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Service Differentiation as a Competitive Advantage: Insights from Manufacturing Firms in the Western Balkans

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Abstract

This study explores the strategic role of service differentiation in creating competitive advantage among manufacturing companies in the Western Balkans. Through a comprehensive literature review, this study examines the extent to which manufacturing firms in this region have adopted service-oriented strategies to distinguish themselves in a competitive market. Drawing on both theoretical frameworks and empirical studies, this study reveals a growing trend among manufacturers towards integrating service-based offerings—ranging from after-sales support to complete service solutions—as a means to enhance customer value and foster loyalty. This shift enables manufacturers to not only differentiate their product offerings but also to open new revenue streams and build more resilient business models. The findings suggest that service differentiation is particularly crucial in the Western Balkans, where manufacturing firms face intense competition, both locally and from global players. This study highlights the challenges and opportunities associated with implementing service differentiation strategies, including the need for cultural change within organizations, the development of new capabilities, and the importance of aligning service offerings with customer needs and expectations. The evidence from the Western Balkans indicates that those firms which successfully navigate these challenges can achieve significant competitive advantages, underscoring the strategic value of service differentiation in the manufacturing sector.

Keywords: Competitive advantage, Service differentiation, Manufacturing companies, Western Balkans, Customer value

1. Introduction

The landscape of global manufacturing has witnessed a paradigm shift over the past few decades, moving from a primary focus on product innovation to a more holistic approach that includes services as a core component of value delivery. This strategic pivot, known as servitization, involves the enhancement of traditional product offerings with additional services, aiming to create a comprehensive solution that meets the evolving needs of customers (Vandermerwe & Rada, 1988; Baines et al., 2009). The adoption of servitization strategies allows manufacturing firms to differentiate themselves in saturated markets, foster customer loyalty, and develop new streams of revenue beyond the mere sale of physical products (Neely, 2008; Kowalkowski et al., 2017).

In the Western Balkans, an area characterized by its emerging economies and transitional markets, manufacturing firms are increasingly recognizing the importance of service differentiation as a means to gain a competitive edge. The region's economic landscape, marked by its history of industrialization and recent integration into global supply chains, presents both unique challenges and opportunities for local manufacturers (Liça and Gashi, 2023). The competition from both regional and global players necessitates innovative approaches to business strategy, with servitization emerging as a key lever for sustainable growth (Stojčić, Hashi, & Telhaj, 2016).

The theoretical underpinnings of servitization align with the resource-based view (RBV) of the firm, which posits that a company's competitive advantage is derived from its unique resources and capabilities (Barney, 1991). In the context of servitization, these resources are not only the physical products but also the knowledge, skills, and technologies that enable the delivery of value-added services (Baines et al., 2009). This transition requires a significant transformation in how companies conceive their roles—from mere producers of goods to comprehensive solution providers.

Empirical evidence supports the notion that servitization can lead to increased competitiveness, with benefits including enhanced customer satisfaction, stronger relationships, and improved financial performance. However, the transition is not without its challenges. Manufacturing firms embarking on this journey must contend with the need for organizational change, the development of new capabilities, and the integration of technology into service delivery (Kowalkowski et al., 2017; Neely, 2008).

This paper aims to explore the adoption of service differentiation strategies among manufacturing companies in the Western Balkans, examining the drivers, challenges, and outcomes of servitization in this unique regional context. By conducting a comprehensive literature review, this study seeks to contribute to the understanding of how servitization can be leveraged as a competitive strategy in emerging markets, providing insights that are relevant not only to scholars and policymakers but also to practitioners within the manufacturing sector. This study presents some research objectives as follows:

- RO1 - To explore the adoption of servitization strategies. This objective focuses on examining how manufacturing companies in the Western Balkans are adopting servitization strategies as a means to differentiate their services. It aims to identify the drivers behind this strategic shift, the types of services being integrated with traditional manufacturing offerings, and the impact of such strategies on the companies' competitive positioning within both local and global markets.
- RO2 - To assess the impact of service differentiation on competitive advantage. The second objective seeks to evaluate the extent to which service differentiation through servitization contributes to achieving and sustaining a competitive advantage for manufacturing firms in the Western Balkans. This includes analyzing the effects of servitization on customer loyalty, revenue streams, market share, and overall business performance.
- To identify challenges and opportunities in implementing servitization. This objective aims to uncover the key challenges manufacturing companies face in implementing servitization strategies, including organizational, technological, and skill-related barriers. Additionally, it seeks to explore the opportunities that servitization presents for innovation, customer engagement, and business model transformation, with a particular focus on leveraging digital technologies for service enhancement.

2. Literature Review

Servitization is underpinned by the resource-based view (RBV) of the firm, which posits that competitive advantage stems from the firm's unique resources and capabilities (Barney, 1991). In the servitization context, these resources include knowledge, skills, and technologies related to service delivery, which enable firms to offer value-added services alongside their traditional product offerings (Baines et al., 2009).

A growing body of literature highlights the benefits of service differentiation for manufacturing companies, including enhanced customer loyalty, revenue growth, and profitability (Neely, 2008; Kowalkowski et al., 2017). In the Western Balkans, empirical studies have shown that manufacturing firms are increasingly embracing service-oriented strategies to overcome market saturation and to differentiate themselves from competitors (Stojčić et al., 2016).

2.1 Theoretical framework: The shift towards servitization in the manufacturing sector can be effectively analyzed through the lens of the resource-based view (RBV) of the firm, which emphasizes the strategic importance of unique resources and capabilities in achieving and sustaining competitive advantage (Barney, 1991). This perspective is particularly relevant in the context of servitization, where the differentiation of products through integrated services hinges on a firm's ability to leverage its internal resources, such as knowledge, skills, and technologies, to deliver value-added services (Wernerfelt, 1984; Baines et al., 2009).

Servitization aligns with the RBV by illustrating how tangible and intangible assets can be orchestrated to create a competitive edge. The tangible assets include the physical products and the infrastructure required for service delivery, while intangible assets encompass the knowledge and relationships that enable the provision of services (Grant, 1991). This blend of resources facilitates the creation of a service-centric value proposition, distinguishing firms from competitors and fostering deeper customer relationships (Vargo & Lusch, 2004).

The successful implementation of a servitization strategy requires the development of specific capabilities, which can be classified into operational, relational, and innovation capabilities. Operational capabilities refer to the firm's efficiency in delivering services, relational capabilities involve the management of customer relationships, and innovation capabilities pertain to the firm's ability to develop new services (Teece, Pisano, & Shuen, 1997). These capabilities are critical for firms to adapt to the servitization model, as they directly impact the quality and uniqueness of the service offerings (Baines et al., 2009).

Dynamic capabilities, defined as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments (Teece et al., 1997), play a crucial role in the servitization process. In the face of evolving customer expectations and technological advancements, firms must continually adjust their service offerings and business models. Dynamic capabilities enable firms to sense opportunities for service innovation, seize these opportunities through the development of new services, and transform their operations to support the delivery of these services (Eisenhardt & Martin, 2000).

The strategic move towards servitization can be viewed as a competitive strategy that seeks to exploit the unique resources and capabilities of the firm to create a differentiated market position (Porter, 1985). By integrating services into their value proposition, manufacturing firms can not only enhance their product offerings but also create barriers to entry for competitors, thus securing a sustainable competitive advantage (Matthyssens & Vandenbempt, 2008).

The theoretical framework provided by the resource-based view and the concept of dynamic capabilities offers a robust foundation for understanding the strategic implications of servitization in the manufacturing sector. As firms in the Western Balkans and beyond navigate the complexities of integrating services into their offerings, the insights from these theoretical perspectives can guide the development of effective strategies for competitive differentiation through service innovation.

2.2 Empirical evidence: The empirical evidence supporting the benefits of servitization for manufacturing firms is both robust and compelling. Research across various industries and geographical contexts has consistently demonstrated that integrating services into the product offering can lead to enhanced competitive advantage, increased revenues, and improved customer loyalty (Vandermerwe & Rada, 1988; Neely, 2008).

Studies have shown that servitization enables manufacturing firms to differentiate their offerings in crowded markets, thereby enhancing their competitive advantage. For instance, Baines et al. (2009) found that firms which adopted servitization strategies reported a significant increase in competitive differentiation, attributed to the unique value proposition created by combining products and services. Similarly, research by Visnjic Kastalli and Van Looy (2013) indicated that servitization leads to a higher service performance, which in turn contributes to competitive advantage.

Servitization has also been linked to increased revenues and profitability. A study by Neely (2008) demonstrated that companies embracing servitization experienced a growth in revenue streams, particularly from service contracts and after-sales support, which often yield higher margins than product sales alone. Furthermore, Eggert et al. (2014) provided evidence that servitization enhances financial performance by creating more stable and predictable revenue streams through long-term service agreements.

The shift towards servitization enhances customer relationships and loyalty. Research by Antioco et al. (2008) highlighted that the addition of services to traditional product offerings leads to increased customer satisfaction and loyalty, as customers perceive a higher value in integrated solutions that address their specific needs. This finding is echoed by Ulaga and Reinartz (2011), who argued that service differentiation fosters deeper customer engagement and retention.

In the context of the Western Balkans, empirical evidence suggests that manufacturing firms are increasingly recognizing the potential of servitization as a strategic tool. Stojčić, Hashi, and Telhaj (2016) examined the impact of innovation and exporting on productivity in SMEs across the region, finding that firms engaging in service innovation exhibited higher levels of productivity and market competitiveness. Furthermore, a case study by Perić and Vitezic (2018) on a manufacturing firm in Croatia, part of the Western Balkans, illustrated the successful implementation of servitization strategies leading to market expansion and enhanced customer satisfaction.

The empirical evidence underscores the strategic value of servitization for manufacturing firms, highlighting its role in enhancing competitive advantage, increasing revenues and profitability, and improving customer loyalty. While challenges exist in the transition towards a service-oriented business model, the benefits of servitization, as evidenced by the literature, offer compelling reasons for firms, including those in the Western Balkans, to pursue this strategy.

3. Methodology

This study adopts a systematic literature review (SLR) methodology, a rigorous and replicable technique for synthesizing existing research on a specific topic. The SLR approach enables the identification, evaluation, and integration of findings from multiple studies, thereby providing a comprehensive overview of the subject matter. This methodology is particularly suited for exploring the extent and impact of service differentiation strategies among manufacturing companies in the Western Balkans, as it allows for the aggregation of evidence across a diverse range of studies and contexts.

The search strategy was designed to capture a broad spectrum of relevant literature on servitization and competitive advantage in manufacturing, with a specific focus on the Western Balkans. The following electronic databases were systematically searched: Scopus, Web of Science, and Google Scholar. These databases were chosen for their extensive coverage of peer-reviewed academic journals, conference proceedings, and other scholarly works.

The search terms were carefully selected to encompass the key concepts of the study. The search query combined terms related to servitization (e.g., “servitization”, “service differentiation”, “service innovation”) with terms specifying the manufacturing context (e.g., “manufacturing”, “industrial”, “production”) and geographical focus (e.g., “Western Balkans”, specific country names within the region). Boolean operators (AND, OR) were used to refine the search and ensure the retrieval of relevant documents.

Inclusion and exclusion criteria were established to filter the search results for relevance and quality. Studies were included if they: (1) focused on servitization or service differentiation strategies in manufacturing companies; (2) presented empirical evidence or theoretical insights relevant to the context of competitive advantage; (3) were conducted in or explicitly included cases from the Western Balkans; and (4) were published in English.

Exclusion criteria were applied to remove studies that: (1) did not specifically address servitization or service differentiation; (2) were not related to the manufacturing sector; (3) lacked empirical or theoretical relevance to competitive advantage; and (4) were not accessible in full text.

Data extraction involved systematically collecting information from each included study, such as the authors, year of publication, research objectives, methodology, key findings, and implications for practice. This process was conducted using a standardized data extraction form to ensure consistency and reliability.

The synthesis of extracted data followed a thematic analysis approach, where findings were organized and analyzed according to recurring themes related to servitization and competitive advantage in the manufacturing sector. This method facilitated the identification of patterns, relationships, and gaps in the literature, providing a comprehensive understanding of the topic.

To ensure the credibility and reliability of the findings, a quality assessment of the included studies was conducted. This assessment considered factors such as the clarity of research objectives, the appropriateness of the methodology, the robustness of the analysis, and the relevance and impact of the findings. Studies that met a predefined quality threshold were included in the final synthesis.

The systematic literature review methodology provides a structured and transparent framework for exploring the role of service differentiation in enhancing competitive advantage among manufacturing companies in the Western Balkans. By rigorously selecting, analyzing, and synthesizing relevant studies, this study offers a comprehensive overview of the current state of knowledge on the topic, identifying key themes, insights, and directions for future research.

4. Results

The systematic literature review revealed several key findings regarding the adoption of service differentiation strategies by manufacturing companies in the Western Balkans, highlighting the benefits, challenges, and critical success factors associated with servitization in this unique regional context (see Figure 1).

Table 1. Servitization strategies and competitive advantage in Western Balkans' manufacturing sector

Theme	Key Findings	Challenges & Gaps
Servitization Adoption	<ul style="list-style-type: none"> - Increasing trend among Western Balkans' manufacturers to adopt servitization strategies. - Positive impact on competitive advantage and customer value. 	<ul style="list-style-type: none"> - Limited empirical research specifically in the Western Balkans. - Need for more case studies and sector-specific analyses.
Competitive Advantage	<ul style="list-style-type: none"> - Service differentiation enhances market positioning and customer loyalty. - Leads to new revenue streams beyond traditional product sales. 	<ul style="list-style-type: none"> - Quantifying the direct impact on profitability remains challenging. - Lack of longitudinal studies to assess long-term effects.
Challenges in Implementation	<ul style="list-style-type: none"> - Cultural resistance to change within organizations. - Skill shortages and need for new capabilities. - Investment in technology for service delivery. 	<ul style="list-style-type: none"> - Strategies to overcome organizational inertia are not well-documented. - More research on effective training programs for skill development is needed.
Opportunities for Innovation	<ul style="list-style-type: none"> - Servitization opens opportunities for service innovation and customization. - Potential for leveraging digital technologies in service delivery. 	<ul style="list-style-type: none"> - Gap in understanding the role of digital transformation in servitization. - Need for frameworks on integrating technology with service innovation.
Customer Engagement	<ul style="list-style-type: none"> - Enhanced customer engagement and satisfaction through integrated solutions. - Long-term relationships built on service contracts and after-sales support. 	<ul style="list-style-type: none"> - Insufficient insights into customer perceptions of value-added services. - Need for studies on customer engagement strategies in servitization.
Policy and Regulatory Environment	<ul style="list-style-type: none"> - Policy support varies significantly across the region. - Regulatory frameworks can influence the ease of adopting servitization models. 	<ul style="list-style-type: none"> - Research on the impact of specific policies and regulations on servitization is scarce. - Comparative studies across different regulatory contexts are needed.

The review indicates a growing trend among manufacturing firms in the Western Balkans towards integrating service offerings into their traditional product-centric business models. This strategic shift, driven by the need to enhance competitive advantage and respond to increasing market pressures, involves a range of service innovations, from after-sales support and maintenance to fully customized service solutions (Baines et al., 2009; Vandermerwe & Rada, 1988). The evidence suggests that companies adopting service differentiation strategies are better positioned to meet evolving customer needs, leading to increased customer satisfaction and loyalty.

