with higher appreciation and satisfaction with health status and relationships with surrounding individuals (Hacihasanoglu, Yildirim, Karakurt, 2012; Kharicha et al., 2017) as losses in late adulthood are numerous and continuous.

Additionally, in Table 1 (page 15-15), a statistically significant positive relationship is observed between marital status and the perceived level of loneliness ($r=.39$, $p<.05$), consistent with many other studies that claimed marital status during late adulthood affects the perceived level of loneliness (Dykstra, 2009; Victor, Bowling, 2012; Victor, Scambler, Shah, Cook, Harris,

Rink, Wilde, 2002), indicating that elderly individuals who are married experience higher levels of perceived loneliness compared to those belonging to other marital statuses. In the Albanian context, this can be interpreted by the fact that often elderly individuals who have their partner present are neglected since children or other relatives justify their absence with the presence of the partner and generally provide more care for the elderly who have lost their partner.

TABLE 1. Correlations between Demographic Data with Quality of Life and Perceived Loneliness

	Age	Gender	Education Level	Marital Status
Physical Health				
Pearson r	.243*	.110	.162	.325**
Sig.	.015	.277	.107	<.001
Psychological Health				
Pearson r	.077	.005	.110	.172
Sig.	.444	.959	.277	.087
Social Relations				
Pearson r	.204*	.061	-.005	.233*
Sig.	.014	.546	.963	.020
Environment				
Pearson r	-.091	.040	-.101	-.079
Sig.	.368	.692	.315	.435
The level of loneliness				
Pearson r	.125	.049	-.011	.393*
Sig.	.214	.628	.917	<.001
N	100	100	100	100

The correlation is significant at the $p < .05$ level

The correlation is significant at the $p < .01$ level

Place of Residence and Domains of Quality of Life

Table 2 (page 17-18) shows statistically significant positive correlations between the place of residence, home, with physical health ($r = -.26, p < .01$), psychological health ($r = .35, p < .01$), and social relationships ($r = -.25, p < .05$).

Positive directions of the correlations indicate that physical health, psychological health, and social relationships of the elderly living at home are at higher levels compared to those who do not live at home. On the other hand, concerning the place of residence, the elderly home, in the same table, statistically significant correlations are observed but with negative directions, with physical health ($r = -.30, p < .01$), psychological health ($r = -.39, p < .01$), and social relationships ($r = -.28, p < .01$). These negative correlations are interpreted as lower levels of physical health, psychological health, and social relationships of the elderly living in the elderly home.

From these findings, it can be assumed that living in the elderly home leads to lower results in the domain of physical health, psychological health, and social relationships due to the importance of informal care from children to Albanian elderly under the influence of the collectivist culture in which we belong and emotional support from children and other relatives that is lacking in the elderly home as claimed by Taube, Jakobsson, Midlöv, and Kristensson (2015); Kotlikoff and Morris (1990); Abdollahi and Mohammadpour (2013). These findings are in line with many other studies conducted in this field (Jalil, Azmoon, Abdohhali, Ghomi, and Shamsizadeh, 2015; Seddigh et al., 2020).

However, on the other hand, a statistically significant positive correlation with the environment domain is observed ($r = .20, p < .05$). This positive correlation indicates that the physical environment in the elderly home are in comparison with the needs of the elderly. This positive correlation of the elderly home as a place of residence with the environment domain was expected as many researchers consider the physical environment in the elderly home, especially in private institutions, as the most positive element (Gardiner et al., 2020), compare with the home where all family members live, which focuses on meeting the needs of all family members, not just the elderly.

From this positive correlation, it can be assumed that the elderly home meets their needs related to the physical environment,

which are very important during this age due to many functional limitations in late adulthood, in line with the findings of other studies pointing that the elderly home is positively associated with the environment domain as an integral part of overall life quality (Fonad, Wahlin, Heikkila, Emami, 2006; Al-Jumaili, Doucette, 2017; Gruneir & Mor, 2008).

So, the findings in this study show a strong relationship between the place of residence and quality of life (in all its domains), supporting hypothesis number 1.

TABLE 2. Place of Residence and Quality of Life.

	Physical Health	Psychological Health	Social Relations	Environment
Living at home with family members				
Pearson r	.261**	.358**	.253*	-.181
Sig.	.009	<.001	.011	.071
Living in a nursing home				
Pearson r	-.302**	-.397**	-.287**	.204*
Sig.	.002	<.001	.004	.042
N	100	100	100	100

The correlation is significant at the $p < .05$ level

The correlation is significant at the $p < .01$ level

Residence and Perceived Loneliness

In Table 3 (page 19) of correlations, we observe that living at home with family members shows a statistically significant positive correlation with the level of loneliness ($r = .43$, $p < .01$). The positive direction indicates that among the elderly living at home, loneliness is perceived at higher levels. These results were unexpected in this study as other studies claim the opposite regarding the place of residence (elderly home), stating that the support of family members is absent and the perceived level of loneliness is higher compared to other elderly people living at home.

The opposite occurs with living in the elderly home, as statistically significant negative correlations with the level of loneliness are observed in the table ($r = -.43$, $p < .001$). The negative direction indicates that the perceived level of loneliness in the elderly home is lower.

It should be emphasized that the inclusion of only private institutions (elderly homes) in the study due to lack of permission from state institutions directly affects the aforementioned finding. On the other hand, the positive relationship between living at home and perceived loneliness in the Albanian context can be interpreted with the influence of the phenomenon of migration and emigration of young people, resulting in many elderly people living alone in this difficult phase of their lives when they need help and care more than ever. Therefore, they feel lonelier compared to the living in the elderly home, who are indeed far from their family members but ultimately are in the company of other elderly people and receive 24-hour formal care provided by trained staff, especially in private institutions.

The findings of this study support our hypothesis that the place of residence is associated with the perceived level of loneliness. Also, in this study, there were discrepancies, such as: the place of residence home showed a positive correlation with the perceived level of loneliness.

For this, we can say that further studies may examine whether these findings are related to cultural elements for Albania or to the typology of the private or state institution.

TABLE 3. Place of Residence and Perceived Loneliness

	Loneliness level
Living at home with family members	
Pearson r	.431**
Sig.	<.001
Living in a nursing home	
Pearson r	-.457**
Sig.	<.001
N	100

The correlation is significant at the $p < .05$ level

The correlation is significant at the $p < .01$ level

Conclusions and Recommendations

The above study examines the possible links between living at home with the elderly or in their home near family members with the quality of life and the level of perceived loneliness among individuals in late adulthood in the Albanian context. Additionally, the study also considered demographic variables such as age, gender, level of education, and marital status.

Regarding demographic factors, age and marital status showed statistically significant correlations with the field of physical health and the field of social relationships. Meanwhile, the other two fields, psychological health and environment, were not linked to demographic factors. Additionally, marital status showed a significant correlation with the perceived level of loneliness.

The results of this study suggested that the quality of life was linked to the place of residence in all its constituent fields. The results showed that among the elderly in the Albanian context, physical and psychological health were at lower levels among the elderly living in the elderly home compared to non-institutionalized elderly. Social relationships were at lower levels for both groups of elderly. Regarding satisfaction derived from the physical environment, the results showed the opposite; the elderly in the institution were more satisfied with the conditions of the physical environment where they lived compared to the elderly living outside the institution.

Furthermore, this study showed a relationship between the place of residence and the perceived level of loneliness. The finding of the connection of the institution's place of residence with the low level of perceived loneliness showed that appropriate conditions and policies followed in elderly homes are protective factors for the perceived level of loneliness, which directly influences the quality of life of the elderly living away from their loved ones.

The findings of this study suggest that more importance should be given to the quality of long-term care provided in elderly homes, as three out of the four fields of quality of life were at low levels. This is certainly due to the fact that generally the elderly who are in more serious condition are institutionalized, but the quality of life at very low levels in the homes of the elderly is concerning. Also, the quality in public and private institutions, especially in public ones, as their exclusion from this study due to their non-permission for unsubstantiated reasons indicates a lot.

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Albanian tourism in 2023 as reported by international media outlets

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Abstract

Albania is frequently presented unfavorably in worldwide media headlines, mostly as a sanctuary for drug-trafficking mafia gangs and as a nation with political and legal issues. It appears, however, that 2023 has been a banner year for Albania's online presence in the international media outlets as the top travel destination. Albania is consistently listed among the top picks for travelers searching for a good summertime getaway in a coastal nation, but also as a year-round destination to explore snippets of history and culture in cities from north to south. What's broken that outdated perception. Albania as a tourist destination is frequently portrayed as the "pearl of the Balkans" in web articles published by Italian and British media. However, the stories themselves undermine that impression, constantly drawing comparisons between the communist-era Albania and the modern, open-minded Albania that welcomes visitors from around the globe. Taking into account this shift in how Albania is portrayed, this paper will use discourse analysis of a number of pieces from major international online media to show how the previous, and also previously researched, image of Albania has changed. An international audience's impression of Albania is shaped in part by how the country is portrayed in foreign media, hence it is crucial to investigate this shift in perception. It also benefits the nation's economy, as visitor arrivals contribute to both service enhancement and the nation's economic expansion.

Keywords: Albania, image, international media, media outlet, tourism, travel, destination.

In international media outlets, Albania, like any other country, has had its own place to reflect the main events or dominant phenomena in the country. But, for a long time, the reflection has mostly had a negative connotation. This is because the events that have received the most attention have been (and some of them continue to be) related to phenomena such as prostitution, drug trafficking, and even the lack of political stability. However, the year 2023 has marked a record in articles dedicated to Albania against the backdrop of a country that should definitely be on the list of travel destinations.

Numerous articles of the prestigious British or Italian media have clearly described Albania as a place not to be missed, as the pearl of the Balkans, which can be visited throughout the year. The focus has been on the summer season, where the most beautiful beaches with white sand and blue sea have been identified. But there were also cities where the focus is on cultural heritage, or even the nature of the north of Albania.

What is noticeable in these writings is that, despite the highlighting of natural beauties (but also affordable and satisfactory prices for what is offered, often making a difference with neighboring Italy and Greece), the communist past is not left without mention. The period under the communist regime of Albania is mentioned within these articles leaving room for the deep contrast between that Albania closed from the outside world of those years and the present Albania welcoming tourists and with the tourism sector under development. Despite the fact that the past cannot be overlooked as it also reflects the steps forward that have been made and the drastic change from that dark period of the country, the frequent mention stands as a

parallel of the past against the present, leaving the image of Albania under the background of comparison with what was and what is.

From one daily to another, a common line of construction of the text can be observed when it comes to the presentation of Albanian tourism, taking 2023 as the reference year. This is a year in which tourism in Albania has been promoted all over the world with all the ways of communication with the audience, such as through social media in the villas, the videos from the Albanian coast have gone around the world, up to the news and various articles related to this. To return to the key point, this similar construction line of the narrative on Albanian tourism turns out to have two culminations, which in themselves constitute a contrast.

In the first, Albania is presented through the lens of the past, emphasizing the dark communist past and the closure to the outside world. Whereas, on the contrary, the second moment in the texts tells about the tourist boom and the “dream” beaches of the Albanian coast. What serves as a break to introduce us to two different times of Albania. On the other hand, they tell us about the progress that the country has made in this direction, a certain success story.

More specifically, let's examine one by one the key fragments in these journalistic texts to understand the difference that is brought to attention.

The British magazine “The Face” sums up this whole approach with a single sentence at the top of the paragraph. As he writes about the flow of tourism in the country, how it managed to become the headline of the summer of 2023, he emphasizes that it has not always been like this, looking at the dark communist period and the closure of the country to the outside world.

“It's not always been like this. For decades, Albania all-but banned, well, everyone. The most isolated country in Eastern Europe, the Balkan nation didn't open its doors until the late '80s, existing as a communist state closed-off to the rest of the world. When its Stalinist leader Enver Hoxha died in 1985, tourists started to trickle in, but it was hardly speedy boarding.” (MacNeill, 2023)

While summarizing the years when Enver Hoxha was in power keeping the country isolated from the outside world, the years after his overthrow are not left out, where even though the country opened up, it failed to break the image of a country closed to foreigners who could visit him. But after being described as the most isolated country in Eastern Europe at the time, today's Albania - a few lines down - is described as the home of modern, tourist-friendly festivals.

“For many, the main attraction is its festivals, all of which are worth raving about. Kala, a boutique festival launched in 2018 by Mainstage Festivals and set on the Albanian Riviera, has quickly won the hearts of punters and made them ache for days after, a paradise of deep house and sun-dappled beaches. Mainstage also runs ION, a seven-dayer set in the same location that mixes music and wellbeing, and there's another week-long, all-nighter further up the coast courtesy of UNUM.” (MacNeill, 2023)

The British state media “BBC”, in an article of December 2023, focusing on Kukësi as the first city nominated for the Nobel Prize, emphasizes once again the oppressive regime of Enver Hoxha and the traces of his regime, which are found today day in the city: the tunnels.

“After World War Two, people watched as ethnic Albanians in Kosovo were absorbed into the Socialist Federal Republic of Yugoslavia, while Kukës found itself on the frontier of Albanian prime minister Enver Hoxha's increasingly paranoid communist dictatorship. Hoxha ruled Albania with an iron fist, building a vast network of underground tunnels and bunkers across the nation. Yet, those below Kukës, which were started in the 1970s and extend for some 7km beneath the city, are the largest in Albania, with enough space to shelter Kukës' entire population of in the event of war.” (Collett, 2023)

In October 2023, the British newspaper “The Times” devoted an article to the capital of Albania, Tirana, noting in the introductory paragraph that it was opened to visitors only after the 90s, preceding the following sentence about the isolation during the years of communism.

“Tirana is not your average European city. For a start it's only been open to visitors since the 1990s. Before that the Albanian capital was all but cut off from the outside world, ruled over by the despotic communist dictator Enver Hoxha.” (Tyson, 2023)

After this paragraph with pessimistic notes, the text continues with an obvious contrast, continuing with the Tirana of today, which has left behind the past and which has developed at a fast pace.

“Since those dark days ended Tirana has been making up for lost time. Futuristic new skyscrapers pierce the skyline, joining minarets and rejuvenated monuments. Abandoned areas have been recast as art, shopping and nightlife districts.” (Tyson, 2023)

However, it cannot be left without mentioning that history - still a reminder of what was - is still there, it has neither disappeared nor been forgotten. But it is the people who have managed to bring the capital out of the shell where it was hidden to make it visitable by foreign tourists.

“The history is still there, told in unflinching museums and derelict bunkers, but the people are looking forward, and it's those people — the friendliest you're likely to find in any big European city — that make Tirana worth a visit. The city spent decades with no one to welcome. Now its arms are wide open.” (Tyson, 2023)

The Romanian online newspaper “Ziare.com”, compared to other articles that appear more explicitly about Albania's past, leaves the latter a little more vague, leaving room for self-understanding. On the other hand, the article goes on to describe today's Tirana, the new one, different from the previous version. This, giving way to the ranking of the advantages that the new city brings with it for visitors, especially with the cheap prices.

“Once a sad and gray city, like most of the communist cities in Eastern Europe, Tirana today is a small, but multi-colored capital, pressing on the way out of the rigid pattern of red ties, which kept the boots on the pile of the Balkan countries. The archaic air of the era that passed three decades ago still prevails, but now it has a warm, pleasant hue, marked by the kindness and enthusiasm of the people. It's a cheap city, easy to translate as a tourist, where you can eat well, at low prices, and where you can spend a weekend without fear of getting bored. If for various reasons you omitted Tirana and implicitly Albania from the list of tourist destinations, at least as city break, considering that it is not a safe destination, is a mistake”. (Anghel, 2023)

Further, the author of the article - to make his impressions about today's Tirana more concrete - lists a number of positive elements that he encountered during his visit to the city, again achieving a deep contrast with the words of departure for Tirana former.

"Tirana is very safe indeed, moreover, it is also friendly, with simple and warm people, pleased to see the tourism growth manifested in recent years, in which the government and the private environment pump good money. I did not expect it, but I even saw a few groups of Asians, Chinese, Japanese or whatever they were, around the city, I also heard German and French being spoken on the street. Plus Italian, but that's not conclusive, because every self-respecting Albanian has at least one relative in Italy, and if he doesn't, he certainly has his wife." (Anghel, 2023)

As if to add even more the dose of contrast of the same city, but of two different times, the writing continues by drawing even more the value of Tirana to visit.

"Obviously, Tirana is not London, Paris or Barcelona, not even Bucharest, but it has the charm of a Balkan town, quite neat, with many - many restaurants and terraces, a wide Moscow-style boulevard, where dozens of red flags with a black eagle are flown, a huge central square, mosques and churches, several parks and natural lakes". (Anghel, 2023)

The Italian daily "La Stampa" in an article dedicated to the new Albania - not the old one - brings back a difficult historical moment for the country, paralleling it with what is happening today, the opposite of what happened yesterday. It is about the year 1991 when the ship "Vlora" with about 20 thousand Albanians inside landed in the port of Bari, Italy, becoming one of the most iconic images of emigration between the shores of the Adriatic Sea. The newspaper brings back this moment to compare it with a completely new image now, of Italians flocking to Albania either for tourism or for business.

"Forget the boats. And erase from your memory the ship "Vlora" and its load of men and women fleeing from Albania, which was plunged into a disaster without a future. It was precisely these days, but 32 years ago: August 8, 1991. Italy then was truly the Promised Land of a people who saw everything collapsing around them. Today, if you look at Albania from Scanderbeg square, the Land of Abraham is no longer Italy. And the boats are no longer there. Actually, no, there are but they are called ferries. And they sail the sea in a reverse course of that day. Bari - Durazzo, or Vlora. And they dump the fortune seekers, the tourists, the disappointed lovers, all immediately away on the overly busy roads of this strange country that is experiencing its first golden age. And there are families who go on holiday or who come here to look for a job, to start a business, to invent a new life." (Poletto, 2023)

But "La Stampa", in the following paragraphs, suggests that this old image of Albania be removed from memory as now the opposite is happening: it is the Italian citizens who choose Albania not only as their vacation destination, but also to stay even longer and to open their own business.

"Forget, then, the Vlora and those photos of men and women also clinging to flagpoles, and then locked in a football stadium. Here Italians who don't come to enjoy the sea without completely emptying their wallets come to open businesses." (Poletto, 2023)

In another article, the British daily "Financial Times" summarizes the whole basic idea about the two times of Albania by writing that times have changed, that the country is no longer what it used to be. As of now, Albania is far from being isolated.

"There's a Himalayan wilderness on Europe's doorstep. The fierce, brooding landscapes of Albania were sealed off from the world during a 46-year communist era, when those sailing to Corfu could only gaze across at its dark shores and wonder. Times have changed". (Bell-Davies, 2023)

And suddenly, the country faces a tourist boom.

Focusing on the wild nature of Albania, while revealing another important element of tourism in the country, "Financial Times" also raises the concern of preserving this part of Albania in the face of the tourist boom.

"Albania's Adriatic coastline was a popular beach break this summer as travellers came in search of undiscovered spots and budget-friendly prices. Faced with this inevitable boom in visitors, many are wondering how to preserve the wild essence that drew people in the first place." (Bell-Davies, 2023)

Meanwhile, the article continues to highlight the big change over the years, as it talks about guesthouses, more broadly about agritourism. If before it was a whole country closed to tourists, now everywhere in Albania houses have opened their doors to welcome visitors and serve local products.

"To find it, head deep into Albania's hinterlands, where farmers-turned-guesthouse owners are practising a form of slow rural tourism that preserves Albania's agrarian traditions and soulful hospitality, similar in spirit to Italy's agriturismo farmstays." (Bell-Davies, 2023)

The British "The Guardian" has chosen to present the present and different from the past regarding Albania through a surprise effect. Through a narrative, the author conveys from the beginning the uncertainty and fear he had before leaving to travel to Albania, because in his eyes he still had the sights from Albania at that time.

"I'm Polish, and I've been travelling through the region long enough to have experienced every kind of basic material discomfort. But I'm also old enough to remember images broadcast from Albania after the fall of communism and the civil war that swept over the country in 1997. Even though much time has passed since then, I wasn't sure what I would find". (Mikanowski, 2023)

And the Albania that he found, after stepping on Albanian soil, was precisely a different Albania. Detached from the negative images of the past. While describing with figurative language the natural beauties that he saw, the author admits during the narration that everything he saw was enough to erase from his brain the fear and uncertainties that surrounded him regarding the Albania that he would find.

"My entry point was one of the most beautiful border crossings I've ever experienced, a wild stretch of shoreline along Lake Ohrid where Albania meets North Macedonia. A quick cab ride from the frontier to the nearby town of Pogradec was enough to dispel any lingering anxieties." (Mikanowski, 2023)

So, another article takes us elsewhere. The Pyramid of Tirana, being one of the most talked about investments in terms

of innovation, but also the history it carries in itself, has not been left out of the media attention even of the main Italian media. The Italian daily “Corriere della Sera”, while taking a multidimensional look at the appearance of the pyramid as an architectural object, does not overlook the fact that it is in itself an object that brings with it the memory of the dictator Enver Hoxha, describing it as one of the last parts remaining from that period of the country still.

“Like the Egyptian ones, but with less history. Like those of Mexico, but with less mystery. Like the one in the Louvre, but uglier. Seen from above, the Pyramid of Tirana has the shape of the large double-headed eagle that celebrates the Albanian flag. Seen from below, it has the shape of a small ziggurat that is lost in the center of the riverside, the Lana. Seen today, it is the cumbersome memory of a dictator and his delusions... the Pyramid is the last remaining piece of Albanian Stalinism-Maoism.” (Battistini, 2023)

After the article continues with additional historical details, how the pyramid has arrived to these days with the changes it has undergone, it is again seen similarly as the whole of Albania is seen in these foreign written media articles in which the comparison is made with the past. Even in the case of the Pyramid of Tirana, it is described as a symbol that unites two time periods in itself. It is neither detached from what it was, nor afraid of what it will be: a place that marks the globalization to come.

“... in the end it was decided to leave it where it was. And to transform, from that mausoleum of collectivization that was, into a sanctuary of globalization to come.” (Battistini, 2023)

The French daily, “Le Figaro”, in an article dedicated to the Albanian Riviera, refers to it in the title as one of the most preserved jewels of the Adriatic. A koi line, continued at the beginning of the article as the beauties of the southern beaches of the country are presented with positive notes, as among the most beautiful in the Balkan Peninsula.

“With its turquoise waters, white beaches, hilltop villages and constant sunshine, Albania’s southwest coast is home to some of the most beautiful beaches on the Balkan Peninsula.” (Petit, T, 2023)

However, this whole image is destroyed by the paragraphs that follow, which begin to tell about the time of the dictatorship. This is a break that leaves its mark on the reader despite the fact that the following sentences resume talking about the wealth of Albania.

“Let’s be honest. What do we know about Albania? Its communist dictatorship, its old Mercedes, its bunkers and perhaps the brilliant writer Ismail Kadaré, that’s about it. His Hellenic heritage? We don’t know him much. Its Ottoman past? We ignore it. Albania is just that, more than 2000 years of history, its own culture, ancient cities and varied landscapes. To the north, its mountains and deep valleys. In the center, its classified towns. To the west, its bustling capital, Tirana. To the south, its coast and its beaches, the most touristy region of the country.” (Petit, T, 2023)

The newspaper thus continues to tell about the beautiful beaches of the Albanian coast, describing them again as jewels of the Adriatic.

“Albania is one of the best kept jewels of the Adriatic. Pass Vlora and see the Ionian Sea carving the coast. Before your eyes, small bays, turquoise waters and perched villages. No, it’s not Greece but the Albanian Riviera, 100 km of coastline, hidden coves and archaeological sites. The Greeks, Romans and Byzantines were established there. Tourists now come there to swim. Guided tour.” (Petit, T, 2023)

In another article of “Le Figaro”, it seems that the same line of presenting Albania as a former communist country is followed. As an itinerary is described in the cities that are recommended to be visited by travelers and explorers, the mark that that period of history has left on the country is pointed out.

“Freed from its Stalinist straitjacket, the land of the eagles resurfaces without having lost its soul. From the ancient remains of thousand-year-old cities to preserved natural spaces, it is an ideal break for a confidential stay. Our recommendations”. (Sancllemente, 2023)

Since the article does not only promote the country’s coastal tourism, it goes on to describe the itinerary in other cities, such as Gjirokastra, to emphasize Albania’s offer in cultural and historical tourism as well. And at the same time breaking away from the parallel between present and past Albania.

“Crossing Albania from north to south promises to experience a live history lesson. Tirana, its capital, has many surprises in store. We see that Stalinism is not always as bad an architect as we believe. Skanderbeg Square, the inspiration is rather Mussolini, but the Namazgah Mosque and the nearby Clock Tower are among the Ottoman wonders inherited from the early 19th century. This 400 kilometer journey will then take travelers to Berat, “the city of a thousand windows”, listed as a UNESCO world heritage site. In the medieval fortress or at the bend of an alley, here you can immerse yourself in the golden age of the picturesque Balkans. Then comes the discovery of Gjirokastër which, despite the vicissitudes of History, has preserved its Ottoman charm almost intact. Birthplace of the writer Ismail Kadaré and Enver Hoxha, it is home to a remarkable ethnographic museum and pleasant shaded terraces. To put yourself in the shoes of a prosperous merchant, you settle down in a 17th century residence where Turkish and Albanian heritage mix. With a hydrofoil ride from Saranda, a seaside resort on the Albanian Riviera, the trip ends with your feet in the water on the most beautiful of the Ionian islands: Corfu.” (Sancllemente, 2023)

In January 2023, the British media “BBC” wrote another article focusing on the Albanian Alps, a reference to mountain tourism. But, as happened with the other articles, in the first introductory paragraphs it is known about the isolated and closed Albania of the years of communism, as it is written that the authoritarian ruler Enver Hoxha effectively closed the mountainous nation from the outside world for four decade, when one of the bans was also the travel ban.

“Long called ‘Europe’s enigma’ by book authors and travel guides, Albania is possibly the most misunderstood country in Europe. Its language is a semantic anomaly with no known relatives in the Indo-European linguistic family. After World War Two, authoritarian ruler Enver Hoxha effectively sealed the mountainous nation off from the outside world for four decades; banning

religion (and making it the world's first atheist nation); forbidding travel and leading Edi Rama, the nation's current prime minister, to say Albania was once 'the North Korea of Europe'. During the Cold War, Hoxha convinced the nation that the rest of the world wanted to overthrow their communist state, so he filled the country with up to 500,000 concrete bunkers for people to hide in case of attack." (Elia, 2023)

After the presentation of the Albania of that time, he quickly gives way to the country of the present, as he writes that in the years that followed - unlike before - Albania opened up to the world, attracting visitors from all over the world, eager to discover one of the last corners of wild and less explored of Europe.

"For decades, few travellers knew anything about Albania's golden beaches, wild mountains and Roman and Ottoman ruins. But in the years since the Balkan nation cautiously opened up to the world, it's been wooing travellers keen to discover one of Europe's last wild and least-explored corners. One of its most audacious projects in recent memory is the Peaks of the Balkans: a 192km circular hiking trail connecting Albania, Montenegro and Kosovo through a series of pathways straddling the Accursed Mountains." (Elia, 2023)

Meanwhile, after many other paragraphs that lay out everything you need to know about exploring northern Albania, the closing paragraph also reinforces the idea of how the country is presented in foreign media coverage. It says the former totalitarian state, which once tried to keep the world out, is using tourism to teach visitors how a country can change over time. This, giving again the two worlds of Albania, the totalitarian past and the touristic present, as if none of them could do without the other. This is a combination, almost inevitable in most foreign media articles where Albania and its tourism boom in these years are in the spotlight.

"It seems this former totalitarian state, which once so desperately attempted to keep the world out, is using slow travel as a way to invite people in and teach them something about how a place can heal and change." (Elia, 2023)

Method

This paper is based on international media outlets articles about touristic Albania. The time period in which these articles were published includes the entire year 2023, from January to December of this year. And the media include: "BBC", "Financial Times", "The Face", "The Times", "Ziare", "The Guardian", "La Stampa", "Corriere della Sera", "Le Figaro". Through the search with the keyword "Albania" on the online pages of these media, the news that includes Albania with a focus on tourism have been found - avoiding and disqualifying other news that report events that are not related to the topic. A total of 11 articles from these international media, all published during the year 2023, with a focus on Albanian tourism, were taken into textual analysis.

Conclusions

In general, the touristic Albania reported by the international media outlets - with newspapers ranging from British to Italian or French - is Albania between the dark past and no perspective under the communist regime of the dictator Enver Hodha and that New Albania with all the necessary potential and proper development to be in the attention and selection of tourists to visit.

As for the past, it appears repeatedly in the paragraphs of international newspaper articles as if it were inevitable. It seems that everything is related to the past, since most articles fail to present Albania for the country it is now without the retrospective of the country it was, especially in the communist period.

This is because, referring to the writings, this period that has left the country isolated from the outside world, has left its own traces and signs even in the current Albania. Something like this, which affects the image that consequently portrays the audience and potential future visitors of Albania. In relation to the other parallel of today's Albania, that welcoming and open to foreign visitors, another image of Albania stands out, diametrically opposed to the first one. Besides the positive effect of presenting the country as a potential place to add to the travel lists of potential tourists, it also shows the progress made from the past and the development in the tourism field. Regarding the latter, touristic Albania is presented as a whole, not only as a coastal country with beautiful beaches and fun activities that accompany the hot summer months, but also as a country where mountain tourism, historical and cultural.

Apart from the description of the blue water of the seas and the white sand, Albania appears as a welcoming country, but also one that offers a lot to foreign tourists from the north to the south. Tourism in the country is described as multidimensional, from hiking in the mountains to cities to marvel at.

However, the commonality of all the reflections is the interweaving of Albania's past and present, not neglecting the communist period and on the other hand echoing the progress, development and change that the country has undergone in the years after that dark period of history.

Discussion

The reflection of Albania in the foreign media outlets has for a relatively long time been stuck by negative aspects, which have also come as a result of the events and events of the time when those articles were written. But, despite the steps forward, media coverage focusing on immigration, drug trafficking or other economic and social problems that plague the country, has continued, almost completely overshadowing the positive aspects and the changes made over the years. Only in recent years, especially in 2023 - when the real tourism boom in Albania also happened - media coverage by foreign media revealed another approach to Albania, highlighting the 'hidden pearl of the Balkans', something that can be assumed to have influenced the creation of a new image for touristic Albania, fundamentally different from the previous image formed by the same media. Therefore, their study is important as they have the power to build and also tear down the image of a country by directly influencing the perceptions of the audience and therefore the potential visitors of that country.

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The use of MOOCs in University Teaching and Learning

Case study: Constructing a MOOC course for teaching physics in higher education

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Abstract

In the sector of higher education, it is assumed that lecturers have teaching abilities due to their high academic qualifications (Kersten, 2018). But the massification of higher education, one of the most challenges of modern higher education - particularly evident in the Albanian University Landscape - is often coupled with a shortage of well-trained academic staff and the reliance on inexperienced lecturers, especially in terms of didactic competencies, and also with a greater number of students, with personal lower expectations. Living in a technological era, open online platforms can serve as a valuable tool to bridge knowledge gaps. This paper examines the use of Massive Open Online Courses (MOOC) in university teaching and learning. The primary objective is to identify the patterns of MOOC development in both Italy and Albania, utilizing data gathered from official institutional websites. This process, guided by key concepts, serves as the foundation for creating a theoretical sample about MOOCs. The secondary aim is to present a curricular module at level 1, design for qualification of university teaching staff in basic course of Physics. This module is structured around two axes: theoretical material from the field of pedagogy and how this pedagogy can be applied in physics teaching and learning. It is tailored for those teaching physics courses in universities specializing in natural sciences and engineering. Some key conclusions drawn from the study include the need for Albanian universities to embrace new platforms and offer technology-based courses. In Italy, three platforms provide MOOCs, with one being a project of the Ministry of Education, University, and Research. However, the Ministry of Education and Sports in Albania currently lacks a strategy regarding MOOCs. The spectrum of MOOCs varies in terms of level, subject coverage, duration, targeted learning community, and teaching language, emphasizing that these courses are products of collaborative and interdisciplinary partnerships.

Key-words: *Technology, MOOC, higher education, university pedagogy, physics.*

Introduction

Historically, the Albanian model of higher education system has worked based on the Humboldtian model: research and teaching are included within the professor role and are integrated at the organisational level, the same model that Götze and Schneijderberg (2022) use when define the German Model of Higher Education Institutions.

Today, massification is one of the main characteristics of higher education. The massification of higher education, together with the increasing internationalisation led to the need to ensure quality of higher education in the changing environment in internationally acceptable and trustworthy ways. (Wächter *et al*, 2015). In this perspective, the discourse – defined as use of language for a certain social practice - must be understood to be constituted by, and constitutive of, social reality (Nokkala, 2016). This new social practice appeals for a new discourse regarding Albanian Higher Education Institutions landscape. The starting point is critical inquiry, the term used to describe a process for the systematic evaluation of process, based on empirical data and is a combination of deliberation and action (Karlik, 2010).

Albania is home to 42 higher education institutions, comprising 15 public institutions and 27 private ones, with some operating for profit and others not (ASCAL, 2024). Empirical data highlights that this substantial number of higher education institutions in the country is associated with an increasing student enrolment, typically restricted for most study programs only by an upper secondary school average grade of 6.5. Moreover, there is a notable rise in the numbers of non-traditional learners, a trend that is underscored, according to Irvine *et al*. (2017). This trend supports the consideration for introducing competency-based education in university settings.

Topics that needs to address are many: The massification of higher education is accompanied mostly with a shortage of well-trained academic staff and - often - with the employment of inexperienced lecturers, especially regarding didactic competencies. The usual educational biographies of university teachers, especially in the technical and natural sciences universities, do not include educational or didactic studies. In the sector of higher education, the traditional discourse assumed that “lecturers have teaching abilities due to their high academic qualifications, but the evaluation results of the teaching quality in higher education significantly show that this assumption is only partially correct” (Kersten, 2018).

But the challenge quality vs quantity is outdated. The fact is that we can't undo the massification of universities. What we can and shall do is to be prepare for this new dimension of higher education: massification. We are part of a knowledge society, a concept that stands in relation to the management and creation of knowledge in companies and organisation, a more academic term, as a more integral alternative to the concept of the information society (Galán *et al.*, 2019). Information is overloaded and labour markets are in continually change. Organisations are transformed in the intelligent ones, characterised by an increased organised knowledge, in the form of digitalised expertize, expert systems, organisational plans and other media (Evers, 2010). However much welcomed this dynamism may be, it does force universities to reassert their normative control over knowledge production: the university are increasingly compelled to exert governance over the market (Fuller, 2018). The new challenge for universities is to keep this authority without enjoying the backup of the state. In most of the countries, including Albania, universities are not the only knowledge agents of the state. Part of this challenge is the requirement to gear university education to the dynamic demands of the economy and technology plays a key role (Kersten, 2018).

Knowledge transfer is a one-way process between universities and external agents and organisations. This concept is used to describe a situation where knowledge is generated, applied or made useful by boundary crossing exercises between non-university settings and universities (Little *et al.*, 2016). Living in the era of Information and Communication Technologies, the dissemination of information and the transmission of knowledge through education and training can happen and be found on untraditional different environment. Open online platforms are one of them and serve as a tool to bridge knowledge gaps and improve didactic barriers. ***In the burst of hi-tech bubbles after 2000, we need to adopt a more sombre tone, emphasising challenges and urgency of change, rather than opportunities of change (Nokkala, 2016).*** Embracing new pedagogical approaches is becoming an emergency.

MOOCs in Higher Education Institutions as a pedagogical approach

MOOC stands for Massive Open Online Courses and represents a new opportunity for digital learning. MOOCs are a good tool to support learning combining the academic tradition and innovation of digital technology (OECD, European Union, 2019). MOOCs are seen as a new pedagogical approach in this new era.

Using MOOCs in higher education must see in terms of options for access in training and education programs, as intellectual and moral education initiatives to insure continuity and sustainability (Galán *et al.*, 2019). MOOCs extend the environment in which the education takes place and thus foster lifelong learning, and are also an opportunity for firms who want to invest in human resources development and training, with a lower cost and more flexibility (OECD, European Union, 2019).

Usually the access is free and students can pay if they want the certificates recognising their enrolment and acquisition of knowledge related to the courses.

