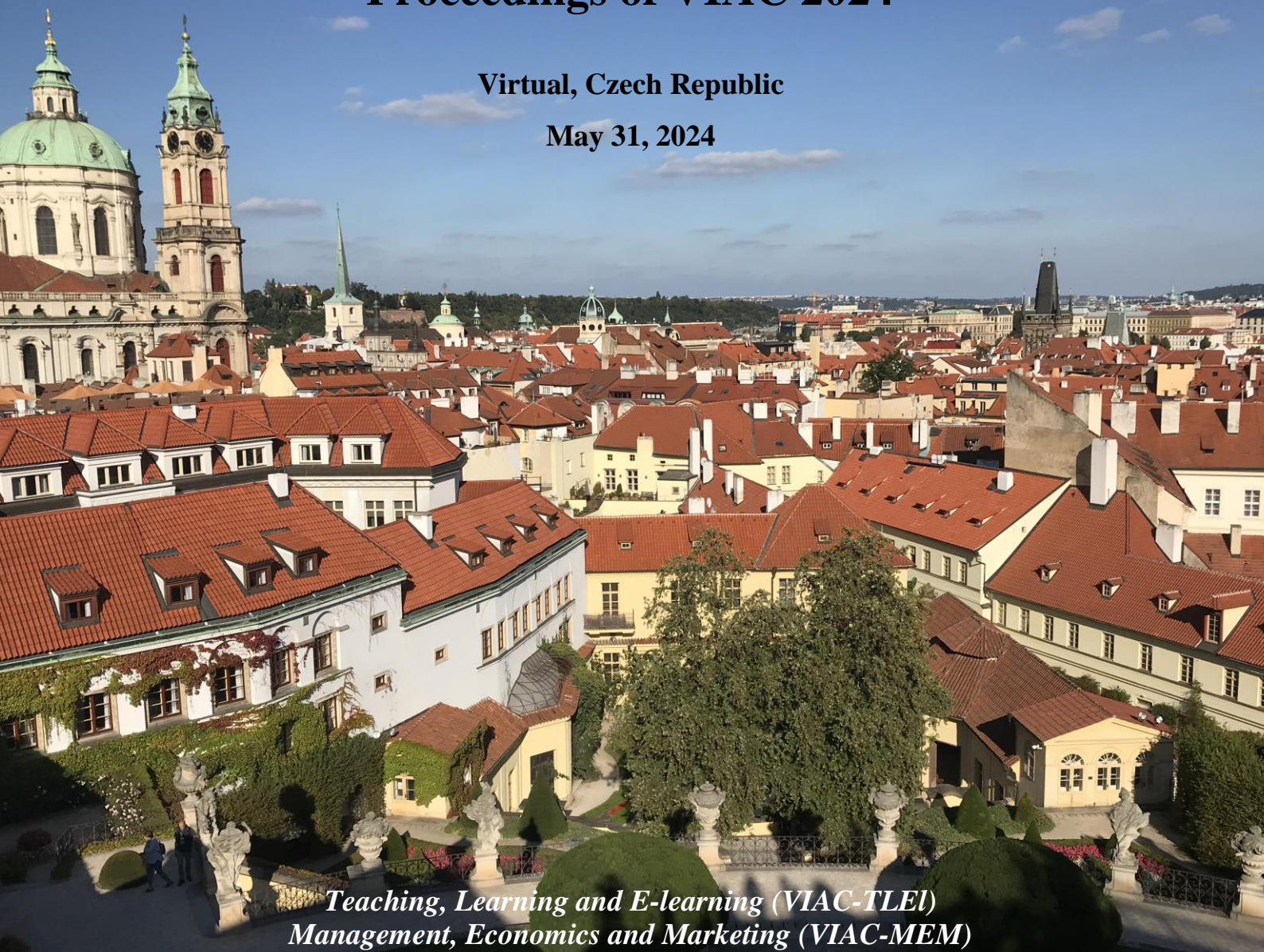




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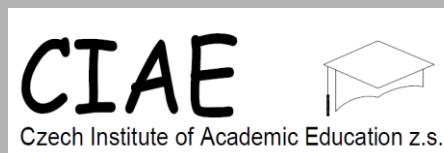
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May 31, 2024