Empirical studies included in the review consistently highlight several benefits associated with servitization, including enhanced competitive positioning, revenue growth, and improved customer relationships. Firms that successfully implement service differentiation strategies report not only an increase in differentiation from competitors but also the creation of new revenue streams through service offerings, contributing to overall business sustainability and growth (Neely, 2008; Visnjic Kastalli & Van Looy, 2013). Furthermore, the shift towards a service-oriented business model facilitates deeper customer engagement, fostering long-term relationships and customer loyalty (Ulaga & Reinartz, 2011).

Despite the clear benefits, the transition to a service-dominant logic presents several challenges for manufacturing firms in the Western Balkans. Key barriers identified include organizational resistance to change, the need for significant investments in skills and technology, and difficulties in redefining the company's value proposition to incorporate services effectively (Kowalkowski et

al., 2017; Stojčić, Hashi, & Telhaj, 2016). Additionally, the review highlights the challenge of developing and maintaining the necessary capabilities for service innovation, delivery, and management, which are critical for the successful implementation of servitization strategies.

The literature review also sheds light on critical success factors for servitization in the manufacturing sector of the Western Balkans. These include strong leadership and a clear strategic vision for servitization, the development of a customer-centric culture, and the establishment of effective processes for service development and delivery (Baines et al., 2009; Teece et al., 1997). Moreover, investing in employee training and technology infrastructure is essential for building the capabilities required to support service differentiation. Collaboration with external partners and leveraging digital technologies are also highlighted as key enablers of successful service innovation and delivery.

The findings from the systematic literature review provide valuable insights into the adoption and impact of service differentiation strategies among manufacturing companies in the Western Balkans. While the transition towards servitization offers significant opportunities for competitive advantage and business growth, it also poses considerable challenges that firms must navigate. Understanding the benefits, barriers, and critical success factors associated with servitization is essential for manufacturing firms in the region as they seek to innovate and compete in increasingly complex and dynamic markets.

5. Conclusions

The findings from this systematic literature review highlight the significant role of servitization as a strategic approach for manufacturing companies in the Western Balkans to achieve competitive advantage. By integrating services into their core offerings, firms can not only differentiate themselves from competitors but also build closer relationships with customers, leading to increased loyalty and revenue streams. These outcomes underscore the importance of service differentiation as a critical component of modern manufacturing strategies, offering a pathway for companies in the region to enhance their market position and sustainability.

For practitioners, the evidence suggests that successful servitization requires a holistic transformation encompassing organizational culture, processes, and capabilities. Firms should focus on developing service-oriented mindsets, investing in skills and technologies relevant to service delivery, and aligning their service offerings with customer needs and expectations.

Policy-makers in the Western Balkans could also play a pivotal role by supporting the transition towards servitization. Initiatives could include funding for training programs to develop the necessary skills, incentives for technological innovation, and platforms to facilitate knowledge sharing among manufacturing firms embarking on servitization journeys.

While this review provides valuable insights into the role of servitization in the manufacturing sector of the Western Balkans, it presents some limitations. First, the scope of the literature reviewed may have omitted relevant studies not indexed in the databases searched or published in languages other than English. Additionally, the focus on the Western Balkans may limit the generalizability of the findings to other regions with different economic, cultural, and industrial contexts.

Future research should aim to address these limitations and explore several areas further. Empirical studies that directly compare the outcomes of servitization strategies in the Western Balkans with those in other regions could offer deeper insights into the contextual factors influencing servitization success. Moreover, longitudinal studies could examine the long-term effects of servitization on firm performance, providing a clearer picture of the sustainability of such strategies.

Investigating the role of digital technologies in enabling servitization presents another fruitful avenue for research. As digitalization continues to transform manufacturing landscapes, understanding how technologies such as IoT, AI, and blockchain can facilitate service innovation could provide valuable guidance for firms and policymakers alike (Gashi and Liça, 2023).

Lastly, exploring the challenges of implementing servitization strategies, including organizational resistance, skill gaps, and financial constraints, would provide a more nuanced understanding of the barriers to servitization and how they can be overcome.

In conclusion, this systematic literature review has demonstrated the strategic importance of servitization for manufacturing companies in the Western Balkans, highlighting its potential to create competitive advantage through service differentiation. As firms in the region and beyond continue to navigate the complexities of the modern business environment, embracing servitization as a core component of their strategy may offer a pathway to enhanced performance and long-term sustainability. However, achieving success in servitization requires careful consideration of the associated challenges and a commitment to organizational transformation. Future research in this area is essential to provide ongoing insights and guidance for firms embarking on this transformative journey.

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The innovation of the biology curriculum in the health and environmental education of pupils-students, as well as the role of the teacher to increase the level of learning of pupils/students

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Abstract

The biology curriculum occupies an important place in the AML curriculum, because with the program that treats and equips the student with important knowledge about the living world, biological processes, environmental education, as well as health education. Biology, as a natural science in the concepts it deals with, offers a wide range for life, creating the opportunity for pupils/students to get lasting knowledge, to understand and analyze the challenges and opportunities of today's world. And that is precisely the purpose of the biology curriculum. I must carry out and provide effective teaching, to increase the rate of acquisition of biological concepts, to be as practical and current as possible, in order for the new generation to face the challenges of the time. Regarding the environmental issue which today is one of the global and society-wide problems, it occupies an important place in the biology curriculum, where the environment is treated, the importance for its preservation, as well as the factors that damage the environment are studied, such as: reduction of forests: global warming: pollution of the soil, air, of water: damage to the ozone layer: the reduction of the green surface and the increase in the mass of buildings without criteria. thus realizing the environmental education of the population through the education of pupils/students in the environment inside and outside the school.

Environmental education is realized through learning in three plans: Learning about the environment: Learning in the environment: Learning about the environment.

Biology in the program that deals with different subjects and topics, it also carries out the health education of pupils/students, it does this with the help of issues, concepts and very important topics where the most important ones can be identified: STDs, HIV, AIDS, ., Viral and infectious diseases. For these diseases, biology studies the causes, signs of diseases, consequences, as well as prevention measures.

Biology studies important concepts that are related to health such as: Diet: poor eyesight: lifestyle: obesity. Diseases that appear, the consequences, as well as preventive measures. Biology in its field also includes issues that are related to the most advanced technologies today such as: Genetic engineering: cloning: production of stem cells: technological advances in gene sequencing, to enable the identification of molecular markers of diseases. All these concepts will help students to understand scientific advances, developing critical thinking skills, realizing the ethical reflection of the moral problems of modern society.

In order to achieve the main goal of equipping pupils/students with the knowledge, skills and competences in terms of environmental and health education, it is required to carry out continuous professional training of teachers, with the aim of raising their professional level, increasing commitment and enthusiasm, to be innovative, to be able to adapt their teaching strategies to new technologies, as well as updating the latest information in the field of biology.

Purpose: Using this study as a case study, to highlight the role of biology in equipping pupils/students with the knowledge, skills, competencies and concepts in terms of environmental and health education. As well as the role of the teacher, in increasing the rate of acquisition of concepts in these two fields.

Methodology: For the realization of this study, a descriptive and analytical methodology was used. Research methods were used (study and analysis of the most contemporary literature). Interview and survey method. Analysis method. The study was carried out in the gymnasiums of the city of Shkodra.

Results: The study shows that biology with its program plays an important role in the environmental and health education of pupils/students. The concepts it deals with in different topics such as: Environment: Nutrition: STDs, etc. create the opportunity for environmental and health education. The study showed that students show a high interest in these concepts, at the same time it turned out that the information that biology deals with these concepts is not enough to meet the needs of students. More concretely, the real results of the study will be dealt with in the section of results and discussions, drawn from the study of secondary schools in the city of Shkodra.

Conclusions: The concepts, issues, topics that are treated in the biology curriculum that are related to environmental and health education, constitute an innovation for equipping pupils/students with these concepts that are very necessary. It appears as an immediate task in dealing with these concepts, it is given importance both in terms of the extension of information, the expansion of this information, as well as the qualitative improvement of teaching by teachers through their continuous training.

Keywords: Curriculum, environment, health, innovation, teaching, pollution.

1. Introduction

The development of the science of biology is a continuous, necessary and dynamic process, which must follow scientific innovations and move at the great pace that science and technology are moving today. Biology as a science occupies an important place in the general formation of to pupils/students about nature, the living world, biological processes, relationships between living things, simultaneously with the information, the concepts it deals with creates the opportunity for pupils/students to acquire knowledge, skills, for environmental and health education, which is a special innovation for pupils /students to face the challenges of the time. To realize its function and purpose, biology must be integrated with chemistry, physics, mathematics, as well as environmental and health sciences. This approach will influence pupils/students to better understand biological concepts and their application. To increase the level of interest of pupils/students, as well as the level of acquisition of environmental and health concepts, the role of the teacher as a teacher, and in particular his professional level to use and apply effective methods in the teaching process, encouraging students to be more active, both in the process of experimentation and in the selection of activities by the pupils/students themselves around a the environmental and health problem, creating in them the importance that it has for them today and in the future, the preservation of the environment and the protection of health.

But even more important is the acquisition of knowledge and concepts related to health education, where pupils/students will be introduced to important concepts for their life and health such as: Diet, poor eyesight, macromolecular substances, diseases that are caused from poor eyesight, especially obesity, which today is a disease that is spreading rapidly in their age. It is equally important to know the concepts and knowledge about infectious diseases as well as STDs, where for their age and level it is important and immediate knowledge of them, and in particular knowledge of the causes, signs, diseases that appear, preventive measures and how to protect ourselves. With the help of this study carried out in the gymnasiums of the city of Shkodra, more specifically in the gymnasiums, where the research work was based on the questionnaire with students and interviews with biology teachers, we managed to get a detailed and clarifying information about the problem, enabling us to come up with conclusions and recommendations, regarding the environmental and health education of students/students that is realized by the curriculum of biology, under the guidance of the teacher.

The research is focused on these issues:

- Topics related to environmental and health education occupy a place in the biology curriculum.
- The information that the biology curriculum deals with this problem, how much do they manage to meet the needs of the pupils/students.
- What is the real level of pupils/students, in terms of knowledge, skills, concepts, related to this problem.
- How does the professional level of the teachers and the level of their training correspond, to be more precise, innovative, practical and experimental, in dealing with the topics or issues that are dealt with in the subject of biology, in terms of environmental and health education.

2. Methodology

For the realization of this study, several methods were used, which we can list: research, survey, interview, comparison and analysis. In summary we can present.

Research method: The study, analysis, and citation of the most contemporary literature related to the problem, dealing with issues, concepts, knowledge and skills related to environmental and health education were carried out.

Interviewing method: It was carried out with the help of questionnaires, interviews, surveys, students and teachers of the gymnasiums of the city of Shkodra: Gymnasiums: "Shenjaze Juka", "28 November", "Oso Kuka", "Jordan Misja" "Hamdi Bushati" ". Questions related to environmental and health education issues were planned in the questionnaire and interviews

Analysis method: It was used to analyze the results of the questionnaire, interviews, surveys of students and teachers of these high schools. The entire methodology is focused on the theoretical and practical concepts that biology deals with in terms of environmental and health education more specifically: The environment: its conservation: damaging factors: the consequences arising from its damage: how we should protect it: diseases that come from infections and malnutrition, the causes, consequences and how to protect ourselves.

Population and sample: In this study, the gymnasiums of the city of Shkodra were taken as the population, while the biology teachers of these gymnasiums, as well as the students for each gymnasium, were taken from 4 classes with a random selection.

Data collection and instruments: For data processing, the method of data grouping was followed according to schools, classes and the place where it is located. The data collection was carried out by the collection and analysis of answers to questions, interviews and surveys. For each question, the answer has been recorded, and after the analysis and comparison of the answers for each question, it has been concretized with a general conclusion, drawing a correct conclusion about the problem being posed. The instruments

have been pre-prepared and well-studied questionnaires, which had dealt with the topic of the problem, focusing on the main issues of the problem taken in the study. The interviews were conducted in writing and orally, creating a suitable environment for them to express themselves freely without emotion and influence. We have implemented the institutional and ethical rules.

2.1 The theoretical part

Biology as a science in the field of its study, affects the increase of the level of students/students in several subfields of biology such as: Molecular biology: Environmental biology: Biotechnology: Systems biology. During the treatment of these branches of biology, pupils/students they are equipped with knowledge and skills necessary for everyday life. With the help of molecular biology and advances in gene sequencing technology, the identification of molecular markers of diseases and the development of personalized therapies is realized. With the help of systems biology, the analysis of complex biological systems is realized with the help of computer models and mathematical analyzes by help explain biological processes.

With modern biotechnology, organisms or biological components are used to produce useful products. With the help of environmental biology, it is possible to obtain necessary knowledge about biodiversity, ecosystems and environments in general, as well as the impact of man on the environment in general, as well as to raise the awareness of pupils/students and society about the importance of the environment and the necessity of conservation Air pollution is one of the environmental problems in Albanian cities and Tirana in particular. This has come as a result of the increase in the number of cars, the reduction of green areas, the burning of waste, industrial activity, lack of waste management, as well as the use of low-quality fuels.

Water pollution comes as a result of garbage disposal, sewage discharge. This type of pollution has a serious impact on human health. Today in the world a large number of diseases appear as a result of water pollution. According to the WHO, today in the world 600 million people get sick from polluted water, where the most typical diseases that appear are: Typhoid, cholera, hepatitis. According to a study by the Agency European Environment 23% of deaths in Albania are caused by environmental pollution. Therefore, it is very important that pupils/students are educated, aware of the consequences of soil, air and water pollution. At the same time, it is very important to know the diseases (STDs) that spread through sexual activity. Since in most cases these diseases do not cause symptoms, they pose a great risk of spreading to others. Among the most common infections are: Syphilis, gonorrhea, chlamydia, trichomonas, these diseases are curable, while herpes, hepatitis B, HIV/AIDS, are treatable but not curable. The most efficient way to prevent STDs is not to start sexual relationships at a young age, as well as protected relationships. The presence of a STD in pre-pubescent children indicates sexual abuse. The strategies for reducing STDs cases are vaccination, reducing the number of partners, educational work, advice, continuous information of pupils/students, about the great risk caused by these diseases, clarifying and explaining the sources, causes, consequences that bring into their lives

Diet. There is a link between nutrition, food safety and health. Therefore, education for a healthy life is very important, where the biology curriculum plays an important role for this problem. In relation to educating people about a healthy diet, it was decided in January 2002 by the United Nations through the group of experts from the Food and Agriculture Organization (FAO) and WHO. Diets consist of the individual foods that a person consumes, the dietary patterns that are quantities, sizes and combinations.

Healthy and sustainable diets. The characteristics that these diets must meet are:

- To meet energy needs.
- Have a variety of foods
- High nutritional values. Quality, quantity, safety
- Safe for consumption.. According to the WHO, such a diet varies according to individual needs, e.g. age, gender, lifestyle, level of physical activity.

There are still many gaps, how to achieve sustainable diets for everyone (Jones, A.D. & Ejeta.G.2016).