Some of the characteristics of a MOOC, based on the work of Galán *et al.* (2019) are:

- Openness and accessibility: information location is located on line, often in distance of learning communities; accessible to anyone, regardless country of origin, previous training
- Size of the educational community: no limits of the number of participants (easily exceed to thousands)
- Learning process is shared: there is not hierarchical relationship between teacher-students; new materials and learning strategies; minimal intervention of teaching staff; students can become generator of the content.

The culture of the institution plays a key role in those collaborative and interdisciplinary partnerships in developing MOOCs. This collaborative processes stimulate new conversations around our own understanding of scholarships and pedagogy, serve to raise new questions, to challenge our beliefs and assumptions and to open channels of communication that explore new alternative best practices (Deven *et al.*, 2010).

The discussion on this untraditional courses, provided on this new era, continues with the used pedagogical strategies, and the motivation and involvement of students. The common questions are those raised by Matthews (2012): What is taught? How it is taught? What is learned? How it is best learned?

Some questions around participation are pointed out by Bayne and Ross (2015): MOOC, which relied on network, needs to produces content, not just to consume; level of discussion and motivation is low.

Time preparation for a MOOC is also a factor to be taken in consideration, together with costs (including video production and copyright clearance) and coordination time. In the first wave of MOOC, University of Edinburgh report that this time was around 30 days of academic (faculty) time for a 5-6 weeks MOOC (Bayne and Ross, 2015).

Methodology

Research planning in this paper is based on qualitative methods. The first part of design was to identify the patterns of MOOCs developing in Italy, our neighbour, and in Albania, from macro level perspectives. The main sources to collect data were those found in the internet, on the official websites of Ministries of Educations and higher education institutions for both countries, using Google as a search engine. This investigation, driven by 4 key concepts, was evaluated as a base to create a theoretical sample about the MOOCs. Key concepts employed were: 1. MOOC levels, subject covering, targeted learning community 2. the lengths and the prerequisites (skills level), 3. the teaching language (native or/and foreign language) 4. if are provided in any partnerships. Strategy of seeking, based on key concepts, involved the combination of them, too. At micro level, the aim was to identify the main elements of a MOOC in order to have a comparison reference frame in densifying characteristics of a MOOC in teaching physics.

In the second part, the theories, paradigms, perspectives, concepts on MOOCs, together with the specific elements of a MOOC were used as an orientated approach to construct a MOOC Module in teaching physics, a process that is known by the term of case-to-case transfer.

In this paper, MOOC developing is analysed based on the academic efforts, not the on technical aspect of the preparation, like the process of video preparation, characteristics of the platform or other technical issues.

Research questions

1. Macro level: What are some of the characteristics of MOOCs provided in Italy? Does Albanian Higher Education Institutions provide MOOCs? Does Ministry of Education and Sports of Albania have any strategy regarding the MOOCs?
2. Micro level: What are the main elements of a MOOC? How can be structured a MOOC module in physics?

Data collection

For the first buckle of research questions, the aim was to identify the institutions that provide MOOCs in both countries, and to explore also around four key concepts.

In Italy, based on the report of the OECD (European Union, 2019) and data collected on the internet, MOOCs are offering by those universities:

University of *Naples Federico II*. The platform for this courses, “*Federica Web Learning*” (<https://www.federica.eu/en/all-moocs/>) is of the University Centre for Innovation, Experimentation and Diffusion of Multimedia Learning at the University of *Naples Federico II*. In this website, are over 500 freely available online courses. “Complete a course and gain a certificate of completion” – is written in the website.

MOOCs are providing in partnership with other education institutions and different agencies, state and private both, like “Consorzio Interuniversitario Sistemi Integrati per l’Accesso”, “Università Degli Studi Di Milano – Bicocca”, “Università Degli Studi Di Padova”, “Università Degli Studi Di Firenze”, “Università Di Milano”, “Università Di Pavia”, “L’orientale - Università Degli Studi Di Napoli”, “Università Di Napoli Parthenope”, “Università Del Salento”, “Università Della Calabria”, “Università Di Catania”, “Università Del Molise”, “Wellesley College”, “Agenzia Per La Coesione Territoriale”, “Scuola Nazionale Dell’Amministrazione”, “Ferrovie Dello Stato”, “Istituto Nazionale di Statistica”, “Telecom Italia”, “Il Mulino editore”, “Confcooperative Cultura, Turismo, Sport”, “Springer”, “Coursera” etc. The length of the courses varied from 2-3 weeks up to 3-years, Bachelor and Master level; the lessons are provided in Italian, but you can find courses provided in English too; the short courses usually are designed for beginners; subjects involve 9 disciplines, from environment, engineering, art, architecture up to chemistry and biology; Federica’s degrees in MOOC format are open access and free even for those not enrolled at the University of Naples Federico II.

Politecnico di Milano. The platform for this courses, MOOCs to bridge the gaps ... “Polimi Open Knowledge” is the MOOC programme of Politecnico di Milano (<https://www.pok.polimi.it/>). This programme offers MOOCs for Bachelor of science, for Professionals, for Master of science, for Teachers, for Researchers, and for citizens. Two course examples are selected from the website, based on the interest of this paper: “Women in Technology” is a 4 weeks MOOC, provided by Politecnico di Milano, IPAG Business School, Lappeenranta University of Technology, PoliHub, The Digital Hub in collaboration with Technological University Dublin, The Shortcut; “Spaces and technologies for smart learning” is again a 4 weeks MOOC, on the role of spaces in teaching, as a key element for educational planning in the classroom and online, provided by the Polytechnic of Milan

Ministry of Education, University and Research of Italy. The platform for this courses, EduOpen. “Free [The] Knowledge for All”. <https://learn.eduopen.org/>, is a project financed by the Ministry of Education, University and Research of Italy, aimed at the creation of a platform for the provision of courses defined as MOOCs by a network of Italian universities and a set of selected partners. The purpose and philosophy of the project is part of the Open and Digital Education movement. From the course catalogue, courses are from 2 hours’ length up to 40 hours and provided by Italian universities. This project is in partnership with Learning Management Systems (LMS) of India, CINECA (a non-profit inter-university consortium), GARR (La Rete Italiana Dell’istruzione e Della Ricerca), Blackboard and Paperlit (Content Distribution & Content Monetization).

A pattern of MOOCs, on a macro level perspective, based on 4 key concepts, is summarised in Table 1.

TABLE 1: Pattern of MOOCs providing in Italy

Institutions	MOOC levels (L), topics covering (T), targeted learning community (TLC)			Lengths & the prerequisites (skills level)	Teaching language	Partnerships
	(L)	(T)	(TLC)			
University of Naples Federico II	University level: Bachelor, Master and orientation / based on the market and construction of new skills	+ 500	Wide	4 weeks up to 3-years, skills levels depend by the length and MOOC level.	Italian and Italian or English	Yes / 9 partners
Politecnico di Milano	Bachelor & Master of Science / Researchers/ Professionals / Teachers / Citizens / Design Test	114				Yes
Ministry of Education, University and Research of Italy	Orientation / for teachers / master's degree/ continues training	Impossible to identify a fixed number, but the impression was that this number was very large			English, François, German, multilingual, Italian, Portuguese.	Yes /23 (mostly, Italian HEIs from all over the country)

In Albania, the official website of Ministry of Education and Sports (MoES) of Albania has not any strategy, document, project or initiative regarding the MOOC. Using the word key “MOOC” as search tool in the official website of MoES (<https://arsimi.gov.al/>) the result was zero for this topic. The same strategy was used to identify if there is any MOOC course provided by Albanian Higher Education but the result was the same: “Sorry, but nothing matched your search terms. Please try again with some different keywords.”

However, in the case of Albanian HEIs, it is the need for a parenthesis. Most of the Albanian HEIs are involved in different projects, supported by European Commission. The hypothesis is that some of them, part of one project or another, maybe are provided MOOCs, but the content should be in the project website, often not accessible through official websites of the institution. This hypothesis is based on a case study. LOGOS University College and University “Aleksandër Moisiu” of Durrës are part of MAGNET project, “Managerial and Governance Enhancement through Teaching”, co-funded by the European Union, in the framework of Erasmus+Programme (ERASMUS-EDU-2022-CBHE-STRAND-1, project number 101083006; three-year project), a consortium of 12 HEIs from Western Balkan. Project leader of this project is Dimokritio Panepistimio Thrakis. One of the deliverables of the project is preparation of at least two MOOCs by each partners, due to date June 2024. Both Albanian HEIs are working on this task. The project platform (<https://magnet-moocs.mbg.duth.gr>) requires individual subscription, and cannot found neither to LOGOS University College, nor to University “Aleksandër Moisiu” of Durrës official websites. For this case, the justification is because all MOOC are in the process of developing. So, it is difficult to state that none of the Albanian HEIs are not coping with this challenge.

All MOOCs provided by both Albanian HEIs can be categorised as xMOOC, based on the definition of Bayne and Ross (2015): xMOOCs¹ are characterised by a pedagogy short on social contact and reliant on video-lecturer and automated assessment, though based on the same authors the efforts are to make a new categorisation of MOOCs. The pedagogy of those MOOCs is based on behaviourist approach, or said differently learning through repetition and testing.

University “Aleksandër Moisiu” of Durrës is preparing two MOOC courses. Those MOOCs are summarised in Table 2, but are in process of developing (Table 2).

TABLE 2: MOOCs provided by University “Aleksandër Moisiu” of Durrës (both in process, representing here in a short variant)

Coordinator and teacher	Course title	Field / Humanities	Target learning community	Estimated Effort
Dr. Ornedi Gega	Teaching Strategies for Students with Special Needs	Topics: Autism /Autism Science / Children with Attention Deficit /Hyperactivity Disorder (ADHD) / Children with intellectual disabilities/ Children with trisomy 21 (Dawn Syndrome)	Graduates at the Faculty of Education, assistant teachers and specialist teachers in pre-university education, teachers of day-care centers and kindergartens, parents who have children with special needs.	2 hours / week
PhD Olta Qejvani	Europeanization of Albanian universities: from EU legislation to innovative integration	Topics: I. EU legislation and policy for higher education institutions ‘Europeanization’. II. Albanian recent developments upon EU law. III. New alternatives from EU practice that urge for implementation for HEI-s in Albania.	This course is appropriate for any student interested in EU affairs, EU integration, but not limited to. The course offers specific knowledge and research for the students interested and focused in EU law, EU integration, international law etc.	2 hours / week

Credits: Dr. Ornedi Gega and PhD Olta Qejvani, University “Aleksandër Moisiu” of Durrës, Albania.

¹ Note: Based on the same authors (Ibid), the other MOOCs are categorized as cMOOCs: designed to foster processes of ‘aggregation, relation, creation and sharing’ among distributed groups communicating and collaborating online.

Constructing a MOOC. Case study: Constructing a course module in teaching physics in university

For this part of the study, the specific elements of a MOOC found on those provided in Italy, are the same with the MOOC template developed by Democritus University of Thrace (DUTH), Greece, in a framework of an Erasmus+ project, “Managerial and Governance Enhancement through Teaching” (MAGNET), supported by European Commission. The template maximizes and highlights findings.

The design of this MOOC is in process and will be provided by LOGOS University College. The first question that had the need for an answer was: Why in physics?

Recently, Albania has experiences some educational reforms in pre-university level. One of them is curricular reform, with an extremely new conception of number of lessons and content base regarding sciences in general and physics specifically. So, physic subject in upper high school is developed with two cycles: the first one has a two year long timeline, from 10-11 grade, where physics is taught as an obligatory subject, with a content base on descriptive nature and reduction in lessons until 2 hours/week; the second one has a one year long timeline, that starts and ends in the period of an academic year, physics is taught as facultative subject, until 4 hours/week, and is chosen only by those that intend to apply in a program study in higher education with scientific focus, such as natural sciences, engineering, medical etc. This fact has a negative impact on the knowledge level of students starting their studies at universities with natural and scientific or technical focus, a fact that is known in Slovakia, too, (Krišťák *et al.*, 2014), though only for the very first reason – reduction in number of lesson taught.

Another justification is the poor academic performance of Albanian pupils in PISA, continually in decline, especially in science and the lack of strategy by the educational authorities to bridge this gap in the next level of pre-university education level, that is means in upper high school. Further, the massification of higher education, which bring at the gate of the HEIs students with a wide diversity in average grade from upper high school. Universities with natural and scientific or technical focus accept candidates based only of the results of upper high school, and there is not the conception of admission competition.

Description of the course (Table 3) is organised based on the template preparing by Democritus University of Thrace (DUTH), Greece. The core concept behind the MAGNET Project is how to enhance pedagogy in higher education, potentially for every subject taught at the university level. It is founded on the “European Strategy for Universities” initiative, which states, “To achieve excellent and relevant higher education, support is also needed to stimulate pedagogical innovation, centered on the learners, with a variety of learning environments and flexible, interdisciplinary pathways” (European Commission, 2022).

TABLE 3: Description of the course (in process of designing and developing)

Asset*	Description
Course Title	Using models in teaching physics in higher education
Course Banner Image	Insert an image
Short Description	The MOOC will provide the methodology of the model and how it can be used in constructing knowledge in physics.
Course Overview	<p>The course aims to inspire academic staff to embrace pedagogy in higher education, recognizing it as essential for creating inclusive learning environments and fostering the development of knowledge. To achieve this, we will delve into the utilization of models in teaching and learning physics, approaching it from a two-ways perspective. Initially, a discussion on the methodology of a model is provided, remarking the fourth dimensions of constructing it. The fifth dimension is to analyse how this model fit with empirical data, and also its validation and/or limitations. In the first part, we will explore three well-known models, Bohr’s atomic, Ideal gas and Photonic gas, illustrating how we can present them within the framework of our theoretical model. The idea behind this lesson is that usually teacher teach a theoretical model not as a model per se, but as a sum of different concepts, qualities, behaviours and principles, all under a name. Furthermore, the efforts will be focusing on applying this model in common problems from physics, selected from the mechanics. As part of the methodology surrounding models, another topic will be covered: mapping and concept maps, which aligns with current trends in developing competency-based curricula in higher education.</p> <p>Through this MOOC, you will:</p> <ul style="list-style-type: none"> • gain familiarity with key ideas of a model in physics, including the manipulation of some known models • develop and practice model method with practical examples • develop and practice methods of mappings and concept map. <p>This MOOC consists of a single module, and the course is designed to be self-paced, allowing participants the flexibility to engage with the content at their own convenience.</p>
Course ID	UP102_Science
Class Start & End Dates	May, 2024 – July, 2024
Estimated Effort	1-3 hours a week
Prerequisites	Recommended experience! Learning community: lecturers of sciences of different years of experiences in higher education; graduate teachers; students of study program in teaching physics, chemistry, mathematics and biology.
Course Staff Picture	Insert a photo

Course Staff Bio	Valbona Nathanaili is a lecturer at the department of pedagogy-psychology at LOGOS University College, Tirana, Albania. She is a Bachelor in physics and a doctoral degree holders in the science of pedagogy, both from University of Tirana. At the undergraduate level, at LOGOS, she teaches the methodology of teaching science and natural sciences.
Course language	This module will be conducted in Albanian languages, with subtitles in English.
Methodology used	Methodology used is lecture based.
Other characteristics	Without credits, without certificates, free participatory

Credits: * Assets are based on the template developed by Democritus University of Thrace (DUTH), Greece.

Curricular structure of this MOOC is of level I, “Fundamentals of design of teaching and learning processes”, a classification based on the work of (Hake, 1998), who define three levels:

1. Modul level I Fundamentals of design of teaching and learning processes
2. Modul level II Arrangements of academic teaching and learning
3. Modul level III Structuring of study programs

The curricula of this MOOC course is based mostly on the program of Basic Course of Physics in the first year of bachelor level (University of Vlora, 2024).

Course content

Week 0: Introduction video

Short description: About the initiative; about the project; why this course; hard time for higher education/ importance of pedagogy in higher education; massification of universities and the importance of effective teaching; about the instructor – who I am and what I teach; who can attend.

Source:

Kersten, S. (2018). Approaches of Engineering Pedagogy to Improve the Quality of Teaching in Engineering Education. In: Drummer, J., Hakimov, G., Joldoshev, M., Köhler, T., Udartseva, S. (eds) *Vocational Teacher Education in Central Asia. Technical and Vocational Education and Training: Issues, Concerns and Prospects*, vol 28. Springer, Cham. https://doi.org/10.1007/978-3-319-73093-6_14

Week 1: Methodology of a model in physics

Short description: The first part of this lesson explain the theoretical definition of a model in physics. Models in physics represent the structure of a physical system and/or its properties. Unlike the theory, the model refers to an individual system, which represents the whole class of similar objects. For this, we rely on the fact that the physical properties of the objects are defined. Physics is taught by studying these properties under certain conditions. The conclusions we draw are within these models and theories. The dimensions of a model are designed based on the work of Dayal, & Ray (2008): 1. Systemic structure specifies (composition: internal parts of the system; environment: external agents linked to the system; connections: external and internal causal links); 2. Geometric structure specifies (position: with the respect to reference frame; configuration: geometric relations among the parts); 3. Temporal structure specifies (descriptive models: represent change by explicit functions of time; causal models: specify change by differential equations with interaction laws); 4. Interaction structure specifies (interaction laws, expressing interactions among casual links, usually as functions of state variables); 5. Limitations/ Conclusions / Validation of the model: does the prediction of the model fit with empirical data?

In the second part of the lesson, the aim is structuring three models, Bohr’s atomic model, Ideal gas model and Photonic gas model based on the dimensions of theoretical model in physics (Table 4). It is very important to note, that in this paper presentation, laws, diagrams and formulas are excluded.

TABLE 4. Working with models to construct knowledge: A descriptive approach of Bohr Atom, ideal gas and photonic gas (Note: laws, diagrams and formulas are excluded)

Examples	Systemic structure*	Geometric structure*	Temporal structure*	Interaction structure*	Limitations/ / Validation
Bohr’s atomic model	electrons and nucleus // external agents: energy from outside	Planetary model of atom; electrons travel in specific orbits, with a fixed radius, around the nucleus	Equilibrium state/ exciting state	How electron behave when atom is at exciting state / quantization of atomic emission spectra	Based on Rutherford’s atomic model. Perfect for Hydrogen Atom and other single electron systems such as He ⁺ ; Validation: introduction of energetic level / electrons can be thought of as behaving like waves and behaving as particles.

Ideal gas	Particle Number (N) is specified and fixed; gas is homogenous, monoatomic; collisions are elastic;	chaotic movement; Reference frame: container	during collisions particles exchange energy and change the direction of movement; Independent State variables: N, T, V	Classical mechanics. Newton's law are applicable.	Experiments show that all gases behave essentially in the same way, if their densities are not too high, the temperatures are not too low and the pressures are not too high. This suggests the concept of an ideal gas, one that will have this simple behaviour under all conditions. (Resnick et al, 1961). The ideal gas gives no indication of the condensation phenomenon that a real gas experiences at temperatures below its critical temperature. For gases with low density, the effect of fluctuations is noticeable. For 2- and 3-atomic molecules the model needs to be modified
Photonic gas	Photon gas is built from energy stored in the container walls; photons possess both wave nature and particle nature; number of the photons is variable; the external agent: the wall of the blackbody; photons move with the speed of light; the rest mass of photon in free space is zero; space is emptied from the gases.	Reference frame: blackbody, which can be compared with a container.	Independent State variables: T and V. Internal energy function is volume dependent.	Photons are absorbed and emitted continually;	Can be adapt as supplement to the ideal gas (Leff, 2002);

Credits: * Based on definitions of Dayal and Ray (2008)

Sources:

Resnick, R. & Halliday, D. (1961). *Physics. For Students of Science and Engineering. Part I.* John Wiley & Sons, Inc.
 Dayal, D., Bhatt, R. & Ray, B. (2008). *Modern Methods of Teaching Physics.* New Delhi: S.B. Nangia, APH Publishing Corporation.

Week 2 & 3 Working with models to construct knowledge: How to apply the model in practical problems examples from mechanics.

Short description: Mechanics is the oldest branch of physics. We generalize its concepts and methods and use them in other branches of physics. Understanding the principles of mechanics helps us lay the foundations for understanding all of physics. In this lesson, the aim is how we can solve different problems, based on a model. For this, are selected 4 practical problems from classical mechanics, and different steps that we can undertake based on the model. Table 5 shows a general view of the work preparation.

TABLE 5. Working with models to construct knowledge: practical problems examples from mechanics (Note: laws, diagrams and formulas are excluded)

Examples	Systemic structure*	Geometric structure*	Temporal structure*	Interaction structure*	Limitations/ Validation
A ball is thrown vertically upward from the ground with a speed of 24.5 m/s. a. How long does it take to reach its highest point? b. How high does the ball rise? c. At what times will the ball be 29 m above the ground.	System schema: free-body & force diagrams; external agent: earth; don't take in consideration air resistance. Ball is considered as a particle;	choose reference frame based on a coordinate system; use symbols; employ vectors; visualize the structure as a whole;	State variables – time and high; provide comparison of states at different times; write down the equation/s of state.	Interaction map: apply the laws of free motion, first as vector equation and then as numerical equation.	Mechanics/ Kinematics: Motion in free fall; t have two values for h=29 m.

Figure shows two blocks of masses (m_1 and m_2) on a smooth horizontal surface pulled by a string which is attached to a block of mass m_3 hanging over a pulley. Find the acceleration a of the system and tensions in the string.	System schema: free-body & force diagrams; situation map / external agent: earth, horizontal surface, pulley; Blocks of masses are considered as particles;	employ vectors; choose reference frame; visualize the structure as a whole;	State variables – tensions, acceleration.	Apply the second law of Newton; Are tensions equal?	Mechanics/ Dynamics. Assume: pulley has no mass and is frictionless (doesn't change the direction of tension in the string at that point). Make assumptions for $a=g$?
Consider a solid cylinder of mass M and radius R rolling down an inclined plane without slipping. Find the speed of mass when the cylinder reaches the bottom.	System schema: free-body & force diagrams; situation map/ external agent: earth; friction force is present, otherwise the cylinder will not rotate.	Choose reference frame; visualize the structure as a whole;	At the highest point, the cylinder possesses only potential energy; a part of the potential energy of the cylinder is spent as kinetic energy of rotation around the axis of rotation. State variables: energy, speed.	Interaction map: apply the law of energy conversation.	Rotational Dynamics/ In the cases when cylinder, takes part in translational and rotational motion, both, the speed at the end of the inclined plane is smaller and the time of arrival at the end is greater, compared with cases that is involved only in translational motion.
Atwood's Machine consists of a smooth pulley with 2 masses suspended from a light string at each end – see the figure. Find the acceleration of the masses and the tension of the ring when: 1. the pulley center is at rest; 2. the pulley is in an elevator, descending with a constant acceleration a .	System schema: diagrammatic representation/ situation map/ neglect the mass of the string/ pulley is smooth. external agent: a. earth / b. earth and elevator	Blocks of masses are considered as particles; choose reference frame: case 2, when pulley is in elevator, you need to find a new inertial system.	State variables Tension is the same throughout the string.	Interaction map: find the forces that are applying on each masses; write down laws, first as vector equation and then as numerical equation.	Mechanics/ try when elevator is ascending.

Credits: * Based on definitions of Dayal and Ray (2008)

Sources:

Resnick, R. & Halliday, D. (1961). *Physics. For Students of Science and Engineering. Part I.* John Wiley & Sons, Inc.

Dayal, D., Bhatt, R. & Ray, B. (2008). *Modern Methods of Teaching Physics.* New Delhi: S.B. Nangia, APH Publishing Corporation.

Thornton, S.T & Marion, J.B. (2004). *Classical Dynamics of particles system.* Fifth Edition. Thomson.

Week 4. Mapping and concepts map in physics

Short description: Mapping and concepts map are useful tools in physics. In this lesson, the concept of map is used on three dimension: mapping, according to Thornton and Marion (2004); concepts map as a form of representation of someone's knowledge about some topic; and situation and interaction map, based on Dayal and Ray (2008). The key word that connect all three concepts is “map”, though each of them represent different perspective of approaching knowledge. Table 6 gives a summary of the definitions for each of the terms used.

TABLE 6. Working with the concepts of maps in physics (work in progress)

Mapping	Concepts map	Situation and interaction maps
Mapping as a tool to describe the progression of a system. If we use n to denote the time sequence of a system and x to denote a physical observable of the system, we can describe the progression of a non-linear system at a particular moment by investigating how the $(n+1)$ -th state depends on the n -th state. This relationship $x_{(n+1)}=f(x_n)$ is called mapping (Thornton, S.T & Marion, 2004)	Concept Map as a useful tool for evaluating the instructional sequence or conceptual construction of textbooks for the basic cycle of the course of Physics and Engineering as for high school (Mello, 2017).	Diagrammatic representation (see Table 3, systemic structure and temporal structure)
	Based on a concept. Case study: Law of conservation.	

Sources:

Anohina-Naumeca, A. (2019). *Concept Map-Based Formative Assessment of Students' Structural Knowledge*. Theory and practice. Cambridge Scholars Publishing.

Dayal, D., Bhatt, R. & Ray, B. (2008). *Modern Methods of Teaching Physics*. New Delhi: S.B. Nangia, APH Publishing Corporation.

Thornton, S.T & Marion, J.B. (2004). *Classical Dynamics of particles system*. Fifth Edition. Thomson.

Mello, L.A. (2017). Concept maps as a tool for evaluation of modern physics contents in textbooks. DOI: 10.31219/osf.io/c376x

Discussions and conclusions

Living in the technological era should not be viewed merely as a redefinition of our experience of time, nor as an opportunity for increased technological advancements. It certainly should not be observed passively. The challenge of actively participating in this era involves embracing every opportunity it presents. Albanian Higher Education Institutions find themselves at a crucial juncture. A growing number of Albanian youth are opting to pursue studies abroad, particularly those with exceptional abilities. It appears that the competition has elevated to a new level: we must not only compete among ourselves but also with our neighbours. The question arises: Are Albanian Higher Education Institutions adequately prepared for these new challenges?

In Albania, concerning MOOCs, online data indicate that only two Albanian Educational Higher Institutions are currently in the process of developing such courses, but as part of individual strategies and efforts, based only on institutional human resources. From the other side, Ministry of Education and Sports currently lacks a strategy regarding MOOCs and no document in its official website indicate for such an initiative, even at least at the level of discourse. The MOOC gap is becoming another concerning issue in Albanian University Landscape, potentially leading to missed opportunities for educational advancement. Again!

In Italy, three platforms provide MOOCs, with one being a project of the Ministry of Education, University, and Research. MOOCs provided by Italian educational institutions aim to target a community, that involve not only traditional learner, such as part of an educational institution, but also untraditional learner. For the later, factors such as time and geographical location are important, but most important seems to be the challenge of fulfilment.

Essential actors in developing a syllabus for Massive Open Online Courses (MOOCs) are the Faculties of Education and Centers for Teaching and Learning. Their mission is to cultivate inclusive teaching, centered on student learning, and guided by research and practice. These play a crucial role in fostering a culture of collaboration within the institution itself, contributing to the fulfilment of their mission. Particularly in universities with a technical or natural sciences profile, these actors are almost non-existent. Additionally, there is a rare of documented collaboration between Albanian institutions.

The spectrum of MOOCs provided in Italian educational landscape varies in terms of level, topics coverage, targeted learning community, lengths, skills level and teaching language. It was not difficult to design the pattern of MOOCs provided in Italian educational landscape (Table 1), for all three platforms, but it is easy to find the perfect MOOC of your interest and educational background. Further, is very important to emphasize that in Italy, these courses are products of collaborative and interdisciplinary partnerships, from different educational institutions, state agencies, foundations and private or state companies.

In Albanian MOOCs case, in each HEIs, the start was by identifying the academic staff ready to face this challenge, but at both institutions this workload was out of the standard professional expectations – which in the case of a lecturer is four courses per year. Said this, does designing and teaching through MOOC will be considered as part of yearly workload? Of course, determining appropriate workload of a MOOC is part of internal politics of a HEI, but there is one more financial aspect that need to be taken in consideration, except others like those of technical nature.

Designing a MOOC has its challenges. It requires time and commitment. The most is the fact that MOOCs are often lecture based. Lecture-based pedagogy is the most traditional form of pedagogy, where the teacher delivers lectures on the

subject matter to the students, and students takes notes and ask questions. The instructor presents information to students in a one-way communication. This pedagogy is often used in larger classrooms, where interaction with students is limited. Number of participants, which easily for high-ranked HEIs exceed to thousands, is a challenge. Of course, technology is very advanced and the objective is that every student of a MOOC can become generator of the content, but this factor has a strong connection with the motivation. From the other side, experience and lesson learned are key factors. So, continuing with the challenges, based on our MAGNET Project, there is a list of course elements that needs to be part of the presentation of the course in the website, such as the title, a short description, course overview, number of courses offered, class start & end dates, estimated effort, prerequisites or enrolment profile, course staff bio, course language, the need of a textbook or no, etc.

But there is one more element that needs to be state from the very first, based on our project MAGNET and Albanian case: Does after successful completion of the course, the student will receive a certificate or diploma? If yes, this course should have an accreditation by the Ministry of Education and Sports, while we don't have any regulation regarding this kind of teaching and learning.

In the case of Italy, one of the platforms that provides MOOCs, "Federica Web Learning", has started as a project co-financed by the "European Union", the Italian government and the "Campania Regione", with the name "La Fabbrica Digitale", from 2014 year. A partnership of Albanian Higher Education Institutions with this platform and/or others will make those challenges easier and Albanian educational landscape more qualitative and more attractive.

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PANEL IV

**ARTIFICIAL INTELLIGENCE (AI)
AND INNOVATION**

Harnessing the Power of PyTorch: Machine Learning Algorithms for Extracting Patterns and Correlations in Complex Datasets

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Abstract

The integration of machine learning into data analysis has significantly enhanced the ability to uncover patterns and correlations within diverse and complex datasets. This study represents the initial phase of a comprehensive study project aimed implementation of deep learning techniques like classification and neural networks to identify physical and chemical compounds problems in food products like agricultural crops. With a particular emphasis on PyTorch, an open-source library developed by Facebook's AI Research lab, this research explores the utility of machine learning algorithms in handling high-dimensional data.

This study introduce a corn grading machine vision system based on RGB and grayscale images. The proposed system perform damage detection for both defected and healthy corns by histogram thresholding. The model achieved an overall accuracy of 0.9570 upon validation. The grading categories recognition models were developed based on color and texture features. A combination of color and texture features achieved the highest accuracy in all the grading categories in image features evaluation. This proposed system can be used as an inline corn sorting tool to ensure that quality standards are adhered to and maintained.

The research focuses on the utilization of both deep learning and ensemble methods to enhance model capacities, showcasing PyTorch's versatility and efficiency in implementing sophisticated algorithms.

PyTorch's dynamic computation graph, user-friendly interface, and high-performance capabilities make it a favored tool among researchers and practitioners. This study highlights PyTorch's advanced neural network modules and GPU acceleration support, which facilitate efficient large-scale computations essential for applications in different subfields related with food safety. Through case studies, the paper demonstrates PyTorch's effectiveness in revealing hidden insights, optimizing operations, and supporting informed decision-making, underscoring the transformative potential of leveraging PyTorch's flexibility and scalability in machine learning (Paszke et al., 2019).

Keywords: Machine Learning, Deep Learning, PyTorch, Neural Networks, image classification,

Introduction

Machine learning (ML) has become an essential tool for analyzing complex datasets across various domains, enabling the discovery of intricate patterns and correlations that are often very difficult or invisible through traditional analytical methods. This capability is driven by the significant advancements in algorithms, computational power, and the availability of large datasets. Machine learning algorithms are particularly effective at uncovering and visualize hidden patterns within complex datasets that traditional statistical methods may overlook. These patterns can provide valuable insights for decision-making processes. In the healthcare industry, ML models can analyze vast amounts of patient data to identify patterns that predict disease outbreaks or individual health risks, leading to proactive healthcare measures (Esteva et al., 2019).

Complex datasets often have high dimensionality, making manual analysis impractical. Machine learning techniques, such as dimensionality reduction and clustering, can manage and analyze high-dimensional data efficiently.

Machine learning models are known for their superior predictive accuracy compared to traditional methods. In finance, for instance, ML algorithms analyze historical market data to predict stock prices or assess credit risks with high precision, helping institutions manage risks more effectively (Ngai et al., 2011).

The ability of machine learning systems to process data in real-time is crucial for applications requiring immediate insights. In network security, ML algorithms can continuously monitor network traffic, identify anomalies, and detect potential threats instantaneously, enhancing the security posture of organizations (Cani et al., 2024), (Sangkatsanee, Ngamsuriyaroj, & Chongsithiphol, 2011).

Machine learning automates the data analysis process, reducing the need for manual intervention and enabling the analysis of larger datasets. This scalability is vital for big data environments where the volume, velocity, and variety of data surpass human capabilities. In e-commerce, ML algorithms analyze user behavior and transaction data at scale to provide personalized recommendations, improving user experience and increasing sales (Covington, Adams, & Sargin, 2016).

The importance of machine learning in extracting patterns from complex datasets is evident across various fields, from healthcare, finance, agriculture to network security and e-commerce. By leveraging advanced algorithms and computational power, ML facilitates the discovery of hidden patterns, enhances predictive accuracy, processes real-time data, and scales analysis to manage vast datasets effectively. These capabilities underscore the transformative impact of machine learning in modern data analysis.

Extracting intricate patterns and correlations from complex datasets of images involves addressing several specific challenges, including high intra-class variability, inter-class similarity, complex backgrounds, data annotation issues, scalability, real-time processing, and lack of standardization. Overcoming these challenges requires advanced machine learning techniques, robust data preprocessing, and efficient computational resources.

Regarding the extracting patterns from food item images, one of the primary challenges is the high intra-class variability. Food items can appear vastly different in images due to variations in cooking styles, presentation, lighting conditions, and angles. (Bossard et al., 2014). This variability makes it difficult for machine learning models to consistently identify and classify food items accurately.

Inter-class similarity poses another significant challenge. Many food items share similar visual characteristics, making it difficult to distinguish between them. (Singla, Yuan, & Ebrahimi, 2016). This similarity requires more sophisticated feature extraction techniques to differentiate between classes accurately.

Food images often contain complex backgrounds and occlusions, where parts of the food item are hidden or overlapped by other objects. This complexity can interfere with the model's ability to focus on the relevant features of the food item, reducing classification accuracy (Ciocca, Napoletano, & Schettini, 2017).

Creating a labeled dataset for food images is labor-intensive and time-consuming. Manual annotation is often required to ensure that each image is correctly labeled, which is essential for training supervised learning models. Additionally, the subjective nature of food classification can lead to inconsistencies in labeling, further complicating the model training process (Chen & Ngo, 2016).

Handling large-scale datasets of food images efficiently is another challenge. Training machine learning models on extensive datasets requires significant computational resources and time. Moreover, deploying these models for real-time applications, such as in automated checkout systems necessitates optimization for speed and accuracy without sacrificing performance (Meyers et al., 2015).

The lack of standardization in food image datasets complicates the development and comparison of models. Different datasets may use varying criteria for categorizing and labeling food items, making it challenging to benchmark models consistently (Zhang et al., 2023). Standardized datasets and evaluation metrics in national level are needed to ensure fair and meaningful comparisons.

Goals of the research potential impact

The goals of this research are: (i) Create and test machine learning models that can accurately identify and classify food items from images, overcoming challenges such as high intra-class variability, inter-class similarity, and complex backgrounds using PyTorch' capabilities to utilize the dynamic computation graph and extensive neural network libraries. (ii) Identifying and addressing challenges related with data annotation and model optimization.

This study is the first step in our project to create standardized datasets and methods for identifying physical and chemical problems in agricultural crops in Albania using deep learning technology. Bringing together expertise from computer science and food science, this research aims to foster interdisciplinary collaboration and innovation. Advanced image processing and pattern recognition can help in predicting, detecting and quantifying the presence of harmful substances in food items through image and data analysis. This can improve food safety standards and prevent outbreaks of foodborne illnesses in the future. (Kaur & Kaur, 2018).

Machine learning

Machine learning (ML) algorithms have significantly advanced over the years, providing foundational techniques for data analysis and predictive modeling. Traditional ML algorithms, such as linear regression, logistic regression, decision trees, k-nearest neighbors (k-NN), support vector machines (SVM), and naive Bayes, have been widely used across various domains.