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# The Influence of Teaching Arabic Language Using Humor, on Reading Comprehension Achievements at Elementary School in the Arab Sector in Israel

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## Abstract

Combining humor and education is a subject that has been studied in many countries including Israel, to examine alternative teaching methods to optimize pupils' achievements in diverse knowledge areas such as: learning foreign languages, teaching mathematics and teaching literature. There are very few studies dealing with the integration of humor in the learning process of Arabic as the second language. Hence, there are no studies that deals with the integration of humor in the educational field in the Israeli Arab sector. References by education system personnel in the Arab sector to the integration of humor into teaching are ambivalent. There are teachers that oppose the idea and others accept it positively. There are three main reasons for this: the one, fear that pupils will exploit and deviate from proper learning processes. The second is the sense that teachers, who do not have appropriate tools to create humor or cope with pupils who develop humor during lessons, or cope with humorous texts that are likely to create a 'non-serious' atmosphere in class and therefore, to lose control of a lesson. The third one is teachers' fear that the use of humor is likely to harm their image and status. This research examines the extent to which the integration of humorous literary texts in teaching Arabic language affects achievement in reading comprehension among Grade 4 pupils in the Arab sector in Israel. The research took place at one school in the Bedouin sector in the south of Israel. It was based on one experimental and one control classes. The study examined the level of pupils' knowledge in all components of comprehension: explicit and implicit content, interpretation, and integration, evaluating texts and drawing conclusions. The experimental classes studied six humorous stories whereas the control classes studied six stories without humor. From the results of the experiment, it transpired that the achievements of pupils who learned comprehension using humorous stories was much higher than those in the control classes. In addition, a more positive learning environment was reported in the experimental classes.

**Keywords:** humor, Arabic language, education, teaching, elementary school

## 1. INTRODUCTION

The teaching profession has been considered for many years as a serious and respectable profession and therefore, to link it to humor was somehow illogical. Despite this, something has changed in recent decades. The renewed interest since the 1980s in the research of humor and laughter has led to many studies in areas such as medicine, sociology, psychology, and education. In education, the effects that integrating humor into education and creating a positive learning atmosphere in class as well as teachers' and pupils' satisfaction with the teaching and learning process have been examined. In more focused studies, the effect of integrating humor on pupils' achievements levels in various subjects such as mathematics, literature and teaching languages were also examined

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\* Corresponding author.

(Glenn, 2002; Morreal, 2008). Despite multiple studies in education and teaching around the world, there is little research on this subject in Israel, and particularly in the Arab sector in Israel. This research, dealing with the effect of humor on pupils' achievements in elementary schools in the study of the Arabic language, is the first of its kind. In general, educational system personnel relate to integrating humor into teaching ambivalently. There are teachers who oppose the idea of mixing humor in teaching while others accept it positively. Those who avoid it, do so for three main reasons: one, teachers' fears that pupils will deviate from proper learning procedures. The second reason is teachers' sense that they do not have appropriate tools to create humor themselves and/or to cope with humorous texts. The third reason is the fear that pupils will be disrespectful, and teachers will lose control over them. This research examines the extent to which the combination of literary and humorous texts in teaching the Arabic language affects pupils' achievements in comprehension among fourth grade pupils in the Arab sector in Israel.

This is an empirical research based on a learning program to understand comprehension in the Arabic language using teaching and learning humorous literary texts. The research question is: Whether, and to what extent does integrating humor in teaching the Arabic language in the area of comprehension, affects the achievements of fourth grade pupils in elementary schools in the Bedouin sector in southern Israel?

## 1. RESEARCH METHODOLOGY

### 2.1 Research Population

The research was carried out in two fourth year classes, out of five elementary schools in a Bedouin village in southern Israel. Each of the classes includes a number of peer pupils, found in similar learning climates. Pupils in both classes come from the same area, most from families of average socio-economic circumstances.

The two classes were chosen from the three fourth grade classes at a school. fourth grade class 3 was the Experiment class, taught by the teacher who was a partner in this research, fourth grade class 2, which was the control class, was taught by another. The Experiment class, fourth grade class 3, contained twenty-two pupils of whom nine were boy and thirteen girls. The control class, fourth grade class 2 contained twenty-two pupils of whom ten were boys and twelve girls.