Sustainable diets are those with low environmental impact, which contribute to a healthy life today and in the future (Hu, F.B. 2002) Regarding the classification of healthy and unhealthy foods, based on their composition, there is no consensus (Lobstein, T. & Davies, S2008)

The group of authors:(Koral.A.V.A.Willett.Ē.C.&Hu,F.B.2004):(Mozaffarian,D.2016), recommend the following principles to have healthy diets:

Replacing unsaturated fats or vegetable oils with saturated fats

- Add fruits, legumes, vegetables, cereals, dried fruits,
- Reducing the intake of processed sugars
- Avoid processed meat, and consume more dairy, eggs, fish.

3.Results and discussions

The results of this study are focused on the analysis made on the interviews of teachers and the questionnaire of students of classes X-XII, of high schools in the city of Shkodra. The questions and interviews are focused on the role that the biology curriculum plays in environmental and health education.

200 students participated in the survey, of which 130 were women and 70 were men, and 30 teachers who teach biology in these high schools were interviewed. From the analysis of the answers received from the students' questionnaire and the teacher's interview, analyzing them with the quantitative method and quality, we managed to identify many problems regarding the problem taken in the study.. Among the most important ones that we managed to identify during this study were:

- The place that the biology curriculum occupies in the AML curriculum, in terms of environmental and health education.
- Evidence in particular of topics and topics where this problem is dealt with more.
- What are the shortcomings of the biology curriculum, in terms of dealing with this very important problem for the environmental and health education of students.
- How much does the teacher respond with his professional level, as well as what is the degree of their training to achieve an effective teaching in order to increase the interest of the students, as well as the degree of updating with the most contemporary information.
- What is the interest of the students regarding this problem.
- The level of students in terms of the degree of acquisition of concepts related to the environment, STDs, diet, emerging diseases, preventive measures.

In summary, we are listing some of the questions that were asked during the teacher interviews, as well as the student questionnaire, as well as a summary synthesis of the answers received from them.

1-Is there continuity in the biology curriculum program in terms of the treatment of concepts related to the environment and health education?

From the answers of the teachers who are based on the biology program, focusing on concrete topics, they generally state that there is no consistent system in terms of dealing with these concepts, since many of these concepts that belong to this problem are encountered in topics and different topics. While the most extensive is the part that deals with nutrition and diets that are dealt with in a separate topic.

2-Regarding the information that biology deals with this problem, is it sufficient for students to get the necessary knowledge in terms of environmental and health education? Do you think that more information should be expanded in biology subjects to complete student needs?

The teachers in their answers reflect the scope of the biology program with topics and topics, and in particular the treatment of concepts related to "Environment", "STDs" and nutrition, in general biology meets the program its concepts related to the problem, the concepts of "Environment" and "STDs" are little treated, while for diet and nutrition their treatment is more extended, and sufficient for the level of the students and the amount of knowledge they need take the students for this problem. Everyone states that these concepts, especially the concepts for the environment and STDs, should be more expanded in the biology curriculum. They further state that this need arises by seeing the need that arises for students, for these two very important issues. Similarly, for the concepts Diet and nutrition, even though it is treated in a single topic, they say that more extensive information is needed, even though it is supplemented with additional information during the explanation.

3-What is the interest of the students during the treatment of these concepts, in the teaching of biology. What is the degree of acquisition, reaction and reflection regarding these concepts by the students?

All the teachers, without exception, give the same answer, where they say that the students' interest in these concepts is high, and they are very active, where with the help of the questions they direct, they seek to know as much information as possible about these concepts, where they are most interested. high show for the concepts related to "Diet" and "STDs". From the answers of the students in the questionnaire, it can be seen that all show a high interest in these concepts, as well as a high level of knowledge about these concepts.

4-How do you judge whether an additional manual or extracurricular module should be used to deal with concepts related to environmental and health education?

In the answers they give, almost all teachers agree that there should be additional information or extracurricular modules for the problem under study for two reasons:

First: The information that the curriculum deals with this problem is not complete.

Second: The students' interest in getting to know and knowing these concepts is high.

5-Have you been trained in terms of teaching treatment of this subject? How efficient is the scientific and didactic material base as well as laboratory, for the treatment of this subject of the biology curriculum.

From the answer, it appears that they have not been trained at all for this problem, where in particular they emphasize as a necessity their training for STDs, as well as for other infectious diseases, whether bacterial or viral. As for the material base, they state that it is very deficient.

While the questionnaire prepared and implemented for the students dealt with many components and issues where the topic focused on these issues:

The environment, the causes of the damage, the consequences arising from the damage, how can it be protected from the damage. For diseases. What knowledge do they know about STDs, infectious and viral diseases, causes, consequences and how to protect ourselves.

Diet. nutrition, how to eat healthy, do they know what a healthy diet is, how much they know about useful and harmful plant and animal foods, what diet they should use for their age, diseases that appear from poor eyesight.

Is the information about these concepts in the biology course sufficient to meet the students' needs?

How does the teacher respond with the professional level, in the teaching process to increase the students' learning level for these concepts.

From a general and detailed analysis for each of the questions in the developed questionnaire, the following are summarized:

In general, they show a high interest in acquiring knowledge related to environmental and health education.

Regarding the level of knowledge of these concepts, from the balance of the responses it appears that most of them have knowledge of the concepts related to "Environment" and "Diet". Although they are aware that damaging the environment or not keeping it clean causes diseases and consequences, they are aware that they should be more dedicated to protecting the environment. While in terms of diet and nutrition, they know what malnutrition is and its consequences, they still do not eat healthy, consuming foods that cause obesity. So it is very important that they have knowledge, they know the consequences, but a greater educational and persuasive work must be done on the part of teachers to minimize the use of an inappropriate diet or malpractice. As for STDs and infectious diseases and viral emphasize that they have very little information, and express their interest in being given more information about these concepts.

4. Conclusions

Based on the study carried out for this problem, we reach the following conclusions:

- The biology curriculum, through the treatment of its program, plays a very important role in the environmental and health education of students both inside and outside the school.
- Today, the knowledge and acquisition by students of the concepts related to: "Environment": "STDs", "Diet", "Nutrition", which are treated in the biology curriculum with the additional information should be given by teachers.
- It is important to continue with the improvement of the biology curriculum in terms of the introduction and expansion of information related to the environmental and health education of students, taking into account the needs of students to become familiar with scientific advances, social and scientific developments, as well as facing the challenges of the future.
- Expanding the knowledge of students, in terms of nutrition and diet, knowing what is called a healthy diet, as well as knowing unhealthy foods that cause disease and obesity in particular, here the work of the teacher is very important, both scientific and educational.
- Increasing and improving the level of teaching by the teacher, through the use of efficient methods as well as the use of technology, making it possible to increase the interest and learning of students in the acquisition of concepts related to environmental and health education.

5. Recommendations

- Since the biology program in the treatment of the subject does not contain sufficient information regarding this problem, it is a task for the teachers to deal with the topics that contain the concepts: Diet: STDs: Environment. To take advantage of the opportunity to expand the provision of information, filling the gaps in the text.

- Expanding knowledge about important problems related to public health and social welfare.

- To increase students' interest in the way of nutrition, especially for their age, away from overlooking the importance of protecting their health.

Cultivating in students the conviction that the use of natural foods, without preserving and without hormones, is a key factor for being healthy.

- Provision of additional information by teachers about STDs, causes and protective measures, for this to cooperate with public health workers to provide scientific assistance and information.

- Increasing the level of the teaching process by teachers as well as their continuous training, at the same time providing a didactic material base to make the lesson as concrete as possible.

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Learning through technology, an innovation in the teaching and learning of the biology curriculum

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Abstract

Technology is already an important factor in the process of teaching biology, significantly increasing the level of student learning, as well as increasing the degree of perfection in the implementation of methods by the teacher, in full alternation in the use of different applications of technology.

The COVID-19 pandemic highlighted the importance and necessity of using technology in the teaching and learning of biology, where today it is becoming an important and necessary tool for the purpose of perfecting teaching, as well as increasing the level of student learning in the subject of biology.

The effects of the use of technology has already proved that it is productive in the teaching and learning process of students. Studies have shown that overestimation, bad management or bad use in many cases has negatively affected the teaching and learning process. Precisely to see the role of technology in teaching and learning, we carried out a study that was extended to several high schools in the city of Tirana, to see practically how efficient the use of technology is in the process of teaching biology.

The study was based on a well-organized and planned topic that touches on these issues:

The access that the school provides to students and teachers in the use of ICT.

To what extent is ICT used by biology teachers in the teaching process.

What is the interest of the students, and their desire with this learning model: What ICT application platforms are used by the teachers: What is the level of technology use by the teacher, as well as the degree of their qualification.

From the analysis of the data extracted from the study, it results that the use of ICT, in the teaching of biology, is already necessary and effective. From the research of the problem, we came to the conclusion that the use of technology has the following advantages: Increases students' interest in the subject of biology: Increases the rate of acquisition of biological concepts: Makes the teaching process much easier for the teacher: Increases the efficiency of information transfer: It is realized a quick distribution of information: Time saving is achieved: Student engagement and motivation increases. In this way, we come to the conclusion that the use of technology in teaching/learning will remain the norm and not the exception in the future.

Purpose: With the help of this study, to reach the conclusion that what is the access of teachers and students that the school gives to the use of ICT, in the teaching/learning process, as well as what is the degree of effectiveness that ICT plays in the process of students' learning, compared to traditional methods, as well as the difficulties that teachers and students face in the implementation of ICT.

Methodology: For the realization of this study, research methods were used, based on the most contemporary literature, as well as on quantitative (quantitative) methods. The population of this study was taken from several high schools in the city of Tirana, where the study focused on students and teachers of these high schools. Questionnaires and interviews conducted with teachers and students were used as measuring instruments.

Results: The results of this study were derived based on two components. Evidence in the field in school environments regarding the location of the technology tools that these schools have and the degree of their use. As well as from the analysis of the results of the answers that were collected from the questionnaires and interviews.

Conclusions: The final conclusion is that the use of technology in the teaching/learning process plays a positive role both in the process of using innovative methods by teachers and in the process of the students' learning level.

Keywords: ICT, platform, teaching, learning, COVID, communication.

1. Introduction

Today, technology is being used in all life processes, this has made its use necessary and vital, becoming comprehensive in all spheres of life. Even in education, technology has brought a radical change, in the development of science as in theory as well as in practice. The rapid developments of today's society, as well as the dizzying growth of information, managing to be distributed with more developed means of communication and transmission, has created the need for teaching and learning to change from year to year, making the use of technology in teaching is more than necessary, facing the great developments that the modern world is undergoing, in order to face the challenges of today's world.

Education and knowledge are the basis of human development, but they are also the fundamental right for every human being. Going back in time, it can be seen that the traditional methodology dominates in education, a method that orients the student towards encyclopedic knowledge and towards specific knowledge.

Precisely the lack of interactive and innovative teaching methods, makes it necessary and vital to use technology as a teaching reformer, following the contemporary educational trend where students are placed in the center of attention, encouraging critical thinking and problem solving. Through the implementation of technology, teachers perfect teaching methods, where they will not only be the transmitter of knowledge, but will give students the tools to get knowledge. Teachers must determine the most efficient strategies during the teaching process, to prepare students as best as possible to be successful in the future (Colin J. Marsh, 2009). The use of ICT brought a radical turn in the development of education, at the level of learning, making the knowledge gained by students more useful in practice and in everyday life. The first beginnings of technology in the teaching process were accompanied by many uncertainties and questions such as: What will be the effectiveness of technology in the teaching process? How ready will the school be to meet the needs of students and teachers to have access to technology? Are teachers professionally prepared to implement technology in teaching?

Today, where the development of technology is moving at a dizzying pace, it is the duty of every teacher to precede this technological boom, to work and perfect his professional level, especially in the recognition of new technology platforms, efficient innovative teaching methods. This could only be achieved by raising his professional level, continuous training, as well as teacher-student interaction. To reach a final conclusion, the study was extended to several high schools in the city of Tirana, where in the questionnaire with students and teachers, as well as from the evidence of the real situation, we arrived at final conclusions and recommendations for the subject of the study.

The subject of the study was programmed and detailed, where more concretely the object of the study was focused on the following directions:

- The current state of schools in terms of digital infrastructure
- The access that students and teachers have in the school to the use of technology.
- The extent to which students benefit from the use of technology.
- The degree of students' interest in this teaching strategy.
- The level of recognition and practical application of biological concepts by students as a result of the use of technology.
- The professional level of teachers, in terms of the use of technology in teaching biology, as well as the level of their training.
- Although it will be covered in detail in the following sections, the study shows that the role of technology in the teaching and learning process remains effective and necessary.

2. Methodology

For the realization of this study, research methods were used where the most contemporary literature dealing with the role of technology in teaching, the most contemporary platforms and applications that are used today, as well as its impact on the teaching/learning process of students in the subject of biology was studied and analyzed. At the same time, quantitative (quantitative) methods were used, which relies on quantitative data. Based on this method, quantitative and qualitative data were extracted, enabling us to reach some conclusions and recommendations, in terms of access and level of technology in the schools studied, at the same time the advantages that the use of technology in teaching gives /learning biology. The whole study is based on the questionnaire with the students, as well as the teachers' interviews.

Population and sample: The population of this study are the gymnasiums of the city of Tirana: "Ismail Qemali", "Aleks Buda", "Arben Broci", "Samiu", "Partizani", Qemal Stafa. The study focused on the students of classes 10, 11, 12, through the questionnaire developed online and in the classroom, as well as with the biology teachers of these high schools through interviews. The questionnaire and the interviews were selected in accordance with the forests and hypotheses of the study.

Data collection and instruments:

The measuring instruments were questionnaires for students, and interviews with teachers, which dealt with many issues related to the problem taken in the study. After the study and analysis of the questionnaire for each answer given to each question, as well as the teacher interviews, that focused on the problems of the study was focused on three moments:

The first moment; It had to do with the digital equipment the school has, the access it provides to students and teachers, and the level of teacher training.

The second moment: The degree of technology use in the biology teaching/learning process, which includes the computer system, digital time tools, as well as the time spent using these digital tools.

The third moment: What is the degree of perception on the use of technology in teaching, the effectiveness it gives, the interest of the students, as well as the difference between technology and traditional methods that are used and partially used. In the answers

received from the questionnaire and interviews, as well as from the analysis of these data, detailed conclusions and recommendations were reached, where a panorama of this study is more clearly completed.

2.1. The theoretical part

"I never teach my students, I try to provide them with conditions to learn." Albert Einstein.

Technology has changed the way of teaching and learning, but by transforming the process it is transforming the result (Fouts, 2015). The use of technology for today's time is vital in all life processes. Since biology is a science that is connected to many modern discoveries in several fields such as: cell biology, genetics, bioengineering and biotechnology. Precisely this makes it more necessary to use innovative methods in the teaching of biology, which the technology has, giving a qualitative jump to these scientific discoveries.

"Technology provides learning resources, offering students great opportunities to become independent learners (Hoven 1999)"

"The integration of technology in the classroom is becoming increasingly widespread in schools today (R., Armstrong, V., Barnes, S., Brawn, 2004).