Linear regression models the relationship between a dependent variable and one or more independent variables by fitting a linear equation to the observed data. It is extensively used for prediction and forecasting in various fields such as economics, biology, and engineering (James, Witten, Hastie, & Tibshirani, 2013). However, it assumes a linear relationship between variables, which may not hold in complex datasets, and is sensitive to outliers.

Logistic regression is used for binary classification problems, predicting the probability of an outcome based on one or more predictor variables. It finds applications in medical fields for disease prediction and in finance for credit scoring (Hosmer, Lemeshow, & Sturdivant, 2013). Nonetheless, it assumes linearity in the log-odds of the outcome, struggles with multi-class classification without extensions, and can be less effective with large and complex datasets.

Decision trees split the data into subsets based on the value of input features, creating a tree-like model of decisions. They are utilized for both classification and regression tasks in different areas like finance, healthcare, and marketing (Quinlan, 1986). However, decision trees are prone to overfitting, especially with noisy data, and can become complex and unwieldy with large datasets.

SVMs find the hyperplane that best separates classes in the feature space, using support vectors to define the margin. They are effective in high-dimensional spaces and are used in text classification, image recognition, and bioinformatics (Cortes & Vapnik, 1995). However, SVMs are not suitable for large datasets due to high computational cost, and choosing the right kernel and regularization parameter can be challenging.

Naive Bayes classifiers assume independence between predictors and apply Bayes' theorem for classification. They are employed in text classification, spam detection, and sentiment analysis (Murphy, 2012). Nevertheless, the assumption of feature independence is often unrealistic, limiting its effectiveness with complex data, and it struggles with zero probability issues.

Limitations in Handling Complex Datasets are related specifically with high dimensionality, non-linearity, scalability, handling of noisy data and feature engineering.

Traditional algorithms often struggle with high-dimensional data due to the "curse of dimensionality," which can lead to overfitting and increased computational complexity (Bellman, 1961). Dimensionality reduction techniques like Principal Component Analysis (PCA) and Linear Discriminant Analysis (LDA) are used, but they may not capture complex patterns effectively.

Many traditional algorithms, such as linear regression and logistic regression, assume linear relationships, which are inadequate for capturing non-linear patterns in complex datasets. Non-linear models and kernel methods are employed to address this issue, but they increase computational cost and complexity.

Algorithms like k-NN and SVM can become computationally expensive with large datasets, making them impractical for big data applications. Approximation techniques and parallel processing are used to mitigate this, but they may compromise accuracy.

Traditional algorithms are sensitive to noisy data, which can lead to overfitting and poor generalization. Regularization techniques and robust statistical methods are applied to address this issue, yet they may not fully resolve the problem in highly complex datasets.

Traditional algorithms often require extensive feature engineering, which is labor-intensive and domain-specific. Automated feature selection methods have been developed, but they may not always identify the most relevant features.

PyTorch a tool for developing Machine Learning Models

PyTorch is an open-source machine learning library developed by Facebook's AI Research lab. It has gained significant popularity in both academic and industry settings due to its dynamic computation graph, ease of use, and flexibility. PyTorch is designed to provide a seamless and intuitive experience for developing machine learning models, making it a preferred choice for researchers and practitioners. One of the standout features of PyTorch is its dynamic computation graph, also known as "define-by-run." Unlike static computation graphs used in frameworks such as TensorFlow, PyTorch allows for on-the-fly graph construction. This feature provides greater flexibility and makes debugging and modifying models much easier (Paszke

et al., 2019). The dynamic graph nature of PyTorch is particularly beneficial for tasks that require variable-length inputs, such as natural language processing and time-series analysis. PyTorch's intuitive and Pythonic interface makes it accessible to both beginners and experienced researchers. It integrates seamlessly with Python, allowing users to leverage existing libraries and tools. This ease of use accelerates the development process and facilitates rapid prototyping and experimentation (Paszke et al., 2019). Additionally, PyTorch supports a wide range of neural network architectures and provides comprehensive libraries for building, training, and deploying models. Those neural network libraries, including pre-built modules for common layers, activation functions, loss functions, and optimizers. These libraries simplify the construction of complex models and enable researchers to focus on the unique aspects of their problems. The `torch.nn` module provides a high-level interface for defining neural network layers, while `torch.optim` includes various optimization algorithms (Paszke et al., 2019).

PyTorch leverages GPU acceleration through its integration with CUDA, significantly speeding up the training of large-scale models. This capability is crucial for deep learning tasks that involve extensive computations. Furthermore, PyTorch supports distributed training, allowing models to be trained across multiple GPUs and nodes, enhancing scalability and performance (Li et al., 2020). These features make PyTorch suitable for both research and production environments.

PyTorch for complex data analysis

PyTorch has been instrumental in advancing the state-of-the-art in various domains of machine learning, from image classification and natural language processing to reinforcement learning, generative models, time-series analysis, and biomedical imaging. Its dynamic computation graph, ease of use, and extensive support for neural network architectures have made it a preferred choice for researchers and practitioners aiming to tackle complex data analysis problems.

One of the most prominent applications of PyTorch has been in the field of computer vision, particularly in image classification tasks. PyTorch has been widely adopted for its flexibility and ease of use in building convolutional neural networks (CNNs). For instance, He et al. (2016) leveraged PyTorch to implement the ResNet architecture, which introduced deep residual learning frameworks that significantly improved the performance of deep networks by mitigating the vanishing gradient problem. This research has set a new standard in image classification tasks on the ImageNet dataset.

PyTorch has also been extensively used in natural language processing (NLP). Devlin et al. (2019) developed the BERT (Bidirectional Encoder Representations from Transformers) model using PyTorch, which has become a state-of-the-art model for various NLP tasks such as question answering, sentence classification, and named entity recognition. BERT's implementation in PyTorch has enabled researchers to fine-tune the model on specific tasks, achieving high accuracy and robustness.

In reinforcement learning, PyTorch has been used to implement complex algorithms that require dynamic computation graphs. Mnih et al. (2015) used PyTorch to develop the Deep Q-Network (DQN), which combined Q-learning with deep neural networks to achieve human-level performance in playing Atari games. The flexibility of PyTorch in handling dynamic computations made it an ideal choice for such tasks, where the model structure changes over time.

Biomedical imaging has seen significant advancements with the use of PyTorch. Ronneberger et al. (2015) developed the U-Net architecture for biomedical image segmentation, which has been widely adopted due to its efficient training and robust performance in segmenting medical images. The implementation of U-Net in PyTorch has facilitated the development of various applications in medical diagnostics and treatment planning.

Identify gaps in the current research

Corn a nutritious and nourishment agricultural culture is one of the top-grown agricultural produce in the world. According to (FAOSTAT, 2024), the Gros Production Value of Maize(Corn) was 260783679 US \$.

FIGURE 1: Gross production value of corn during 1961-2022(FAOSTAT)



With large-scale production, the post-harvest procedure is crucial since corn is it is an agricultural plant that has a high risk of damage in terms of mold and insects in the body.

Several physical parameters affect corn quality and have been used to sort and classify corns during analyzed by model such as size, shape, defects and maturity or color. These parameters have helped in identifying corns with physical damage.

Nowadays, the common classifying and evaluating technique procedure is mostly done by manual observation. However, this technique suffers from several disadvantages, such as low precision, labor-intensive, and subjectivity. Some researchers have introduced the mechanical sorting machines as a solution to the shortcomings of manual sorting of some other agriculture items such are tomatoes. However, this grading system was limited to only size and weight classification. Presently, with the emergence and developments in machine vision technology, it has become possible to overcome these limitations accurately and non-destructively based on machine vision detection systems (Chen et al., 2002).

While there have been efforts to create datasets for food image classification, such as Food-101 and Vireo Food-172, these datasets are primarily focused on classifying food types and lack detailed chemical composition annotations (Bossard et al., 2014; Chen et al., 2009). There is a significant need for comprehensive datasets that not only include diverse food items but also provide detailed annotations on their quality and chemical and nutritional compositions. The lack of such datasets hinders the development of CNN models capable of predicting chemical compounds from food images (Min et al., 2018).

The potential of multi-spectral and hyperspectral imaging to provide more detailed information about the physical and chemical makeup of food items is underexplored. Research integrating CNNs with these advanced imaging techniques could significantly enhance the prediction of physical damage and chemical compounds (Kamruzzaman, Makino, & Oshita, 2016).

Existing literature primarily focuses on classifying food types or detecting food quality and safety issues, such as spoilage or contamination, rather than predicting specific chemical compounds present in the food (Singla et al., 2016; Martín et al., 2019). There is a gap in research specifically targeting the prediction of chemical compounds in food items using CNNs. More studies are needed to develop and validate models that can accurately predict nutritional and chemical information from food images (Acharjee et al., 2020).

Few studies have integrated CNN-based image analysis with traditional analytical techniques, such as chromatography or mass spectrometry, which are used to validate the chemical composition of food items (Guerrero-Ginel et al., 2020).

Research is needed to create hybrid models that combine the strengths of CNNs for image analysis with traditional chemical analysis methods. This integration could improve the accuracy and reliability of predicting chemical compounds in food items (Sun et al., 2020).

With large-scale production and the need for high-quality corn to meet consumer and market standards criteria, have led to the need for an inline, accurate, reliable grading system during the post-harvest process. In this study we introduce a classification machine vision system based on RGB images for corn. The proposed system performs damage detection and healthy corn by histogram thresholding based on the regions of interest. The combination of color and texture features achieved the highest accuracy in all the grading categories in image features evaluation. This proposed system can be used as an inline corn processing tool to ensure that quality standards are adhered to and maintained.

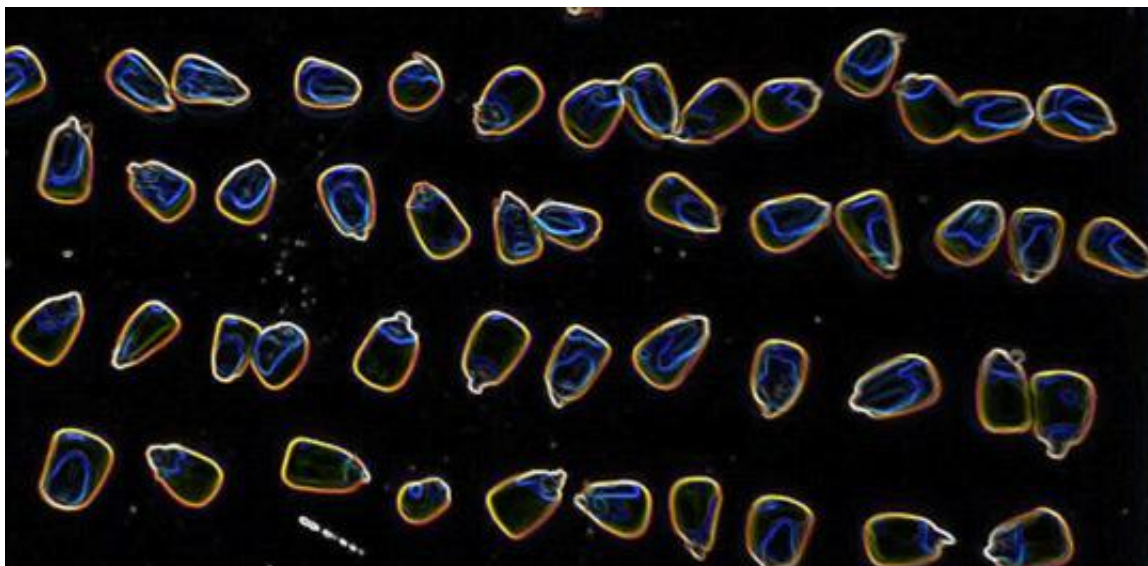
Within the scope of the study, we introduce a DCNN (deep convolutional neural network) classification system based on color images processing and machine learning technology. Based on research studies was stated that DCNN gave better results compared to other models with a performance success of 94.4% (Zhang et al., 2021).

Within the scope of the study in which a fast and non-destructive classification of two different corn seed cultivars was performed through hyperspectral imaging, images obtained were classified by an DCNN (deep convolutional neural network) classification model.

The proposed system extracted both RGB color features and gray level texture features and used them as feature variables to develop correlations to corns color intensity and defect. Texture features are also referred to as second-order features (Moallem et al., 2017) because they capture the spatial dependence of gray values that contribute to the perception of texture by representing the properties of pixels in pairs. The main objective of this study was to develop a computer vision system that can be used to identify the presence of damaged in corn cobs in Albanian cultivars before using them for as a raw material for the production of corn by-products. The specific objectives of this study were to develop an efficient image processing algorithm, to develop an efficient and accurate detection algorithm and to develop different classifiers of corn cobs into different grading categories. This proposed system can be applied in real-time corn post-harvesting or processing procedures because its fast, cheap, accurate, and non-destructive, thus improved reduced inspection time and quality sorting guarantee in corn production and supply chain management.

Materials and Methods

Experiments were conducted between November 2023 and February January 2024 at European University of Tirana (UET). A total of 196 different corn cobs with different degree of defects and color intensity were manually selected at a local farm in Pogradec city, Albania. Figure 1 shows RGB sample images of corn seeds.

FIGURE 2: Initial image of corns used in the study**FIGURE 3:** Edge detection of image used in the study

As the image acquisition system, we use a high-resolution camera mounted 14 cm perpendicularly above an imaging stage. The images were transferred via an USB port to an intel core i5-4500U CPU, 4 GHz, 16 GB physical memory (Intel, Santa Clara, CA, USA), Microsoft Windows 10 PC. Therefore, about 50 corn seeds were photographed in an area of $8\text{ cm} \times 12\text{ cm}$. All photos were captured in the same environment on a black background. The resolution of the images obtained was 1224×620 pixels, each containing multiple individual seeds, which could not be directly used as input for the CNN model. Therefore, the images were segmented into smaller sections of 112×112 pixels for further use. In addition to the images photographed and captured by the camera, to increase the number of training sets and also to prevent overfitting and enhance the accuracy of CNN model we used the data augmentation method (Zhang et al., 2020). In our case, the training images were randomly rotated (Smith et al., 2022), flipped both horizontally and vertically and normalized to account for the variability in the orientation and condition of the seeds in real-world scenarios.

As a result of above steps, a dataset was created to be used in the models designed for the study. The dataset contains a total of 5880 images in three classes. Images belong to two different maize types, taken from a local farm in Albania.

As classification model we used an CNN (convolutional neural network), as it gave better results compared to other classification models with a performance success of 94.4% (Zhang et al., 2021). The proposed neural network was composed of an input layer, convolution layers, pooling layers, fully connected layers, and an output layer. A transfer learning approach is used to combine machine vision with deep learning to classify the data model images.

Neural Network Models and transfer learning

This research used Progressive Residual Network (P-ResNet) model, which is an enhanced version of ResNet designed for maize seed classification. The architecture of P-ResNet is composed of six layers: five convolutional layers followed by a fully connected layer. After each convolution, batch normalization is applied, followed by the ReLU activation function to process the output of the convolutional layers. To prevent overfitting and reduce both the number of parameters and computational complexity, the model incorporates max pooling and average pooling strategies. Based on the prepared dataset, images sized to $112 \times 112 \times 3$, the output from the fully connected layer is passed through a softmax function to generate a probability distribution for predicting corns seed quality.

The labeled RGB images were fed into the enhanced P-ResNet model. For this experiment, 4704 images were used for training, while 1176 images were reserved for validation. Transfer learning was applied for the classification of corn seed. After model training, performance was assessed by evaluating the results on both the training and validation datasets. Model development utilized the open-source framework PyTorch 1.9.0, with Python 3.8.10 as the programming language, and PyCharm 1.3 as the Integrated Development Environment (IDE).

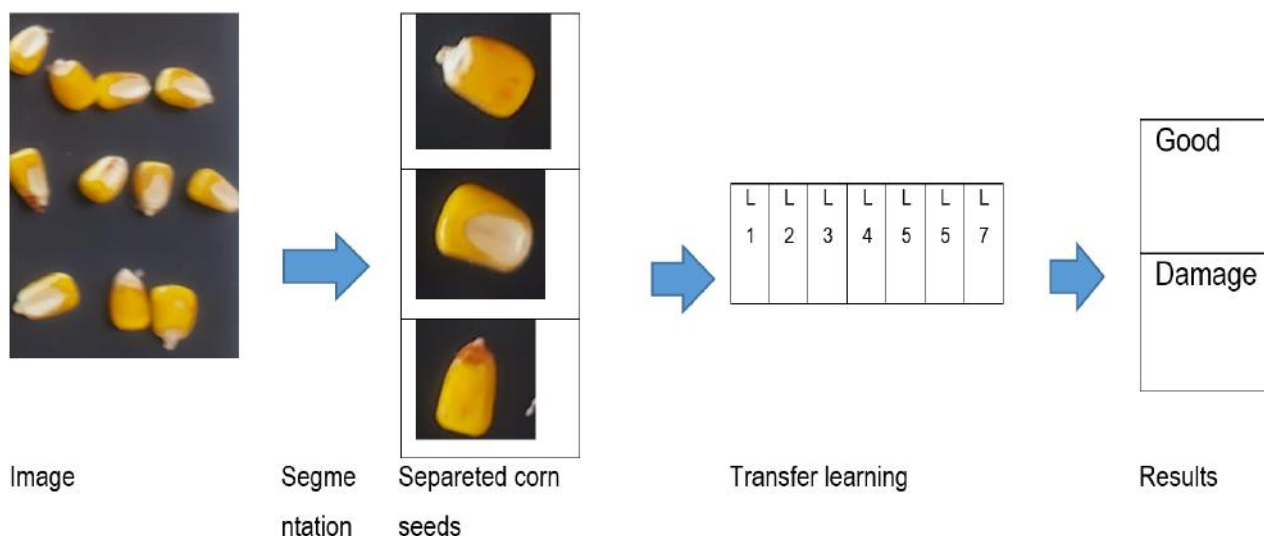
Two classical CNN models were used as benchmarks for comparison with P-ResNet. concretely the AlexNet and the VGGNet models. The input data were processed by a pre-trained network, where activation values from each layer were stored as features. Cross-dataset fine-tuning was employed, allowing the model to update and propagate weights based on the new task. This technique enables transferring learned weights from the pre-trained model to the current classification model. Details of the hyper-parameters used during fine-tuning are provided in Table below. This process transfers knowledge from a large dataset to the specific maize seed classification task. In this study, the convolutional layers served as fixed feature extractors, while a fully connected layer with five neurons was constructed to handle classification. The final categorization results were obtained through the prediction layer.

TABLE 1: Hyperparameters applied during fine-tuning procedure

Parameter	Value
Epochs	28
Batch size	32
Learn rate	0,001
Learn rate schedule	Exponential
Weight decay	0,004
Decay period	10

The proposed CNN model utilizes the Adam optimizer with an initial learning rate of 0.001, where weight parameters were updated to minimize the loss function. Batch Normalization was applied between each convolution and ReLU layer, replacing traditional dropout to enhance training and reduce overfitting. An epoch refers to one full training cycle of the corn seed dataset, with the maximum epoch set at 28 and a batch size of 32. These parameters improved the optimizer’s performance. Figure below illustrates the process of transfer learning and maize seed classification in the network.

FIGURE 4: Process of transfer learning and classification of maize seeds.



Results

The prepared dataset was trained using AlexNet, VGGNet, and the optimal parameters listed in table below were applied to prevent overfitting and reduce training time. All networks were trained for 28 epochs. In the early phase (epochs 1–11), there was a significant reduction in loss values accompanied by a rapid increase in accuracy. Ultimately, the CNN models achieved over 91% accuracy during training, with loss values stabilizing below 0.15, indicating robust and reliable model performance. The models reached convergence around the 16th epoch, after which the validation accuracy and loss curves leveled out, and the gap between the training and validation metrics narrowed.

Despite these fluctuations, the metrics remained above 90% accuracy and below 0.2 loss, even in the worst-case scenario, demonstrating that the classifier's performance was still satisfactory and capable of achieving its classification objectives.

In this experiment, all CNN models successfully classified the two maize seed categories, with accuracy rates exceeding 91%. The highest accuracy was achieved by P-ResNet (98.70%), followed by AlexNet (96.81%) and VGGNet (96.32%).

Although these models were trained using images from a custom-made dataset, fine-tuning allowed them to achieve performance similar to end-to-end models on datasets with limited samples. This process makes image acquisition more efficient, reducing both time and effort, and thus improving overall efficiency. This model's high accuracy in complex datasets highlights its potential for transfer to other classification tasks. Furthermore, the experimental results show that enhancing the training data significantly improves the model's performance, particularly for datasets with smaller sample sizes. The deep learning-based feature extraction method used in this study effectively retains critical information about the corn seeds, minimizing the data loss commonly associated with manual feature extraction techniques.

The experimental analysis demonstrated that the deep learning architecture, with updated weights and fine-tuning, exhibited strong generalization capabilities on the maize seed dataset. The proposed P-ResNet achieved superior performance and higher accuracy. Additionally, the analysis revealed that the maximum difference in classification accuracy across two models was less than 2,5 %.

AlexNet had the shortest training time at 11 minutes, while VGGNet required the longest at 48 minutes. It's important to emphasize that training time is influenced by the available hardware, with advanced GPUs significantly reducing training duration. When considering both time and model complexity, P-ResNet's training time was only 4 minutes longer than AlexNet, and it performed better in terms of Parameters, FLOPs, and total memory usage. This efficiency is attributed to the use of the Adam optimizer, which minimizes error loss and adjusts the training and validation data across epochs.

Conclusion

This study integrates deep learning algorithms and machine vision to automatically classify corn seeds using a CNN model. The developed model architecture can be adapted to various seed types, ensuring the supply of high-quality seeds for agricultural production. The proposed P-ResNet model is compared against AlexNet, VGGNet. The results demonstrate that P-ResNet achieved the highest accuracy, classifying maize seeds in a fast, efficient, and non-destructive manner. These findings emphasize the benefits of transfer learning, particularly its effectiveness when working with limited training data.

In future research, efforts will be focused on testing new algorithms to further enhance the classification performance and adaptability of the model. Exploring other deep learning architectures, such as EfficientNet, DenseNet, and Transformer-based models, may offer additional improvements in accuracy and speed. Additionally, increasing the dataset to include more varieties of Albanian corn seeds will provide a more comprehensive evaluation of the model's generalization ability across different types of seeds. Another important direction for future work will involve the creation of a hybrid model trained on both physical and chemical properties of corn seeds, which could help in predicting not only seed quality but also the genetic origins of the corn. This multi-modal approach will enable a more thorough analysis of the seeds, ensuring more precise classification and contributing to advancements in agricultural practices.

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A Comparative Analysis of Classical Digitization Methods and Contemporary Digital Technologies and Tools

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Abstract

The advent of digital technologies has revolutionized the way information is managed and accessed. This study explores the classical approach to document digitization, emphasizing manual methods such as scanning and optical character recognition (OCR), and compares it with the current state-of-the-art digital technologies and tools available for efficient and accurate digitization.

Classical digitization methods involve time-consuming and labor-intensive processes, where physical documents are manually scanned and converted into digital formats. OCR is then employed to recognize and extract text, but its accuracy is often limited, particularly with handwritten or complex documents. This classical approach is characterized by its dependence on human involvement and its susceptibility to errors, making it less suitable for large-scale digitization projects.

In contrast, contemporary digitization technologies leverage advanced machine learning algorithms, artificial intelligence, and computer vision to automate the digitization process. Tools such as intelligent document recognition (IDR), natural language processing (NLP), and advanced OCR have significantly improved the accuracy and efficiency of digitization. These technologies enable the extraction of information from diverse document types, including handwritten text and complex layouts, with a high degree of precision.

The study further delves into the advantages and challenges associated with each approach. Classical methods, while familiar and accessible, may struggle with scalability, accuracy, and time efficiency. On the other hand, modern technologies offer automation, improved accuracy, and the ability to handle diverse document formats, but may require a higher upfront investment and technical expertise.

Additionally, the paper considers the impact of these approaches on archival preservation, accessibility, and information retrieval. Classical digitization may face challenges in ensuring long-term preservation and accessibility, whereas contemporary technologies provide enhanced searchability, indexing, and integration with other digital systems.

In conclusion, this comparative analysis sheds light on the evolution of document digitization, emphasizing the transition from classical methods to advanced digital technologies. The findings aim

to assist organizations and practitioners in making informed decisions when selecting the most suitable digitization approach based on their specific needs, resources, and goals.

Keywords: Digitization, OCR Techniques, Machine Learning, Artificial Intelligence, Natural Language Processing

Introduction

Document digitization, an essential component of modern information management, involves converting physical documents into digital representations in order to expedite storage, retrieval and dissemination operations. With the advancement of digital tools and technologies, traditional techniques to document this process have undergone substantial evolution, paving the way for more efficient and versatile solutions. In today's digital age, this process is critical to revolutionizing the way people

create, manage, and access information. The digitization of documents enables simple access to information at any time, from any location, and on any device with an internet connection. This accessibility overcomes the drawbacks of physical storage, allowing users to retrieve content quickly and effectively. Digital documents can also be indexed and tagged with metadata, facilitating fast and accurate search functionality. The process of digitalizing the documents can also reduce the costs of paper-based processes, like printing, storage and manual handling, as well as it contributes to environmental sustainability and reduces carbon emissions associated with paper production and transportation. Additionally, digital document management systems facilitate compliance with regulatory requirements and industry standards by ensuring proper documentation and record-keeping practices.

Classical methods of document digitalization, such as scanning and optical character recognition (OCR) have long been the foundation of this process. These technologies rely on human processes and have traditionally been limited in their capacity to accurately capture handwritten or complex materials. However, they laid the framework for future advances in digital technologies.

The evolution of digitalization methods can be traced back to the early days of computing, with the emergence of basic software solutions known as Material Requirements Planning (MRP) systems in the 1960s. Initially developed to meet the inventory management needs of manufacturers, MRP systems laid the foundation for more sophisticated digitization tools.

In parallel, contemporary digital technologies have ushered in a new era of document digitalization, automating and improving the process through the use of machine learning, artificial intelligence and computer vision algorithms. Intelligent document recognition (IDR), enhanced OCR, and natural language processing (NLP) approaches have emerged as critical instruments in this paradigm change, allowing businesses to digitally store documents with remarkable rapidity and precision.

The purpose of this study is to investigate the progress of document digitalization by comparing traditional digitization processes to modern digital technologies. By assessing the benefits, limitations, and implications of each technique, this study hopes to provide insights that will help businesses and practitioners choose the best digitization strategies for their needs.

Methodology

This study attempts to address three major issues regarding the topic of document digitization:

1. What are the classical and contemporary approaches for document digitization, and what distinguishes them, as well as their advantages and disadvantages?
2. How have recent advances in optical character recognition (OCR), machine learning, and artificial intelligence influenced the ongoing evolution of document digitization?
3. What overall best practices and suggestions can be gleaned from existing literature to help guide the successful implementation of document digitalization projects?

This study uses a narrative literature review methodology, which is distinguished by its interpretative and adaptable approach to synthesizing and analyzing existing research findings. Unlike more rigid systematic reviews, which follow specified search criteria and stringent inclusion/exclusion constraints, narrative literature reviews allow for a more nuanced analysis and interpretation of existing literature.

The primary data corpus for this study was compiled by a thorough search of scientific databases, peer-reviewed journals, conference proceedings, and pertinent publications. Articles, reports, case studies, and research papers dealing with document digitization approaches, OCR improvements, and machine learning applications were thoroughly evaluated and analyzed.

The collected material was meticulously organised and synthesised around the study questions. Thematic clusters were identified by thorough analysis, allowing for the discovery of recurring patterns, developing trends, and key discoveries among the examined papers. The grouping of literature into subject clusters allowed for a more systematic assessment of methodological nuances and comparisons.

The synthesised findings were interpreted and discussed contextually within the study problems. The analytical discourse clarified the differences between traditional and modern document digitization processes, highlighted the revolutionary significance of OCR improvements and machine learning techniques, and outlined actionable best practices for implementation.

Literature Review

Document digitization has been extensively researched across multiple disciplines, including computer science, information science, and library science. It has been an increasingly prevalent topic in the recent years, driven by the need for information management and accessibility. It is the process of converting physical paper documents into digital formats such as PDF, JPEG or DOC files, that result in increased accessibility, security, and cost-savings. This procedure involves scanning or taking photographs of physical documents and preserving them as digital data. These digitised papers are easily stored, accessed, and shared electronically, improving information management and accessibility. (Sanjana, Neetha, & S, 2023) Nowadays, digitalization means more than just creating digital backup of documents, but it can be used to extract and analyze important

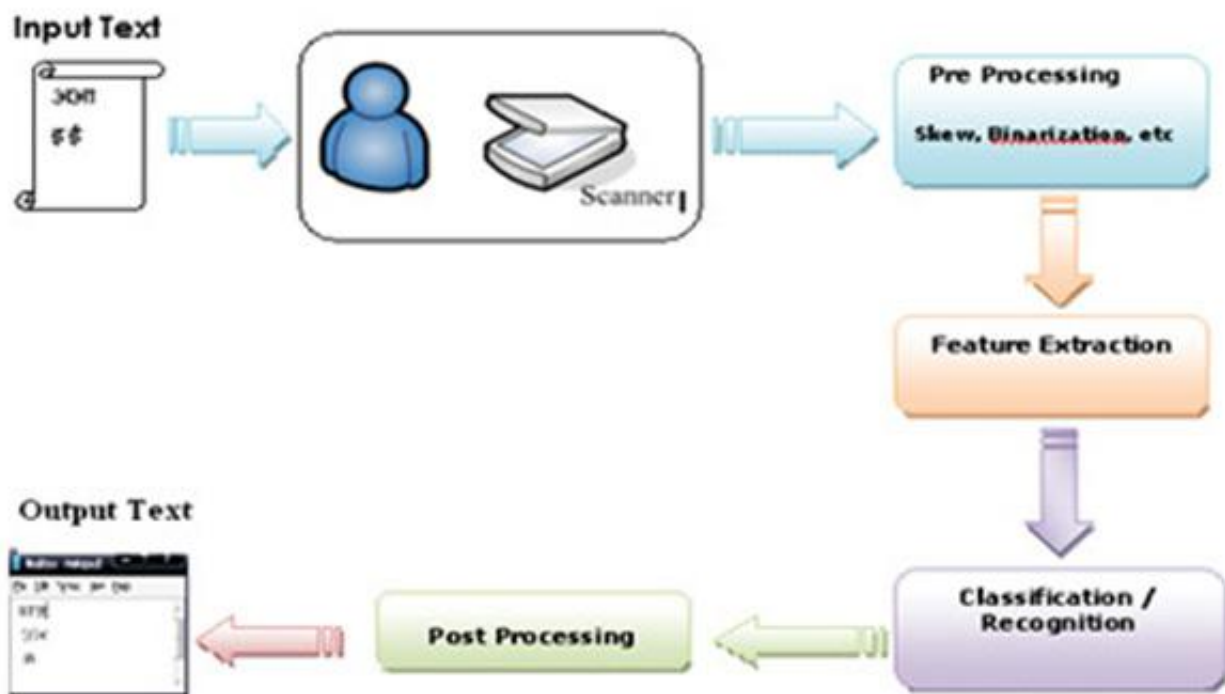
information that can be suitable for business applications. It can impact productivity by making it easier to access documents localized in a central repository, efficiency, security and collaboration.

An examination of the literature demonstrates considerable advances in document digitization techniques, particularly in the fields of optical character recognition (OCR), machine learning (ML), artificial intelligence (AI), and natural language processing.

OCR Technology

Early research in document digitization concentrated on developing OCR algorithms for accurately extracting text from scanned documents. OCR technology has advanced significantly in recent years, allowing for the automatic recognition of characters via optical processes. (Smith, 2007) (Smith R. W., 1987) According to (Mithe, Indalkar, & Divekar, 2013) OCR is a valuable tool for turning scanned images of handwritten, typewritten, or printed text into machine-encoded text. The method is divided into various stages, including scanning, segmentation, preprocessing, feature extraction, and recognition. It uses a combination of hardware and software to turn printed documents into machine – readable text. Hardware, such as an optical scanner or specialized circuit board, copies or reads text; advanced processing is normally handled by software.