"Furthermore, teachers can be involved in professional development, through the use of technology, as they become accessible to them at any time, in any place (Vail, 2003).

Although today's technology is being used a lot in the teaching process, it still remains a challenge for the school in the future where the teaching strategy should include the use of new technologies that will improve the teaching and learning process, at the same time increase students' interest in learning.

"ICT has gone through innovations and has transformed our society, which has totally changed the way people think, work and live as well as education (Grabe, 2007).

"Technology offers a variety of resources, to listen and discover language skills, it also offers a wide variety of opportunities for learning the language context and interactive activities, most of them in a real context (Mujtaba, 2013). Biology for the topic it deals with, is among the subjects that create opportunities for the teacher to use ICT, in the service of its acquisition by the students, positively influencing the learning process of the students.

The advantages of using technology in teaching biology are:

- It enables the facilitation of learning and acquisition of knowledge
- It increases the atmosphere in the classroom, and the students manage the learning process themselves.
- Realizes the integration of the teaching process with modern technology platforms.
- It makes students more motivated for the learning topic
- It offers opportunities to learn in a non-traditional way, as well as reduces learning time.
- It realizes the integration of many subdisciplines of biology, as well as with other sciences such as chemistry, physics.
- It enables the transmission of information more easily.
- It offers time flexibility to learn anywhere and anytime.
- It increases the rate of research, the use of experiments and the use of scientific methods.
- Parents find it easier to communicate with teachers, as well as learn about their children's achievements.

In addition to the advantages, it should be borne in mind that the use of technology in teaching also presents problems where we can list more concretely:

- Staying for a long time near electronic screens at school and at home harms students' health both in the process of vision and the spine.
- Staying at the computer for a long time, often makes the students leave from what they should be engaged in the learning process, reducing the interest in learning
- There are also cases of students withdrawing from social life.
- Disconnecting students from the real world
- Limitations of social and social interactions, detaching the student from the problems of everyday life.
- As a result of focusing only on technology, it may happen that teachers move away from using modern methods and techniques, eliminating the very important interactive learning in the teaching process.

Some of the technologies used for teaching biology:

1-Computer simulations, where the most important is PhET (Physics Education Technologist).

They are interactive computer simulations, where the research includes the fields of biological, chemical, physical, mathematical concepts. With the help of these simulations, some of the following concepts can be explained; Polarity of molecules: Neurons: Density: Natural selection: Degrees of Ph.

2-Reference, reporting and information display programs. (Microsoft office packages). The most useful are: Microsoft PowerPoint: Microsoft Excel: Microsoft Front Page. These programs are used in research, reference, presentation in teaching biology, in the research of biological concepts, using multiple sources of information, enabling the analyzes given to their effective treatment, as

well as the achievement of an organization scheme. At the same time, they manage to increase students' access to online work outside the classroom.

3-Interactive table (TBI). Smart board. They are technological tools that have great potential in transforming the classroom in the teaching process. The instructions that are given by them help the students in the learning process in: tactile learning: auditory: visual.

At the same time, it helps the students to return and re-study the lessons, completing them from home. They help to record the notes taken by the students in the class.

4-Cell biology: With this application, it is possible to study the most difficult part of the cell, such as the morphological and molecular side of the cell, covering the anatomy and physiology of the cell.

5-Learning Biology Basica application: With this application it is possible to learn more easily some concepts of the environment, botany, zoology as well as concepts of evolution.

6-Medicinalis Plants: This app is perfect for studying the concepts of botany, and especially for identifying medicinal plants for human healing purposes.

7-Visual Anatomy application: It is an interactive application that contains three-dimensional models of the anatomy of the human body

8-Complete Biology application: With this application, it is possible to explain several biological topics, as well as many exercises, problems, etc.

3. Results and discussions

The results of this study were derived from the real study of the schools studied in the city of Tirana, from the answers of the students taken from the questionnaire, as well as from the interviews with the teachers of the high schools studied, which are listed above.

The theme of the entire study, which includes the verification of the real state of technology, the answers from the students' questionnaire, as well as the teachers' interviews, is focused on these important issues:

- The access that the school provides to students and teachers in the use of technological platforms and applications.
- The ability and speed of the use of technology by teachers in the process of teaching biology.
- The variety of different technological methods that teachers serve to students in the classroom.
- What is the level of knowledge acquisition by students, as a result of the use of technology in the teaching process
- The professional level of the teacher to integrate technological tools, for an effective teaching/learning. The questionnaire has been anonymous to give students the opportunity to express themselves freely.

We are briefly presenting some of the conclusions drawn from the students' answers and the teachers' interviews, carried out during the study. technological material base.

1-In terms of the level of technological infrastructure located in these schools, to be used in the teaching process, it results:

All the gymnasiums taken in the study have continuous internet, which allows students and teachers to use it in the future, while in terms of the material base, in each gymnasium there is a classroom or an auditorium, where a number of computers are installed such as and installations to use various technological applications. In the conversations with the teachers, they clarify that this is called the informatics cabinet, which serves to teach the subject of informatics, and is also used in special cases, to study other subjects, and in particular for the subject of biology, for topics of different where the use of technology is very important, but the hours of use are limited, as this auditorium is for the whole school and all subjects. So, as you can see, the use of technology is a bit limited, and in the case of biology, it is only used for special topics and with planned schedules.

2-The access that the school offers to students and teachers, for the use of technology:

From the students' answers and teachers' interviews, it results that: 45% say that students and teachers have access, 25% say that only teachers have access, and 30% say that neither students nor teachers have access.

3-Which of these tools does the teacher own: Personal laptop, video projector, desktop, which they use in the process of teaching biology. The results of the interviews: 45% of teachers own a personal computer (laptop), 10% own a computer and a video projector, 40% do not have a laptop or a video projector, 5% have a video projector. What stands out is that not all teachers have a personal computer (laptop).

4-Which of the following technological devices are located in the school, and are used in the process of teaching biology in the classroom: School computers, personal computer, desktop, projector, interactive tables, projection systems.

From the answers of the students as well as the interviews of the teachers, it results that few teachers own personal computers and projectors, which they use to teach specific topics of the subject of biology. While the school computers are in the computer class, which serve more for the development of the subject of informatics. There is only one video projector in the school and it is in the computer class. As for the projection system and the interactive tables are missing. The teachers raise as a problem that the equipment

of the school and in particular of the biology laboratory is more than necessary with the missing items such as: Desktop, projector, projection system, as well as interactive tables.

5-How has teaching through technology affected the effectiveness of teaching and, in particular, the ease of understanding of biological concepts by students, as well as their academic achievements. The results of the questionnaire show that technology plays a positive role in increasing the effectiveness of teaching/learning. More specifically, 40% state that the impact of technology is high, 15% state that it is sufficient, and 25% state that it has no effect at all.

6-Training or activities are offered by the school, to increase the technological skills of teachers:

From the answers of the teachers' interviews, it results that the school does not offer training or activities, everything in terms of training in this field is done with private and individual courses.

7-The ability and level of teachers to use and integrate platforms (MS Word:PPT:Exel). More manage to use the MS Word platform, less manage to use PPT, rarely Exel: translated to %; 40% they use MS Word:30%PPT:20% Exel:10% neither of the platforms.

4.Conclusions

The analysis of the study revealed that the implementation of technology has brought about a radical change in the teaching/learning process.

The degree of use of technology in teaching by biology teachers has already become normal, but as it was evident, it turns out that the most experienced teachers use more technology in teaching.

The study showed that among the problems raised by teachers, there is a marked lack of technological tools in the school, since the presence of only one computer class in the school does not meet the needs of the school for all subjects.

Another problem raised by teachers is the lack of teacher training for the use of technological tools, as well as sometimes the lack of professional level in this field.

The researches showed that for a teaching/learning to be successful, it requires a teacher with a high professional level, a high scientific level, a clear vision as well as the ability to use new methods by integrating them with technology, to achieve high level of student learning.

The study shows that students learn more, learn better and are more interested when technology is used in teaching.

Using technology, teachers find it easier to involve students in the learning activity, manage to create different learning styles, and manage to expand the range of information to serve students.

5.Recomendations

Every school should have virtual environments with necessary technological tools.

Some classrooms should have computers and projection equipment, and each teacher should have his own personal laptop, as well as the biology teacher should have his own video projector to use in the teaching process.

In order to realize the needs of students who like learning through technology, in addition to systematic implementation in teaching, full digital practices should be used, in order to increase the interest of students, to reach the level of their learning.

Students and teaching staff must have access to the use of technology, making available the necessary resources and necessary digital tools.

Continuous training of teachers, to know and apply ICT application platforms, should be given great importance.

Curriculum and educational programs should be reviewed, including innovative technologies for imparting knowledge.

Technology achieves the transformation of the learning environment, from teacher-centered to student-centered.

It is important to understand that technology in itself will not guarantee true learning, but its use has the ability to improve and transform education.

To understand and recognize the differences between the quantity of technology use and the quality of use.

Continuous training of teaching staff remains a primary and immediate task.

The school should test the expected outcomes of the technology.

Teachers must determine the outcomes to be achieved by students, plan learning goals, and then select the technology that is most appropriate to achieve the goal.

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Entrepreneurship as a Driver for Economic Development: Insights from the Western Balkans

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Abstract

Economic development in the Western Balkans has been a subject of keen interest and extensive study, given the region's transition from conflict-affected economies to aspiring EU members. This study synthesizes findings from a comprehensive literature review focusing on the important role of entrepreneurship in driving economic development within these countries. The methodology involves a critical analysis of empirical studies, policy reports, and theoretical frameworks related to Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia. The literature reveals a consensus on the positive impact of entrepreneurship on economic development, highlighting it as a critical engine for job creation, innovation, and competitiveness. Several studies underscore the significance of small and medium-sized enterprises (SMEs) as the backbone of the region's economic growth, contributing significantly to GDP and employment. However, the entrepreneurial ecosystem in the Western Balkans faces unique challenges, including regulatory hurdles, limited access to finance, and a lack of supportive infrastructure for startup growth. Evidence suggests that governmental policies and international assistance have played crucial roles in fostering a conducive environment for entrepreneurship. Initiatives aimed at improving the business climate, such as regulatory reforms, financial support mechanisms, and entrepreneurship education, are identified as key drivers of economic development. Furthermore, the literature points to the increasing importance of technology and innovation in enabling entrepreneurs in the Western Balkans to compete on a global scale. This study concludes that while significant progress has been made, sustained efforts are required to overcome existing barriers and fully harness the potential of entrepreneurship for economic development in the Western Balkans. Future research directions include examining the impact of digital transformation on the entrepreneurial landscape and the role of cross-border collaborations in promoting regional integration and development.

Keywords: Economic Development, Entrepreneurship, Western Balkans, SMEs, Regulatory reforms, Innovation

1. Introduction

The Western Balkans—a region encompassing Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia—stands at a critical situation of economic transformation and integration into the European Union. This area, marked by its rich history and cultural diversity, has experienced significant political and economic overturn in the recent past. Following the conflicts of the 1990s, these nations have embarked on a path toward economic recovery and development, with entrepreneurship emerging as a pivotal force in this journey (Bartlett & Prica, 2019). The European Union's expansion policies have further incentivized reforms and fostered a conducive environment for economic activities in the region (European Commission, 2020).

The significance of entrepreneurship in the economic development of the Western Balkans cannot be overstated. Small and medium-sized enterprises (SMEs) form the backbone of the region's economies, contributing significantly to employment and GDP. However, the entrepreneurial landscape is fraught with challenges, including but not limited to, regulatory constraints, access to finance, and market competitiveness (World Bank, 2019). Understanding the dynamics of entrepreneurship within this context is crucial for policymakers, investors, and scholars interested in the region's economic development.

Moreover, the integration of the Western Balkans into the European Union presents both opportunities and challenges for entrepreneurs. EU accession processes require significant economic reforms, including the adoption of EU standards and norms, which impact the business environment (European Commission, 2020). At the same time, integration offers access to a larger market, potential funding opportunities, and the promise of political stability, which are essential for entrepreneurial ventures.

This paper aims to dissect the role of entrepreneurship in the economic development of the Western Balkans, examining the interplay between business activities, government policies, and international assistance. By leveraging a comprehensive literature review, this study highlights the contributions of SMEs to the region's economy, the obstacles entrepreneurs face, and the effects of policy interventions designed to support economic growth and development. Through this analysis, the paper seeks to offer insights into the complex yet promising landscape of entrepreneurship in the Western Balkans, contributing to a broader understanding of its role in the region's economic trajectory. The research objectives of this study are as follows:

1. To investigate the role of SMEs in the economic development of the Western Balkans. This objective aims to understand the contribution of small and medium-sized enterprises (SMEs) to job creation, innovation, and GDP growth within the

Western Balkans. It seeks to explore how SMEs act as engines of economic development, their role in fostering a competitive market environment, and their impact on regional economic diversification.

2. To identify and analyze the challenges faced by entrepreneurs in the Western Balkans. This objective focuses on uncovering the specific obstacles that entrepreneurs encounter in establishing and growing their businesses in the region. It includes examining regulatory hurdles, financial accessibility, infrastructural limitations, and socio-economic factors that influence entrepreneurial activity. The goal is to provide a comprehensive understanding of the barriers to entrepreneurship and suggest potential mitigation strategies.
3. To assess the effectiveness of government policies and international assistance in supporting entrepreneurship. This objective aims to evaluate the current policies and aid programs designed to enhance the entrepreneurial ecosystem in the Western Balkans. This includes analyzing the role of government initiatives and international support in improving access to finance, fostering innovation, and creating a conducive business environment. The study seeks to offer insights into the strengths and weaknesses of these support mechanisms and propose recommendations for enhancing their impact on entrepreneurship and economic development.

2. Literature Review

Small and medium-sized enterprises (SMEs) are widely recognized as the backbone of the Western Balkans' economies, contributing significantly to GDP and employment (World Bank, 2019). Studies have shown that SMEs not only stimulate economic growth but also play a crucial role in innovation and market competitiveness (Jones and Coviello, 2005).

Despite their importance, entrepreneurs in the Western Balkans encounter several obstacles, including regulatory hurdles, limited access to finance, and a lack of supportive infrastructure for startup growth (OECD, 2018). These challenges are compounded by the region's history of political instability and economic uncertainty.

Government policies and international assistance have been instrumental in improving the business climate in the Western Balkans. Initiatives such as regulatory reforms, financial support mechanisms, and entrepreneurship education have been key drivers of economic development (European Commission, 2020; USAID, 2017).

2.1 The role of SMEs in economic development: Small and Medium-sized Enterprises (SMEs) are widely recognized as the engines of economic growth and development, particularly in emerging economies like those in the Western Balkans. Their significant role in promoting innovation, creating employment, and enhancing productivity cannot be overstated.

SMEs are pivotal in creating employment opportunities in the Western Balkans. Due to their size and operational nature, these enterprises are more adaptable to market changes and can thus generate jobs more rapidly than larger corporations during economic recoveries (Ayyagari et al., 2020). According to the European Commission (2020), SMEs in the EU, which share similarities with those in the Western Balkans, account for over 65% of total employment, indicating their critical role in sustaining the labor market. In the context of the Western Balkans, SMEs not only offer employment but also play a crucial role in enhancing social stability by providing livelihoods in both urban and rural areas, thereby mitigating regional disparities.

While large firms often dominate research and development (R&D) spending, SMEs contribute significantly to innovation and competitiveness, especially in niche markets (Lica et al., 2021). Their inherent flexibility allows SMEs to respond quickly to new market opportunities and technological changes. A study by Acs and Audretsch (1988) highlights that SMEs have a higher rate of innovation per employee compared to larger firms, suggesting that their contribution to technological advancement and innovation is disproportionate to their size. In the Western Balkans, the agile nature of SMEs enables them to adapt and innovate, thus driving the region's competitiveness in the global market.

SMEs play a crucial role in enhancing productivity and fostering economic growth. By contributing to a diverse and competitive business ecosystem, SMEs encourage efficiency and innovation across sectors (Ratten and Jones, 2020). The World Bank (2019) reports that SMEs significantly contribute to economic growth by enhancing productivity, especially in emerging economies where they bridge the gap left by larger industries. In the Western Balkans, the dynamism of SMEs in sectors such as information technology, agriculture, and services, establishes the region's economic growth and development trajectory (Zdravković et al., 2021).

SMEs are instrumental in promoting inclusive economic growth and sustainable development. They provide opportunities for entrepreneurship across different demographic groups, including women and minorities, thereby fostering inclusivity (Demirgüç-Kunt et al., 2021). Furthermore, many SMEs in the Western Balkans are increasingly adopting sustainable business practices, contributing to environmental conservation and social welfare. The United Nations Industrial Development Organization (UNIDO, 2021) emphasizes the role of SMEs in achieving sustainable development goals (SDGs) by integrating sustainability into their business models, highlighting their contribution beyond economic metrics.

The role of SMEs in the economic development of the Western Balkans is multifaceted, encompassing employment generation, innovation, productivity enhancement, and the promotion of inclusivity and sustainable development. To further harness the potential of SMEs, policies aimed at addressing their unique challenges, such as access to finance, market entry, and capacity building, are essential (Šarlija and Pfeifer, 2021). By creating a supportive ecosystem for SMEs, the Western Balkans can leverage these enterprises as catalysts for economic growth, social stability, and sustainable development (Shiroka Pula et al., 2022).

2.2 Challenges facing entrepreneurs: Entrepreneurship in the Western Balkans, while a key driver of economic growth and innovation, encounters numerous challenges that can stifle business creation and expansion (Cvetanović et al., 2022). These challenges are multifaceted, ranging from regulatory and financial hurdles to broader socio-economic issues. Understanding these obstacles is crucial for developing targeted interventions to foster a more supportive entrepreneurial ecosystem in the region.

One of the most significant barriers facing entrepreneurs in the Western Balkans is the complex and often cumbersome regulatory environment (Krasniqi and Mustafa, 2019). Despite efforts to streamline business registration and operation processes, many entrepreneurs still face bureaucratic red tape, inconsistent enforcement of laws, and a lack of transparency in government dealings. The World Bank's Doing Business reports highlight the region's varying success in improving the ease of doing business, with regulatory hurdles remaining a notable impediment to entrepreneurship (World Bank, 2019).

Access to finance is another critical challenge for entrepreneurs in the Western Balkans. Small and medium-sized enterprises often struggle to secure the capital needed for startup and growth due to a lack of collateral, limited credit history, and a conservative banking sector wary of lending to what they perceive as high-risk ventures (Bhaumik and Selarka, 2019). This situation is compounded by a relatively underdeveloped venture capital and angel investor ecosystem in the region, leaving many entrepreneurs with limited options for funding (European Investment Fund, 2020).

Entrepreneurs in the Western Balkans also face challenges related to market competitiveness and infrastructure. The small size of domestic markets, coupled with high competition and limited consumer purchasing power, can limit business growth opportunities. Additionally, infrastructural deficiencies, such as unreliable internet and logistics networks, hinder the operation of businesses, particularly those reliant on digital technologies or engaged in trade (OECD, 2018).

Socio-economic factors, including workforce skills and migration trends, present further challenges for entrepreneurs in the Western Balkans. The region experiences a "brain drain", with many skilled individuals emigrating in search of better opportunities elsewhere. This trend exacerbates the challenge of finding and retaining talent, crucial for innovation and business growth. Furthermore, the legacy of conflict and political instability in some areas continues to impact investor confidence and economic stability, affecting entrepreneurial ventures (UNDP, 2020).

The entrepreneurial landscape in the Western Balkans is fraught with challenges that require comprehensive and coordinated responses from governments, international organizations, and the private sector. Addressing these obstacles is essential for unlocking the full potential of entrepreneurship as a catalyst for economic development in the region. Efforts to improve the regulatory environment, enhance access to finance, upgrade infrastructure, and tackle socio-economic issues will be critical in creating a more conducive ecosystem for entrepreneurs.

2.3 Government policies and international assistance: The role of government policies and international assistance in supporting entrepreneurship cannot be understated, especially in regions like the Western Balkans, where economic development is a critical focus. These interventions are designed to create a more favorable business environment, stimulate innovation, and attract investment, thereby facilitating entrepreneurial growth and economic development.

Governments in the Western Balkans have implemented a variety of policies aimed at supporting entrepreneurs and small businesses (Balabanis and Karelakis, 2021). These initiatives often include tax incentives, grants, and subsidies designed to lower the barriers to business creation and expansion (Ivanović-Djukić et al., 2020). For example, several countries in the region have introduced programs to reduce the administrative and financial burdens on startups and SMEs, such as streamlined business registration processes and reduced tax rates for new enterprises (European Commission, 2020).

Furthermore, some governments have focused on enhancing the entrepreneurial ecosystem through the development of innovation and technology parks. These hubs serve as a platform for startups to access mentorship, networking opportunities, and sometimes even direct financing (Llaci, 2020). The support for technology and innovation-driven enterprises is particularly noteworthy, recognizing the potential of these sectors to drive economic growth and competitiveness on the global stage (World Bank, 2019).

International assistance plays a significant role in bolstering entrepreneurship in the Western Balkans, with numerous programs funded by the European Union, World Bank, and other international organizations. These programs often focus on enhancing access to finance, providing business development services, and building capacities for innovation and technology adoption.

The European Union, through its Instrument for Pre-Accession Assistance (IPA), has been instrumental in supporting economic development in the region. The IPA funds projects aimed at improving the business environment, enhancing competitiveness, and fostering regional integration and cooperation. These projects include support for policy reforms, investment in infrastructure, and training programs for entrepreneurs (European Commission, 2020).

Additionally, international collaborations have facilitated the exchange of best practices and knowledge transfer, contributing to the development of a more dynamic and resilient entrepreneurial ecosystem (Dabić et al., 2020). Programs like the Western Balkans Enterprise Development and Innovation Facility (WB EDIF) offer a comprehensive approach to supporting SMEs, combining finance, technical assistance, and policy dialogue (European Investment Bank, 2020).

The combined efforts of government policies and international assistance have been pivotal in creating a more supportive environment for entrepreneurs in the Western Balkans. These interventions are critical for overcoming the inherent challenges faced by startups and SMEs in the region, enabling them to contribute more effectively to economic growth and development. Continued commitment and collaboration between domestic and international stakeholders are essential to sustain and further enhance these support mechanisms for entrepreneurship

3. Methodology

This study adopts a comprehensive literature review methodology to explore the role of entrepreneurship in the economic development of the Western Balkans. The literature review is both broad and inclusive, covering a range of empirical studies, policy reports, theoretical frameworks, and case studies relevant to the topic. The aim is to synthesize existing knowledge, identify gaps in the literature, and provide a nuanced understanding of the challenges and opportunities facing entrepreneurs in the Western Balkans.

The source selection process was guided by several criteria to ensure the relevance and quality of the literature included in the review. First, priority was given to peer-reviewed academic journal articles, recognized for their scholarly rigor and contribution to the field. These sources provide empirical data, theoretical insights, and critical discussions surrounding entrepreneurship and economic development in the Western Balkans. Second, reports from reputable international organizations such as the World Bank, European Commission, OECD, and UNDP were included to incorporate practical insights and policy perspectives. These reports offer comprehensive analyses of economic conditions, entrepreneurship ecosystems, and the impact of government policies and international assistance in the region. Third, case studies and success stories of entrepreneurs and SMEs in the Western Balkans were reviewed to illustrate the practical application of theoretical concepts and the real-world impact of policies on business practices.

The literature review process involved several key steps. Keywords such as “entrepreneurship”, “economic development”, “Western Balkans”, “SMEs”, “regulatory reforms”, and “innovation and technology” were used to search relevant databases and online repositories. Academic databases such as JSTOR, ScienceDirect, and Google Scholar, along with reports from international organizations’ websites, were searched using the identified keywords. Titles and abstracts were screened for relevance to the topic. Selected sources were then subjected to a full-text review to assess their contribution to the literature review’s objectives. Key findings, themes, and insights were extracted from the selected sources and analyzed to identify patterns, trends, and gaps in the literature.

Through this methodology, this study aims to provide a comprehensive overview of the role of entrepreneurship in the economic development of the Western Balkans, drawing on a wide range of academic and practical sources to inform the analysis and discussion.

The literature review methodology employed in this study is designed to ensure a thorough and critical examination of the subject matter. By systematically selecting, reviewing, and synthesizing relevant literature, this study offers valuable insights into the complex relationship between entrepreneurship and economic development in the Western Balkans, highlighting the significance of supportive policies and international assistance in fostering a vibrant entrepreneurial ecosystem.

4. Results

Entrepreneurship plays a pivotal role in the economic development of the Western Balkans, driving growth, innovation, and competitiveness within the region. The impact of entrepreneurship is multifaceted, influencing various aspects of the economy, from job creation to the stimulation of innovation and the enhancement of the region’s global competitiveness. The main findings of this study are presented in Table 1.

One of the most direct impacts of entrepreneurship on economic development is job creation. Small and medium-sized enterprises (SMEs) are the backbone of the Western Balkans’ economies, accounting for a significant portion of employment in the region. The establishment and growth of SMEs and startups are crucial for generating employment opportunities, particularly in areas with high unemployment rates. Research by the European Commission (2020) highlights that SMEs in the Western Balkans are major contributors to job creation, providing essential pathways for employment for diverse segments of the population, including youth and women.

Entrepreneurship is also a key driver of innovation and technological advancement. Entrepreneurs in the Western Balkans are increasingly focusing on technology-driven ventures, contributing to the digital transformation of the economy (Filipović and Kovačević, 2020). This shift towards innovation and technology not only enhances the competitiveness of businesses but also promotes the development of new industries and sectors within the economy. Studies have shown that innovative startups and tech-based SMEs play a critical role in introducing new products and services, improving productivity, and fostering a culture of innovation (OECD, 2018).

Table 1. Key findings on entrepreneurship and economic development in the Western Balkans

Key Findings	
Role of SMEs in economic development	<ul style="list-style-type: none"> - SMEs are crucial for job creation, particularly in regions with high unemployment. - SMEs drive innovation and competitiveness, especially in niche markets. - Contribute significantly to GDP growth and economic diversification.

Challenges facing entrepreneurs	<ul style="list-style-type: none"> - Entrepreneurs face regulatory hurdles, limited access to finance, and lack of supportive infrastructure. - Market competitiveness and infrastructural deficiencies hinder business operations. - Socio-economic factors, including workforce skills and migration, impact entrepreneurship.
Government policies and international assistance	<ul style="list-style-type: none"> - Targeted policies and international aid programs are crucial in supporting entrepreneurship. - Initiatives focus on improving the business climate, access to finance, and fostering innovation. - Collaboration between domestic and international stakeholders enhances the entrepreneurial ecosystem.
Role of technology and innovation	<ul style="list-style-type: none"> - Technology and innovation enable global market access and enhance operational efficiency. - Support the development of a sustainable and inclusive digital economy. - Investment in R&D is vital for fostering innovation and maintaining competitive advantage.

Entrepreneurial activities contribute to economic diversification, reducing the region's dependence on traditional industries and enhancing its resilience to economic shocks. By venturing into new markets and industries, entrepreneurs in the Western Balkans are helping to broaden the economic base of the region. This diversification is essential for sustainable economic development, as it enables the economy to adapt to changing global market conditions and consumer preferences. Furthermore, entrepreneurship enhances the global competitiveness of the Western Balkans by promoting the adoption of international standards and practices, thereby improving the region's attractiveness to foreign investors and markets (World Bank, 2019).

Entrepreneurship also plays a crucial role in promoting social and economic inclusion. By providing opportunities for self-employment and business ownership, entrepreneurship can be an effective pathway out of poverty and a means to address social inequalities. Entrepreneurial ventures often emerge as solutions to local challenges, driving social innovation and delivering products and services that meet the unique needs of communities in the Western Balkans. Additionally, entrepreneurship empowers marginalized groups, including women and minorities, by providing them with the tools and opportunities to participate actively in the economy (UNDP, 2020).

The impact of entrepreneurship on the economic development of the Western Balkans is profound and wide-reaching. Through job creation, innovation, economic diversification, and social inclusion, entrepreneurs and SMEs are at the forefront of transforming the region's economy. However, realizing the full potential of entrepreneurship requires addressing the myriad challenges that entrepreneurs face, including access to finance, regulatory barriers, and the need for supportive infrastructure and policies. As the Western Balkans continue to navigate their path towards economic growth and EU integration, fostering a vibrant and supportive entrepreneurial ecosystem will be key to ensuring sustainable development and prosperity (Gashi et al., 2019).

Technology and innovation are pivotal in shaping the entrepreneurial landscape of the Western Balkans, driving economic growth, enhancing competitiveness, and addressing societal challenges (Vuković et al., 2020). The infusion of technology and innovative practices within startups and SMEs not only propels these businesses to new heights but also contributes to the broader economic transformation of the region.

Technology enables entrepreneurs in the Western Balkans to access global markets with relative ease. Digital platforms, e-commerce, and online marketing tools have lowered the barriers to international trade, allowing even the smallest businesses to reach customers worldwide (Mihajlović et al., 2021). This global reach is essential for startups and SMEs aiming to expand beyond local markets, providing opportunities for growth and diversification (Petrović et al., 2019). The World Economic Forum (2019) notes that technology-driven businesses in emerging markets, including the Western Balkans, are increasingly competitive on the global stage, contributing to the region's export growth and international trade (Liça and Gashi, 2023).

Innovation and technology adoption are key drivers of productivity and efficiency within businesses. By implementing new technologies, such as cloud computing, big data analytics, and automation, entrepreneurs can streamline operations, reduce costs, and improve product and service quality (Gashi and Lica, 2023). The European Bank for Reconstruction and Development (EBRD, 2018) highlights that technology adoption among SMEs in the Western Balkans leads to higher productivity rates, enabling these firms to compete more effectively both domestically and internationally (Hoxha et al., 2021).

Entrepreneurial ventures in the Western Balkans are increasingly focusing on sustainability, leveraging technology and innovation to address environmental and social challenges. Green technology startups, for example, are developing solutions to reduce carbon emissions, manage waste, and promote renewable energy. These innovations not only contribute to sustainable development but also open up new business opportunities in the green economy. The United Nations Environment Programme (UNEP, 2020) emphasizes the importance of supporting eco-innovative startups in the region as a means to achieve environmental goals and foster economic resilience.