FIGURE 1 Processes in OCR System (Kaur, Mann, & Khurana, 2013)



Stages of OCR Technology in Document Digitization

1. Scanning

The initial stage in the OCR process is scanning, in which the physical document is turned into a digital format. This step requires the use of specialized hardware, such as scanners or digital cameras to take an image of the document. The resulting digital image is encoded in commonly used formats such as JPEG, PNG, or TIFF, maintaining the original document's visual content. High-quality scanning is required to ensure the fidelity and clarity of the digital picture, which is the foundation for all subsequent OCR procedures. (Kaur, Mann, & Khurana, 2013)

2. Preprocessing

Preprocessing is the second step, that starts improving the quality and legibility of the scanned images, and it allows a better performance of OCR. During this stage, there are used several image enhancing techniques to reduce the imperfections or the artefacts that are created during the scanning process. These techniques include noise reduction, contrast improvement, binarization, and deskewing. Noise reduction methods remove superfluous pixel-level noise, whereas contrast enhancement algorithms increase brightness and contrast levels to highlight text sections. Binarization methods convert grayscale images

into binary representations that distinguish text from background. Additionally, deskewing algorithms correct any skew or rotation in the scanned image, preserving text alignment and geometric integrity. (Kaur, Mann, & Khurana, 2013)

3. Segmentation

This stage divides the preprocessed image into distinct textual components, such as letters, words, lines or text blocks. The goal of segmentation is to identify and differentiate between unique textual units within a document, allowing for easier feature extraction and identification operations. Several segmentation techniques are used, including component analysis, line detection and region-growing algorithms. These techniques allow for the exact identification and segmentation of text sections based on spatial and structural features. (Wusong & Kanungo, 2001)

4. Feature Extraction

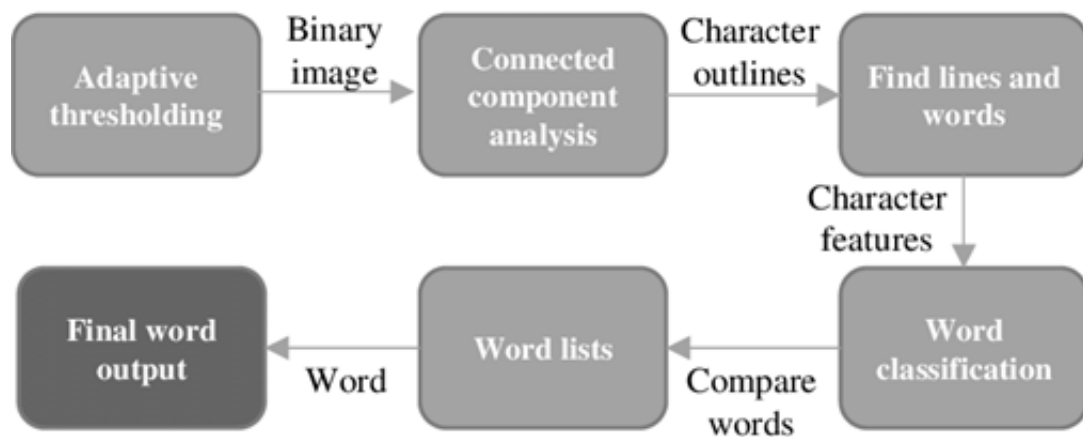
This stage of the process involves extracting key traits and properties from segmented textual components. These aspects represent distinct visual attributes such as: size, shape, intensity, texture and spatial connections between neighboring pixels. Feature extraction seeks to extract relevant information from textual pieces in order to inform the recognition process. Using advanced algorithms and mathematical representations, feature extraction enables the characterisation and quantification of textual properties required for accurate recognition. (Mori (editor), 2010)

5. Recognition

In this stage, extracted features are used to classify and identify textual content in the document. The recognition process is orchestrated by OCR algorithms, which are generally based on machine learning paradigms such as neural networks, hidden Markov models (HMMs), or support vector machines (SVMs). These algorithms analyse extracted features to determine the most likely textual representations for each segmented element. The recognised text is then synthesised into a coherent digital format, converting the scanned paper into machine-readable and editable content. (Kaur, Mann, & Khurana, 2013)

Tesseract OCR Engine

Tesseract, an open-source OCR engine, has become a popular tool for optical character recognition (Smith R. , 2007) (Smith & Weil, tesseract-ocr, 2024) Tesseract was first developed at HP Labs between 1984 and 1994 and has been continuously refined and improved since then. Tesseract's capability to handle both traditional black-on-white text and inverse white-on-black text utilizing advanced page layout analysis technology has been highlighted. (Smith R. W., 2009) The combination of OCR technology with mobile platforms, particularly Android, has provided new opportunities for document digitalization and accessibility. (Bhaskar, Lavassar, & Green, 2010). Mithe et al. (2013) present an innovative application that combines OCR functionality with speech synthesis on Android smartphones, allowing users to convert images of text into speech. This integration not only improves the accessibility of digitized materials but also addresses spatial constraints associated with standard scanning equipment. This technology is applicable across various industries, including banking, legal, education and government sectors as well. (Bhaskar, Lavassar, & Green, 2010) Additionally, techniques such as table boundaries detection and text-post processing have improved results in mobile applications. Despite its obvious benefits, OCR technology is not without flaws, because the accuracy of these systems is dependent on the quality of input documents. Moreover, the output from these systems may result in noise and errors, that need more advanced post-processing techniques to enhance readability and accuracy. Advances in image processing, machine learning, and mobile computing have contributed significantly to the progress of OCR technology. The integration of OCR with the Android platform, as demonstrated by Mithe et al. (2013), shows the potential for increasing the accessibility and usability of document digitization tools. However, continued research & development efforts are necessary to address remaining difficulties and improve the capabilities of OCR systems. The primary advantage of optical character recognition (OCR) technology is that it streamlines data entry by allowing for easy text searches, editing, and storage. OCR enables organizations and people to keep files on their PCs, laptops, and other devices, providing continuous access to all material. It can improve service by ensuring employees have the most up-to-date and accurate information. (IBM Cloud Education, 2022)

FIGURE 2 Tesseract OCR Engine Architecture (Gjoreski, Zajkovski, Bogatinov, Madjarov, & Gjorgjevikj, 2014)

Advantages of OCR Technology

1. **Improved Efficiency:** This technology automates the conversion of scanned documents into machine readable text, making the data entry operations more efficient. This results in reducing the need for manual interference.
2. **Enhanced Accessibility:** By transforming physical documents into digital text, OCR makes information more accessible to people with visual impairments or disabilities.
3. **Searchability and Indexing:** OCR method facilitates text searchers in rapidly accessing specific information. It can also be indexed for easy retrieval, improving management capabilities.
4. **Editing and Manipulation:** Digitized text produced using OCR can be readily edited, modified, and formatted with word processing software. This allows users to annotate, correct, or change documents without having to retype them manually.
5. **Space and Cost Savings:** Digitizing documents enables companies to reduce physical storage requirements and associated costs for paper-based information. Computerized documents can be preserved electronically, removing the need for physical filing cabinets and saving space. (IBM Cloud Education, 2022)

Disadvantages of OCR Technology

1. **Accuracy Limitations:** This technology is dependent on the quality of documents, as handwritten or badly printed, or damaged low-resolution photos can lead to errors or inaccuracies in OCR output.
2. **Formatting and Layout Issues:** OCR method can struggle to retain complicated formatting, layout or graphical components found in scanned documents. Text recognition algorithms may mistakenly change document style or omit non-textual elements, reducing document fidelity.
3. **Language and Font Limitations:** OCR performance may differ based on the language and font styles used in scanned documents. Certain languages or font types may provide obstacles to OCR systems, resulting in lower accuracy or recognition errors.
4. **Processing Time:** OCR processing can be time-consuming, especially for big numbers of documents with complicated layouts. The preprocessing, segmentation, and recognition stages of OCR consume computer resources and may result in processing delays, reducing overall efficiency.
5. **Post-Processing Requirements:** Despite developments in OCR, post-processing may still be required to correct errors, verify accuracy, or increase readability of OCR output. Manual intervention or additional software tools may be needed to address noise, errors or formatting issues with digitized documents. (Martinez, 2024)

The Skip Connected Deep Convolutional Autoencoder (SCDCA) Method

This method was proposed by Zhao et al. (2018) as a novel solution to Optical Character Recognition (OCR). The Skip Connected Deep Convolutional Autoencoder (SCDCA) method uses deep learning techniques, notably convolutional autoencoders and skip connections, to overcome text recognition issues in scanned documents. Traditional OCR solutions frequently rely on handmade characteristics and heuristic algorithms, which may fail to correctly recognize text in complicated or degraded photos. In contrast, the SCDCA method deviates from these established methodologies by leveraging the potential of deep learning. The SCDCA approach is built around a convolutional autoencoder architecture that learns hierarchical

representations of input pictures. The autoencoder's encoder component compresses the input image into a lower-dimensional latent representation, which is then decoded and used to reconstruct the image. By training the autoencoder on massive datasets of scanned documents, the model learns to extract text-related properties and patterns. (Gunaydin, Gencturk, Ergen, & Koklu, 2023) One significant improvement introduced by Zhao et al. (2018) is the introduction of skip connections into the autoencoder design. Skip connections allow data to bypass some layers of the network and be routed directly into deeper ones. This helps to mitigate the vanishing gradient issue and allows the model to properly capture both low-level and high-level characteristics from the input image. The SCDC approach, which combines convolutional autoencoders with skip connections, promises to outperform existing OCR methods. The deep learning-based technique allows the model to learn complex text representations, making it more resilient to differences in font styles, sizes, orientations, and image quality. Furthermore, the SCDC model's end-to-end training enables it to effectively adapt and generalize to diverse document types and conditions. This technology uses convolutional autoencoders, which are a sort of neural network architecture, to extract meaningful representations from input images. Convolutional autoencoders have two primary components: an encoder and a decoder. (Zhao, Liu, Jiang, Guan, & Wen, 2018)

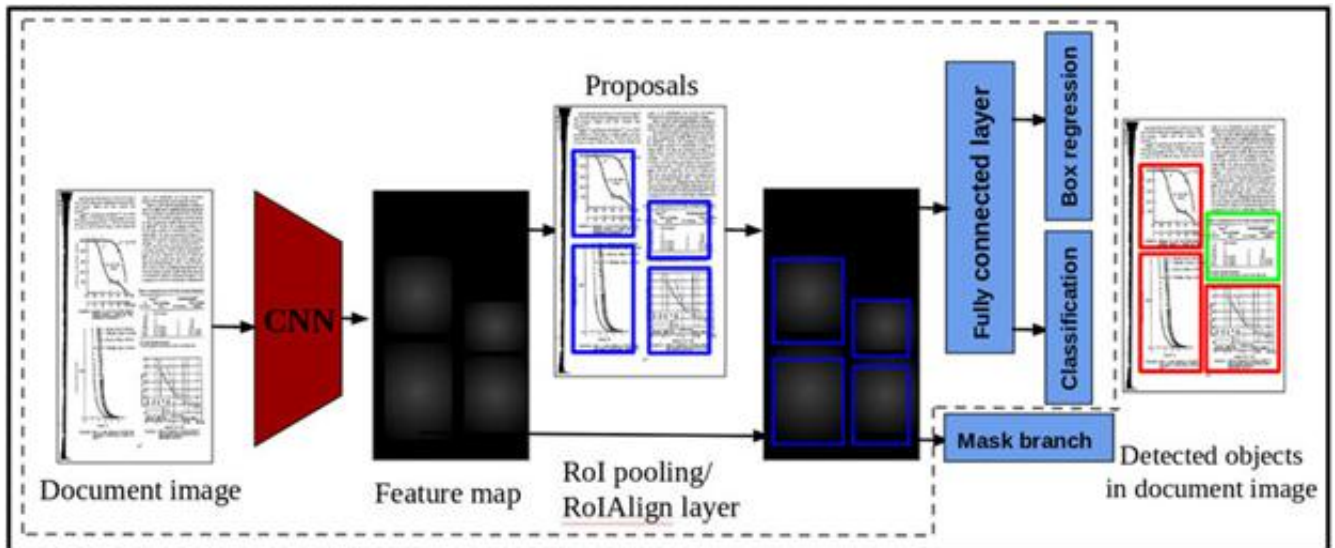
Encoder: The encoder component of a convolutional autoencoder sends the input image through an order of convolutional layers, each followed by a pooling operation. These convolutional layers extract hierarchical data from the input image, gradually decreasing its dimension and capturing deeper representations. The encoder compresses the input image to a lower-dimensional latent space representation, encoding essential visual information while removing unnecessary components. (Zhao, Liu, Jiang, Guan, & Wen, 2018)

Decoder: In contrast, the decoder component of the convolutional autoencoder reconstructs the original input image from its compressed form. The decoder returns the latent space representation to the original image dimensions by applying a series of deconvolutional layers (also known as transposed convolutions) and up sampling operations. The decoder's goal is to produce an accurate reconstruction of the input image using the learned latent representations. (Zhao, Liu, Jiang, Guan, & Wen, 2018)

This method represents a significant advancement in OCR technology, highlighting the potential of deep-learning based approaches to text recognition in scanned documents. The SCDC method offers a promising solution for improving the accuracy and efficiency of OCR systems in real-world applications, by introducing one significant innovations, which is the incorporation of skip connections into the convolutional autoencoder architecture. Skip connections enable information to bypass certain layers of the network and flow directly to deeper layers. This architectural approach addresses the vanishing gradient problem that plagues deep neural networks, allowing the model to capture both low-level and high-level information from the input image. The SCDC model is trained using large-scale datasets of various scanned documents. During training, the model learns to extract text-related attributes and patterns from input photos by iteratively optimizing its parameters. By minimizing a predetermined loss function, such as mean squared error or binary cross-entropy, the model adjusts its weights and biases to increase its ability to reliably reconstruct the input images. The use of large-scale datasets ensures that the SCDC model can accurately generalize to previously unexplored data and document formats. The model learns strong representations from a wide range of text styles, fonts, sizes, orientations, and image qualities, allowing it to effectively recognize and extract text from scanned documents in real-world applications. (Zhao, Liu, Jiang, Guan, & Wen, 2018)

Graphic Object Detection (GOD) Method:

This method, introduced by Saha et. Al (2019) is a novel way to localizing graphical items inside document images that using deep learning algorithms. Unlike previous approaches, which may struggle to detect and localize graphical features such as charts, diagrams, or logos, the GOD method uses end-to-end trainable deep learning models to do this task. This technique is distinguished by its end-to-end trainable architecture, which allows the entire model, from input to output, to be trained concurrently using labelled data. This method enables the model to learn directly from raw input photos and optimize its parameters in order to execute graphical object detection tasks successfully. The GOD approach is based on deep learning, which allows the model to automatically learn hierarchical representations of graphical elements contained in document images. Deep learning architectures, such as convolutional neural networks (CNNs) or recurrent neural networks (RNNs), are used to extract information from input photos and predict the presence and position of graphical objects. By training on diverse datasets, the model can generalize well to unseen data and effectively detect graphical elements across different document types and layouts. (Saha, Mondal, & Jawahar, 2019) The results of the analyses conducted showed that this method achieved accurate and reliable detection of graphical objects in document images.

FIGURE 3 : GOD framework (Saha, Mondal, & Jawahar, Graphical Object Detection in Document Images, 2019)

The EAST (Efficient and Accurate Scene Text) Detection Algorithm

This method is proposed by Sun et. al(2022) designed specifically for detecting and recognizing inclined text in images. The approach uses reinforcement learning to train a recurrent neural network (RNN) controller. Reinforcement learning enables the RNN controller to learn optimal behaviours based on feedback from the environment, specifically picture data. The EAST algorithm determines the best fully convolutional neural network (FCN) topology for feature extraction. FCNs are ideal for extracting features from photos while maintaining spatial information. The method extracts multiscale text features from the input image using the chosen FCN architecture. The collected features are then fed into the Generalized Intersection over Union (GIoU) algorithm. The GIoU measure is widely used in object detection tasks to assess the overlap between predicted bounding boxes and ground truth boxes. The EAST approach employs GIoU to boost the regression effect of the text bounding box, hence enhancing text detection accuracy. The loss function used to train the EAST algorithm is changed to balance positive and negative sample classes. This tweak ensures that the model learns successfully from both sorts of instances, resulting in better text identification outcomes. (Sun, et al., 2022)

The EAST detection algorithm represents a significant advancement in the field of scene text detection due to:

1. **Efficient Processing:** One of its primary features is its ability to handle images efficiently. The approach can efficiently analyse large-scale image data while preserving spatial information by using fully convolutional neural networks (FCNs) for feature extraction. This allows the algorithm to tackle text detection jobs in real-time or near-real-time circumstances, making it ideal for applications that require speed.
2. **Robustness to Inclined Text:** This algorithm is specifically intended for detecting recognizing tilted or angled text in photos. This ability is required for managing text that appears at various angles or orientations in natural settings or documents. The method can successfully localize and extract inclined text sections using reinforcement learning and specialized techniques such as GIoU.
3. **Adaptability to Different Text Sizes and Fonts:** Its ability to adjust to different text sizes, fonts, and styles is a key point. The algorithm's multiscale feature extraction approach detects text of varying sizes and typefaces, making it useful for a variety of text recognition tasks. This versatility is critical for situations in which text appearance varies dramatically between images or documents.
4. **Training Procedure:** During the training phase, the EAST method makes use of enormous datasets of annotated images with tilted text. These datasets are utilised to train the RNN controller, fine-tune the FCN architecture, and optimise the GIoU algorithm's parameters. The training approach employs iterative optimisation strategies to reduce the loss function and enhance the model's performance over time.
5. **Evaluation and Validation:** After training, the EAST algorithm's performance is tested using benchmark datasets and standard text detection metrics. Precision, recall, F1-score, and mean average precision (mAP) are measures that assess the algorithm's ability to detect and localise text sections within images. The algorithm's performance is compared to other cutting-edge text identification methods to determine its efficacy and superiority. (Sun, et al., 2022)

These methods show how deep-learning-based algorithms can overcome text recognition problems in scanned documents, providing promising solutions for real-world applications.

Results and Conclusions

This article discusses both traditional and modern methods of document digitization. Classical methods centred on Optical Character Recognition (OCR) algorithms, which extract text from scanned documents. Scanning, preprocessing, segmentation, feature extraction, and recognition are some of the key processes. These approaches have several advantages, including greater efficiency, accessibility, and searchability/indexing. However, limits include accuracy restraints, formatting concerns, and language/font restrictions. When it comes to The SCDC method, it has major advantages in terms of its capacity to extract hierarchical text representations from scanned documents via convolutional autoencoders with skip connections. The SCDC method improves accuracy and robustness to text-character variance by utilizing deep learning techniques. However, while it excels in word recognition, it may not be optimized for detecting graphical elements or other non-textual aspects typically seen in documents. In contrast, the GOD technique uses end-to-end trainable deep learning models to detect graphical objects in document images. While this methodology is effective at localizing graphical features, it may be less proficient at recognizing textual material when compared to specific OCR algorithms. Lastly, the EAST detection framework detects and recognizes tilted text in photos using reinforcement learning and specialized approaches like the Generalized Intersection over Union (GIoU) algorithm. While it excels at handling inclined text, it may be less adaptable in detecting text in different orientations or fonts.

Recent advances in OCR technology, machine learning, and artificial intelligence have considerably accelerated document digitization. Deep learning algorithms, in particular, have transformed OCR by allowing models to learn directly from raw input data and automatically extract essential features for text recognition. Techniques such as convolutional neural networks (CNNs) and recurrent neural networks (RNNs) have demonstrated significant effectiveness in extracting text features and improving OCR accuracy. Furthermore, reinforcement learning methods, as illustrated in the EAST detection algorithm, have been used to train models for detecting and recognizing text in images with tilted or skewed orientations, addressing a common issue in document digitalization. These developments highlight the transformational impact of machine learning and AI on document digitalization, opening the path for more efficient and accurate systems.

In addition to using modern OCR techniques and machine learning algorithms, best practices for document digitization projects include careful evaluation of data quality, preprocessing procedures, and model selection. High-quality image scanning and preprocessing are critical for improving OCR accuracy and reducing mistakes. Furthermore, selecting appropriate models and architectures based on the digitization project's specific objectives might have a substantial impact on its success. Continuous assessment and validation of OCR systems utilizing benchmark datasets and standard performance indicators is also required to assess the efficacy and reliability of the implemented solutions. Furthermore, working with field experts and stakeholders, as well as soliciting user feedback, can assist refine and optimize document digitization procedures for optimal efficiency and usability. Overall, successful document digitization initiatives require a comprehensive approach that combines cutting-edge technology with best practices in data management and project delivery. To improve document digitization, a hybrid strategy that combines the capabilities of different technologies may be beneficial. For example, combining the SCDC approach for text recognition with the GOD method for graphical object detection could result in a comprehensive solution for digitising documents containing both textual and graphical content. Additionally, using techniques from the EAST detection algorithm to handle sloped text could increase the system's adaptability and accuracy.

Ultimately, the optimum approach or mix of methods is determined by the document digitization project's individual needs and characteristics. When deciding on a strategy, consider the sorts of documents to be digitised, the desired level of accuracy, the inclusion of graphical features, and the complexity of text orientation. Furthermore, constant evaluation and adaptation based on real-world performance and user input are critical for improving and optimising document digitization systems over time.

In conclusion, while each method has distinct strengths and capabilities, combining complementing techniques and adapting the approach to individual project requirements can result in more effective and efficient document digitization solutions. Continued research and innovation in the field are required to advance the state-of-the-art and solve the changing problems of document digitalization in diverse sectors.

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Bending behavior of GFRP and conventional steel reinforced concrete structures

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Abstract

Glass fiber reinforced polymer, or GFRP, is a composite element which provide a very high tensile strength, which combined with other characteristics like low weight to resistance ratio, very good anti corrosion properties, electromagnetic neutrality, high cuttability in temporary structure, makes the GFRP a very good substitute of steel as e reinforcement material in the reinforced concrete structures. But, the downside of GFRP is being an anisotropic material with a low compressive resistance and also a low tensile/compressive modulus of elasticity compared to steel. And as it is known, a low modulus of elasticity is associated with high deformity, reduced load bearing capacity and also low ductility which is a very important property for building in seismic regions. In order to show the differences between GFRP and conventional steel as a reinforcement for the reinforced concrete structures, for a beam section with a given concrete class and for each case of reinforcement, is built the moment – curvature diagram, showing the differences between these two reinforcing materials also numerically. All the calculations are performed on the Eurocode framework.

Key-words: GFRP, reinforced concrete, moment – curvature diagram.

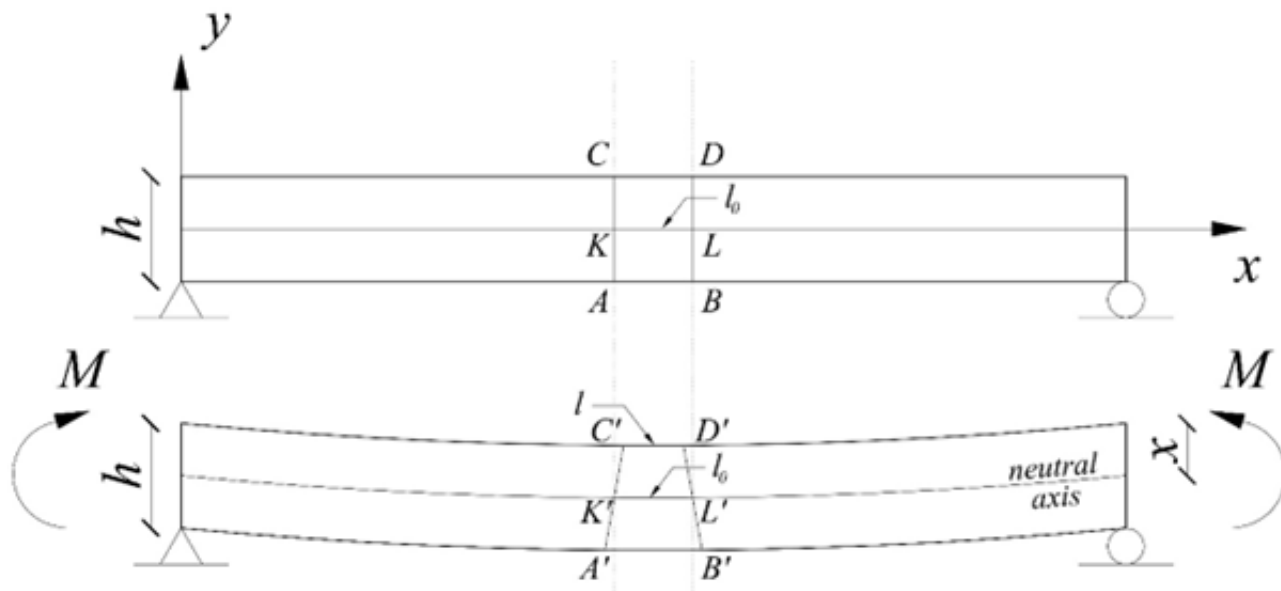
Introduction

Fiber reinforced polymer, or FRP, is a reinforcing material used on the reinforced concrete structures as a substitute of the conventional steel. FRP is a composite material which consists of glass, carbon or aramid fibers bonded together from a matrix of epoxy, polyester or vinylester resin. In this article, the glass fiber reinforced polymer, GFRP, is studied. As previously stated, the GRFP is a material with an elevated tensile strength, but, on the other hand they are an anisotropic material with low compression resistance, low modulus of elasticity, and lack of ductility. Otherwise, steel is an elastic material, with very good ductile properties, isotropic (good tensile and compressive resistance) and with an elevated modulus of elasticity (associated with high deformity). As it is seen, these two materials are very different, each of them with their advantages and disadvantages, so in order to determine which is the more favorable for use as a reinforcing material on the reinforced concrete, the bending behavior of each of them is analyzed. This analysis is performed with the help of the moment - curvature diagram. For a given section, with specified properties, the moment - curvature diagram is determined for two different cases of reinforcing material, steel and GFRP.

Correlation between the depth of neutral axis, curvature and strain

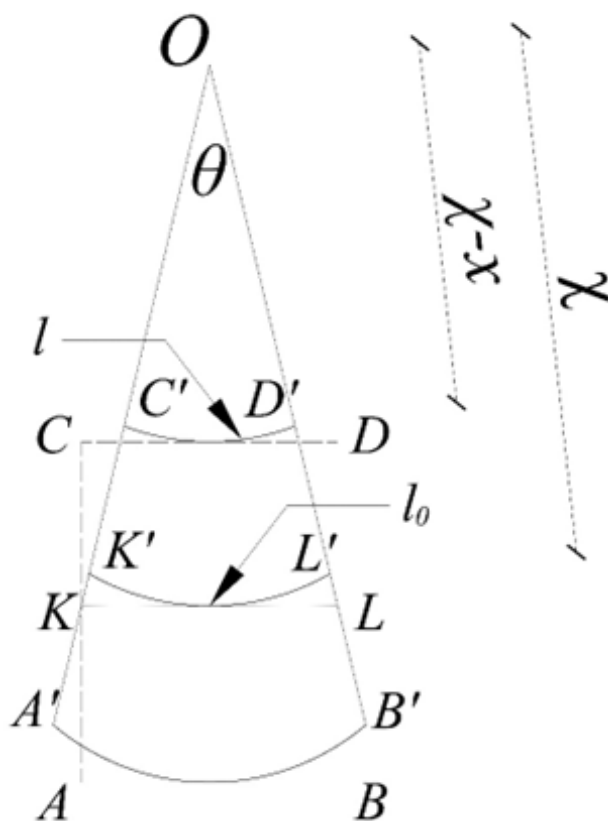
First is considered a beam under pure bending (no internal shear force). In this case, the beam is deformed in circular arc shape. It is assumed that the plane cross section remains plane also after the straining's, in order that across the section the strains are distributed linearly.

FIGURE 1. Deformation of a beam under bending moment



To determine the correlation between the depth of neutral axis, curvature and the strain, the geometry of small element (between cross sections CKA and DLB) is studied:

FIGURE 2. Deformation of a small element inside the whole beam



In this case 'O' is the center of curvature, ' χ ' (Greek letter chi) is the radius of curvature and as we know, the curvature is $k=1/\chi$.

Since the radius of curvature is very big, the angle ' θ ' is very small, so we can approximate $\theta \approx \text{tg}\theta$.

So, the length of the original fiber (un-deformed fiber)

$$l_0 = \chi \cdot \text{tg}\theta \approx \chi \cdot \theta \tag{1}$$

And the length of the top deformed fiber:

$$l = (\chi - x) \cdot \text{tg}\theta \approx (\chi - x) \cdot \theta \tag{2}$$

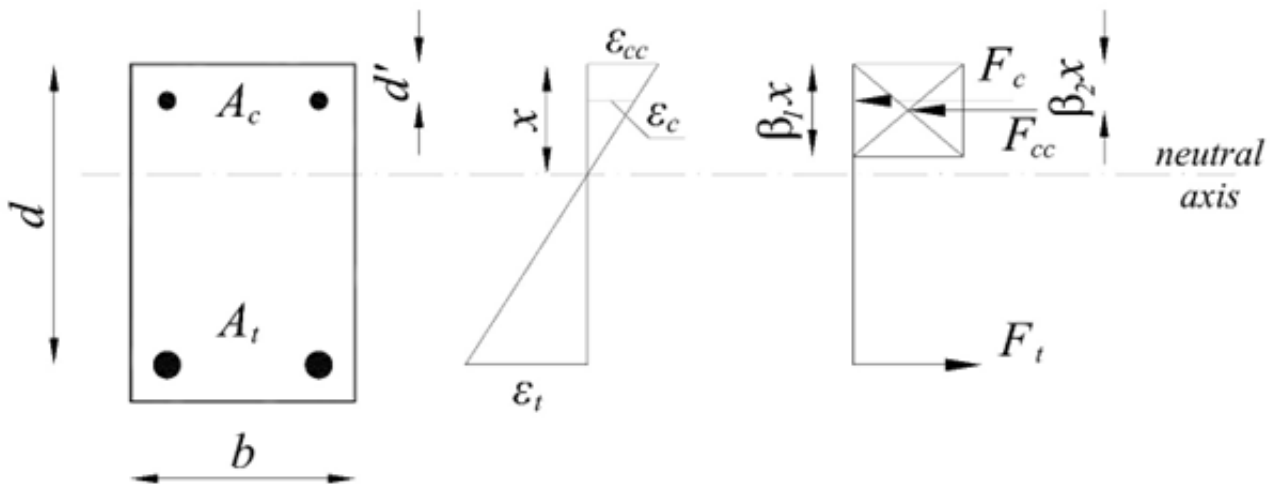
Finally, the correlation between depth of neutral axis, curvature and strain is given:

$$\epsilon_c = \frac{\Delta l}{l_0} = \frac{l_0 - l}{l_0} = \frac{\chi \cdot \theta - (\chi - x) \cdot \theta}{\chi \cdot \theta} = \frac{x}{\chi} \Rightarrow k = \frac{1}{\chi} = \frac{\epsilon_c}{x} \tag{3}$$

Consideration

Before showing the calculation process for building the moment – curvature diagram, some basic assumptions are made. For the purpose of this paper, the strain diagram and stress distribution in a section subject to bending is as in the following figure [1] [3]:

FIGURE 3. Strain and stress distribution in the cross section.



Bending theory for a reinforced concrete element assumes that concrete has cracked on the tension region and all the tensile stresses are carried from the reinforcement.

For the concrete, the stress distribution is accepted rectangular with $\beta_1=0.8$ and $\beta_2=0.4$.

Based on the compatibility of strains inside the section, we can calculate the strains on the reinforcement from the strain diagram as follows.

Strains on the tensile reinforcement:

$$\epsilon_t = \epsilon_{cc} \frac{d - x}{x} \tag{4}$$

Strains on the compressive reinforcement:

$$\epsilon_c = \epsilon_{cc} \frac{x - d'}{x} \tag{5}$$

So, from expression (4) and (5), for a given position of neutral axis “ x ” and varying concrete compressive strains “ ε_{cc} ”, we can calculate the strains on the reinforcing (steel or GFRP).

For concrete grades $\leq C50/60$ $\varepsilon_{c2}=0.2\%$ and $\varepsilon_{cu2}=0.35\%$. [1]

The compressive stresses on concrete are calculated by:

$$\sigma_{cc} = f_{cd} \left(1 - \left(1 - \frac{\varepsilon_c}{\varepsilon_{c2}} \right)^n \right); \varepsilon_{cc} < \varepsilon_{c2} \quad (6)$$

$$\sigma_{cc} = f_{cd}; \varepsilon_{cc} \geq \varepsilon_{c2}$$

Where $n=2$.

For the steel reinforcement, after calculating the tensile and compressive strains with the help of expression (4) and (5), the stresses can be calculated as follows:

On the compressed reinforcing:

$$\sigma_{sc} = E_s \cdot \varepsilon_{sc}; \varepsilon_{sc} < \varepsilon_{sy} \quad (7)$$

$$\sigma_{sc} = f_{sy}; \varepsilon_{sc} \geq \varepsilon_{sy}$$

And on the tension reinforcing:

$$\sigma_{st} = E_s \cdot \varepsilon_{st}; \varepsilon_{st} < \varepsilon_{sy} \quad (8)$$

$$\sigma_{st} = f_{sy}; \varepsilon_{st} \geq \varepsilon_{sy}$$

Where “ ε_{sy} ” is the yield strain and depends from the steel grade.

Regarding the GFRP, we have to assume that:

GFRP do not contribute on the compressive strength of the section. [4], [6]

The longitudinal tensile resistance is diameter – dependent (different bar diameter has different tensile resistance, resistance decrease with the diameter increase). [4]

GFRP have an elastic linear behavior till the failure point. [4]

Also for the GFRP, after calculating the tensile strains with the help of expression (5), we can calculate the tensile longitudinal stresses by:

$$\sigma_f = E_f \cdot \varepsilon_f; \varepsilon_f < \varepsilon_{fd} \quad (9) [4]$$

Where, the design longitudinal tensile strains can be calculated from:

$$\varepsilon_{fd} = 0.9\eta_a \frac{\varepsilon_{fk}}{\gamma_f} \quad (10) [6]$$

Where $\gamma_f=1.5$ and $\eta_a=0.8$ for GFRP bonded with vinylester resin and concrete on dry conditions, and [6]:

$$\varepsilon_{fk} = \frac{f_f}{E_f} \quad (11) [4]$$

And “ f_f ” is the longitudinal tensile resistance, “ E_f ” is the longitudinal tensile modulus of elasticity.

If $\varepsilon_f > \varepsilon_{fd}$ is assumed that the GFRP has failed. [6]

Calculation

In order to build the moment – curvature diagram, a beam with rectangular cross section with $b=30$ cm, $h=50$ cm and $d'=3.5$ cm is taken in consideration. The concrete is C25/30.

First case: Section is assumed to be reinforced with $A_s=8.04\text{ cm}^2$ (4Ø16) in tension and $A'_s=8.04\text{ cm}^2$ (4Ø16) in compression and $f_{yk}=4300\text{ daN/cm}^2$, $E_s=2000000\text{ daN/cm}^2$ and $\epsilon_{sy}=0.187\%$.

Second case: Section is assumed to be reinforced with $A_f=8.04\text{ cm}^2$ (4Ø16) in tension and $A'_f=8.04\text{ cm}^2$ (4Ø16) in compression which, as is previously stated, its contribution is not taken in consideration. For the Ø16 bars, the tensile resistance is $f_f=6820\text{ daN/cm}^2$, the tensile modulus of elasticity is $E_f=406790\text{ daN/cm}^2$ and $\epsilon_{fd}=0.805\%$. [4]

But, since GFRP do not contribute on the compressive strength of the section, in order to have similar comparative conditions for the two cases, the contribute of compressive steel reinforcing is not taken in consideration, so $A'_s=0$.

For each case, the depth of the neutral axis is accepted once $x=0.651 \cdot d$ (limit position for the conventional concrete – steel for $\epsilon_{cu2}=0.35\%$ and $\epsilon_{sy}=0.187\%$) and once $x=0.303 \cdot d$ (balanced section for GFRP), and for each cases are built the respective moment – curvature diagram.

To build the moment – curvature diagram, the following steps are needed:

1. A value for “ ϵ_c ” is accepted.
2. With expression (3) is calculated the radius of curvature.
3. With expression (6) is calculated the compressive stress on concrete.
4. With expressions (4) and (5) are calculated the tensile strains on steel reinforcement and GFRP and the compressive strains only on steel reinforcement.
5. With expression (7) and (8) are calculated the tensile and compressive stresses on steel reinforcement.
- 5.1 With expression (9) is calculated the tensile stresses on GFRP

After calculating the respective stresses on the reinforcement, we can calculate the corresponding resisting moment of the section.

For steel reinforcing:

$$M_{Rd} = A_s \cdot f_{yd} \cdot \left(\frac{h}{2} - d'\right) + \sigma_c \cdot \beta_1 \cdot x \cdot b \cdot \left(\frac{h}{2} - \beta_2 \cdot x\right) \tag{12}$$

For GFRP:

$$M_{Rd} = A_f \cdot f_{fd} \cdot \left(\frac{h}{2} - d'\right) + \sigma_c \cdot \beta_1 \cdot x \cdot b \cdot \left(\frac{h}{2} - \beta_2 \cdot x\right) \tag{13}$$

With the help of expression (12) and (13) the following moment – curvature diagrams are built:

FIGURE 4. Moment – curvature diagram for GFRP with $x=0.651d$

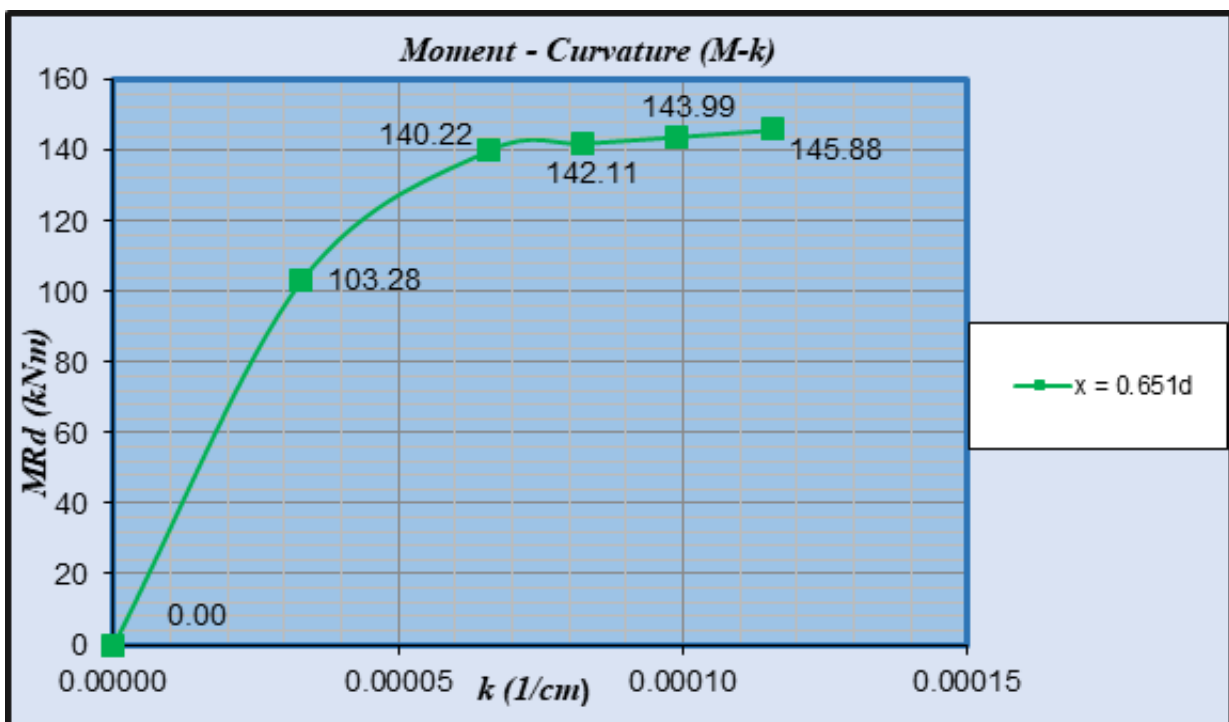


FIGURE 5. Moment – curvature diagram for GFRP with $x=x_{bal}=0.303d$.