The emphasis on technology and innovation within the entrepreneurial ecosystem encourages a culture of continuous improvement and creativity. Innovation hubs, incubators, and accelerators play a crucial role in this regard, providing spaces for entrepreneurs to collaborate, share ideas, and access mentorship and funding. These environments stimulate the development of innovative solutions and business models, promoting a dynamic and forward-looking entrepreneurial community. According to the Innovation and Technology Report by the United Nations Conference on Trade and Development (UNCTAD, 2019), such ecosystems are essential for nurturing innovation and technological advancement in emerging economies.

The role of technology and innovation in entrepreneurship is transformative, offering pathways for economic development, competitiveness, sustainability, and societal well-being in the Western Balkans. As the region continues to evolve, fostering an environment that supports technological adoption and innovation will be key to unlocking the potential of entrepreneurs and SMEs. This requires concerted efforts from governments, the private sector, and international partners to invest in infrastructure, education, and policy frameworks that encourage innovation and technology-driven entrepreneurship.

5. Conclusions

This study explores the multifaceted relationship between entrepreneurship and economic development in the Western Balkans, emphasizing the pivotal role of SMEs, the challenges entrepreneurs face, the impact of government policies and international assistance and the transformative power of technology and innovation. The findings underscore the significant contribution of entrepreneurial ventures to the region's economic vitality, job creation, and societal well-being. Moreover, this study highlights the critical challenges that entrepreneurs encounter, including access to finance, regulatory hurdles, and the need for a supportive ecosystem to foster growth and innovation.

The evidence presented reinforces the notion that entrepreneurship serves as a key driver of economic development in the Western Balkans. SMEs, in particular, have been identified as the backbone of the economy, providing essential employment opportunities and contributing to GDP growth. However, the challenges identified, such as financial constraints and bureaucratic impediments, underscore the necessity for comprehensive support mechanisms to enable these enterprises to thrive (Popović et al., 2020).

The findings of this study have significant implications for policymakers, international organizations, and stakeholders within the entrepreneurial ecosystem. First, there is a clear need for targeted policy interventions that alleviate the financial and regulatory barriers facing entrepreneurs. This includes the development of more accessible funding avenues, streamlined regulatory procedures, and enhanced support services for startups and SMEs. Additionally, the role of technology and innovation in driving economic development suggests that investments in digital infrastructure, R&D, and innovation hubs are critical for fostering a dynamic entrepreneurial environment.

This study provides some limitations. It primarily relies on secondary data and literature reviews, which may not fully capture the rapidly evolving entrepreneurial landscape in the Western Balkans. Furthermore, the generalizability of the findings may be limited due to the unique socio-economic and political context of the region. Therefore, caution should be exercised in extrapolating the results to other contexts or regions.

Given the limitations noted, future research should aim to address these gaps through primary data collection, including surveys and interviews with entrepreneurs and key stakeholders in the Western Balkans. Such studies could provide more nuanced insights into the specific challenges and opportunities facing the entrepreneurial ecosystem. Additionally, comparative studies involving other regions could offer valuable perspectives on effective policies and practices that support entrepreneurship and economic development. Lastly, longitudinal studies tracking the evolution of the entrepreneurial landscape over time would contribute to a deeper understanding of the impact of policy interventions and global economic trends on entrepreneurship in the region.

In conclusion, this study contributes to a comprehensive understanding of the dynamics of entrepreneurship and economic development in the Western Balkans. While acknowledging the challenges that lie ahead, this study highlights the immense potential of entrepreneurship to drive economic growth, innovation, and societal progress. By addressing the identified barriers and leveraging the power of technology and innovation, the Western Balkans can harness the full potential of its entrepreneurial talent, paving the way for a prosperous and sustainable future.

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Digital advancements in literacy: Assessing the effects of technology on reading comprehension and fluency

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Abstract

The rapid advancement of technology has significantly influenced educational methodologies, particularly in enhancing reading comprehension and fluency. This study investigates the impact of technology-based interventions on improving these critical literacy skills. This study conducts a systematic analysis of various technological tools, including e-books, reading software, and interactive applications, and their implementation in diverse educational settings. Findings from the study reveal a notable improvement in both reading comprehension and fluency among participants who engaged with technology-enhanced learning resources compared to those who relied on traditional reading materials. Qualitative data further highlighted the motivational benefits of technological tools, which fostered a more engaging and personalized learning experience. The contribution of this research lies in its comprehensive evaluation of technology's role in literacy development. By illustrating the positive outcomes of integrating digital tools in reading instruction, this study provides empirical evidence to support the adoption of technology-based interventions in educational curricula. Additionally, it offers insights into the pedagogical strategies that can maximize the effectiveness of technology in enhancing reading skills, thereby serving as a valuable resource for educators, policymakers, and curriculum developers.

Keywords: Reading comprehension, Fluency improvement, Educational technology, Digital learning tools, Literacy development.

1. Introduction

Literacy, encompassing reading comprehension and fluency, is foundational to educational success and lifelong learning. In an era marked by rapid technological advancements, traditional pedagogical approaches face significant challenges in engaging students effectively (Leu et al., 2017). The digital age demands innovative educational strategies that resonate with technologically savvy learners and address the diverse needs of students (Zhao, 2020). Despite the critical role of literacy in academic and personal development, there remains a substantial gap in the effective integration of technology in reading instruction. Traditional methods often fail to fully engage students or meet the varied learning styles present in today's classrooms (Allington, 2012). As technology permeates all aspects of society, its potential to enhance literacy skills, particularly reading comprehension and fluency, is significant yet underexploited (Reinking, 2018).

This study aims to systematically examine the impact of technology-based interventions on reading comprehension and fluency. By focusing on various digital tools, including e-books, interactive applications, and reading software, the research seeks to identify effective strategies for leveraging technology to improve literacy outcomes (Cheung & Slavin, 2013).

The findings from this study are anticipated to offer valuable insights into the role of technology in literacy education. By providing empirical evidence on the efficacy of technology-based interventions, this research could guide educators, curriculum developers, and policymakers in designing and implementing more effective literacy programs (Guthrie et al., 2013). Furthermore, it aims to contribute to the broader discourse on educational equity by exploring how technology can bridge gaps in literacy achievement among diverse student populations (Kamil, 2003).

2. Literature Review

2.1 The role of technology in modern literacy education: The integration of technology into literacy education has revolutionized traditional reading and writing practices, introducing a new dimension of digital literacy that is pivotal for navigating the modern world. The National Council of Teachers of English (NCTE) emphasizes the importance of developing students' proficiency in reading, writing, and communicating through digital mediums as essential components of literacy in the 21st century (NCTE, 2019). This perspective is supported by research indicating that digital literacy skills are crucial for academic success, social interaction, and participation in the global economy (Hobbs, 2017).

Digital tools and resources, such as online reading platforms, digital libraries, and interactive applications, offer unprecedented access to diverse texts and multimedia content. These technologies not only expand the range of reading materials available to students but also introduce new ways of interacting with text through hyperlinks, videos, and interactive graphics. Lankshear and Knobel (2015) argue that these multimodal texts require readers to develop new literacies, including the ability to critically evaluate information, navigate digital environments, and synthesize multiple forms of media.

Moreover, technology facilitates personalized learning experiences that can adapt to individual students' needs, interests, and skill levels. Adaptive learning technologies, for example, use data analytics to provide customized reading recommendations, scaffolded support, and feedback that can enhance comprehension and engagement (Xie, Spector, & Gronseth, 2019). This personalization is particularly beneficial for addressing the diverse needs of students, including those with learning disabilities or those learning English as a second language.

The collaborative and social aspects of digital reading also represent a significant shift in literacy education. Platforms that allow for social annotation, online discussion forums, and collaborative writing projects enable students to engage in literacy practices that are inherently social and situated within authentic communities of practice (Warschauer & Grimes, 2007). These social dimensions of digital literacy underscore the importance of teaching students to navigate digital spaces responsibly, emphasizing the development of digital citizenship skills (Ohler, 2012).

However, the integration of technology in literacy education is not without challenges. Issues such as equitable access to digital devices and the internet, the digital divide, and the need for professional development for teachers in effective technology integration are critical considerations for educators and policymakers (Selwyn, 2016). Furthermore, there is an ongoing debate about the balance between screen-based reading and traditional print texts, with research suggesting the need for a balanced approach that values the strengths of both mediums (Mangen, Walgermo, & Brønning, 2013).

2.2 Technology-enhanced reading comprehension strategies: The advancement of digital technologies has led to the development of innovative strategies aimed at enhancing reading comprehension among learners of all ages. One significant area of research focuses on the use of multimedia and interactive resources. According to Mayer (2009), the multimedia learning theory suggests that individuals learn more effectively from words and pictures than from words alone. This theory underpins the effectiveness of interactive e-books and educational software that integrate text, audio, video, and animation to enrich the reading experience and support comprehension (Mayer & Moreno, 2003).

Digital annotation tools represent another critical technology-enhanced strategy for improving reading comprehension. These tools allow students to make notes, highlight text, and ask questions directly within digital texts, facilitating a deeper engagement with the material. Research by Johnson, Archibald, and Tenenbaum (2010) indicates that digital annotation can improve students' ability to understand and remember key concepts by encouraging active reading and providing a means for reflection and self-explanation.

Gamification, the application of game-design elements in non-game contexts, has also been explored as a method to enhance reading comprehension. By incorporating elements such as points, badges, and leaderboards into reading activities, educators can motivate students and make the learning process more engaging and enjoyable. A study by Huang and Soman (2013) found that gamification could significantly increase motivation and engagement, leading to improved comprehension and retention of information.

Furthermore, adaptive learning technologies play a vital role in personalizing reading comprehension instruction. These systems use algorithms to adjust the difficulty level of texts and comprehension questions based on the learner's performance, ensuring that students are challenged but not overwhelmed. Xie, Spector, and Gronseth (2019) highlight the potential of adaptive learning technologies to provide tailored support to students, enhancing their comprehension skills over time.

The integration of social media and collaborative platforms into reading instruction is another innovative strategy. These platforms can facilitate discussions, peer feedback, and the sharing of insights, further enriching the reading experience. Guthrie and Wigfield (2000) argue that social interactions around text can enhance comprehension by exposing students to diverse perspectives and encouraging critical thinking.

2.3 Improvements in reading fluency through digital interventions: Digital interventions have emerged as powerful tools for enhancing reading fluency, a critical component of literacy that encompasses the ability to read text quickly, accurately, and with proper expression. One of the foundational approaches to improving fluency is through repeated reading, which has been adapted to digital formats to increase engagement and effectiveness. Research by Rasinski, Blachowicz, and Lems (2009) supports the use of repeated reading strategies, noting significant improvements in fluency when students engage with texts multiple times. Digital platforms can facilitate this practice by providing immediate feedback and tracking progress over time, thereby making the learning process more dynamic and responsive.

Voice recognition technology represents another innovative approach to fluency development. This technology allows students to read aloud to a digital device that can immediately identify errors, mispronunciations, and hesitations, offering corrective feedback in real-time. Therrien, Wickstrom, and Jones (2006) highlight the potential of voice recognition to provide personalized and immediate feedback, which is crucial for developing fluent reading skills.

Furthermore, digital texts and e-books offer unique advantages for fluency improvement. They often come with adjustable text features, such as font size and spacing, which can be tailored to individual reader needs, reducing visual strain and supporting

smoother reading. Additionally, many digital texts include synchronized highlighting and read-aloud features, which can aid in modeling fluent reading. Kuhn, Schwanenflugel, and Meisinger (2010) discuss how these features can support readers by demonstrating fluent reading patterns, thereby improving their own fluency through imitation.

Audio books also play a significant role in fluency development. Listening to audio books allows students to hear and internalize the rhythm, pace, and expression of proficient reading. Taguchi, Takayasu-Maass, and Gorsuch (2004) found that exposure to audio books can enhance students' reading fluency by providing a model of expressive reading, which students can emulate in their own reading practice.

2.4 Engagement and motivation in digital reading environments: The shift towards digital reading environments has introduced new opportunities to engage and motivate learners in ways that traditional texts cannot. One of the key advantages of digital platforms is their ability to incorporate multimedia elements—such as videos, interactive animations, and audio—which can enrich the reading experience and cater to diverse learning styles. Guthrie and Wigfield (2000) emphasize the importance of engagement in literacy development, noting that students who are more engaged with the text are likely to have better comprehension and retention. Multimedia elements in digital texts can capture students' attention and sustain their interest in reading material.

Gamification, the application of game-design elements in educational settings, has been recognized for its potential to significantly increase student motivation and engagement. Lee and Hammer (2011) argue that gamified elements such as points, badges, and leaderboards can transform reading activities into more enjoyable and competitive experiences, thereby enhancing motivation to read and participate in literacy activities. The success of gamification lies in its ability to leverage the intrinsic motivation of learners, encouraging them to set and achieve their own reading goals.

Personalization and choice are also critical in digital reading environments. Technologies that allow learners to choose their reading materials based on interest and reading level can lead to increased motivation and engagement. Deci, Vallerand, Pelletier, and Ryan (1991) highlight the role of autonomy in motivation, suggesting that when students have the freedom to make choices about their learning, their intrinsic motivation and engagement improve. Digital libraries and e-reading platforms that offer a wide range of texts and genres can cater to individual interests, making reading a more personalized and motivating experience.

Furthermore, interactive features such as annotations, dictionaries, and note-taking capabilities allow students to engage actively with texts. Casteck, Zawilinski, McVerry, Hartman, and O'Byrne (2011) discuss how these features enable students to interact with the text on a deeper level, asking questions, making connections, and reflecting on what they read, which can further enhance comprehension and engagement.

2.5 Challenges and considerations in implementing technology in reading instruction: One of the primary challenges in integrating technology into reading instruction is ensuring equitable access to digital devices and internet connectivity. The digital divide—a term that refers to the gap between individuals who have access to modern information and communication technology and those who do not—can exacerbate existing educational inequalities. Warschauer and Matuchniak (2010) highlight the importance of addressing this divide, noting that without equitable access to technology, students from lower socioeconomic backgrounds may face additional barriers to literacy development. Efforts to mitigate these disparities include school-based initiatives to provide devices and broadband access, as well as community programs aimed at increasing digital literacy skills.

The successful integration of technology in reading instruction also depends on teacher readiness and the availability of professional development opportunities. Teachers must be proficient not only in using technology but also in selecting and implementing digital tools that enhance literacy learning. Hutchison and Woodward (2014) emphasize the need for ongoing professional development that equips teachers with the skills to critically evaluate and effectively integrate technology into their instructional practices. Without adequate training and support, teachers may struggle to utilize digital resources to their full potential, limiting the benefits for students.

Another consideration is the critical evaluation of digital content for quality and appropriateness. As the number of digital reading materials and educational technologies continues to grow, educators must be discerning in their selection of resources. Coiro (2012) discusses the challenges of navigating the vast array of digital information and stresses the importance of teaching students critical literacy skills to evaluate the credibility and relevance of online content. Ensuring that digital reading materials are aligned with curriculum standards and learning objectives is crucial for maintaining instructional integrity and promoting meaningful literacy development.

Concerns about screen time and its impact on students' health and well-being are also prevalent among educators and parents. Too much screen time has been associated with negative outcomes, including reduced physical activity and potential impacts on mental health. Balance is key, as Reinking (2018) suggests, advocating for a balanced approach to reading that incorporates both digital and traditional print texts. Encouraging a variety of reading experiences can help mitigate potential downsides of excessive screen use while still leveraging the benefits of technology-enhanced literacy instruction.

3. Methodology

The methodology for this study employs a comprehensive literature review to examine the current state of research on the effect of technology on reading comprehension and fluency. This approach allows for a critical analysis of existing findings, identification

of gaps in the literature, and synthesis of knowledge to inform future research and practice. The search strategy involved a systematic exploration of electronic databases, including ERIC, Google Scholar, JSTOR, and PsycINFO, using a combination of keywords and phrases such as "technology in reading education," "digital tools and reading comprehension," "reading fluency and technology," and "multimedia learning." The search was not limited to peer-reviewed journals alone but also included dissertations, conference proceedings, and educational reports to capture a broad spectrum of research.

Inclusion and exclusion criteria were established to ensure the relevance and quality of the literature reviewed. Studies were included if they: were published in the last two decades to ensure the relevance of technology discussed; focused explicitly on the use of technology to enhance reading comprehension and/or fluency; included empirical evidence of the impact of technology on reading outcomes; were published in English. Exclusion criteria focuses on: studies focusing solely on traditional reading strategies without technology integration; non-empirical opinion pieces or editorials; studies that did not specify the reading outcomes measured.

For each selected study, data were extracted on the study context (educational level, geographical location), participant demographics, the technology used, methodology, reading outcomes measured, and key findings. This process facilitated the identification of patterns, trends, and gaps in the research. The analysis involved synthesizing the data to compare and contrast the impact of different types of technology on reading comprehension and fluency across various educational contexts. This synthesis aimed to highlight effective practices and technologies, as well as areas requiring further investigation. The synthesis also considered the theoretical frameworks underpinning the studies, enabling a discussion of how theories of reading and technology integration intersect and inform one another.

While a literature review method provides a comprehensive overview of existing research, it is subject to limitations such as publication bias, the variability in the quality of studies included, and the potential for subjective interpretation during analysis. Acknowledging these limitations is crucial for a balanced understanding of the findings.

Employing a literature review as the methodology for this study offers a systematic and structured approach to understanding the complex landscape of technology's impact on reading comprehension and fluency. By critically analyzing and synthesizing existing research, this method provides insights into effective practices, highlights areas for future research, and contributes to the ongoing dialogue on integrating technology in literacy education.

4. Results

The review revealed that multimedia tools, including interactive e-books and educational software that integrate text with audio, video, and animations, significantly enhance reading comprehension. Studies consistently showed that students who used multimedia resources had higher comprehension scores compared to those who used traditional texts alone (Mayer, 2009; Dalton & Proctor, 2008). The multimodal nature of these tools supports diverse learning styles and helps students make connections between text and context, thereby deepening their understanding of the material.

Digital interventions, particularly those offering repeated reading opportunities and real-time feedback, were found to improve reading fluency. Technologies such as voice recognition software and digital reading applications that allow for tracking and feedback on reading speed and accuracy showed positive effects on students' fluency levels (Rasinski et al., 2009; Therrien et al., 2006). These tools not only facilitate practice and reinforcement but also enable personalized feedback, contributing to more efficient fluency development.

The literature highlights the significant role of gamification and personalization in motivating students and engaging them in reading activities. Gamified learning environments, which incorporate elements like points, badges, and leaderboards, were linked to increased motivation and a greater willingness to participate in reading tasks (Lee & Hammer, 2011). Similarly, platforms that offer personalized reading experiences, allowing students to choose texts based on their interests and reading levels, were found to enhance engagement and motivation (Guthrie & Wigfield, 2000).

While technology has the potential to improve reading comprehension and fluency, the effectiveness of digital tools is significantly influenced by the role of the teacher. Studies underscored the importance of teacher mediation in selecting appropriate technologies, integrating them into the curriculum effectively, and guiding students in their use (Hutchison & Woodward, 2014). Teachers' ability to scaffold digital reading experiences and provide instructional support was crucial for maximizing the benefits of technology for reading development.

A recurrent theme across the literature was the issue of digital equity. Access to technology and the internet remains a significant barrier for many students, particularly those from low-income families and rural areas (Warschauer & Matuchniak, 2010). This digital divide poses challenges to the equitable implementation of technology-enhanced reading instruction, highlighting the need for systemic solutions to ensure all students can benefit from digital learning opportunities.

The findings from the literature review suggest that technology, when effectively integrated into reading instruction, can have a positive impact on reading comprehension and fluency. Multimedia tools, digital interventions for fluency, gamified learning environments, and personalized reading experiences all contribute to enhanced literacy outcomes. However, the success of these technologies depends on equitable access, teacher readiness, and effective pedagogical integration. Addressing these challenges is essential for leveraging technology to support reading development comprehensively.

5. Conclusions

This research synthesized existing literature to explore the impact of technology on reading comprehension and fluency. The findings reveal that technology, when thoughtfully integrated into literacy instruction, can significantly enhance reading skills. Multimedia tools and digital interventions offer promising avenues for improving comprehension and fluency, while gamification and personalization strategies boost engagement and motivation among learners. However, the effectiveness of these technological tools is contingent upon equitable access to digital resources, teacher readiness, and the strategic pedagogical use of technology.

The implications of this research for educational practice are multifaceted. Firstly, educators should consider incorporating multimedia tools and digital interventions into their reading programs to support diverse learning needs and styles. Additionally, leveraging the motivational potential of gamification and providing personalized reading experiences can foster a more engaging and inclusive literacy environment. Importantly, professional development opportunities for teachers are crucial to equip them with the necessary skills to effectively integrate technology into reading instruction.

The findings suggest a need for curriculum designers to integrate technology into literacy curricula systematically. This integration should not only include the use of digital tools but also the pedagogical strategies that effectively leverage these tools to enhance reading comprehension and fluency. Curriculum development should reflect a balanced approach that combines traditional and digital reading materials, catering to diverse learning preferences and needs.

Policymakers should consider the findings as a call to action to address the digital divide. Investments in digital infrastructure, such as ensuring high-speed internet access and providing students with devices, are crucial steps towards equitable education. Policies should also focus on supporting schools in underprivileged areas to overcome barriers to technology integration, ensuring all students benefit from digital advancements in literacy education.

The research underscores the importance of digital literacy among educators, not just students. Teacher education programs should include comprehensive training on digital literacy, including the selection, use, and evaluation of digital tools for reading instruction. Ongoing professional development should be made available to help teachers stay abreast of the latest educational technologies and pedagogical approaches for integrating them into the classroom.

The motivational benefits of offering students choices in their reading materials and incorporating gamified elements into reading activities highlight the importance of student-centered learning environments. Educators should be encouraged to create classrooms that prioritize student interests, allowing for personalized learning paths that can lead to improved engagement and reading outcomes.

The integration of technology into reading instruction necessitates a broader understanding of literacy that includes digital literacy skills. Future research should explore how digital literacy contributes to traditional literacy outcomes and identify effective strategies for teaching these skills in conjunction with reading comprehension and fluency.

The research also has implications for technology developers, emphasizing the need for designing accessible and inclusive digital reading tools. Developers should consider diverse learner needs, including those with disabilities, to ensure that digital tools are universally designed and contribute positively to all students' reading development.

These additional implications highlight the multifaceted impact of integrating technology into literacy education. By addressing these areas, stakeholders across the educational landscape can work collaboratively to harness the benefits of technology for enhancing reading comprehension and fluency, thereby supporting the development of literate, informed, and engaged learners in the digital age.

Future research should address several key areas. To better understand the long-term impact of technology on reading skills, longitudinal studies that follow students over multiple academic years are needed. Research in diverse educational settings, including different grade levels, socioeconomic backgrounds, and geographical locations, would provide a more comprehensive understanding of how technology impacts reading development across various contexts. Studies comparing the effectiveness of different types of technology tools and interventions can help identify the most beneficial approaches to enhancing reading comprehension and fluency. Further investigation into how teachers integrate technology into reading instruction and the challenges they face can inform the development of targeted professional development programs.

This research is subject to several limitations. The literature review was limited to studies published in English, potentially excluding relevant research in other languages. The possibility of publication bias, where studies with positive findings are more likely to be published, may affect the overall conclusions drawn from the literature. The rapid pace of technological advancement means that some studies may quickly become outdated, necessitating ongoing research to keep pace with new developments.

In conclusion, this research highlights the potential of technology to significantly enhance reading comprehension and fluency. The findings underscore the need for equitable access to technology, effective teacher professional development, and careful pedagogical integration to fully realize the benefits of digital tools in literacy education. By addressing these challenges and building on the insights provided by this review, educators and policymakers can better harness the power of technology to support and advance reading skills for all learners.

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The Impact of Customer Loyalty Programs on Businesses Growth in the Tourism Sector. Case of 3-Star Hotels in Durres.

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Abstract

This study investigates the influence of customer loyalty programs on business growth within the tourism sector, with a specific focus on 3-star hotels in Durres. The research aims to explore the extent to which loyalty programs affect customer behaviour, satisfaction, and overall business performance. A quantitative analysis of customer data has been conducted. The quantitative analysis involves the collection of data on customer retention behaviours, advocacy behaviours, purchasing behaviours. This data is used to identify trends and correlations between loyalty programs and the above variables. The survey for this study has been applied to 400 tourist that has been accommodated in different hotels of 3 and 4 stars in Durres, from May to September 2023. The findings of this study suggest that customer loyalty programs have a significant impact on business growth in the tourism industry. Participants in loyalty programs are more likely to book repeat stays, spend more on additional services, and provide positive reviews and recommendations. The findings can inform hotel managers and marketers on how to design and implement effective loyalty programs to attract and retain customers.

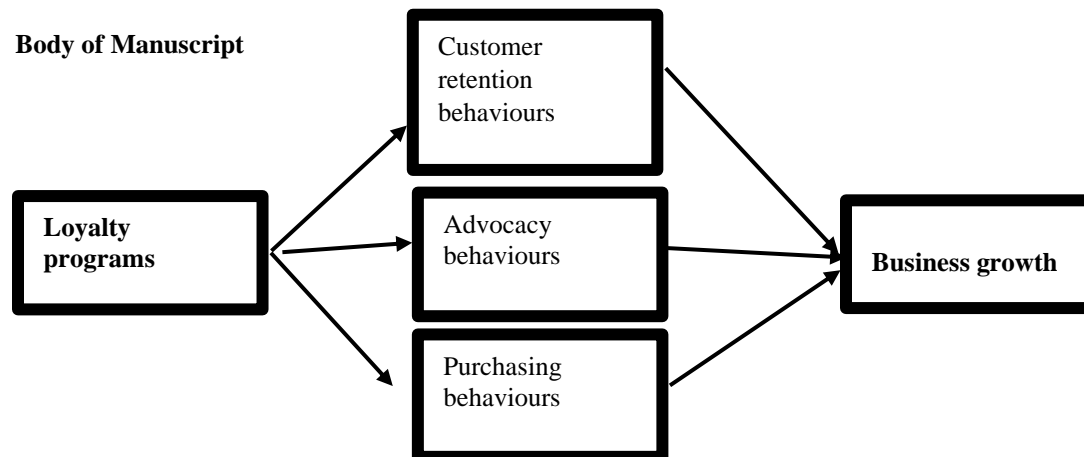
Keywords: loyalty programs, customer retention behaviours, advocacy behaviours, purchasing behaviours.

1. Introduction

The tourism industry is a vital sector of the global economy, contributing significantly to GDP and employment in many countries. Within this industry, hotels play a crucial role in accommodating travelers and providing them with a comfortable and enjoyable stay. (UNWTO, 2023). However, the competition among hotels is hard, and they constantly tend to find new ways to attract and retain customers. One strategy that has gained popularity in recent years is the implementation of customer loyalty programs. These programs are designed to reward repeat customers and encourage them to continue purchasing, in our case, continue booking with the same hotel. (Davis, 2006). There are different types of loyalty programs, including point-based systems, cashback rewards, and membership programs. Some programs are designed to reward customers for their overall spending, while others focus on encouraging customers to make specific purchases or engage in certain behaviours, such as referring friends or leaving reviews. (Hammord, 2003).

In this study, we will examine the impact of customer loyalty programs on business growth in the tourism industry, focusing specifically on 3-star hotels in Durres. We will explore how these programs influence customer behavior, satisfaction, and overall business performance. This study explores how aligning loyalty programs toward its determinant's customer retention behaviours, advocacy behaviours, purchasing behaviours. Statistical tests included descriptive statistics, internal consistency, reliability, validity, correlations, and regressions were conducted to determine the relationship and to validate the study. The survey for this study has been applied to 583 tourist that has been accommodated in different hotels of 3 stars in Durres, from May to September 2023. The research will employ a quantitative analysis by a questionnaire that has been conducted on customers of 3 stars hotels in Durres. This data will be used to identify trends and correlations between loyalty program and its determinants. Overall, this study aims to contribute to the understanding of how customer loyalty programs can drive business growth in the tourism industry, particularly for 3-star hotels in Durres. The findings will be valuable for hotel managers and marketers looking to design and implement effective loyalty programs to attract and retain customers. (Peiguss, 2012).

2. Body of Manuscript



In today's fiercely competitive markets, businesses often fight to distinguish themselves to attract new customers and to maintain old ones. Moreover, loyalty programs facilitate a more personalized customer experience, by offering according to individual preferences and behaviours. This personalized approach enhances customer satisfaction and enforcing loyalty by addressing specific needs. (Singh& Khan, 2012).

By providing rewards exclusive to program members, businesses cultivate a shared identity and connection that distinguishes them from competitors. In essence, loyalty programs serve as a tool for businesses to survive in the hard and aggressive business world. Overall, the goal of customer loyalty programs is to build a strong relationship between the customer and the business, incentivizing the customer to remain loyal and choose that business over its competitors. By doing so, the business can increase customer retention, drive repeat purchases, and ultimately, fuel growth. (Singh & Khan, 2012).

Customer loyalty programs have become a common strategy for businesses in the tourism sector, including hotels, to retain customers and encourage repeat business. Research has shown that customer loyalty programs can have several benefits for businesses in the tourism sector. For example, a study by Kim (2018) found that loyalty program members were more likely to book repeat stays and spend more on additional services compared to non-members. The effectiveness of loyalty programs depends on various factors, including program design, communication, and customer engagement. For example, a study by Lee and Back (2019) found that the perceived value of rewards and the ease of earning points were important factors influencing customer participation in loyalty programs. Customer satisfaction is a key driver of loyalty in the tourism sector. Research has shown that satisfied customers are more likely to become repeat customers and recommend the hotel to others. Another study by Hsu and Lin (2018) found that customer satisfaction positively influenced customer loyalty in the hotel industry. Despite their potential benefits, loyalty programs also face challenges such as high costs, low redemption rates, and customer fatigue. Another study by Lee and Back (2019) found that customers were less likely to participate in loyalty programs if they perceived the rewards to be of low value or if the program was too complex. Loyalty programs can have a positive impact on business growth in the tourism sector, and during this research we are going to study particularly the 3-star hotels in Durrës. However, the effectiveness of these programs depends on various factors, including program design, communication, and customer engagement. (Singh& Khan, 2012).