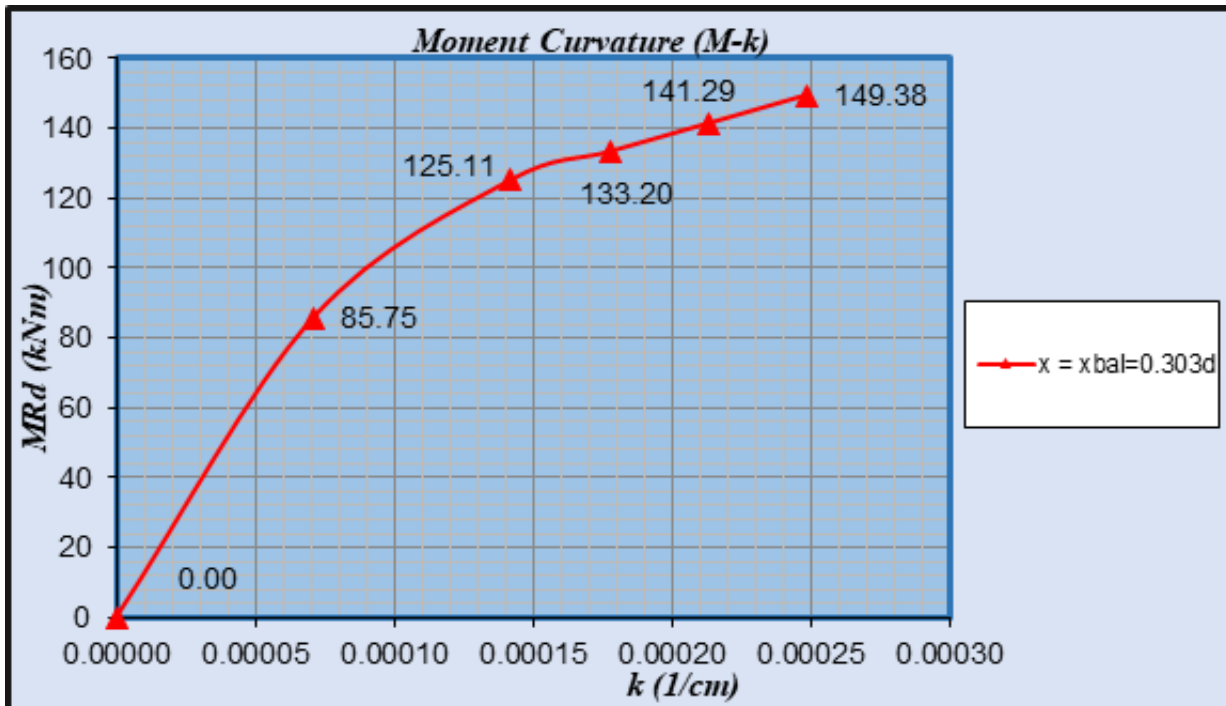


FIGURE 6. Moment – curvature diagram of GFRP for two positions of neutral axis.

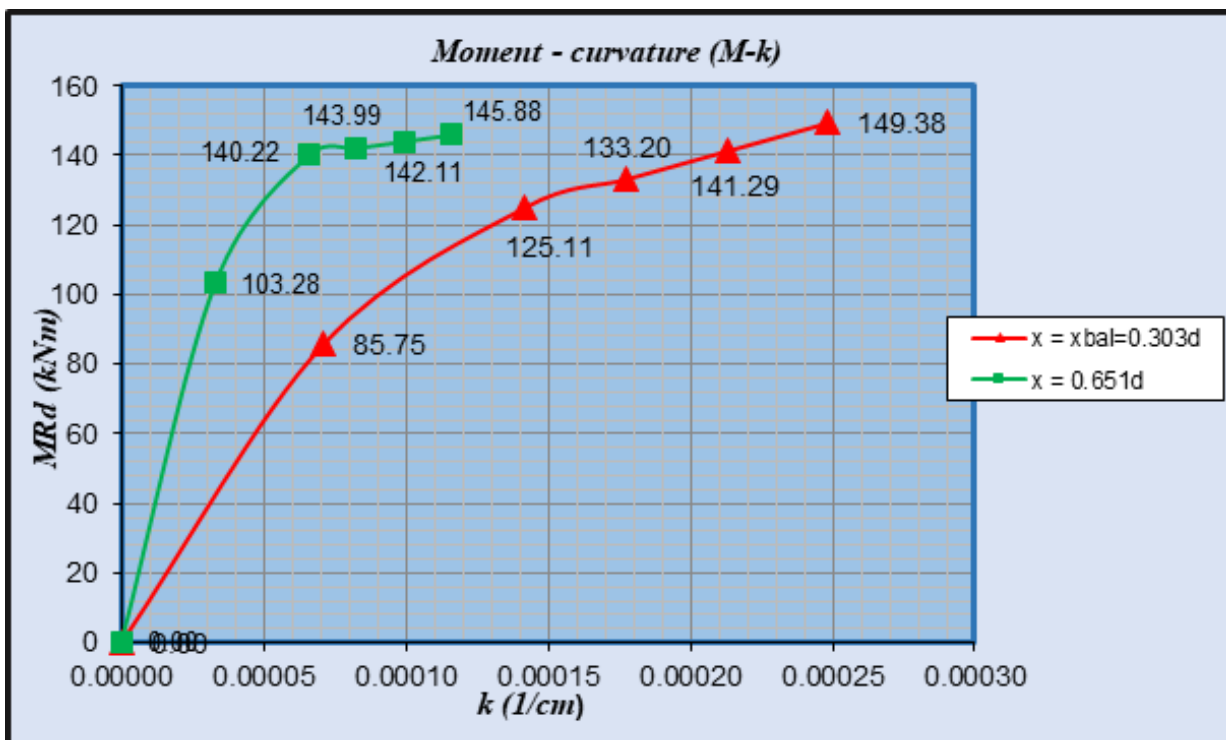


FIGURE 7. Moment – curvature diagram for Steel reinforcing with $x=0.303d$.

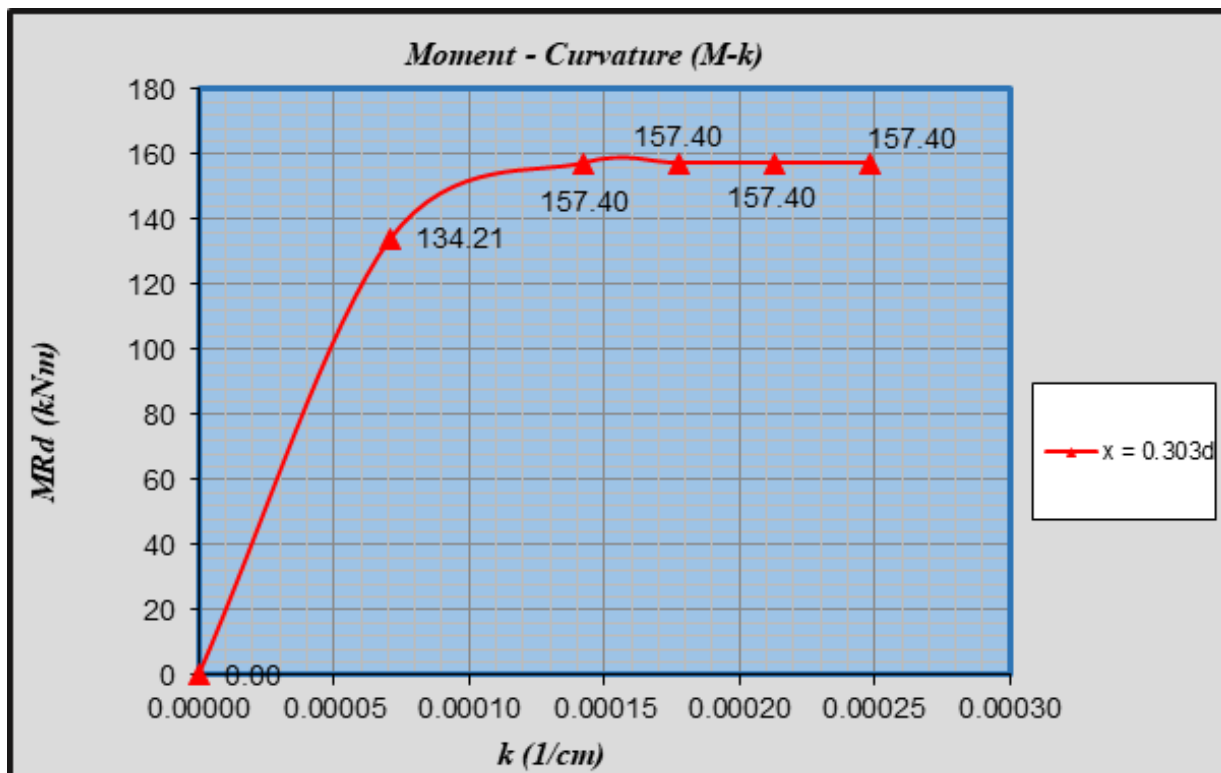


FIGURE 8. Moment – curvature diagram for Steel reinforcing with $x=x_{lim}=0.651d$.

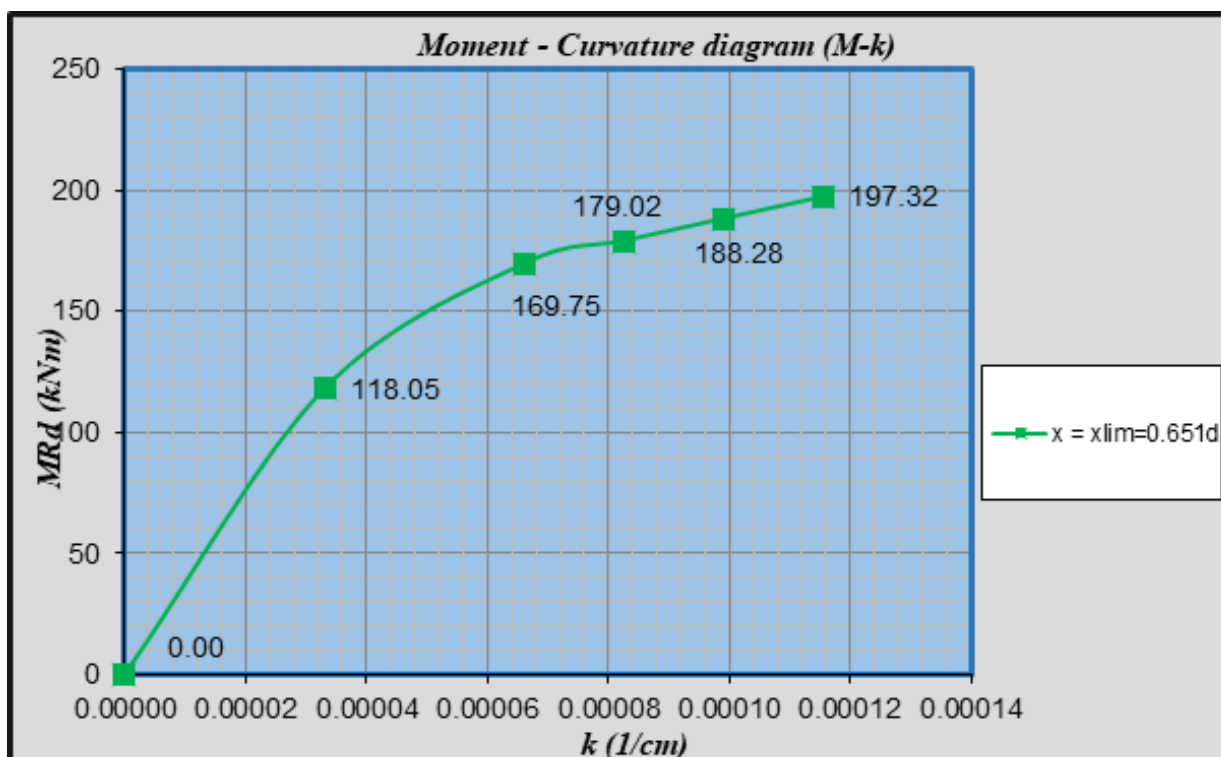


FIGURE 6. Moment – curvature diagram of Steel reinforcing for two positions of neutral axis.

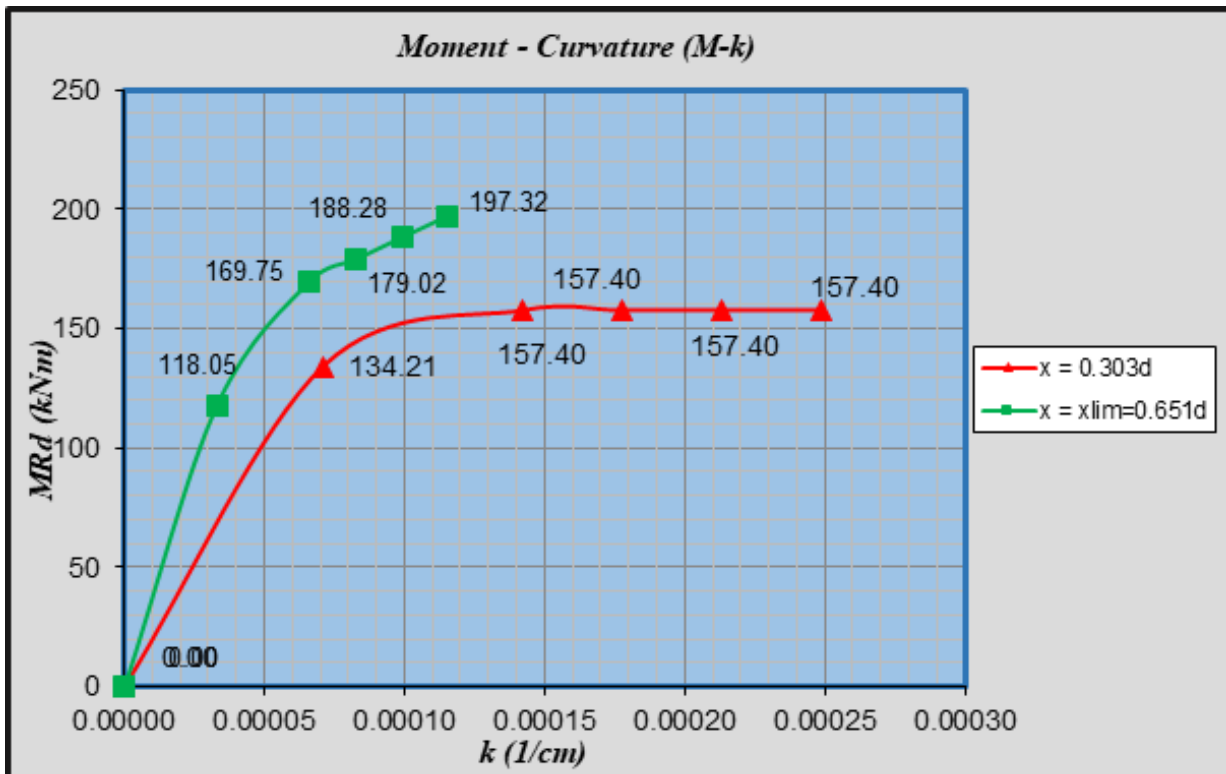
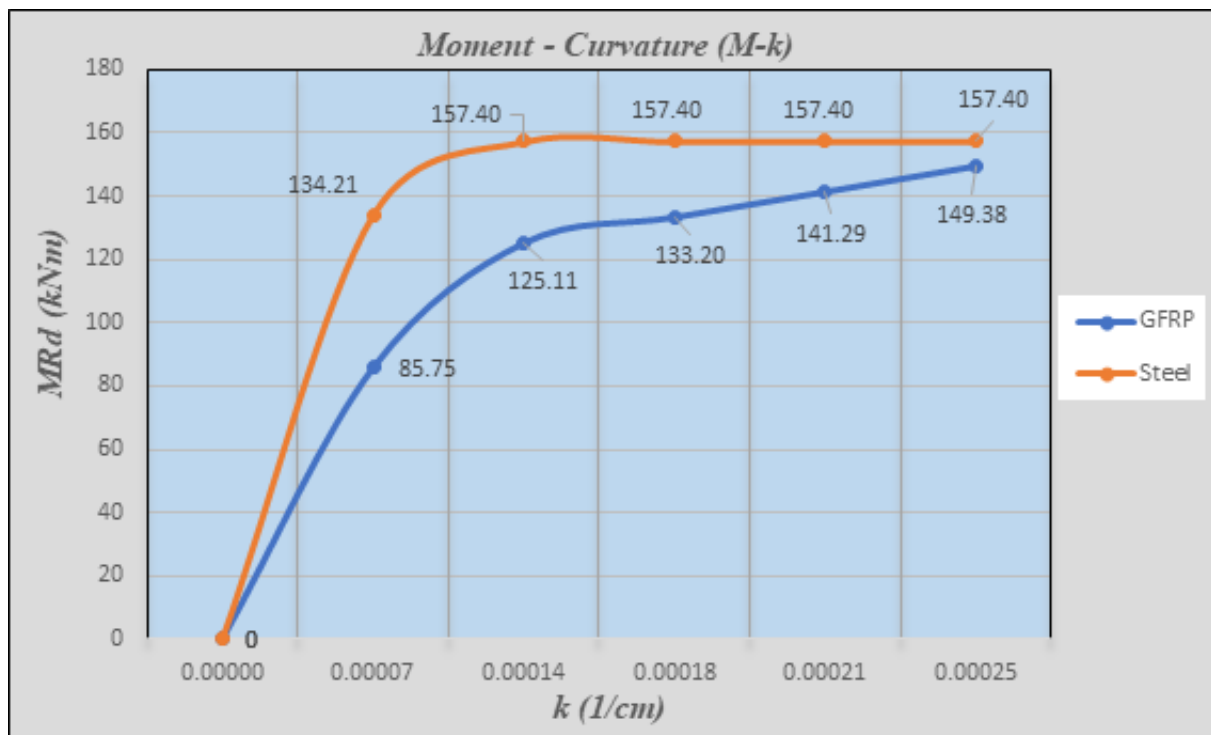


FIGURE 7. Moment – curvature diagram for two types of reinforcing for $x=0.303 d$ (x_{bal} for GFRP reinforced section)



Conclusions

Based on the above moment – curvature diagram, the following positive and negative aspects of GFRP usage are drawn.

Positive aspects:

- GFRP have high tensile resistance
- Low weight/resistance ratio. [5]
- Very good anticorrosion properties. [5]
- Electrically neutrality. [5]
- High cuttability. [5]

Negative aspects:

- GFRP do not provide compressive strength.
- GFRP are not a workable material, meaning that is difficult for them to bend for creating stirrups, bended bars, or simple hooks.
- GFRP high tensile strength can't be used maximally because their relative deformity surpasses the design relative deformity for relative small internal forces.
- Is possible that their limit strain is smaller than concrete ultimate strain.
- GFRP don't have yielding point, stress – strain relationship is within elastic range, for this reason the reinforced concrete structures reinforced with GFRP display low ductile properties.
- GFRP have low tensile modulus of elasticity, for this reason the reinforced concrete structures reinforced with GFRP display low ductile properties.
- Under bending, for the same deformity of the element, they provide low moment of resistance, for this reason the reinforced concrete structures reinforced with GFRP display low ductility properties.
- With the increasing of the height of the compressive zone, the moment of resistance of the section is increased, but the deformations decrease, so the structure displays low ductile properties. This is also true when steel is used as reinforcing, but for GFRP is more evident.

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Technology, IoT and AI help in Conservation of Cultural Heritage. Protecting “Ura e Mesit” (The Mesi Bridge) in Shkodra Area, Albania.

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Abstract

Always we care of our roots and our culture, and the Built Cultural Heritage helps much in keeping the memory of the past and the history of the countries. Among the architectures on the territory, the bridges are the most evident and powerful witnesses of the past. Large structural intervention can be carried out on the old monuments, in order to prolong their lives, but today we can limit the intervention as well as to better control their structural health. As for humans with analysis and diagnosis, the use of the continuous monitoring can bring a better knowledge of the structure of the monument and give higher confidence about the risk of collapse, which is the worst event could happen to the constructions. The paper consider the Mesi bridge in Shkodra Area, in Albania, as case study, and suggest some strategy in order to monitor, reinforce and conserve a national patrimony adopting techniques and technology belonging to the world of the civil engineering, to that one of the computer science and also of the electronics.

Keyword: Permanent Monitoring, Cultural Heritage, structural health monitoring, IoT for structures

Historic introduction

Arch masonry bridges have been widely used due to their efficiency as structure and their simplicity in construction to cover large span, in the mountain as well in the river. Masonry, as any other material, suffers of degradation mostly due to the environmental conditions which act during the time. Then the value of the ancient bridges, as structure and monument, because belonging to the cultural heritage of one region, must be preserved as long as possible for future generations. The architects, the engineers, the technicians in charge of this should study and apply the most efficient system compatible and reversible to conserve this heritage. In Albania several old masonry arch bridges are present all over the country, and some of them are really valuable for their historical and social value. Also, most of them are at risk for structural deficiency or degradation.

Also bridges built in the last century or the century before need to have attention from the citizen and from the authority, and deserve specific treatment, as maintenance or require conservation intervention inside the framework of the typical approach that we give to the cultural heritage architectures.

TAB. 1- List of some historical bridges in Albania (World Heritage List, UNESCO official site)

	Name	Classified	Length	Type	Use	Date
	Kasabashit Bridge	Cultural Monument	26 m	Masonry 1 pointed arch	Footbridge Vlosh	1640
	Kamares Bridge	Cultural Monument	40 m	Masonry 2 segmental arches	Footbridge Shkumbin	1715
	Kurcajt Bridge	Cultural Monument	23 m	Masonry ure me nje hark	Footbridge Kir (river)	19th century
	Gorica Bridge	Cultural Monument	129 m	Masonry 7 semi-circular arches	Former road bridge Osum	1780
	Kadiu Bridge	Cultural Monument	30 m	Masonry 1 pointed arch	Footbridge Lengaricë	18th century
	Tanners Bridge	Cultural Monument		Masonry 2 semi-circular arches	Footbridge Former Lanë	18th century

The construction of most stone bridges in Albania can be dated at the period from the 16th to the 19th century, when the territory of Albania was part of the Ottoman Empire, in that part of the outskirts of the empire where great desire and enormous efforts for its expansion to western Europe were carried out.

The practice of persistent, demanding and expensive engineering constructions of stone bridges provided stability and intensity to Empire life and enabled local communities to ensure movement, trade and communication. Looking at today conditions, we could state that the bridges were built by expert engineers which allowed them to survive over a long period of time. Stone bridges built in different periods occupy a key place among the ancient engineering structures of Albania. From the sources obtained so far, we note that today about 100 old bridges are preserved in our country. Built in the valleys of rivers, streams, or in the mountains, with different sizes and numbers of arches, they were part of important roads of the time, connecting the inhabited centers together. Old bridges with stone arches can be found in all provinces of the country, starting from north to south, Kukes, Shkodra, Kruje, Elbasan, Librazhd, Pogradec, Korce, Permet, Gjirokaster. Of course, depending on the width of the river bed, stone bridges with one or more arches were erected. Several bridges with many arches are preserved, such as the bridges of Gorica and Velabishti in Berat, the bridges of Dropull, Miraka in Librazhd, Tabakeve in Tirana. Arch stone bridges are the simplest and most widespread; We meet them in every province of the country.

A short list has been shown in Tab.1. As it can be seen, most of them are classified inside the National Cultural Heritage patrimony, and even at higher international level, at UNESCO list of the Cultural Heritage in the world.

FIG. 1 – Typical damaged bridge due to the flooding.

The key factor in the damage to historic stone arch bridges was flood damage (Fig.1). Flood damage could cause considerable damage to the base of the bridge, even though flood splitters were always present in the bridges. Floods, tree trunks and other drifting materials could cause serious damage to bridges and lead to their destruction. In addition to damage from floods, damage from earthquake effects may also occur. The bridge's heavy weight increased its resistance to earthquake impact. Depending on the severity of the damage, partial or global damage to the bridge may result. Human-caused damage, such as overloading, modification of the bridge's slope, wars and lack of adequate material, has often occurred in local areas of the bridge.

FIG. 2. Typical damages of Stone bridges by flooding

Several academic works on the structural health of stone bridges have mainly focused on studying the impacts of factors such as loss of stiffness, time- temperature-dependent deformations, fatigue, corrosion, erosion and vibrations. To reliably detect such damage, continuous monitoring using state-of-the-art methods and techniques is essential.

Mesi Bridge – The History

From the end of the 18th century, a first permanent bridge was established across the river Kiri. Today, the Mesi Bridge is well preserved. Mesi Bridge takes its name from the village of Mesi near it, which connects Shkodër with Drishti and the province of Cukali.

The “bow arch” bridges were very common in the 1930’ and 1940’ years in Italy, Albania and in many other country of the Mediterranean area.

Of the bridges that are preserved in us, the Mesi Bridge is the largest. It is made with 13 arches with different spaces. The length of the bridge in horizontal projection, measured during its paving, is 120 m. In the plan about 5 m to the right of the main arch, the bridge route takes a turn in the direction of the downstream flow, with an angle of 14°, the break is imposed by the shape of the rock formation of the river bed.

The construction of the bridge has gone through two phases, which can be seen from the traces of the construction technique. The first phase includes the main arch with three arches on its sides; two on the left wing and one on the right. The visible sides of the masonry of the old part are made of hewn stones with regular joints. Later, when apparently the large streams flooded the sloping parts, at the entrance and exit of the bridge, the need arose to extend it, which brought about the second phase of construction.

From the constructive side, the light spaces in the arches of the bridge are realized with a double vault. The thickness of the lower vault of the main space reaches 0.60 m and the upper one 0.45 m. The width of the vault is 3.4 m. The maximum height of the parapet in the center of the bridge above the level of the river bed reaches 15.2 m.

From both sides of the main arch, which has a 21.5 m light space, two small arches have been opened. These small arches, which are often encountered in bridges and are called relief or discharge windows, reduce the hydrodynamic pressure of the water on the legs of the arches and facilitate the construction of the bridge, avoiding the massive walling of the legs.

FIG. 3. The Bridge of Mesi, with lateral holes.



To distribute the flow of water, the legs of the main arch are added to the upper flow from a pile in the form of a prism with a triangular base, something that does not allow water to crash into the supports bow. The route of the first phase of the bridge is paved with “*kellie*” stone slabs, where in every 1m, the rows transverse rise 5 cm, giving the slope of the ridge of the main arch the shape of a staircase. With the extension of the bridge in the second phase, five arches from the left and four arches from the right have been added to the old part.

FIG. 4.A,B. The Bridge of Mesi, built during the Ottoman period, around 1770, by a local Pasha, on the Kiri River. The bridge is 120m long, 3.4m meters wide, 12.5 meters high with 13 arches and represents one of the longest Ottoman bridges in the region.



More than river, the Kir is a sort of creek, in sense that there is a big difference of its behaviour in summer and in winter. So, sometimes it is almost dry, like you see in the fig. 2, in the summer, while in the winter you can have even too much water, and it can happen some flooding, and water can pass through the holes of the arches, to permit the water to pass through the bridge and not push and destroy the bridge itself.

FIG. 5. The Bridge of Mesi, in the summer season the river is almost dry, behaving like a creek



FIG. 6. The Bridge of Mesi, presentation of the stone façade



The bridge is composed by several arches, with the big arch in the middle, under which this Kir river pass. The wide of the bridge is about three meters. That means that small chariot can pass by there, maybe some horse, people of course. There is a typical arch, which is called in Italy, the “devil’s arch”, which has this shape of full round arch, pushing the pedestrian road to follow this absurd (and suffering from the travelers) middle span slope. The bridge is still in good conditions, and even build back to hundred years ago, in 1770, probably by a local pasha, in Ottoman Empire. This bridge, you can see the pavement, is an ivon pavement, and this is a historical photo.

FIG. 7. The Bridge of Mesi paving with full gravel

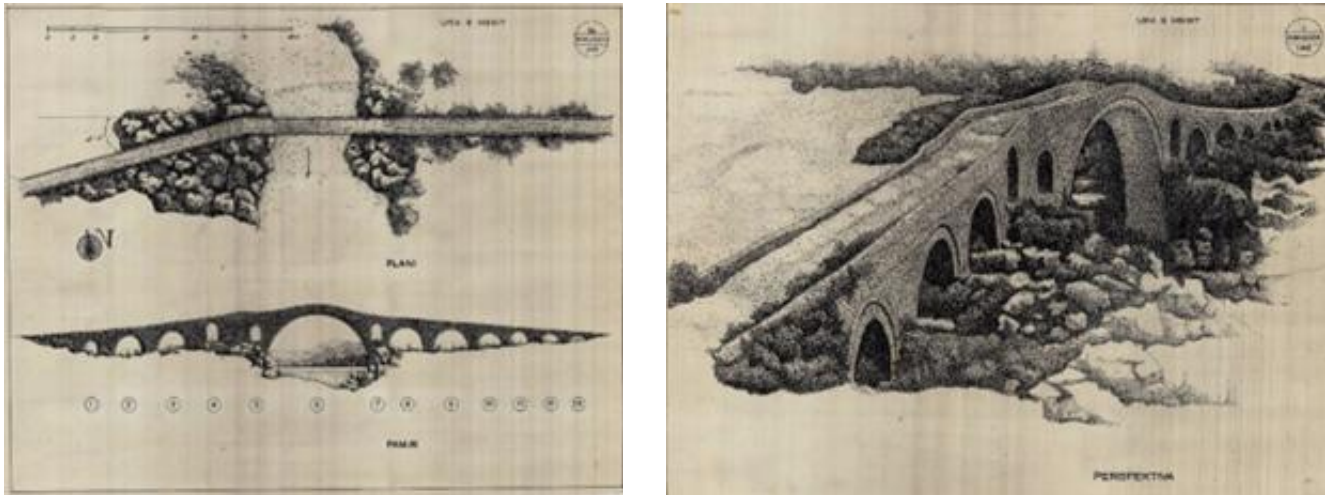


FIG. 8. The Bridge of Mesi, 1906 photo, the river under is full of vegetation



We can see in Fig. 5. some technical drawings taken by the construction archive in Tirana. These drawings have been made by some interesting architects in 1981 and there we can see the appearance of the perspective, the plan and the view.

FIG. 9.,A and b. Technical drawings (reproduction) of Institute of Design Studies, 1981 (Tirana)

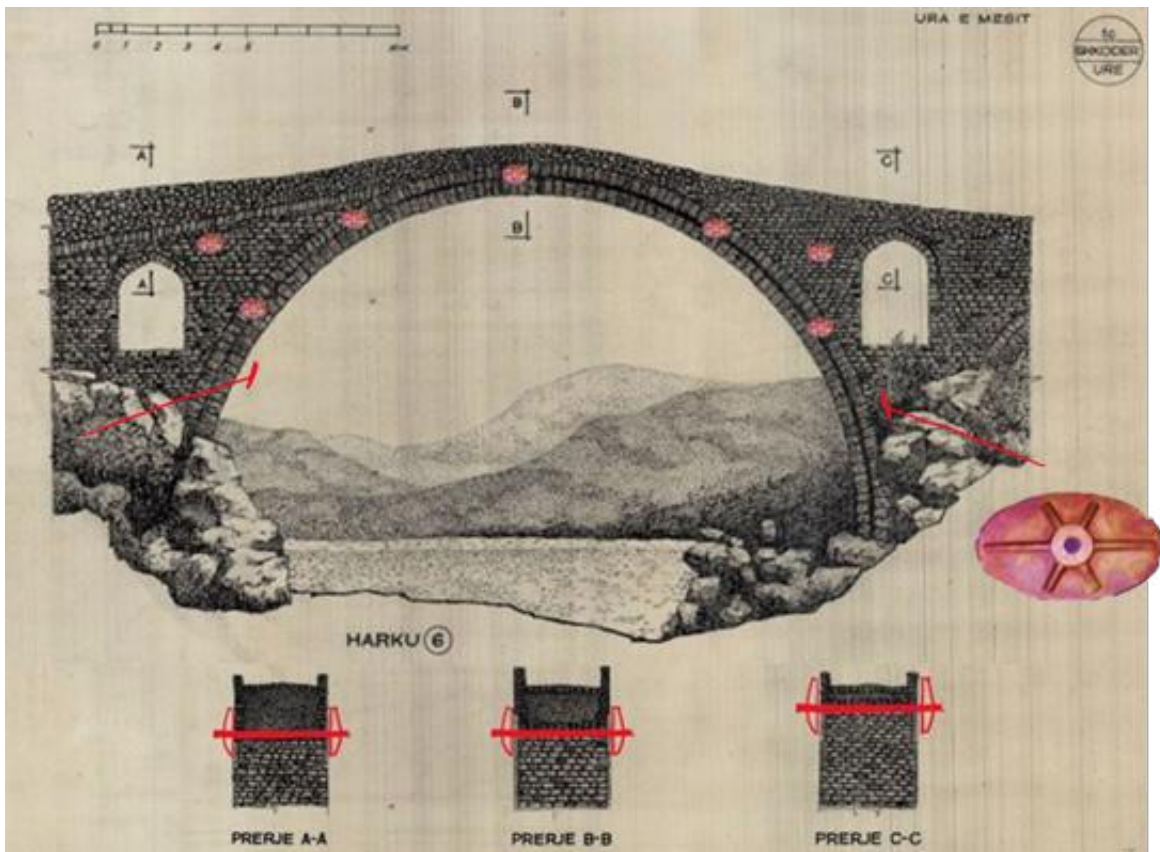


Ponte Mesi: Pathologies and possible interventions

As already mentioned before, damages in stone arch bridges were mostly caused by floods, earthquakes or human-caused damages.

The Mesi Bridge, itself, is not suffering special kind of “dramatic” pathology. The clear and evident problem is the age, although not excessive, and the lack of maintenance. Typical masonry construction in the city were recommended by the architects to provide a robust protective plaster, like a skin, in order to reduce environmental attack, prolong the life and keep the safety factor at a satisfactory level. The bridge do not have any plaster,any “skin” to protect the masonry structure, then it will be important to consider that in the possible conservation intervention.

FIG. 10. Possible intervention of conservation with transversal chain bar on the main structural arch and a dry underpinning (drawn on a drawings (reproduction) from the archive of Institute of Design Studies, 1981



We always should keep in mind the principles of the conservation and restoration worldwide accepted and adopted (C.Brandi, 1963), which remark that the structure should not be contaminated with structural elements that do not belong to the traditional construction, and the intervention should be reversible.

Under these assumptions we can say that the most realistic conservation work could be to “confine” the two façades of the bridge in order to avoid the distancing of the masonry block from the core of the bridge (Fig.10). This intervention could be considered very similar to that one we use for the masonry houses, when we put some long chain bar, blocked at the ends, in order to prevent the “artichoke” opening (and then collapse) of the lateral walls. The end plates can have some soft decoration or appear in their naked modernity, that is not important. The important effect is the chance to remove the end plate and the inner chain bar (which should be made by stainless steel or galvanized iron). The secondary intervention, steel in the framework recalled above, is some partial underpinning of the main pier which lay in the river bed, in order to reduce movement of those, when heavy flooding happens. The underpinning can be like a long nails at the base of the pier deeply infilled in the soil of the river bed (around 10m, D=30 mm, like a wall anchor) and blocked with a visible distributing long plate at the base of the pier.

Other subsequent, and repeated activity, should be the cleaning of the river bed, at any beginning of the winter season, in order to remove trunks, trees, and other kind of dangerous debris.

Monitoring activity

As main part of the conservation, today, it is strongly suggested (sometimes is compulsory) to complete the work with a maintenance program and with a permanent SHM (structural health monitoring), to have a continuous control of the condition of the structure, as well as to have any early warning about some critical situation should happen.

The chosen sensors should be effective enough to give a real and tangible control of the bridge, not only an academic collection of numbers with limited, inscrutable and indecipherable meaning. The sensors should be readable immediately from any technical worker, being engineer or architect or even geologist. The sensor should be protected against vandalic action and designed in such a way that they could last longer and survive under adverse atmospheric conditions. Finally, the sensors, in the framework of the modern monitoring systems, should transmit on line (Wifi, Gsm, Lora-Wan,...) the collected data to one dataserer, where a suitable post-processing program should elaborate the data and give some assessment, even including the A.I. (Artificial Intelligence) which should help in collecting and rearranging the data, predicting risks, failures and helping in performing a suitable maintenance.

List of the sensor that could be installed on the bridge:

- “crack” meter – with remote control ;
- accelerometer – with remote control;
- stress control of the “tie”bars (strain gauge) with record and remotely control the stress of chains in order to follow abnormal request of “confinement” by the masonry.
- river water level meter.

The above sensors will be installed with a suitable threshold for each quantity to measure in order to give alarm for abnormal behaviour acceleration of the decay and of the already existing cracks.

Therefore, monitoring and identifying the damage status of the arch bridge in a timely manner can improve the structural safety and reduce subsequent maintenance costs, which is of great importance to ensure the normal operation of the arch bridge and prolong its service life.

The means used in inspections and maintenance are evolved over time, following experience and scientific and technological developments. For example, bridge testing was introduced in the 19th century, along with sensors to measure deflections and displacements. Remote monitoring was introduced in the 1920s, along with the development of the first embeddable strain sensors. However, remote monitoring has been used very rarely due to the numerous challenges involved in deploying sensors, remote data collection and analysing large amounts of data. The last quarter of the 20th century saw rapid development, as a result, modern structural health monitoring (SHM) was born and is rapidly developing, evolving and expanding, promising full commercial maturity in the first quarter of the 21st century .

There are several important old bridges in Albania, which deserve also to be considered and reminded as needing attention and maintenance.

Conclusions

The protection and conservation of our cultural heritage is a honourable duty that we have in order to transmit in the best way the monuments to our following generations. Even not so old or valuable monuments can deserve to be kept in good condition to conserve tradition, even though simple and popular. Several old and monumental bridges are still in Albania, in good conditions, and deserve to be conserved or reinforced in a proper way.

The conservation should always be carried out in the framework of the principles accepted in the Restoration Charts, since 1931, in Athen. That’s why in our case study, the Mesi Bridge, we suggested some few reinforcement actions, effective but respectful of the traditional structure.

Also, as important new issue, we suggest to take advantage of the new technology wireless and of the new miniaturized and highly effective sensors to always install, after a reinforcement intervention, a strong, diffuse and reliable permanent monitoring system. This added devices will help in two main different ways: on one side it will help in assessing continuously the structural health conditions, in case also showing some alert; on the other side it will help on giving useful hints on how to carry out maintenance procedure, saving money on useless and less effective actions.

Iot (Internet of Things), A.I., Digital Twins are all part of the same family of digital platform to help the humans to control more confidently the conservation of our monuments.

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PANEL V

**FUTURE TRENDS
AND THE IMPACT OF
TECHNOLOGY IN HEALTHCARE**

Pollinosis influence on human health through allergic diseases.

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Abstract

Your represented study provides a clear overview of the key points from your scientific paper on the impact of allergic diseases caused by plant pollen grains. Here's a breakdown of the main findings:

Objective and Scope:

The paper focuses on the impact of allergic diseases caused by pollinosis on human health. The study specifically investigates the prevalence of allergic diseases among individuals sensitive to pollen in the Tirana area during the period March to June 2023.

Methodology:

Allergy tests, particularly prick tests, were conducted on 282 patients displaying signs of allergy to plant pollen. The study aimed to analyze the variability of allergic diseases based on factors such as age, place of residence, gender, and the season under consideration.

Key Findings:

Many people affected by pollinosis reside in rural areas (186 cases).

Men are more affected than women by seasonal pollinosis.

The age group most prone to allergic diseases is 23-34 years old.

In the spring we meet the highest number of people exhibiting allergic symptoms from plant pollen.

Phleum pratense pollen, representing the Gramineae family, is identified as the primary cause of allergic diseases, affecting 76 patients.

Conclusion:

The conclusion drawn from the results is a synthesis of the key findings, highlighting the demographic patterns and specific pollen types contributing to allergic diseases in the Tirana area during the specified period.

Implications:

The implications of the study may include insights for public health interventions, awareness campaigns, and potentially the development of targeted treatments for individuals affected by allergic diseases caused by plant pollen.

Key words: Pollinosis, Human Health, Pollen, Allergic Diseases, Phleum pratense, Tirana.

Introduction

Analyzing several research on allergic persons, it is discovered that a sizable portion of the population, roughly 20% of children and 12% of adults show varied symptoms of allergies and asthma. People who have pollinosis will undoubtedly experience negative effects in their schooling, employment, or way of life. Even though allergic disorders have been identified for millennia, a few allergies nowadays are recognized as illnesses that have a significant influence on global public health.

The incidence of several allergic diseases has increased fourfold, particularly in the past 20 years, and at the start of this century, this has become a concerning phenomenon that could be viewed as a new type of pandemic. In rare instances, pollinosis can result in death (Lewis and Lewis, 1982; Lewis et al., 1991; Bauchau and Durham, 2004; Camacho, 2015).

Even though modern medicine has made great strides thanks to cutting-edge procedures, allergists must once again be provided with the necessary technical support to distinguish between various allergy disorders and prescribe the appropriate treatments for their patients (Bottelli et al., 1982; Camacho, 2015).

Specific foods, plant pollens, and air pollution including suspended particles are the key elements that affect the development and severity of allergy disorders (Ducker and Knox, 1986; Croner, 1992).

We have studied pollinosis, one of the primary allergy illnesses brought on by plant pollen, a significant aeroallergen, as our study subject. Based on the acquired data, we have determined that pollinosis poses a serious threat to the public health of the people living in Tirana.

According to studies conducted in 2008 by Lekli et al. and in 2021-a by Jance et al., Tirana is among the cities in our nation where allergic illness cases are most common

Naturally, the previously described elements of air and environmental pollution resulting from inappropriate urban expansion during a bullish natural environment have an impact on the rise in allergic people exhibiting symptoms from exposure to plant pollen (Croner, 1992; De Swert, 1999; Galli, 2000).

According to us, the primary cause of the allergy patient data that is clearly visible in Tirana is the ongoing atmospheric pollution that results from the presence of more airborne pollutants and various gases that are incredibly toxic to human health. The pollution of the air and soil in Tirana has increased recently, and the main causes of this pollution are the city's growing population, the loss of natural parks, heavy traffic, the age of cars on the road, the manufacturing activities that take place in the capital, etc. (Jance et al., 2021-a).

We provide some assistance to allergists in the quick and accurate diagnosis of the relevant pollinosis, along with the applicable patient advice, by contributing to the discovery of allergic variables that function as risk factors in various pollinosis. But why not strive to raise awareness among the relevant directorates and various enterprises about which plants are suitable for ornamental purposes and which do not trigger allergies in the public? (Knox, 1979).

In order to carry out an accurate determination of the plants that serve as allergic factors, it is necessary to carry out: the exact quantitative and qualitative identification of the presence of allergenic pollen in the air for the area of Tirana, it is also necessary to carry out a description of the identification of allergies based on the age group and gender of the residents, and the potential influence of atmospheric air pollution on the occurrence of various allergic diseases have all served as the primary goals of our study.

Materials and Methods

We employ two distinct ways to accurately identify the plant whose pollen acts as an allergic factor generating a particular pollinosis (Moore and Webb, 1978; Pacini and Franchi, 1978; Faegri and Iversen, 1989). The one involves a skin prick test, while the other involves immunological blood testing (Pablos et al., 2016). The benefit of identifying the pollen that has acted as an allergenic factor for a certain person is that it allows the patient to be properly protected by providing them with information about the plant to which they are sensitive and when the plant is pollinated.

Twelve plant species that have been classified as plant allergens (Tab. 1) represent the eight plant families that are the focus of the general allergy tests (Pablos et al., 2016).

TABLE 1. Plant allergens used in allergy testing are categorized by the appropriate family.

No.	Allergenic plants	Flowering time	Family
1	<i>Alnus glutinosa</i>	February - March	Betulaceae
2	<i>Avena sativa</i>	May - June	Poaceae
3	<i>Ambrosia artemisifolia</i>	July - September	Compositae
4	<i>Artemisia vulgaris</i>	July - October	Compositae
5	<i>Betula pendula</i>	March - April	Betulaceae
6	<i>Corylus avellana</i>	February - March	Corylaceae
7	<i>Parietaria officinalis</i>	May - October	Urticaceae
8	<i>Phleum pratense</i>	May - August	Graminaceae
9	<i>Platanus orientalis</i>	April - May	Platanaceae
10	<i>Quercus sp.</i>	Aprile - May	Fagaceae
11	<i>Secale cereale</i>	May - July	Graminaceae
12	<i>Triticum aestivum</i>	June - July	Poaceae

The correct identification of the allergenic component is aided by the immunological analysis of blood done on allergic patients, which involves measuring the concentration of antibodies with accuracy. Using six categories (Tab. 2), the concentration of immunoglobulin E (IgE) in the blood is calculated using this approach (Pablos et al., 2016). The concentration of IgE is expressed as a kg unit per liter, or kU/l, for each category. (Pablos et al., 2016).

TABLE 2. Presence of antibodies (measured in kilograms per liter, - kU/l).

< 0,35	No specific antibodies present
0,35 - 0,7	Negligible presence
0,7 - 3,5	Little presence
3,5 - 17,5	Clear presence
17,5 - 50	Good presence
50 - 100	Very high presence
> 100	Extremely high presence

Plant identification that has been shown to be allergenic.

We started by using plants that are native to the Tirana region, which are thought to be the source of pollinosis since their pollen acts as an allergen when skin prick testing is used to diagnose allergies.

Laboratory analyses were conducted using Erdtman's (1960) acetolysis method to achieve the best pollen grain separation. This method involves processing the material with an acetolysis mixture that consists of concentrated sulfuric acid (H_2SO_4) and acetic acid (glacial) (CH_3COO)₂ in a 9:1 ratio. After that, an optical microscope is used to study the precipitate when it is combined with glycerin (Erdtman, 1960; Erdtman, 1969; Jance et al., 2021-b; Jance and Jance, 2024).

The images were captured with the Motic BA310 microscope, which has a built-in CMOS 1/2, 3MP digital camera with 2048 x 1536 pixels and a USB 2.0 output.

Appropriate pollinosis determination based on the patient's information.

We took action by examining the data supplied by the Institute of Public Health for 282 patients who were allergic to a certain plant's pollen in order to correctly identify the allergic condition that had manifested in individual cases. March–June of 2023 was the time frame under study.

In addition to the allergy test, we collected information from the medical record and spoke with the patient about his age, gender, place of birth, place of employment, and living arrangements to offer the best possible diagnosis and accurately assess the variety of allergy symptoms.

Results and Discussion

Following pollen analysis in the lab and statistical and analytical processing of data from the Institute of Public Health collected in the Tirana region between March and June 2023, a significant portion of the population suffers from pollinosis, which is primarily caused by cereal plant pollen (*Phleum pratense* - timothy).

All four months' worth of scientific data from March to June are combined into one group.

TABLE 3. Patients with allergies, according to the relevant plant.

No.	Allergic plant	Cases identified
1	<i>Alnus glutinosa</i>	38
2	<i>Avena sativa</i>	12
3	<i>Ambrosia artemisifolia</i>	6
4	<i>Artemisia vulgaris</i>	9
5	<i>Betula pendula</i>	28
6	<i>Corylus avellana</i>	5
7	<i>Parietaria officinalis</i>	15
8	<i>Phleum pratense</i>	68
9	<i>Platanus orientalis</i>	7

10	Quercus sp.	26
11	Secale cereale	56
12	Triticum aestivum	12
Total number of allergic patients		282

According to the individual families, Table 3 shows the number of allergy sufferers from the plant pollen. The two procedures mentioned above were used to conduct the allergy testing, which produced the desired findings.

It is evident that for patients who have undergone allergy testing, the *Phleum Pratense* plant allergen is the primary cause of pollinosis; in fact, it has been found in 68 instances.

Next, we examine the plants, *Secale cereale* whose pollen causes allergic reactions in 56 patients, *Alnus glutinosa* which causes allergic reactions in 38 people, and *Betula pendula*, which causes allergic reactions in 28 patients, as significant allergenic factors. Some plants may be categorized as allergens that are less prevalent.

We have included the factors of gender, age, and year period that have been identified in persons afflicted by pollinosis, keeping in mind that the way and forms of expression of allergies rely on the allergic component that produces them, as well as making it the goal of our study. We have created the corresponding graphs for crucial information for this purpose.

Chart 1 shows that 164 males and 118 women, or 42% of the total, made up the 282 patients that were examined and evaluated.

Chart 1. Distribution of allergies based on the patient's gender.

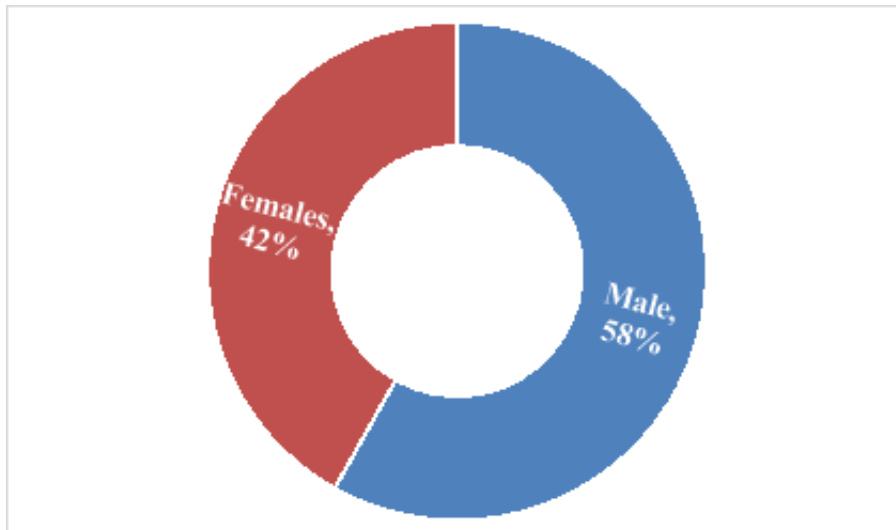


Chart 2 illustrates that most persons with allergy diseases—exactly 186 people—live in villages, with around 34% of allergy sufferers residing in city areas.

There are two primary reasons why we believe this phenomenon occurs:

1. Residents of the villages around Tirana are more exposed to the plant
2. Tirana is a true metropolis with significant air pollution and very few green spaces. (Jance et al., 2021-a).

CHART 2. Distribution of allergies based on the patient’s place of residence.

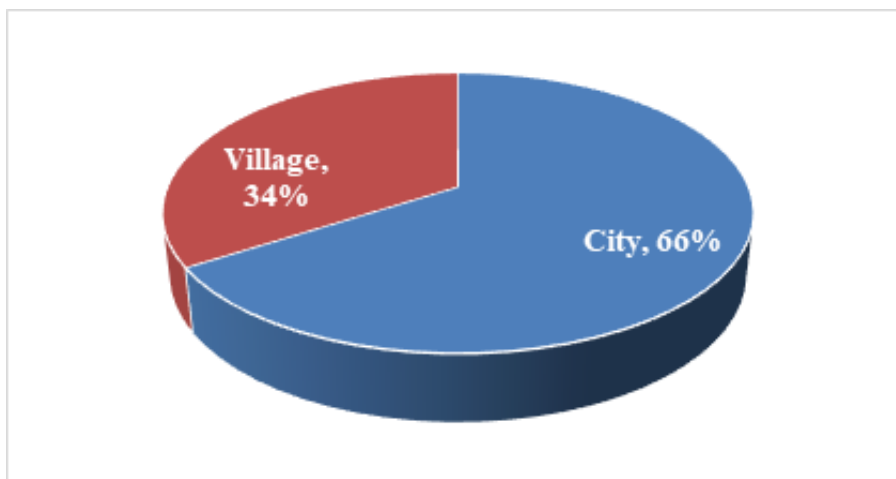


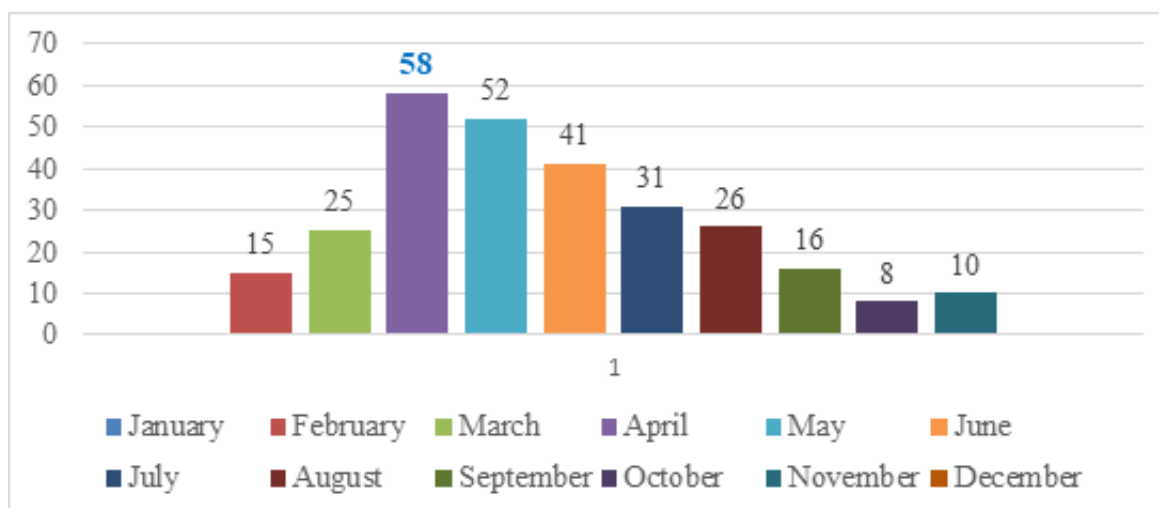
Chart 3 displays the allergy patient instances that have been discovered based on the months of July 2022 to June 2023. There is a distinct variation between the months; April has the highest number of patients (58 instances) with a particular pollinosis-related diagnosis, while May has the second-highest number of allergic people.

According to our perspective, the observed phenomena is directly related to the fact that most plants blossom during these months. This is in line with spring, when most trees and flowers blossom.

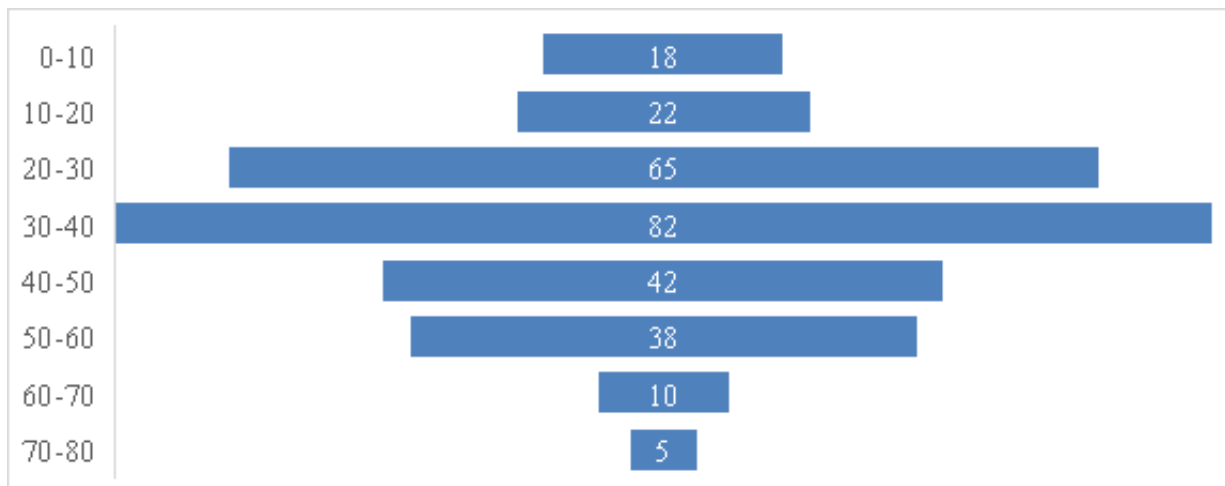
Based on the literature review, it is found that during a week of flowering, there are roughly 10 plant pollen grains/m³ of air collected daily. Over the course of a week, this amount of pollen can reach over 100 pollen grains/m³ of air, which may be a cause of some allergic diseases in humans (Pfaar et al., 2017).

According to Becker et al. (2021) there is proof that when there is around 12 pollen grains/m³ of air in the atmosphere, there will always be medical visits and hospitalizations due to developing pollinosis.

CHART 3. Patients with allergies from July 2021 until June 2022



The distribution of allergy sufferers by corresponding age groups may be found in Chart 4. According to the data collected, it can be observed that the age range of 30-40 years old accounts for many patients afflicted by pollinosis, with 82 instances identified. This age group is followed by the 20–30-year-old age group, which includes 65 cases of allergic reactions.

CHART 4. The age distribution of allergy sufferers in years

We believe that the primary cause of this observed behavior is the dynamics of entry and departure, which ineluctably result in these age groups' most frequent encounter with allergy pollen. Long-term stays in enclosed spaces and bars where smoking is permitted have also been proven to encourage the occurrence, making this lifestyle choice a clear element that has a substantial impact on the emergence of a variety of allergy illnesses.

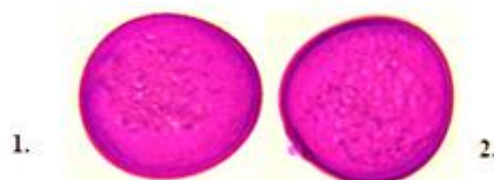
Regarding the most significant allergenic component, *Phleum pratense* (Fig. 1), we can identify it as an annual plant grown by humans for use as a grain, fodder, and cover crop. It belongs to the Gramineae family. It is frequently planted for cow feed, especially for use as horse hay. Particularly when cut later, it has a comparatively high fiber content. (Galan et al., 1995; Camacho, 2015).

If mowed sooner, it is said to be a rough, gritty grass that animals do not really enjoy. It gives horses high-quality nutrients and is regarded as a typical component of grass hay. For domestic pet rabbits, guinea pigs, chinchillas, and degus, Timothy hay is a staple that frequently makes up much of their diet. Although nutrient-rich soils are usually needed, it may also thrive on roadsides and in abandoned fields. Hay fever is treated with the allergen found in Timothy grass pollen. (Kay, 2007; Nelson, 2014; Scaparrotta et al., 2015; Barber et al., 2019).

Research has shown that this plant's pollen grains contribute to a variety of pollinosis by acting as allergic factors (Lewis and Lewis, 1982; Laffer et al., 1992; D'Amato et al., 2007; Damialis and Kostantinou, 2011).

According to a study of several studies conducted by both domestic and international researchers, the primary allergenic factor for many cases of pollinosis is the pollen of plant species that belong to the Gramineae family (Laffer et al., 1992; Prieto-Baena et al., 2003; D'Amato et al., 2007; Pietzak, 2012).

FIG. 1. *Phleum pratense* (pictures 1 and 2 show timothy in their natural habitat and a microscopic image of pollen). (Refer to Jançe, 2023).



Regarding the primary types of allergic diseases resulting from exposure to allergens in the air, we can primarily address conditions affecting the respiratory system, including bronchial asthma, allergic rhinitis, and rhino conjunctivitis (Croner, 1992; D'Amato et al., 1998; Chinn et al., 1999; Riedinger et al., 2002; D'Amato et al., 2007; Becker et al., 2021).

The respiratory system and lungs are nearly invariably shown to be significantly burdened (Fig. 2).

FIG. 1. A patient with a pollinosis allergy's lung graph (Source: Jahiqi, 2023).



We must stress as a conclusion that the data utilized in this study came from the Institute of Public Health, therefore the findings are broad and should not be interpreted in their entirety. It should be remembered that the actual number of allergy sufferers may be significantly higher, since many individuals may have been identified as pollen-allergic after completing the necessary allergy testing at the several private clinics in the city.

Conclusion

- A considerable proportion of 282 individuals had positive results from the allergy tests conducted, according to the study's findings.
- *Phleum pratense* - Timothy pollen is the primary allergenic factor influencing the formation of pollinosis in 68 instances. *Secale cereale* is also an important allergenic factor identified in 56 cases and *Alnus glutinosa*, an ornamental tree, comes next, since it has been recognized as an allergenic factor in 38 allergic individuals.
- Most instances of pollinosis, 186 cases were found in the villages around Tirana, with fewer occurrences 96 allergic patients found in Tirana city region.
- Men account for around 58% of instances of pollinosis, or 164 cases, whereas women account for 42% of cases, or 118 allergic cases. The age range that is impacted is 23-34 years old.
- Furthermore, it has been shown that the springtime months of April through June, which correspond to the blossoming season of most plants identified as allergic factors, are the ones with the highest prevalence of allergy cases.

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Heavy metals in food crops and health risks.

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Abstract

Your summary provides a comprehensive overview of the key aspects of your scientific paper on soil contamination by heavy metals in the industrial area of Elbasan city. Here's a breakdown of the main points:

Objective and Scope:

The study aims to examine the connection between soil contamination by heavy metals particularly in the industrial area of Elbasan city, their presence in food crops, and its potential impact on human health, specifically focusing on health risk through various diseases.

Study Area and Period:

The research was conducted in Elbasan town, with a focus on the industrial area.

Soil samples were collected during the period April to June 2023.

Causes of Soil Pollution:

The study attributes soil pollution in the Elbasan area to the abusive activities of both light and heavy industries. These industries are identified as not adhering to appropriate environmental protection measures.

Health risks:

The paper discusses the most important soil pollutants, with a specific focus on heavy metals, and their potential health effects.

Emphasis is placed on the connection between soil contamination and some diseases in the human population.

Results:

Significant results indicate soil pollution by heavy metals, specifically Nickel (Ni), at levels roughly 2.4 times higher than the parameters set by relevant European Union regulations.

Conclusion:

The conclusion highlights the noteworthy findings regarding the elevated levels of Nickel in the soil, transition in food crops, and through the food chain in the human body, being a potential risk for various diseases.

Key words: Heavy metals, Contamination, Health Risks, Diseases, Elbasan - Albania.

Introduction

The equilibrium and biochemical and geochemical cycles of heavy metals, which are naturally occurring elements in soil, have been disrupted by human activity (Singh et al., 2010). According to Yang et al. (2018), heavy metals are dangerous substances that may accumulate in plant tissues through a process called bioaccumulation. They are also tenacious and difficult to degrade. Heavy metals including Zn, Fe, Cu, Mn, and Ni are considered essential metals and are linked to significant biological activity in humans. (Jarup, 2003)

Thus, a prolonged exposure to heavy metals through diet has been associated with a higher risk of developing illnesses such as cancer, neurological disorders, birth defects, anemia, and renal failure (Chang et al., 2014; Rehman et al., 2013).

The presence of macro- and microplastics in the soil, excessive pesticide use, deforestation primarily caused by humans, excessive fertilizer application to agricultural lands by farmers, and the presence of heavy metals above permissible levels are some of the detrimental factors that impact the quality of healthy soil (Jance and Jance, 2024; Jance et al., 2021).

For people, soil biodiversity, both above and below the surface, is essential because healthy soil supports high-quality ecosystems. The biodiversity of soil is vital to the flow of nutrients and carbon, acts as a check on the presence of pests and other illnesses, and is the primary source of many medicinal drugs that are crucial to human health.

The examination of heavy metal contamination resulting from industrial operations, particularly in the mineral processing and enrichment industries in Albania, has consistently been the subject of legitimate scientific inquiry by a diverse range of national and international investigators, primarily drawn from university academic institutions and research centers.

Determining the presence of heavy metals, such as Co, Cd, Zn, Fe, Cu, Pb, Ni, and As, above the allowed rate in agricultural lands and forest ecosystems near industrial areas has been devastating and has seriously and significantly harmed human health as well as the health of the soil (McBride, 1994), affecting the population's health and well-being.

Numerous studies have come to the same conclusion: if the levels of heavy metals in the soil are higher than allowed, they will be the primary cause of a detrimental effect on the soil, agricultural crops grown on it, livestock pastures, and forest areas (Berglund et al., 1984; Mantovi et al., 2003; Jasson, 2004; Jance et al., 2021, Jance and Jance, 2024).

We have attempted to illustrate the current state of heavy metal contamination in the soil for the Elbasan area for the April–June of last year through this study.

It is advised to protect against and limit exposure to wind, consider using filtered water, and purchase fruits and vegetables that are as organic as possible—grown in soil that is both fertile and free of toxic pollution—until a more precise assessment of the risk factors is obtained through similar studies. (Münzel et al., 2022).

Through a qualitative examination of the acquired data, it is simple to observe that heavy metals are present in the ideal ranges, designating them as non-risk variables, except for the nickel element, which is present at levels around 2.4 times greater than default rates.

According to Brown et al. (1987), nickel is necessary for higher plants as a micronutrient.

Although excessive amounts of nickel can be harmful to human health, they are a necessary component of urease. Thus, a well-known illustration of abiotic-biotic interactions in the environment is seen in soil-food crop/vegetable systems. In excessive quantities, nickel can be harmful to crops directly and indirectly to human health (Yong et al., 1996).

There are signs of increased environmental pollution, and ongoing heavy metal monitoring is necessary to safeguard the general public's health. The buildup of heavy metals in food is directly correlated with their toxicity. Excessive concentrations of these substances lead to various health problems. Customers must be vigilant while selecting their food suppliers.

We stress the importance of more research to precisely identify the part polluted soil plays in food crops, and through the food chain in the human body, being a potential risk for various diseases.

Materials and Methods

The study's soil samples range in weight from 150 g. Following the collection of soil samples, let them completely dry (in a thermostat set at 40°C) and then filter through a sieve. Following processing, it was discovered that 95% of the soil samples had sizes less than two millimeters.

Following the above-described procedure, the collected soil samples are treated using the “dilution method with 4 acids” in a dilution process.

1. Nitric acid, or HNO_3 , is first applied to a sample of soil weighing 0.1 grammes (with a volume of 2.5 milliliters).
2. Next, we add 5 milliliters of hydrofluoric acid, or HF.
3. Proceed to add the diluted acid, HClO_4 (1.5 milliliters in volume).
4. The final and final acid that we add is hydrochloric acid (HCl), which has a volume of 2.5 milliliters. (Peveiril et al., 1999).

To ascertain the pH of the soil, we treated 10 grammes of soil with 25 milliliters of oxygenated water, centrifuged the mixture for 30 minutes, and then waited for the precipitate to settle for 5 minutes. Grain size and pH measurements were also performed, and it was discovered that the average pH value of the soil samples was 8.2, indicating an alkaline environment (Gee and Bauder, 1986).

Results

Following laboratory investigations and statistical and analytical processing of soil samples collected in the Elbasan area between April and June of 2023, it is shown that this city has higher than allowed levels of soil pollution, with the nickel element being the sole element found to be contaminated.

All three months' worth of scientific data—from April to June—are combined. The goal of this three-month grouping was to detect soil trend contamination as precisely as possible throughout time.

TABLE 1. The value obtained for the presence of hazardous metals in soil.

No.	Heavy metals	Maximum quantity permitted (mg/kg)	Mean (mg/kg)
1	Cadmium (Cd)	3	1
2	Arsenic (As)	30	0.5
3	Cobalt (Co)	75	30.5
4	Nickel (Ni)	75	179
5	Copper (Cu)	140	42
6	Chromium (Cr)	200	53
7	Lead (Pb)	300	66
8	Zinc (Zn)	300	71

The quantity of heavy metals for the studied period is shown in Table 1 together with the maximum permitted level. All other metals are below the acceptable standard, apart nickel.

In “normal” soil, the presence of *cadmium (Cd)* is defined as 0.1 mg/kg; in “toxic” soil, it is defined as 3–8 mg/kg. Our study yielded a result of 1 mg/kg; given that 3 mg/kg is also the maximum value permitted by EU directives, the presence of Cd in “normal parameters” is indicated by this amount.

When *arsenic (As)* is found in soil at 5 mg/kg, it is considered “normal,” and when it is found in soil at 20–40 mg/kg, it is considered “toxic.” Our study found 0.5 mg/kg of As, and since 30 mg/kg is the maximum value permitted by EU regulation, its presence in the soil is within “normal parameters.”

Cobalt (Co) is a mineral that is classified as “normal” in soil when it is present in amounts of 10 mg/kg and as “toxic” when it is present in amounts of 40 mg/kg. Our study found that the amount of 30.5 mg/kg of Cobalt is present in “normal parameters” because the maximum value permitted by EU directives is 75 mg/kg.

The presence of *copper (Cu)* in the soil is classified as “normal” if it is found in amounts of 2 mg/kg, and as “toxic” if it is found in amounts of 60–125 mg/kg. Our study found 42 mg/kg of Cu, and since 140 mg/kg is the maximum value permitted by EU regulation, the presence of Cu in the soil falls within “normal parameters.”

In “normal” soil, *chromium (Cr)* is present in amounts of 5 mg/kg; in “toxic” soil, it is present in amounts of 75–100 mg/kg. Our study found 53 mg/kg of Cr, and since 200 mg/kg is the maximum value permitted by EU directives, its presence in “normal parameters” is noteworthy.

Lead (Pb) levels in the soil are categorized as “normal” when they are 10 mg/kg, and as “toxic” when they are 100 mg/kg. Our investigation yielded a result of 66 mg/kg; given that the EU regulation allows a maximum of 300 mg/kg, this indicates that the lead content in the soil is within “normal parameters.”

Zinc (Zn) levels between 10 mg/kg and 100 mg/kg are considered “normal” and “toxic” respectively in the soil classification. Our study found that the amount of Zinc (Zn) in the soil was 71 mg/kg, which is within “normal parameters” given that the EU directives allow for a maximum of 300 mg/kg.

The term “normal” refers to soil that contains 10 mg/kg of nickel (Ni); “toxic” soil is defined as having between 70 and 400 mg/kg of Ni. After soil samples were processed in a lab, it was discovered that the average concentration of nickel in the soil was 179 mg/kg, considering that the maximum amount permitted by EU laws is 75 mg/kg, we deduce that there is around 2.4 times as much nickel in the soil as permitted by the European norm; hence, the soil is deemed “toxic” in this instance.

Discussion

The animal world, including humans, is constantly exposed to high concentrations of heavy metals in the environment, by breathing polluted air and through the food chain.

The major risk factors for strokes (thrombosis and cerebral hemorrhage), hypertension, and heart disorders include heavy metals in general and cadmium, lead, and arsenic when they are present in the soil in amounts higher than advised (Münzel et al., 2021).

Variations in plant type, soil physicochemical properties, pH, absorption capacity, and soil organic matter are a few possible causes (Wang et al., 2013).

The manufacturing of metals and hydrocarbons, the smelting and refining industries, the creation of rubber and plastic, and the burning industries are the primary sources of heavy metals in the soil, water, and air environments. Toxic metals may also readily find their way into human food items if they are present in the environment in which we live. This is mostly due to the ingestion of contaminated drinking water and air, as well as the inhalation of contaminated food that comes from plants or animals. (Gazso, 2001).

Originating from both agricultural and industrial sources, cadmium (Cd) is present as an impurity in a variety of compositions, primarily phosphate fertilizers, detergents, and petroleum products. As a byproduct of zinc, cadmium is also generated and frequently aids in the refining process. The concentration of Cd in the soil is increased using agricultural

compounds like fertilizers, pesticides, wastewater, waste industry, or atmospheric pollution deposition. These factors determine whether plants absorb Cd to a significant degree (Wegglar et al., 2004; Messner and Bernhard, 2010; Tellez-Plaza et al., 2015).

According to the findings of much research on the connection between cadmium and cardiovascular illnesses, those with higher blood cadmium levels are more likely to suffer hypertension and stroke (Valera et al., 2008; Messner & Bernhard, 2010). The elevated cadmium concentrations in the examined food crops might pose a serious risk to consumers and have detrimental effects on human health. Human health is at risk due to cadmium buildup in several organs, including the skeletal system, liver, kidneys, nerves, and lungs (Tsutsumi et al., 2014).

Lead (Pb) One of the most common heavy metals and the primary element of the earth's crust is lead (Pb). Many different sources maintain its existence; the mining, smelting, manufacturing, and recycling sectors are the primary ones that come to mind. It has been determined to be a hazardous element with a high metabolic accumulation capacity (Vaziri, 2008). The quantity of lead in the soil determines how quickly plants absorb it; the rate of absorption is not constant. Due to its inability to break down, lead is regarded as a stable metal that is a continuous environmental contaminant, much like other heavy metals. This is the primary cause of lead's environmental settling in sediments, water, and soil. Dietary exposure to lead has been connected to hypertension, vertigo, mental illness, and renal dysfunction (Patrick, 2006).