H1: There is a positive relation between loyalty programs and customer retention behaviours.

H0: There is not a positive relation between loyalty programs and customer retention behaviors.

Customer retention and loyalty programs are critical for businesses to maintain a stable customer base and to build long-term relationships with their clients. These programs aim to incentivize repeat purchases, increase customer satisfaction and customer loyalty. (Roking 2005). To improve customer retention, businesses can focus on providing excellent customer service, personalized experiences, and personalized loyalty programs. By keeping customers satisfied and engaged, businesses can increase their lifetime value and increase business growth. (Singh & Imran 2012). Customer loyalty is the result of consistently positive emotional experiences, physical attribute-based satisfaction, and perceived value of an experience, which includes the product or services. It is a measure of how likely a customer is to continue buying a specific product or service. The importance of customer retention and loyalty lies in the fact that it is more cost-effective to retain existing customers than to acquire new ones. Loyal customers also tend to spend more and are more likely to refer others to the business. (Roking 2005). A positive overall experience with the business, including customer service, product quality, and convenience, can enhance the effectiveness of retention and loyalty programs. An effective communication of the program benefits and rewards to customers is crucial for engagement and participation. Utilizing customer data to personalize offers and rewards can also increase the relevance and effectiveness of the program. The presence of

competing loyalty programs and the overall market environment can influence the effectiveness of the programs itself. (Roking 2005).

H2: There is a positive relation between loyalty programs and advocacy behaviours.

H0: There is not a positive relation between loyalty programs and advocacy behaviours.

Advocacy behaviors in the context of customer loyalty programs refer to customers actively promoting or recommending a brand or product to others. This can include activities such as word-of-mouth recommendations, online reviews, social media posts, and referrals. (Mogale, 2019). Advocacy behaviors are a key indicator of customer loyalty and can have a significant impact on a brand's reputation and customer acquisition efforts. Businesses can encourage advocacy by providing exceptional products and services, actively seeking feedback, and offering incentives for referrals or reviews. Increasing the power of customer advocacy, businesses can expand their credibility in the market. (Magatef & Tomalieh, 2015). Advocacy behaviors can have a significant impact on the success of loyalty programs. Positive advocacy behaviors can lead to increased customer engagement and loyalty, while negative advocacy behaviors can damage a brand's reputation and lead to lost sales. (Magatef & Tomalieh, 2015).

H3: There is a positive relation between loyalty programs and purchasing behaviours.

H0: There is not a positive relation between loyalty programs and purchasing behaviours.

Purchasing behaviors and loyalty programs are closely related in marketing and customer relationship management. Purchasing behaviors refer to the actions and decisions that consumers make when acquiring goods or services. (Keller, 2016). These behaviors can be influenced by a variety of factors, including personal preferences, marketing efforts, and external influences. Understanding purchasing behaviors is crucial for businesses because it helps to plan their marketing strategies. Another step that is related with purchasing behaviors is the importance to meet the needs and preferences of businesses target audience. Encouraging customers to spend more can also drive business growth. By increasing the average purchase value, businesses can boost their revenue and profitability. (Kumar & Reinartz, 2018). Loyalty programs can influence purchasing behaviors by offering rewards, discounts, and incentives to customers who make repeat purchases or engage with the brand in other ways. By providing tangible benefits, loyalty programs can encourage customers to make more frequent purchases and to choose a particular brand over competitors. The effectiveness of loyalty programs can vary depending on factors such as program design, customer engagement, and the competitive landscape. Research has shown that well-designed loyalty programs can lead to increased customer retention, higher spending per customer, and improved customer satisfaction. (Solomon, Dahl, White, Zaichkowsky, & Polegato, 2019).

3. Table Figures and Equations

Table 1: Explaining the descriptive statistics of the variables: Advocacy behaviours, Purchasing behaviours, Retention behaviours, Customer loyalty.

Simple Statistics							
Variable	N	Mean	Std Dev	Sum	Minimum	Maximum	Label
Advocacy behaviours	583	8.48113	1.74406	4945	2.50000	10.00000	
Purchasing behaviours	583	8.79503	1.68873	5128	2.50000	10.00000	
Retention behaviours	583	9.32247	1.34789	5435	2.50000	10.00000	
Customer loyalty	583	8.34820	1.55750	4867	1.00000	19.00000	Total

Source: SAS Statistics, 2023

The first table provided simple statistics output for four variables taken in consideration: Advocacy behaviors, Purchasing behaviors, Retention behaviors, and Customer loyalty. These variables are used in this research to measure different aspects of customer behavior and attitudes. The sample size (N) for this variable is 583, indicating that there are 583 responses. The mean value of the range 8.34- 8.48 suggests that respondents exhibit moderately high levels of responses. The standard deviation of the range 1.5- 1.7 indicates the degree of variability among respondents. A higher standard deviation means higher variability. (SAS Statistics, 2023).

Table 2: Cronbach Coefficient Alpha

Cronbach Coefficient Alpha					
Variables	Alpha				
Raw	0.835487				
Standardized	0.836554				
Cronbach Coefficient Alpha with Deleted Variable					
Deleted Variable	Raw Variables		Standardized Variables		Label
	Correlation with Total	Alpha	Correlation with Total	Alpha	
Advocacy behaviours	0.667137	0.793901	0.662095	0.795641	
Purchasing behaviours	0.703906	0.774791	0.704993	0.776465	
Retention behaviours	0.580416	0.828528	0.581446	0.830459	
Customer loyalty	0.730122	0.763679	0.724963	0.767381	Total

Source: SAS Statistics, 2023

A quantitative survey research study was conducted in hotels of 3 stars in the city of Durres to measure the relationships between the variables identified in the literature review. Questions included in the survey were adopted to explain how customer retention behaviours, advocacy behaviours, purchasing behaviours influence loyalty programs.

According to table 2, the variables used in this study shows high levels of internal consistency reliability with CronBach Alpha Coefficient 0.836554. (CronBach Alpha all above 0.7). Each variable such as: advocacy behaviours, purchasing behaviours, retention behaviours, customer loyalty individually contributes positively to the scale's reliability. (SAS Statistics, 2023).

Table 3: Explaining the correlations between the 5 variables: Loyalty programs, customer retention behaviours, advocacy behaviours, purchasing behaviours

Pearson Correlation Coefficients, N = 583 Prob > r under H0: Rho=0				
	Advocacy behaviours	Purchasing behaviours	Retention behaviours	Customer loyalty
Advocacy behaviours	1.00000	0.58149 <.0001	0.44315 <.0001	0.64888 <.0001
Purchasing behaviours	0.58149 <.0001	1.00000	0.54654 <.0001	0.63015 <.0001
Retention behaviours	0.44315 <.0001	0.54654 <.0001	1.00000	0.51771 <.0001
Customer loyalty	0.64888 <.0001	0.63015 <.0001	0.51771 <.0001	1.00000

Source: SAS Statistics, 2023

The third table explains Pearson Correlation Coefficients according to the relationships between four variables: advocacy behaviors, purchasing behaviors, retention behaviors, and customer loyalty, highlighting how they are related to each other. It suggests that there are significant positive correlations between the variables. The p-values associated with all correlation coefficients are less than the significance level of 0.0001 and have positive value, indicating that all correlations are statistically significant. (SAS Statistics, 2023).

Table 4: The relation between Customer loyalty and **Retention behaviours**

Dependent Variable: Customer loyalty programs

Dependent Variable: Customer loyalty Total					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	399.868366	133.289455	76.26	<.0001
Error	579	1011.947243	1.747750		
Corrected Total	582	1411.815609			
R-Square	Coeff Var	Root MSE	Customer loyalty Mean		
0.283230	15.83605	1.322025	8.348199		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Retention behaviours	3	399.8683657	133.2894552	76.26	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Retention behaviours	3	399.8683657	133.2894552	76.26	<.0001

Levene's Test for Homogeneity of Customer loyalty Variance ANOVA of Squared Deviations from Group Means

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Retention behaviours	3	56.9438	18.9813	0.74	0.5294
Error	579	14884.6	25.7074		

Welch's ANOVA for Customer loyalty

Source	DF	F Value	Pr > F
Retention behaviours	3.0000	51.20	<.0001
Error	8.9129		

Source: SAS Statistics, 2023

To verify the first hypothesis, have been provided outputs from different statistical analysis and regression analysis. H1 proposed that there is a positive relationship between retention behaviors and loyalty programs. To verify the relationship between the two variables it has been provided different tests such as Levene's Test for Homogeneity and an Analysis of Variance (ANOVA), examining the impact of different levels of retention behaviors on customer loyalty. The coefficient of determination (R-squared) is 0.283, meaning that approximately 28.3% of the variability in customer loyalty programs can be explained by the retention behaviors variable, included in the model. In the second table the ANOVA analyses of variance has been adopted. The retention behaviors collectively account for a significant amount of variance in customer loyalty programs, as indicated by the F-value (76.26) and with the associated p-value. The Levene's Test for Homogeneity checks if the variances of customer loyalty across different levels of retention behaviours are equal. In this case, the p-value (0.5294) suggests that there is no significant difference in variances across groups. From all the results explained, it can be deduced that there is a positive relationship between retention behaviors and customer loyalty. (SAS Statistics, 2023).

Table 5: The relation between Customer loyalty and **Advocacy behaviours**
Dependent Variable: Customer loyalty programs

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	602.135607	150.533902	107.46	<.0001
Error	578	809.680002	1.400830		
Corrected Total	582	1411.815609			
R-Square	Coeff Var	Root MSE	Customer loyalty Mean		
0.426497	14.17751	1.183567	8.348199		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Advocacy behaviours	4	602.1356073	150.5339018	107.46	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Advocacy behaviours	4	602.1356073	150.5339018	107.46	<.0001

Levene's Test for Homogeneity of Customer loyalty Variance
ANOVA of Squared Deviations from Group Means

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Advocacy behaviours	3	174.9	58.3156	2.94	0.0328
Error	578	11478.4	19.8589		
Welch's ANOVA for Customer loyalty					
Source	DF	F Value	Pr > F		
Advocacy behaviours	3.0000	98.42	<.0001		
Error	39.7906				

Source: SAS Statistics, 2023

To verify the second hypothesis, it was also provided output from different statistical analysis and regression analysis. To verify the relationship between the two variables has been provided results from Levene's Test for Homogeneity and an Analysis of Variance (ANOVA), examining the impact of different levels of advocacy behaviors on customer loyalty programs. The coefficient of determination (R-squared) is 0.426, meaning that approximately 42.6% of the variability in customer loyalty programs can be explained by the advocacy behaviors, variable included in the model. In the second table, in the ANOVA table, describes the advocacy behaviors collectively account for a significant amount of variance in customer loyalty programs, as indicated by the F-value (107.46) and the associated p-value. The Levene's Test for Homogeneity checks if the variances across different levels of advocacy behaviors are equal. In this case, the p-value (0.0328) suggests that there is a significant difference in variances across groups. Overall, the analysis suggests that advocacy behaviors significantly influence customer loyalty, explaining a substantial proportion of its variance. The significant p-values in both tests, deduct that there is a positive relationship between advocacy behavior and customer loyalty programs. (SAS Statistics, 2023).

Table 6: The relation between Customer loyalty and Purchasing behaviour
Dependent Variable: Customer loyalty programs

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	568.868200	189.622733	130.25	<.0001
Error	579	842.947409	1.455868		
Corrected Total	582	1411.815609			
R-Square	Coeff Var	Root MSE	Customer loyalty Mean		
0.402934	14.45334	1.206593	8.348199		
Source	DF	Type I SS	Mean Square	F Value	Pr > F
Purchasing behaviour	3	568.8681996	189.6227332	130.25	<.0001
Source	DF	Type III SS	Mean Square	F Value	Pr > F
Purchasing behaviour	3	568.8681996	189.6227332	130.25	<.0001

Levene's Test for Homogeneity of Customer_loyalty Variance ANOVA of Squared Deviations from Group Means					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Purchasing behaviour	3	194.3	64.7657	3.11	0.0260
Error	579	12061.1	20.8310		
Welch's ANOVA for Customer loyalty					
Source	DF	F Value	Pr > F		
Purchasing behaviour	3.0000	90.18	<.0001		
Error	29.2859				

Source: SAS Statistics, 2023

To verify the relationship between the two variables has been also provided results from Levene's Test for Homogeneity of Customer loyalty Variance and an analysis of variance (ANOVA), examining the impact of different levels of purchasing behaviors on customer loyalty programs. The coefficient of determination (R-squared) is 0.403, meaning that approximately 40.3% of the variability in customer loyalty can be explained by the purchasing behavior, variable included in the model. In the second table the ANOVA test has been conducted. The purchasing behaviors collectively account for a significant amount of variance in customer loyalty programs, as indicated by the F-value (130.25) and with the associated p-value. The Levene's Test for Homogeneity explains if the variances of customer loyalty across different levels of purchasing behaviors are equal. In this case, the p-value (0.0260) suggests that there is a significant difference in variances across groups. Overall, the analysis suggests that purchasing behaviors significantly influence customer loyalty programs, explaining a substantial proportion of its variance. Also, the significant p-values in both tests indicate that the effect is significant and the two variables purchasing behaviors and customer loyalty programs are positively related. (SAS Statistics, 2023).

4. Conclusions

Customer loyalty programs have a significant impact on the growth of businesses in the tourism sector. These programs contribute to enhanced customer retention, increased repeat business, and positive word-of-mouth marketing. By offering incentives

such as discounts, complimentary services, and personalized experiences, hotels can build strong relationships with guests, leading to improved loyalty and profitability.

It is important to conduct market research to understand the preferences and behaviors of guests. Design loyalty programs that align with their needs and preferences, by offering rewards that are valuable and relevant to their travel experiences. Utilize guest data to personalize communications and offerings within the loyalty program. By understanding individual preferences, hotels can provide professional service and provide deeper connections and loyalty. It is also very useful to regularly engage with loyalty program customers through various channels, such as email, social media, and in-person interactions. Keep members informed about program updates, exclusive offers, and upcoming events to maintain their interest and participation. Managers and owner should ensure that loyalty program rewards provide tangible value to guests, such as discounts on room rates, complimentary amenities, or exclusive access to events. Tangible benefits incentivize guests to participate in the program and increase their likelihood of returning to the hotel. By monitoring continuously, the performance of the loyalty program and track key metrics, such as member enrollment, redemption rates, and revenue generated from loyal guests. This data need to be used to evaluate the effectiveness of the programs.

From the results provided from this study can be assumed that there is a positive relation between advocacy behaviours, purchasing behaviours, retention behaviours and customer loyalty, where Customer loyalty programs is the dependent variable and advocacy behaviours, purchasing behaviours, retention behaviours are the independent variables. The study is limited by its focus on 3 stars hotels in Durres, Albania. Future research should examine other tourism destinations and include a more diverse range of hotels and resorts. The data provided from this research has been used to evaluate the effectiveness of loyalty programs and adjust as needed to optimize the results. Future research should explore the impact of other factors on customer loyalty programs, such as corporate social responsibility and customer engagement.

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