We list heart attacks, thrombosis in the brain, chronic ischemic heart disease, and arrhythmias—disorders of the regular heart rhythm—among these cardiovascular illnesses (Vaziri, 2008; Münzel et al., 2021).

Temperature, pH, and the presence of humus soil are among the elements that favor lead's stability in water and soil (Martinez and Motto, 2000; Navas-Acien et al., 2007).

Myocardial infarction, coronary heart disease, cerebral ischemia, and thrombosis are among the most common cardiovascular illnesses. Diabetics and, often, female patients are the most impacted by these conditions. (Vaziri, 2008; Münzel et al., 2021; Münzel et al., 2022).

Nevertheless, research has demonstrated that another heavy metal, arsenic, increases the chance of dying from cardiovascular disorders (Moon et al., 2012; Münzel et al., 2022).

Chromium consumption has been linked to chromosomal damage in humans, alterations in DNA replication and transcription, ulcers, and lung cancer (Spector et al., 2011). Liver issues, nausea, vomiting, and other gastrointestinal distress have all been related to copper poisoning (Kim et al., 2009). Gastrointestinal issues may arise from consuming too much zinc through food (Bawa, 2023).

Due to their substandard living circumstances, people with low incomes are more exposed to environmental pollutants, which is why this phenomenon exists. In the meantime, it is anticipated that this issue will grow more serious and all-encompassing in the future.

This is primarily because of the growing trend of globalization regarding the primary food supply sources, where daily consumption of tainted meat, fruits, and vegetables leads to an increase in the levels of toxic metals in the human body.

The fact that 20% of the average calorific consumer goods for every person in the world come from sources other than the earth and the remaining 80% come from crops cultivated directly in the soil serves as further evidence of the phenomenon (Wegglar et al., 2004).

The primary pathophysiological variables that lead to cardiovascular, neurological, and metabolic illnesses include heavy metal contamination, plastic pollution, overfertilization, and pesticide usage. Of these, oxidative stress and inflammation are the most mentioned (Wegglar et al., 2004; Münzel et al., 2022).

Elbasan has long been regarded as one of Albania's most polluted cities in terms of the environment. Regarding the finding of significant pollution for the Elbasan area, we are mainly of the opinion that among the main factors we can list: increased population density, heavy traffic, recently added multi-story buildings, poor road infrastructure, lack of parks and green spaces, and among the most important factors is the increase in the activity of heavy industry that operates in the area, accompanied by the improper management of technical control by the competent bodies.

We believe that the lithology of the terrain has a role in this excessive presence of nickel and that nickel pollution results from nickel's natural distribution in the research region (Bencko, 1983; Jance et al., 2021; Jance and Jance, 2024). In the meanwhile, it is recognized that transportation contributes to nickel environmental contamination, mostly through emissions from refineries and industrial waste (McIlveen and Negusanti, 1994; Cempel, 2006; Jance et al., 2021; Jance and jance, 2024).

In conclusion, it is discovered that nickel, a heavy metal, has been contaminating the soil in Elbasan City over the course of the analysis.

Conclusion

1. We deduce from the study's findings that Elbasan city's soil contains heavy metal elements, most of which are within permissible limits except for the nickel element, which is around 2.4 times higher than the limits specified by EU regulation.
2. Given that nickel, a heavy metal, is present in the soil in the town of Elbasan, we believe that the primary source of this phenomena is the raw material deposits found in the soil, which come from the production of the heavy industries that operate in the region.
3. Heavy metal-contaminated soil, transition in food crops, and through the food chain in the human body, being a potential risk for various diseases:

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Prevention of diseases and infections in the workplace through infection protocols; results from public and private institutions

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Abstract

Prevention of diseases and infections through preventive programs and protocols that reduce the number of accidents and injuries at work as well as their negative consequences for the institution is now one of the main goals of the institutions to protect their employees. The implementation of infection control protocols by health professionals and the awareness of workers on safety and health at work should be a priority. The purpose of this study is to identify the risk of infectious diseases and the frequency of contamination among doctors and nurses with contaminated sharps.

Methods:

Data were obtained through open ended questionnaires for 40 individuals who worked in private and state institutions in Tirana during February 2024 (33 study participants were females, and 7 males). More than half of the study participants (n=21) worked in a public institution, and the rest (n=19) in a private institution, respectively 9 doctors, 26 nurses and 4 physiotherapists.

Results:

Out of 40 participants, 35 (82.5%) were exposed in the workplace to contamination with contagious disease. Around two thirds were drilled with sharp tools contaminated with blood one, two, three times and more than 3 times, and n=13 (32.5%) were never drilled.

Sixty three percent of the participants answered that they have the tools to protect themselves from infections and contagious diseases, 22.5% do not have all the tools, and 12.5% do not have the tools at all, to protect themselves from infections. The frequency of drillings among nurses (n=26) and doctors (n=11) $t=(df)=3.572;35$, $P=0.001$ were statistically significant. The value of Mean for Nurses ($M=3.58$ times $SD=1.579$) was greater than the mean for doctors ($M=1.73$ times, $SD=1,009$) (Mean difference= $1.850,95\%CI$). By means of the test it is proved that the frequency of drillings is 1.8 times more in nurses than in doctors.

Conclusions:

Based on our study, all the interviewed health professionals who work in health institutions feel at risk at their workplace. Nurses are more at risk of contamination and risk of infectious diseases than doctors. But if employees are trained in safety and health and supervision, the risk is lower. All institutions must create the right conditions with training programs, protocols for the prevention of infections and risks at work, as well as the right tools for the protection of their employees from infections. Also, the findings of this study encourage the increase of attention of health workers on the care of implementing protocols for their safety at work.

Key words: *Safety and health, health personnel, risk prevention, occupational disease, nurses, drilling with sharp tools, contamination.*

Introduction

Safety and Health at work means the measures taken to ensure the physical and mental well-being of employees during their work activities. A series of strategies and measures, such as the provision of personal protective equipment, the implementation of safety protocols and the promotion of healthy actions during the work process. (Law 10.237 Article 1) The role of the nurse and his profession are among the most important professions. difficult both physically and psychologically. Nurses during an ordinary day have to deal with a lot of physical fatigue due to the continuous care of patients and in our country, nurses do all the care since they do not have a nurse assistant. The role of the nurse is one of those roles that, even though technology advances, can never be replaced. In an ordinary working day, at one point you are with someone who is in the last moments of his life and you have to comfort his family as soon as this situation is over, you have to take care of a small child and you immediately collect yourself after all the sadness that you had nothing in your hand to save the first patient and you enter the next visiting room where the little patient is waiting for you to whom you smile and serve as if nothing had happened. In fact, the “impact” is with you for longer, but you have to go through it for the moment, these are the barriers and stresses of the emotional load that remain for a long time. The safety of nurses from injuries and risks as well as diseases caused or acquired in the workplace matters not only to nurses but also to the patients they care for. Hiring and retaining healthy employees (nurses) is very important to provide quality health care for patients. In many other countries with a high population, studies have shown that the cause of accidents from nurses' piercings is the volume of work and the conditions at the workplace. Steps in the treatment and prevention of drilling accidents with sharp tools. The best models are those that have a successful program and implement it for occupational safety and health for their employees. The programs should be organized so that they can be used by those responsible for safety and implemented by employees.

The working group responsible for the program acts according to the following steps

- Assesses the risk in the workplace and takes preventive measures
- Trains and informs nurses, doctors when they are hired and whenever there are schedule changes.
- Supervises staff during work processes
- If there are cases such as piercings with cutting tools contaminated with blood pathogens, apply the standard protocol

Teamwork between occupational health and safety professionals, management and employees is vital to solving complex problems cost effectively. No single discipline can meet all worker and workplace needs. The protocol is drawn up and all staff are trained every year. And every time there are accidents, the staff is gathered and retrained. Meetings and time dedicated to the team to foster positive relationships and to be filled with encouragement and strength is essential for the team to be sustainable and the work to be done properly and efficiently. By working together, occupational health and safety professionals can become a model team in business by delivering on their promise of a safe and healthy workplace (Wachs JE2005). In the workplace, the employee must provide all the necessary tools for the prevention of accidents and the information with the protocol must be displayed. Such as washing hands, the regulation for reporting piercings with sharp tools. Nurses are predisposed and at risk of contamination through piercings with needles, scalpels, surgical tools, etc. Often, nurses report that the volume of work, shift work, etc. make them lose their vigilance in protecting against contamination.

In the model institutions, from the moment the contract is concluded, the staff is trained with the Protocol for Protection from Infections and risks during work. They are made aware of all the internal regulations for the protective measures that should be used in daily work, the appropriate clothing, hospital waste and biohazard risks. In the model nursing institution, there are all the means to protect against infections. The employer and the management team aim for workers to be happy and satisfied at work. Employees are not seen only for the function they perform but as a very important integral part of the company.

Prevention of accidents and contamination in the workplace

- Elimination and reduction of risks at source
- Provision of appropriate equipment and tools for each procedure
- Risk assessment and control
- Health surveillance
- Involvement of workers in the formulation and implementation of occupational health and safety programs and protocols.

Purpose

1. The purpose of this study is to identify the risk of infectious diseases and the frequency of contamination among doctors and nurses with contaminated sharps.
2. Awareness of workers on safety and health at work.

Hypothesis

H0: Nurses experience more contamination accidents from drilling with contaminated tools than doctors.

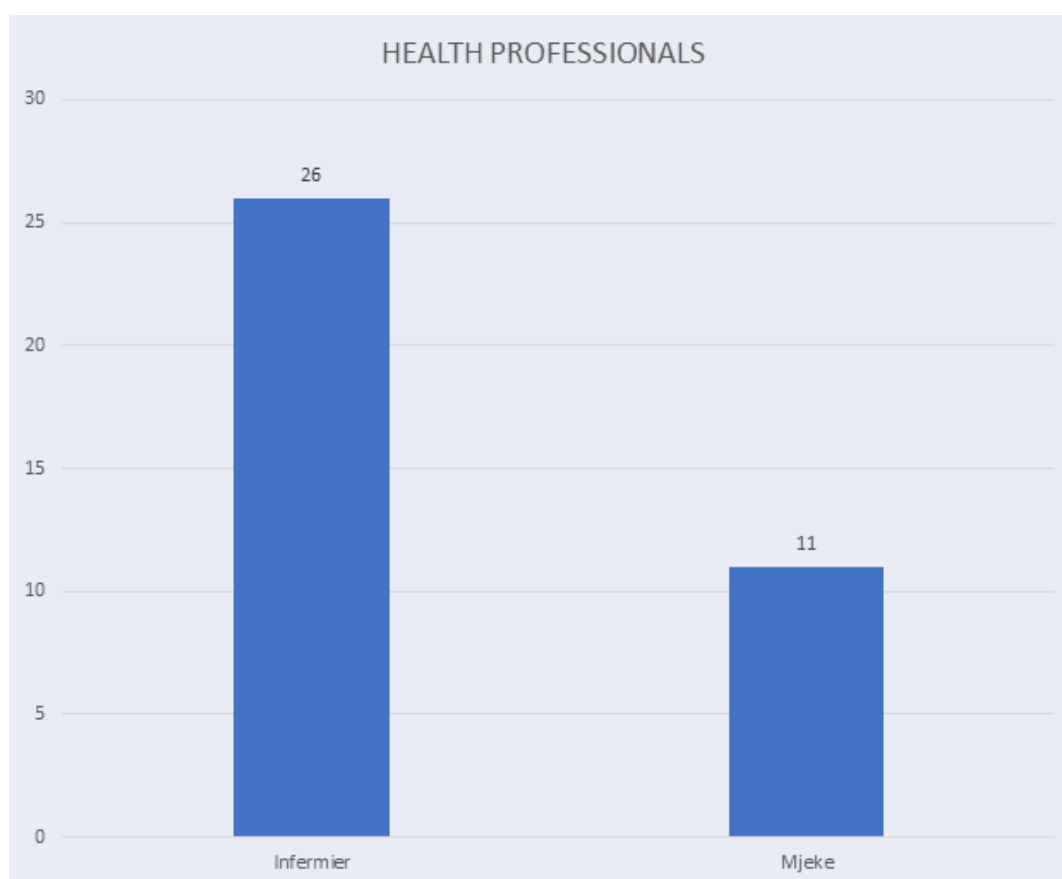
Ha: Nurses do not experience more contamination accidents from piercings with contaminated tools than doctors

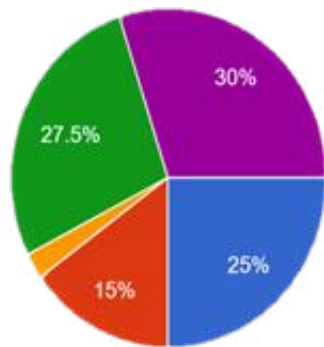
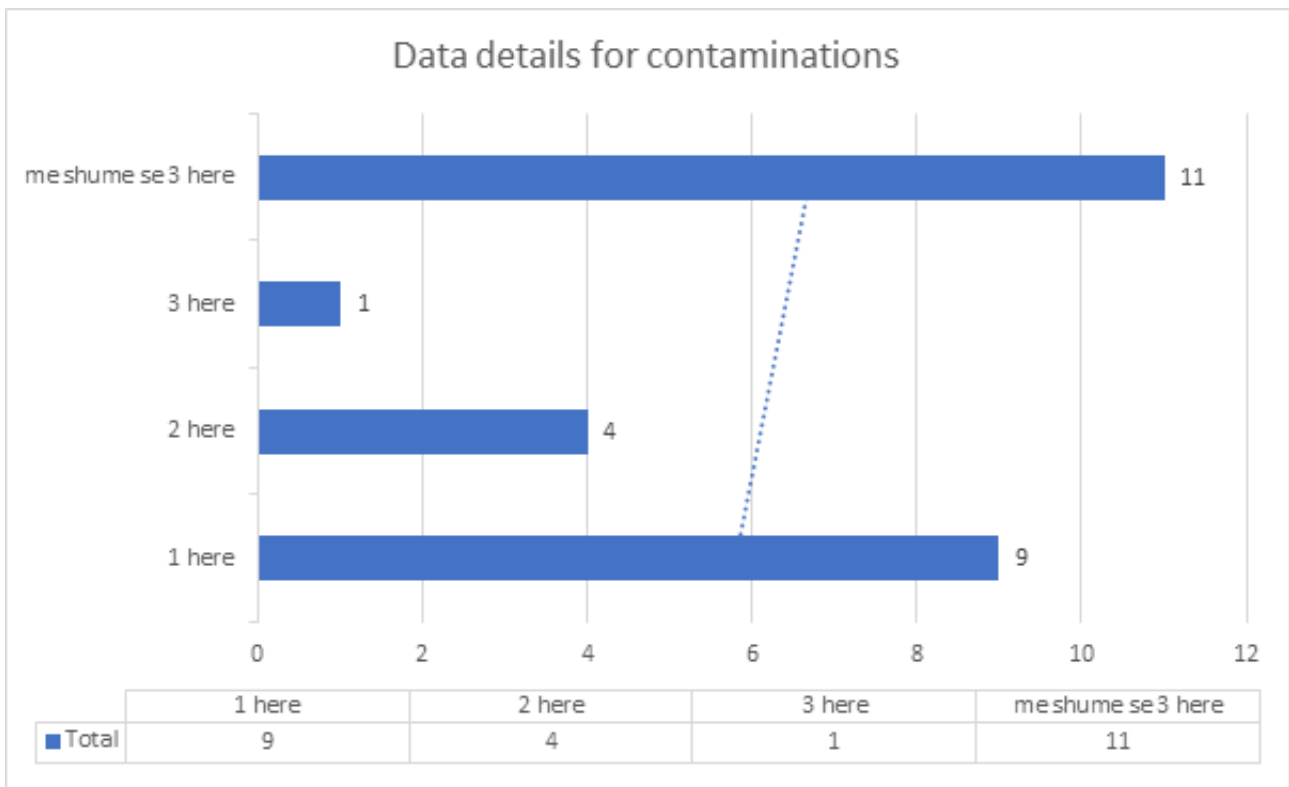
The research question

Are nurses more likely to be pierced and contaminated with sharp instruments than doctors?

Methods

Data were obtained through questionnaires for 40 individuals working in private and state institutions in Tirana during February 2024, of which 33 F, 7 M. N=21 (52.5%) work in a state institution, n=19 (47.5%) in a private institution, respectively 11 doctors, 26 nurses and 3 physiotherapists. N= 35 people (82.5%) are exposed at the workplace to contamination with infectious diseases, n= 5 (12.5%) are not exposed at the workplace. Of the 40 health professionals n=13 (32.5%) reported that they have never been contaminated with secretions from patients, n=11 (27.5%) have been contaminated through piercings with sharp tools contaminated with patients' blood more than 3 times during their work, n=9 (22.5%) were contaminated 1 time, n=1(2.5%) were contaminated 3 times, n=6(15%) were contaminated 2 times. The question is, do you have all the right tools for protection against infections? 25 people (62.5%) yes, 5 people (12.5%) no, 9 people (22.5%) no all means. 1 person (2.5%) all. For n=40 n=25 (62.5%) answered that they have the means to protect themselves from infections and contagious diseases, n=5 (12.5%) do not have the means to protect themselves from infections, n=9 (22.5%) do not all tools, n=1 (2.5%) all tools for protection against infections





Results

H0: Nurses experience more contamination accidents from drilling with contaminated tools than doctors.

Ha: Nurses do not experience more contamination accidents from piercings with contaminated tools than doctors

The research question

Are nurses more likely to be pierced and contaminated with sharp instruments than doctors?

Alpha=0.5

P=value?

TABLE 1: Independent test results for contamination through piercings of nurses and doctors.

Group Statistics					
	Doctors,Nurses	N	Mean	Std. Deviation	Std. Error Mean
Drilling with tools contaminated with blood	Nurses	26	3.58	1.579	.310
	Doctors	11	1.73	1.009	.304

Drilling with tools contaminated with blood	N	Mean	SD	df	t	p
Nurses	26	3.58	1,579	35	3.572	0.001
Doctors	11	1.73	1,009			

To test the basic hypothesis, the analysis of the independent t test was performed. The results show that k

or changes, that is, in the frequency of piercings among nurses and doctors. Independent -samples- T-test through which the frequency of piercings was compared between nurses (n=26) and doctors (n=11). Difference values were found $t=(df)=3.572;35, P= 0.001$ where Mean for Nurses (M=3.58 times SD=1,579) is greater than the Mean for doctors (M=1.73 times, SD=1,009) the degree of difference is (Mean difference=1.850,95%CI) Based on the above analysis we conclude that the basic hypothesis is proven that the frequency of piercings is 1.8 times greater in nurses than in doctors.

Discussion

After we examined the data of 40 individuals working in private and state institutions in Tirana during February 2024, of which 33 F, 7 M. N=21 (52.5%) work in a state institution, n=19 (47.5%) in private institution, respectively 11 doctors, 26 nurses, 3 physiotherapists, we come to the conclusion that nurses in our country are more predisposed and have more piercings with contaminated sharp tools than doctors. This is because they have not been specifically trained and do not have contemporary standards and protocols with special programs for protection against infections. Institutions must develop specific trainings every year for protocols and programs of safety and health at work (Alfulayw KH, 2021) Although in other countries in surgery or gynecology departments or other wards where nurses have more manipulations or few years of experience, there are more accidents with piercings with sharp tools (Akyol and Kargin 2016), in our country even nurses who work in primary health care have been contaminated at least 1 time through drilling with sharp tools. The protocol is often seen only because of the regulation, not as an important tool in protecting the life of the employee.

Conclusion

- All health institutions, whether they are Health Centers or Hospitals, must have protocols with simultaneous programs for the protection of workers from infections.
- Protocols must be drawn up by a management group, not just one individual, and their implementation should be followed in detail, such as at the time of employment of individuals, during the reporting of accidents and their treatment.
- Standardization of protocols according to the evidence for private and state institutions should be the same and be implemented 100%.
- All the nurses and doctors who were contaminated have reported that they have not been infected with infectious diseases such as Hep B, HIV. It is necessary to carry out other studies at the country level to prove if the analyzes are carried out and the medical staff are not infected with infectious diseases from contamination.

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The Impact of Artificial Intelligence (AI) in Medical Imaging: A Literature Review.

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Abstract

One of the most auspicious frontiers in healthcare innovation lies in the incorporation of artificial intelligence (AI) into medical imaging, encompassing various facets such as image processing and interpretation. The application of AI extends across diverse domains, ranging from image acquisition and processing to AI-assisted imaging reporting, subsequent treatment planning, data storage, and the derivation of diverse medical conclusions. Given its expansive scope, AI is anticipated to exert a profound influence on medical imaging and contemporary hospital systems.

Patients requiring medical imaging, whether for cardiac conditions, fractures, neurological disorders, or cardio-respiratory complications, stand to benefit significantly from AI-driven diagnostics. AI can swiftly diagnose ailments, propose treatment options, and prioritize interventions for groups of patients at heightened risk.

The Society for Imaging Informatics in Medicine (SIIM) delineates medical informatics and AI as comprehensive frameworks. Imaging informatics traverses the entire imaging continuum, encompassing image formation and acquisition, delivery, management, storage, processing, analysis, and comprehension. It extends from image visualization to data navigation for interpretation, reporting, and communication, serving as an integrative catalyst and a bridge to various medical disciplines.

AI's application extends across multiple medical imaging modalities, including X-ray, MRI, CT, and ultrasound. Recent studies underscore the efficacy of AI in enhancing medical imaging outcomes. Despite the promising benefits, the integration of AI into medical imaging poses challenges, ranging from concerns about data privacy to interpretability issues. Navigating ethical and legal regulatory frameworks is imperative, given the transformative potential of AI. Ethical considerations pertaining to its impact on healthcare professionals and patient trust in this technological paradigm are paramount.

Amidst ongoing discussions surrounding the ethical dimensions and standards guiding AI applications in medical imaging, there is an observable trajectory of sustained and effective growth. The incontrovertible impact of AI on medical fields at large, and imaging in particular, underscores its transformative role in shaping the future of healthcare.

Key words: Research, Artificial Intelligence (AI), Radiology, Medical Image Analysis, Data Privacy

Introduction

The advent of artificial intelligence (AI) and deep learning has marked a significant milestone in the field of medical imaging, especially in radiology. AI, driven by advancements in deep learning techniques such as convolutional neural networks (CNNs), is rapidly transforming radiological practices by enabling automated image analysis, enhancing diagnostic accuracy, and assisting in clinical decision-making. These technologies have shown promise in various imaging modalities, including computed tomography (CT), magnetic resonance imaging (MRI), and X-ray, by automating the detection of pathologies that range from cancers to pulmonary diseases (Litjens et al., 2017; Esteva et al., 2017).

Deep learning models have demonstrated the ability to match, and in some cases surpass, the diagnostic performance

of human radiologists in detecting and classifying diseases. For example, Esteva et al. (2017) reported dermatologist-level accuracy in classifying skin lesions using deep neural networks, highlighting the potential of AI to enhance diagnostic workflows. Similarly, AI applications in chest radiography have automated the classification of conditions such as pulmonary tuberculosis with high sensitivity and specificity (Lakhani & Sundaram, 2017).

In addition to diagnostic automation, AI plays a pivotal role in radiomics—extracting quantitative features from medical images that can provide prognostic information and guide personalized treatment approaches (Hosny et al., 2018). The use of AI-driven radiomics is becoming increasingly important in cancer research, where it helps predict patient outcomes based on imaging data (Erickson et al., 2017).

Despite these promising developments, there remain significant challenges in implementing AI in clinical radiology. Issues such as the generalizability of AI models across different populations, the interpretability of deep learning algorithms, and the integration of AI into existing clinical workflows are critical areas of ongoing research (Shen et al., 2017). Furthermore, ethical considerations, such as data privacy and the potential for AI to perpetuate biases in medical decision-making, must be carefully addressed (Hosny & Aerts, 2019).

To identify the most relevant scientific articles on the use of artificial intelligence (AI) in radiology, a systematic search was conducted in several major scientific databases, including PubMed, IEEE Xplore, Scopus, and Google Scholar. Keywords used in the search included terms such as “deep learning in radiology,” “AI in medical imaging,” “machine learning in radiology,” and “automated image analysis.” Studies were selected that covered applications of deep learning algorithms in various radiological image analysis, including pathology detection and classification, radiomics, and clinical decision support.

Inclusion and Exclusion Criteria

The studies included in this review were articles published between 2010 and 2023 that addressed the use of AI and deep learning methods in various medical imaging modalities, such as CT, MRI, X-ray, and mammography. Articles that reported empirical results on the performance of these algorithms in disease diagnosis and detection, as well as studies that addressed the clinical and ethical implications of using AI in radiology, were included.

Studies that did not provide empirical data, review articles without any critical analysis of results, and papers presented at conferences without full publications were excluded.

Data Extraction and Synthesis

For each included study, data were extracted about (1) the methodologies used to train and evaluate the AI algorithms, (2) the performance of the algorithms on diagnostic tasks and disease classification, (3) the modalities used (CT, MRI, X-ray, etc.), and (4) challenges and limitations reported by study authors.

The data collected was synthesized to provide a clear overview of the key ways in which AI is being implemented in radiology, including key benefits and challenges. Additionally, studies were categorized by imaging modalities and the pathologies they addressed, highlighting recent trends and gaps in the literature.

Quality Assessment

To assess the quality of included studies, an approach based on standardized criteria was used, including study design, sample size, data quality, and outcome assessment methods. Studies with results based on small data sets or that did not report clear performance specifications were treated with caution during the overall synthesis.

Ethical Considerations

Part of the methodology involved reviewing studies that addressed ethical issues of using AI in radiology, including data privacy, medical liability, and the possibility of reinforcing bias in diagnostic decisions. These aspects were considered to ensure a thorough understanding of the impact of AI in this field.

How AI manage to read medical images?

The use of Artificial Intelligence (AI) for recognizing and reading medical images includes several techniques and methods that have been developed to improve accuracy and efficiency in diagnosing and analyzing images. CNNs are a special class of neural networks that are particularly effective in image processing and visual pattern recognition. They use convolutional filters to extract different features from images and help classify them, researchers Lakhani & Sundaram (2017) and Yasaka et al. (2018) highlight the use of CNNs in the classification of various diseases in radiological images. Deep Neural Networks - DNN: include more layers and recognize more complex data patterns. These meshes can be used to help diagnose diseases by analyzing medical images and identifying features invisible to the naked eye. Shen et al. (2017) and De Fauw et al. (2018) discuss the use of DNN in improving the diagnosis of various diseases through image analysis. Choi & Han (2019) mention the use of neural networks for denoising and improving the quality of temporal images, such as those used in MRI, this study highlights the ability of RNN networks for processing data sequences and can be used for image analysis. Liu et al. (2019) and Wang et al. (2012) discuss the use of Ensemble Learning Models for more accurate identification of abnormalities and diseases in images. This technique is accomplished by combining results from different algorithms to improve performance in image analysis. Chartrand et al. (2017) and Erickson et al. (2017), point out that different methods for feature extraction and image classification have been explored to improve diagnosis accuracy, this includes identifying important features in images that aid in their classification and eventual diagnosis. While another group Kim et al. (2019) and Huang et al. (2019) discuss the use of machine learning models for various image analyzes and for improving diagnosis accuracy.

The great impact

Based on the literature studied, the biggest successes of using AI in radiology included improving diagnostics, automating image analysis, and increasing the accuracy and efficiency of radiologists in several key areas. For example, Lakhani & Sundaram (2017) demonstrate the use of convolutional networks (CNN) for the classification of tuberculosis in radiographic images. McKinney et al. (2020) report that an AI system was able to diagnose breast cancer with similar or higher accuracy than radiologists. Prevedello et al. (2017) show that AI has been used to develop systems that automatically identify critical findings on CT images and send immediate notifications to physicians to address them. This has significantly improved efficiency and helped save lives in emergency situations. MRI has also benefited from AI, particularly in the accurate segmentation of brain and heart lesions and structures. Korfiatis et al. (2017) report the success of AI in automatically segmenting hyperintense regions of brain in FLAIR MRI, helping to diagnose neurological diseases such as multiple sclerosis.

Some of the biggest challenges of using AI in radiology

One of the main challenges highlighted in the literature is the lack of standardized and high-quality data. The study by Zech et al. (2018) emphasized variations in the performance of deep learning models when applied to data from different hospitals. Models trained on a particular dataset may not generalize well to different clinical contexts due to variations in medical equipment, variable imaging protocols, and patient demographic characteristics. Another challenge highlighted in the literature was the integration of AI into clinical practice. Choi et al. (2018) pointed out the difficulties in adopting new technologies, including the lack of necessary infrastructure, resistance of medical staff to change, and challenges in matching AI with existing clinical protocols. Important challenges for the use of AI in radiology are also ethical issues and regulations, Hosny et al. (2018) and Topol (2019) discuss ethical issues related to the use of AI for automated diagnoses, including issues of patient data privacy and liability in case of AI diagnostic errors. Another challenge appears to be the disparity in training data that may create biases in diagnosis for different patient groups. HE. Liu et al. (2019) mentioned that AI models can be prone to bias if trained on data that does not represent the full diversity of patients. This may lead to underperformance for certain population groups, raising ethical and clinical concerns.

What are the impacts of using AI on the preservation and protection of data privacy?

According to the works of Litjens et al. (2017) and Hosny et al. (2018), substantial data collection is necessary for the training and optimization of AI models. Despite ongoing efforts to anonymize datasets, there remain significant concerns regarding the potential for re-identifying individuals through sophisticated data analysis techniques. The implementation of anonymization and pseudonymization strategies is therefore critical in safeguarding data privacy. Several studies, including those by Shen et al. (2017) and Yasaka et al. (2018), emphasize both the advantages and challenges associated with AI applications in healthcare. Zech et al. (2018) further highlight that while AI advancements contribute to enhanced diagnostic and treatment capabilities, they also introduce privacy and data security risks, potentially undermining user trust and the integrity of healthcare systems.

Conclusion

The incorporation of artificial intelligence into radiology has yielded significant advancements, particularly in enhancing the accuracy, efficiency, and speed of medical image analysis. These technological strides have the potential to revolutionize diagnostic practices and improve patient outcomes. However, alongside these benefits come considerable challenges, particularly in relation to data privacy, security, and compliance with evolving regulatory frameworks. As AI technologies continue to mature and become more widely adopted, it is imperative to address these challenges comprehensively. Ensuring a balance between the benefits of AI and the ethical and legal considerations surrounding data use will be crucial for the safe, effective, and responsible integration of AI in radiology and broader healthcare applications. Future efforts should focus on developing robust frameworks that prioritize patient privacy and trust while fostering innovation in AI-driven medical practices.

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Musculoskeletal disorders among office workers: an observational study

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Abstract

Background: Musculoskeletal disorders (MSDs) are a widespread issue among office workers, impacting their health and productivity. Factors like repetitive motions, sustained postures, and prolonged sitting contribute to increased musculoskeletal symptoms.

Objective: This study aims to assess the prevalence and characteristics of musculoskeletal symptoms in office workers, focusing on the severity and location of associated pain.

Methods: A cross-sectional observational study was conducted with 234 office workers in Tirana, who completed a modified Nordic musculoskeletal questionnaire. Data were analyzed using descriptive and inferential statistics.

Results: The study involved a predominantly female group (70%) with an average height of 165 cm, weight of 70 kg, and approximately 10 years of experience in their roles, working around 30 hours per week. A significant 87% experienced musculoskeletal pain in the past year, with cervical (42.8%) and back pain (43.2%) being most common. Pain was moderate, occurring 3-4 times a week, and was particularly noticeable in the last 7 days. Many attributed their pain to poor posture (125 participants) and used anti-inflammatory drugs (74 participants) for relief. A subset (77 participants) cited non-specific pain causes. While 81 participants sought online pain relief methods, 157 lacked understanding of ergonomic workplace adaptations.

Conclusion: The study reveals a high prevalence of work-related musculoskeletal disorders, largely influenced by occupational factors. The findings highlight the need for interventions like exercise and ergonomic improvements to alleviate musculoskeletal pain and enhance overall well-being in office workers.

Keywords: musculoskeletal disorders, Nordic musculoskeletal questionnaire, office workers.

Introduction

Worldwide, the rise in life expectancy has led to a growth in chronic, non-communicable conditions, including injuries. Among these, musculoskeletal disorders (MSDs) are especially prominent, representing a widespread work-related health concern and a leading cause of absenteeism due to health issues in the workplace (da Costa & Vieira, 2010; Punnett & Wegman, 2004). Individuals suffering from work-related musculoskeletal disorders (WMSDs) often experience symptoms like pain, muscle stiffness, and swelling in affected regions, which can eventually result in long-term disabilities or even force them to leave their professions (Okezue et al., 2020; Briggs et al., 2018). Among office workers, musculoskeletal disorders (MSDs) represent a significant health challenge, largely due to the sedentary nature of office jobs and the repetitive movements involved. MSDs affect various structures, including muscles, joints, and connective tissues, often leading to substantial pain

and impaired functionality, which can negatively impact both personal well-being and professional performance (da Costa & Vieira, 2010; Lee et al., 2018). Studies suggest that the prevalence of work-related musculoskeletal disorders (WMSDs) in office environments is concerning, with estimates ranging from 40% to more than 80% of employees reporting these conditions at some stage in their careers (Janwantanakul et al., 2008; Lee et al., 2018). Multiple factors contribute to the high occurrence of WMSDs in office settings. Extended periods of sitting, a common feature of office work, are strongly associated with an elevated risk of musculoskeletal problems, particularly in the neck and lower back. In addition, poor ergonomic setups further heighten these risks, as many office employees adopt uncomfortable postures while using computers and other office tools (Hoe, et al. 2018; Aminoff et al., 2015). Inadequately designed chairs and non-adjustable desks can cause considerable physical stress, which over time results in pain and discomfort. Repetitive actions like typing and using a mouse are also recognized as significant contributors to the development of WMSDs (McLean & McNaughton, 2011). Psychosocial factors are also important in the emergence of musculoskeletal symptoms. Office workers frequently encounter high job demands, tight deadlines, and stress, all of which can exacerbate the onset and continuation of WMSDs (McLean & McNaughton, 2011). These disorders not only affect individual health but also have broader organizational implications. WMSDs are a leading cause of absenteeism, with employees frequently requiring long periods of leave due to pain and discomfort, ultimately impacting workplace productivity and morale (Dagne, D., et al. 2020). Within higher education institutions, where office work is common, the occurrence of WMSDs is a major concern. Research conducted among staff in various academic institutions revealed that more than 60% of employees reported having experienced at least one musculoskeletal disorder, with the neck and lower back being the most frequently affected regions (Okezue et al., 2020). These findings prompt critical questions about the sufficiency of current workplace ergonomic standards and emphasize the need for preventive strategies. Addressing the rising issue of WMSDs among office employees requires an understanding of the specific risk factors involved. Recent research shows that implementing ergonomic improvements can substantially lower the risk of developing WMSDs (Sultan-Taïeb, et.al, 2017). Adopting ergonomic measures such as adjustable desks, adequate chair support, and taking regular breaks for stretching and movement can significantly reduce the risks tied to extended sitting periods and repetitive office tasks (Briggs et al., 2018). Furthermore, promoting a positive work environment that encourages open discussions about health and well-being can aid in minimizing psychosocial stress factors and enhancing overall employee health. In summary, the widespread prevalence of musculoskeletal disorders among office workers poses a significant threat to both public health and workplace productivity. A comprehensive understanding of the complex nature of WMSDs, which involves both physical and psychosocial elements, is essential for creating effective intervention strategies (Demissie, et al., 2024).

Materials and Methods

Purpose

The purpose of this study is to analyze the prevalence of work-related musculoskeletal disorders (WMSDs) among office workers, identifying associated risk factors and examining their impact on employee health and productivity.

Objectives of the study

- **To assess the prevalence and distribution of musculoskeletal disorders (MSDs)** among office workers, focusing on the most commonly affected anatomical regions, particularly the cervical and back areas.
- **To identify key occupational risk factors**, including poor posture and prolonged sitting, that contribute to the development and severity of musculoskeletal pain among office workers.
- **To evaluate the level of ergonomic awareness** among office workers and explore its relationship with the occurrence and management of musculoskeletal pain.

Study Design: We conducted a cross-sectional observational design to assess the prevalence and characteristics of MSDs among office workers in Tirana. The study was conducted over a one-month period, from October to November 2023. This design allows for a snapshot of MSD prevalence and pain characteristics at a specific point in time.

Participants: The study sample consisted of 234 office workers from various sectors, including academia, economics, healthcare, and information technology. Participants were recruited using convenience sampling from several office buildings in Tirana. Inclusion criteria required participants to be full-time office workers with at least six months of experience in their current role. Exclusion criteria included individuals with pre-existing musculoskeletal conditions unrelated to their office work.

Data Collection: Data were collected using a modified version of the Nordic Musculoskeletal Questionnaire (NMQ), a validated instrument widely used to assess musculoskeletal symptoms (MDPI, 2022). The questionnaire included questions on the presence, location, and intensity of pain experienced over the past year and the past seven days. Pain intensity was rated on a scale from 0 (no pain) to 5 (severe pain). The questionnaire also gathered demographic information such as age, gender, height, weight, and hours worked per week.

Data Analysis: Descriptive statistics were used to summarize demographic characteristics and the prevalence of MSDs. Pain intensity was categorized, and prevalence rates were calculated for different body regions. Inferential statistics, including chi-square tests, were employed to examine associations between demographic factors and MSD prevalence. Data analysis was performed using SPSS version 27.

Results

The results from the tables highlight the significant impact of musculoskeletal disorders (MSDs) among office workers. The majority of the participants were women (63.1%), and many had more than 10 years of experience in the same job position (40.7%). An overwhelming 84.4% of participants reported experiencing musculoskeletal pain in the past 12 months, with the most commonly affected areas being the neck and lower back (43.7% each). Even in the last 7 days, neck and back pain were the most prominent, affecting 39.3% and 30.3% of participants, respectively. Work was identified as the primary cause of pain for 52.7% of respondents, but a significant portion (31.4%) were unsure if work was the reason. Among those who did not attribute their pain to work, housework (20.8%) and other non-work-related factors were major contributors. In terms of managing the pain, 31.7% of participants used pain relief and anti-inflammatory drugs, while 29.1% relied on stretching. However, only a small number utilized physiotherapy (8.2%) or regular exercise routines (8.6%), and 26.1% did nothing to manage their pain. Furthermore, 65.9% of participants had not received ergonomic training in their workplace, indicating a lack of awareness about preventive measures. These findings suggest that musculoskeletal disorders are prevalent among office workers, largely influenced by ergonomic factors and insufficient awareness of preventive strategies.

FIGURE 1: Gender of participants

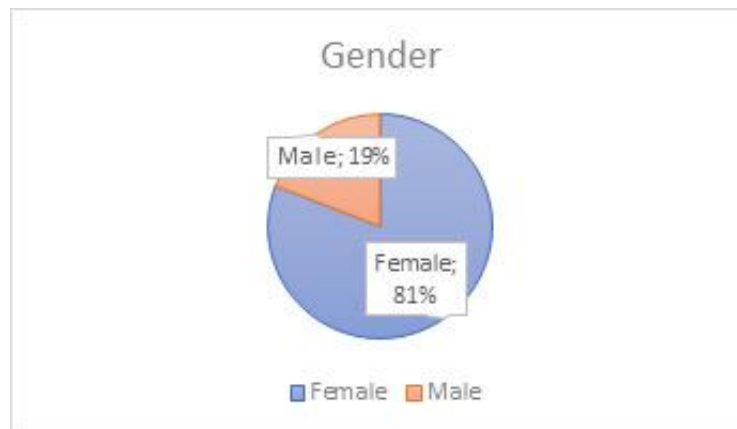
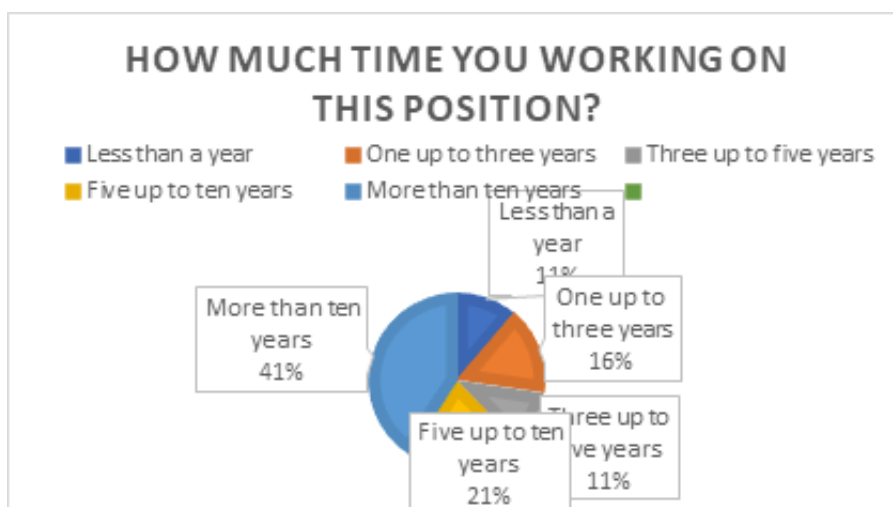


Figure 2: Work experience



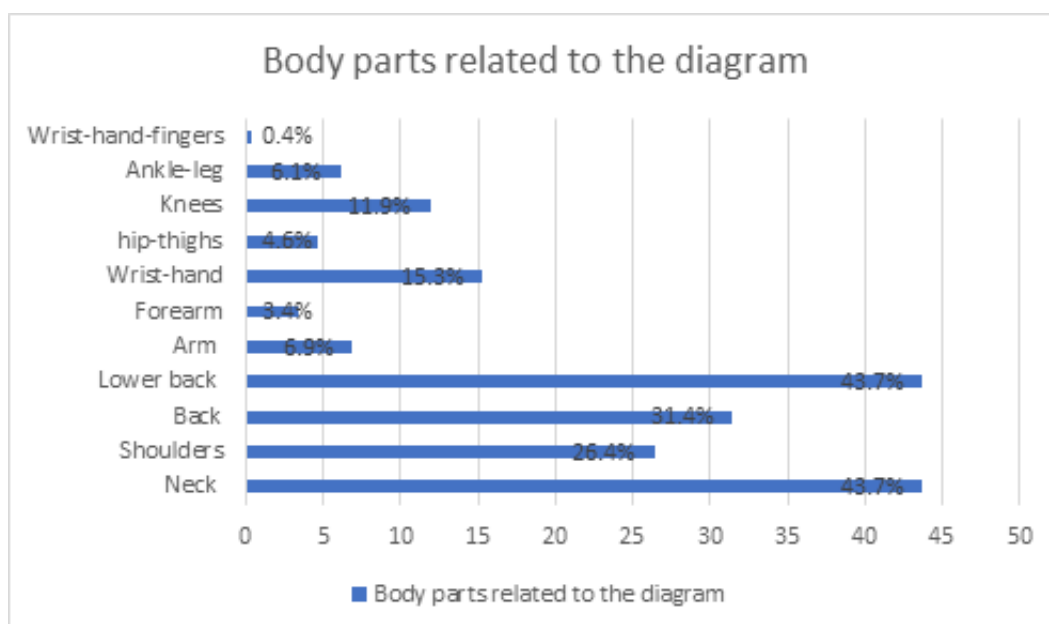
The data shows that the majority of participants are female with a mean height 165 cm, weight 70 kg (fig. 1). This may reflect a specific gender composition among office workers in this area. A large percentage of participants (40.7%) have more than 10 years of experience in the same job, while 21.3% have 5 to 10 years of experience. This suggests that workers tend to

stay in the same position for extended periods, increasing the risk of developing MSDs due to the accumulation of muscular stress and prolonged non-ergonomic positions (fig. 2).

FIGURE 3: Musculoskeletal Pain in the Last 12 Months



FIGURE 4: Most Affected Areas by Musculoskeletal Pain (Last 12 Months)



The vast majority of participants (84.4%) reported experiencing musculoskeletal pain in the last 12 months. This high percentage is a clear indicator that musculoskeletal pain is a widespread problem among office workers, potentially linked to sedentary working conditions and insufficient ergonomics (figure 3). Neck and lower back pain represent the most affected areas, each with 43.7%. This result is consistent with previous studies showing that poor sitting posture and lack of proper support for the back and neck during computer work are primary factors leading to frequent pain in these regions. A considerable portion of participants also reported pain in the wrists and hands, likely due to the continuous use of keyboards and mice (figure 4).

FIGURE 5: Musculoskeletal Pain in the Last 7 Days

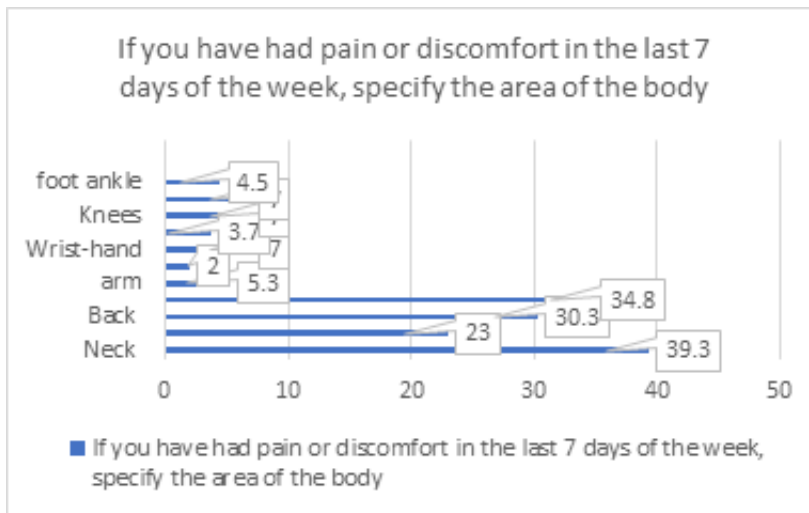


FIGURE 6: Is Work the Cause of Musculoskeletal Pain?



Pain in the neck and back remains the most common even in the last week, indicating that these are chronic issues for most workers. The frequent pain in the neck and back suggests that adequate measures to mitigate ergonomic problems at the workplace have not been implemented, potentially leading to further deterioration of their musculoskeletal health (figure 5). The majority of participants (52.7%) attribute their pain to their work conditions, clearly indicating that the positions and activities they perform at work are significant contributors to their musculoskeletal pain. However, a large percentage (31.4%) are unsure if work is the cause, highlighting a lack of awareness of the impact of ergonomics on musculoskeletal health (figure 6).

FIGURE 7: Other Factors Contributing to Pain (For Those Who Said “No”)

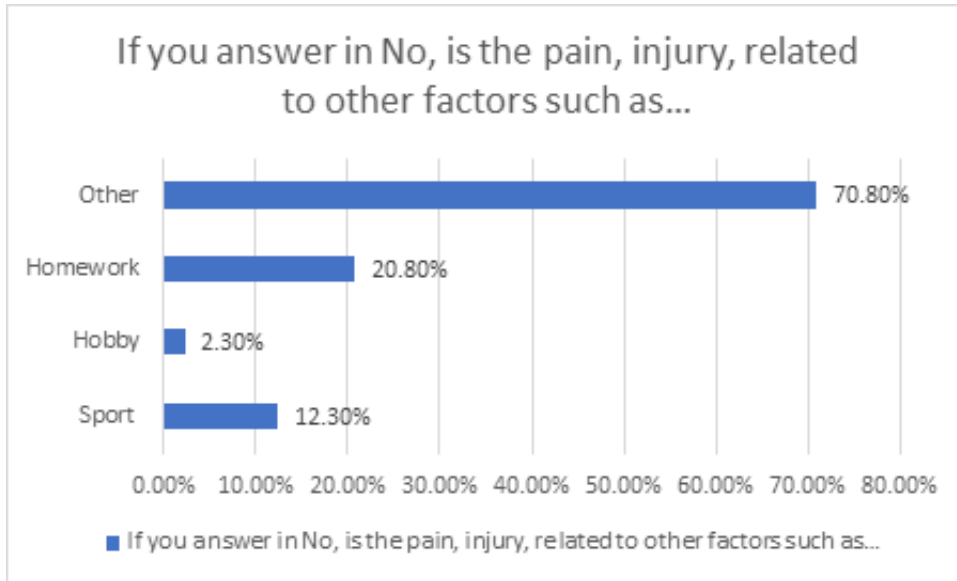
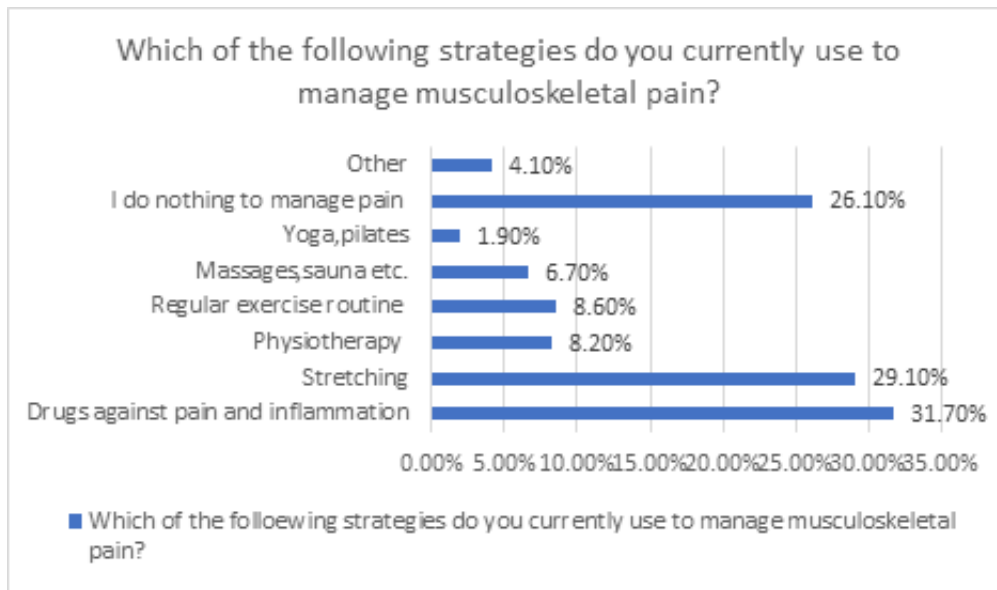
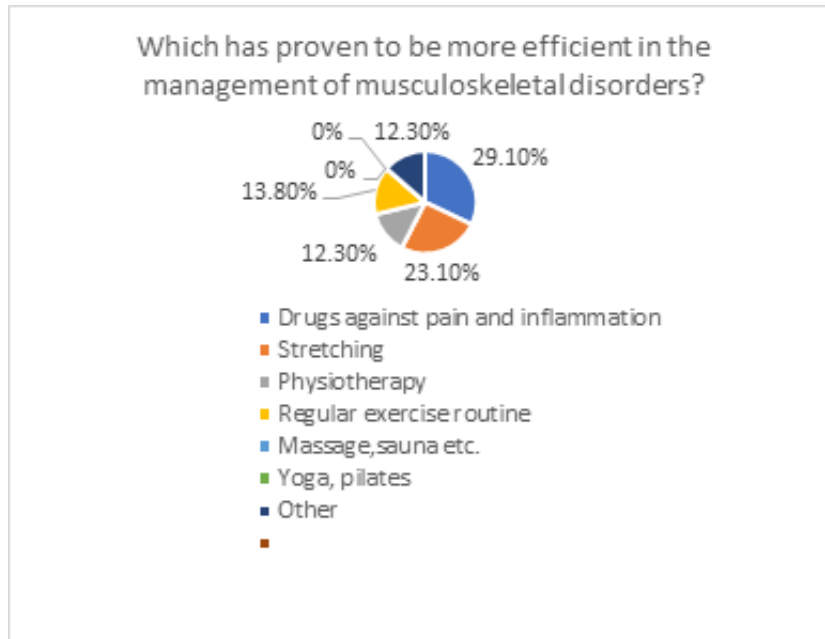
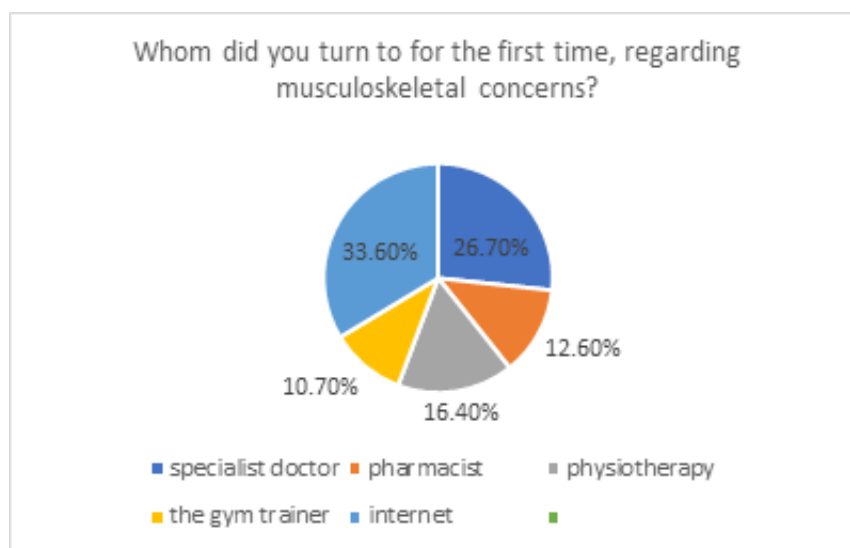


FIGURE 8: Strategies for Managing Musculoskeletal Pain

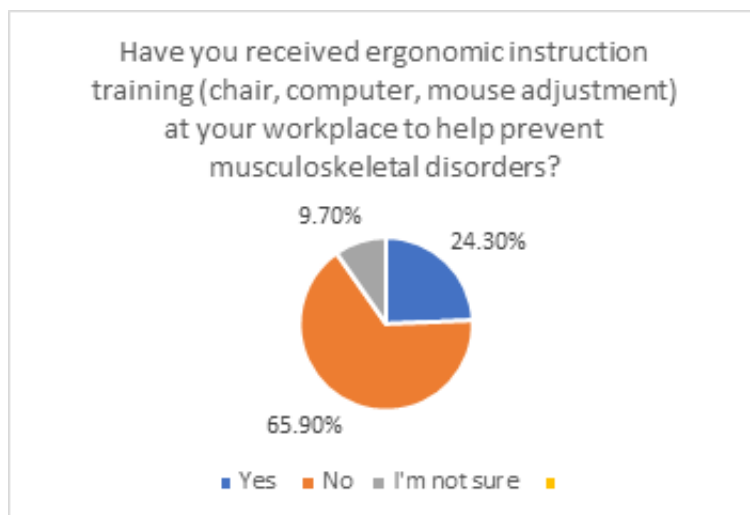


For those who do not attribute their pain to work, a large portion (20.8%) experience pain due to housework or other activities they perform outside of work. This suggests that sedentary work is not the sole cause but is a factor that exacerbates the pain caused by other activities (figure 7). 125 participants referred that the working posture was the cause of the moderate pain during the day where anti-inflammatory drugs was the solution to alleviate pain for 74 participants. A subset (n=77) with a high percentage for the musculoskeletal pain syndrome referred other nonspecific pain reason. A considerable number of participants rely on medication (31.7%) and stretching (29.1%) to manage their pain. This shows that more sustainable interventions such as physiotherapy and regular exercise are not widely used, while 26.1% of participants take no action to manage their pain. This highlights the need for awareness and education on effective pain management strategies (figure 8).

TABELA 9: Management of musculoskeletal disorders**FIGURE10:** Ergonomic instruction or training received

A significant portion of participants (33.6%) turned to the internet as their first source of information and advice on musculoskeletal concerns. While the internet provides easy access to information, it may not always offer reliable or personalized advice. A quarter (26.7%) sought help from a specialist doctor, which is a more reliable source. However, fewer participants consulted a physiotherapist (16.4%) or a gym trainer (10.7%), indicating that many workers might not be accessing targeted professional help for managing their musculoskeletal issues (figure 9). Mostly the participants (n=81) consulted the internet pages for different pain solutions.

The ergonomic working instruments adaptation was not a clear concept referring to the 157 participant responses. The majority of participants (65.9%) reported not receiving any ergonomic instruction or training in their workplace. This suggests a significant gap in workplace health initiatives aimed at preventing musculoskeletal disorders. With only 24.3% having received proper ergonomic training, it becomes clear that a lack of awareness and instruction may be contributing to the high prevalence of MSDs. This underlines the need for companies to implement ergonomic training and adjustments to workstations to improve the well-being of office workers (figure 10).

FIGURE 11: Strategies proven most effective in managing musculoskeletal disorders

Pain relief and anti-inflammatory drugs were the most commonly cited effective strategies (29.1%) for managing musculoskeletal disorders, followed by stretching (23.1%). Physiotherapy and regular exercise routines were also considered moderately effective by 12.3% and 13.8% of participants, respectively. However, none of the participants reported massages, saunas, or yoga/Pilates as effective. These findings suggest that many participants rely on immediate, short-term relief (such as medication), while long-term and sustainable interventions like physiotherapy and exercise are underutilized (figure 11).

Conclusion

The findings of this study indicate that musculoskeletal disorders (MSDs) are a prevalent issue among office workers in Tirana, with 84.4% of participants reporting musculoskeletal pain in the past year. This prevalence aligns with existing literature, which highlights sedentary office environments as major contributors to MSD development, particularly in the neck and lower back regions (Punnett & Wegman, 2004). In this study, 43.7% of participants reported neck and lower back pain, consistent with previous research linking poor ergonomic practices to high levels of discomfort in these areas (Cho, Hwang, & Cherng, 2012). The recurrence of symptoms in the last seven days (39.3% neck pain, 30.3% back pain) reinforces the notion that MSDs are chronic, likely due to prolonged exposure to occupational risk factors. Workplace conditions, such as extended periods of sitting and inadequate posture support, were cited by 52.7% of respondents as the primary cause of their pain, underlining the critical role of ergonomics in workplace health (Tersa-Miralles, et al. 2020). A significant finding was the lack of ergonomic training, with 65.9% of participants reporting that they had not received any instruction. This highlights a gap in workplace health strategies, where inadequate education on ergonomics may contribute to the high prevalence of MSDs. Ergonomic interventions, including workstation adjustments and training on correct posture, have been shown to reduce the incidence and severity of MSDs (Lin, et al., 2022) low adoption of physiotherapy (8.2%) and regular exercise (8.6%) further underscores the need for a holistic approach to both preventing and managing musculoskeletal disorders. Short-term relief strategies, such as anti-inflammatory drugs (31.7%) and stretching (29.1%), remain popular, but they do not address the root causes of MSDs, which are often related to inadequate ergonomics and low physical activity levels. The limited use of long-term management strategies like physiotherapy and exercise (12.3% and 13.8%, respectively) suggests that office workers may not be fully utilizing sustainable pain management options (Bin Ahmed, et al., 2023). This study emphasizes the urgent need for workplace interventions to address MSDs both in terms of prevention and management. Introducing ergonomic training and adjustable workstations could significantly reduce the prevalence of musculoskeletal pain. Moreover, raising awareness about the long-term benefits of physiotherapy and exercise could lead to more effective management of MSDs and improve the overall well-being of office workers. As 33.6% of participants reported seeking advice online, workplace health initiatives should also include reliable resources on ergonomics and musculoskeletal health. This study's limitations include its cross-sectional design, which only provides a snapshot of MSD prevalence at one point in time and does not account for the progression of symptoms. The use of convenience sampling may also limit the generalizability of the findings. Nevertheless, this study provides valuable insights into the high prevalence of musculoskeletal pain among office workers and the importance of workplace ergonomics in addressing this issue. In conclusion, this study underscores the need for comprehensive workplace interventions aimed at both preventing and managing musculoskeletal disorders. By improving ergonomic practices and promoting awareness of effective pain management strategies, employers can foster healthier work environments and reduce the burden of MSDs on office workers.

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Research Protocol on building Genomic Medicine Expertise: A Multi-Disciplinary Training Program for Healthcare Professionals in Albania

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Background

Genomic medicine holds immense potential to revolutionize healthcare by providing personalized treatments based on genetic information. However, there is a significant gap in the knowledge of genomic medicine among healthcare professionals globally (1), and this is particularly evident in Albania. This gap is compounded by the lack of genomic-medicine-trained clinicians, researchers, and technical professionals. Addressing these shortages through a structured educational program is vital to improving Albania's capacity for personalized healthcare and research in genomic medicine.

Precision medicine represents a transformative shift in healthcare by tailoring prevention, diagnosis, and treatment to the individual characteristics of patients, including their genetic makeup, lifestyle, and environmental factors. Globally, this approach promises better patient outcomes and more efficient healthcare systems. However, the adoption of precision medicine is dependent on healthcare professionals' knowledge and competencies. Research has shown that the level of understanding and the **capacity** to implement genomic medicine in clinical practice remains limited, especially among frontline healthcare professionals in primary care settings(2-3). In Albania, where precision medicine is still in its early stages, healthcare professionals face significant gaps in training and exposure to genomic approaches in clinical settings. To address this, it is critical to develop educational programs that equip healthcare providers with the necessary skills to integrate precision medicine into routine practice.

The acceptability of such training programs is essential for their successful implementation. Studies have shown that when training programs are aligned with the needs and motivations of healthcare professionals, they are more likely to be adopted and result in meaningful changes in practice(3-4). Thus, this research aims to assess the knowledge, attitudes, and practices (KAP) of healthcare professionals in Albania regarding precision medicine and to explore the acceptability and feasibility of implementing a comprehensive training program to enhance their capacity in this field.

Research Objectives

- To establish a comprehensive genomic medicine training program to enhance the knowledge and practical skills of healthcare professionals in Albania.
- To develop and implement a customized genomic medicine curriculum tailored to Albania's healthcare needs.
- To foster collaborative research on the genetic basis of diseases prevalent in Albania through international partnerships.
- To analyze **acceptability of Precision Medicine Training Programs for Healthcare Workforce in Albania: A Cross-Sectional Online Survey on Knowledge, Attitudes, and Practices in Genomic Medicine.**

Research Questions

1. What is the current level of genomic medicine knowledge among healthcare professionals in Albania, and how can it be improved?
2. How can a multi-disciplinary training curriculum in genomic medicine impact healthcare delivery and research capacity in Albania?
3. What are the benefits of international collaboration in advancing genomic medicine education and research in Albania?

Methods

Study Design

A multi-phase project involving **education, curriculum development, and collaborative research**. The project will engage healthcare professionals through co-teaching, workshops, and joint research initiatives.

Study Population

Healthcare professionals, researchers, and educators in Albania will participate in this genomic medicine training program. The program will target both early-career professionals and those looking to specialize in genomic medicine.

Training Program Structure

- **Co-teaching Program:** A 10-week co-teaching program delivered by international genomic medicine experts. Participants will engage in genetic testing, bioinformatics, ethical issues in genomics, and clinical applications.
- **Workshops and Face-to-Face Sessions:** A 3-4-day workshop at the European University of Tirana will provide hands-on experience with genetic testing and data interpretation.
- **Collaborative Research:** Researchers from Albania will collaborate with international experts on genomic studies, exploring diseases specific to the Albanian population.

Study design on the fourth Objective: To analyze acceptability of Precision Medicine Training Programs for Healthcare Workforce in Albania: A Cross-Sectional Online Survey on Knowledge, Attitudes, and Practices in Genomic Medicine.

Research Objectives: The goal of this research project is to identify current knowledge, required training content, perceived potential, and motivation to pursue precision medicine (PM) training, among the target health workforce. Hence the following research questions guiding the research study are:

- What is the current level of knowledge about PM primary healthcare workforce in Albania?
What PM training content and structure is acceptable for this category of health service delivery?
What is the perceived potential of PM?

- **Primary Objective:** To assess the current level of knowledge, attitudes, and practices related to genomic medicine among Albania's primary healthcare workforce.
- **Secondary Objective:** To identify key educational gaps and barriers to adopting precision medicine and provide recommendations for curriculum development and professional training programs.
- **Tertiary Objective:** To foster collaborative research and curriculum development, leading to the implementation of precision medicine in the Albanian healthcare system.

This is a cross-sectional study using a web-based survey. The survey will be conducted among primary healthcare professionals (physicians, nurses, and specialists) in Albania to assess their knowledge, attitudes, and practices (KAP) regarding precision medicine. This study will report on an evidence-based approach to needs assessment to investigate the current level of knowledge of Precision Medicine, acceptable content for training, the perceived potential of a more precision approach to patient care and motivation to participate in a training programme among primary healthcare doctors, specialist doctors and nurses in Albania.

During the period September 2024, we will distribute in a web-based survey to primary healthcare physicians in Albania using a standardized questionnaire via google form. This research will be a cross-sectional study. Based on our knowledge, there is no prior research conducted in Albania on this topic, so a questionnaire will be either translated or developed, investigated, and confirmed to be accurate for the Albanian doctors. Responses will be anonymous without any identifying data, and only the research investigators will have access to the data. A convenience sampling technique will be used to pick

the sample population. The questionnaire will be tested as part of a pilot study to confirm its validity and reliability. The tool's internal consistency of the used sub-scales, will be shown by Cronbach's alpha values, ranging from 0.7 to 0.8. Participants will be encouraged to complete the online survey on the Google form.

Study Population

The study will target healthcare professionals working in Albania's primary healthcare system, including general practitioners, nurses, and medical specialists. Participants will be recruited through convenience sampling.

Data Collection Tools

A standardized online questionnaire will be developed, based on WHO guidelines and similar studies. The questionnaire will be structured into four sections:

Measurements

Demographic information

The questionnaire will consist of age, gender, qualification level, rank, and years working in the healthcare system.

Knowledge toward Precision Medicine (PM) and Personalized Care (PC).

This sub-scale will contain questions about the general knowledge of PM and PC, including knowledge of artificial intelligence machine learning, AI in the medical field, AI during the training for post-graduate doctors.

Attitude toward Precision Medicine (PM) and Personalized Care (PC).

This sub-scale will contain questions about the attitude toward PM including the necessity of PM in the medical field, training, assessment, diagnosis, radiology, pathology, and its importance (for the statistical analysis, Don't know, disagree or strongly disagree = 0, agree or strongly agree = 0 & Good attitude is upper than 5 points).

Practice toward PM/PC

This sub-scale will have questions about the practice of PM and PC, including if the doctor has inserted the PM/PC in the medical field and the intention of conducting this technique during the training (for the statistical analysis, yes = 1, No, never applied = 0 & Good practice is upper than 2 points).

Framework

The study will adopt the **Knowledge-Attitude-Practice (KAP) Model** to guide the assessment of healthcare professionals' readiness to implement precision medicine. The KAP model is ideal for exploring how knowledge informs attitudes and, in turn, how these attitudes shape practices and behavior in healthcare settings. By using this framework, the study will identify gaps in knowledge, attitudes that may be supportive or resistant, and current practices that need to be enhanced.

Data Collection and Analysis

The survey will be distributed via Google Forms and will be conducted between September 2024 and December 2024. Responses will be collected anonymously. Descriptive statistics will be used to summarize demographic information and responses. Associations between knowledge, attitudes, and practices will be analyzed using chi-square tests and correlation analysis. The reliability of the sub-scales (Knowledge, Attitudes, Practices) will be confirmed using Cronbach's alpha.

Expected Results

It is expected that the majority of healthcare professionals will have limited knowledge of genomic medicine and its practical applications in primary healthcare. The study may reveal a positive attitude towards the potential of precision medicine, but also highlight concerns related to the resources and training required for its integration. Current practices related to genomic medicine are expected to be minimal, with many participants expressing interest in training but lacking the resources or knowledge to implement precision medicine in clinical settings.

Participants' knowledge and skills in genomic medicine will be assessed before and after the program using structured surveys. Collaborative research will be assessed based on publications, patents, and innovations resulting from joint projects. Participants will provide feedback on the effectiveness of the curriculum, which will be continuously refined to meet local healthcare needs.

Ethical Considerations

Informed consent will be obtained from all participants in the training and research programs. Data collected will be anonymized to maintain confidentiality.

Expected Results

Healthcare professionals in Albania will significantly improve their understanding of genetic testing, bioinformatics, and personalized medicine, leading to better healthcare outcomes. Multiple joint publications and research projects focusing on population-specific genetic studies will enhance Albania's contribution to global genomic research. The program will build a skilled workforce capable of integrating genomic approaches into clinical practice and research.

Expected Impact

Personalized treatments tailored to genetic profiles will lead to better diagnosis, prevention, and management of genetic diseases in Albania. The curriculum and co-teaching initiatives will lay the foundation for ongoing genomic medicine education and research, ensuring Albania remains at the forefront of genomic healthcare innovation.

Discussion

The findings from this research will provide critical insights into the current state of knowledge and the attitudes of Albanian healthcare professionals towards precision medicine. Similar to studies conducted in other regions, it is expected that the majority of healthcare providers in Albania have limited exposure to precision medicine and may lack the necessary skills to apply genomic information in patient care (5-6). However, the potential for precision medicine to improve healthcare outcomes, particularly in areas such as oncology, cardiology, and rare genetic diseases, is widely recognized (7-8).

A key barrier identified in other studies is the lack of tailored training programs that address the specific needs of different healthcare professions. For example, pharmacists, nurses, and general practitioners each have distinct roles in the implementation of precision medicine, and therefore require role-specific training (8-9). The flexibility and adaptability of the training program will be crucial to its success in Albania, where resource constraints and varying levels of technical expertise may pose additional challenges. The use of modular, blended learning approaches, combining online and in-person sessions, has been shown to be effective in similar contexts(4). Furthermore, engaging healthcare professionals in the development of the curriculum through needs assessments and feedback loops can increase the acceptability and perceived relevance of the program, thereby enhancing its impact.

The study's outcomes will also contribute to understanding the broader systemic and structural challenges to integrating precision medicine into Albania's healthcare system. As seen in other regions, issues such as data management, interprofessional collaboration, and patient engagement are critical to the successful implementation of genomic medicine (8-9). Addressing these challenges through targeted education, policy support, and infrastructure development will be essential for realizing the potential of precision medicine in Albania.

The findings from this research will be pivotal in understanding the current state of knowledge and the attitudes of healthcare professionals in Albania toward precision medicine. Similar studies conducted in other regions, including Turkey and India, have highlighted substantial gaps in the knowledge of healthcare providers regarding precision medicine and genomic applications(9-10). In Turkey, for example, a cross-sectional study revealed that less than 30% of healthcare workers had any formal training in genomic medicine, despite recognizing its importance in personalized healthcare. Such gaps mirror the expected results of this study, with healthcare professionals in Albania likely to show limited exposure to precision

medicine techniques, despite expressing interest in the potential of these approaches.

Moreover, research conducted in the United States and Europe has shown that tailored training programs are essential for improving knowledge and practice in precision medicine. Studies demonstrate that modular training formats, which combine online and in-person sessions, can significantly improve healthcare workers' competencies in genomic medicine. In Albania, where resource constraints and varying levels of technical expertise present additional challenges, flexible and adaptive learning strategies will be critical to the success of any training program. Engaging healthcare professionals in the development and refinement of training content, through needs assessments and feedback mechanisms, will also enhance the program's relevance and acceptability (9-11).

The systemic and structural challenges identified in other regions are also relevant to Albania. For instance, issues such as data management, ethical considerations around genetic testing, and interprofessional collaboration are crucial to the successful implementation of precision medicine (Research Protocol). These challenges need to be addressed through targeted educational interventions, policy support, and infrastructure development. By doing so, Albania can enhance its capacity to deliver personalized healthcare, ultimately leading to better patient outcomes.

Conclusion

Our study highlights the critical gaps in knowledge, attitudes, and practices regarding precision medicine among healthcare professionals in Albania. The findings reveal that while healthcare providers recognize the potential of precision medicine to transform patient care, there are significant barriers to its implementation, including limited exposure to genomic medicine, inadequate training, and concerns about resources. Tailored training programs that address these challenges are essential to ensure that healthcare professionals are equipped with the knowledge and skills necessary to integrate precision medicine into clinical practice. The development of flexible, role-specific curricula and the use of modular training approaches will be key to overcoming the resource constraints and varying levels of expertise among professionals. Additionally, fostering collaborative research and providing policy support will be vital in building a sustainable framework for precision medicine in Albania. By addressing these educational gaps, Albania's healthcare system can progress towards more personalized, effective healthcare, ultimately improving patient outcomes and public health.

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