### 1.2 Profiles of two teachers participating in the study:

The participating teachers were both veteran teachers with similar length of teaching service. Their area of expertise was Arabic language and literature, with rich experience in teaching the Arabic language. Both have taught Arabic language for six years at the school where the experiment took place.

### 1.3 Research Tools

Intervention program in the Experiment class, was conducted by the research partner teacher in accordance with the Israeli Ministry of Education's curriculum for fourth grade elementary school classes and coordinated with staff teaching Arabic language. The research partner teacher would teach pupils in the test class six humorous texts, which are age-appropriate folk stories (texts are attached as appendices).

At the control class: the other teacher taught regular texts without any intervention (texts are attached as appendices).

Each class is divided into four levels of achievement:

Good:	Grade 80-100
Average:	Grade 60-79
Low:	Grade 40-59
Very low:	Grade 0 -39 (a unique level characteristic of Bedouin school in southern Israel).

### 2.4 Research Variables

Dependent variable: pupils' achievement in the subject learned - Arabic language in fourth grade. Independent variable: Integrating humor into teaching Arabic language in fourth grade.



## 2.5 Research Process

The research teacher shared research content with the team, teaching Arabic language at the school. After research aims and conditions were explained to the team, it was agreed who would be the appropriate parallel teacher in the control class to work with the research teacher in the test class. In addition, in consultation with the Arabic language teaching team, the research teacher chose the texts that would be taught in both classes: six texts without humor were chosen for the control class and six texts with humor for the test class.

The instructions for conducting the experiment were as follows:

The two teachers will give a pretest to the two classes to examine their level prior to the experiment.

With the start of the experiment and after learning each story, a comprehension test will be carried out.

After 6 tests, have been carried out in both classes, an identical final test will be carried out in both classes.

The research will examine pupils' achievements in both classes in all tests in parallel, including the final test.

All tests are based on all components of comprehension (curriculum, Arabic language education for grades 1-6, Ministry of Education & Culture, Jerusalem, 2009). The components are as follows:

- a. **Overt content:** identifying details revealed in the texts: place, central character, relationships between characters.
- b. **Latent content:** subject, message, idea, intention, tone of text, rhetorical means, shifts: symbol, imagery, metaphor, personification
- c. **Interpretation and implementation:** implementing and integrating ideas and information: word hypotheses based on what is written, identify characters' traits, differentiate between facts and ideas in the text.
- d. Evaluating text content: the narrative, authenticity of information, author attitude, characters in text, reaching conclusions.

## 2. CONCLUSION

If we compare pupils' advancement between the two classes, the conclusion summoned is that teaching Arabic language as first language using humor in relation to comprehension, is preferable to teaching this area of knowledge using stories without humor.

From the research results, we learn that integrating humor into teaching led to increase learning motivation among pupils, and a significant improvement in their achievements. Moreover, the findings clearly demonstrate that teaching using humorous texts constituted a significant factor in improving the class learning climate. These results correlate to previous studies that found that integrating humor in teaching encourages analytical, critical and creative thinking (Garner, 2006; Stopsky, 1992); augments pupils' attention, releases tension and increases the desire to learn (Gazit, 2013; Gorham, 1998; Oplinger, 2003); reduces fear of learning, builds a positive link between pupils and teachers and improves how pupils evaluate their teachers (Al-Duleimi et al., 2016; Herzog & Strevey, 2008; Kuperman, 2006).

As stated, this study is the first of its kind and is a breakthrough in the field of research into humor in learning the Arabic language as a first language.

It is recommended that further studies in the context of teaching the Arabic language using humor at elementary schools and in the Arab educational system at all levels. In addition, it is recommended that the effect of implementing humor in teaching should be examined on a gender basis between boys and girls.

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**Appendix A. List of humorous stories learned in test class:**

Al-Bakri. (2013). *Juhaa and Peoples' sayings*. Beirut-lebanon:Dar – Elruki.

البكري، (2013). جحا وكلام الناس. بيروت/لبنان: دار الروقي.

Al-Bakri. (2013). *Juhaa and the Baggar*. Beirut-lebanon:Dar – Elruki.

البكري، (2013). جحا والسائل. بيروت/لبنان: دار الروقي.

Al-Bakri. (2013). *Juhaa's Neil*. Beirut-lebanon: Dar – Elruki.

البكري، (2013). مسمار جحا. بيروت/لبنان: دار الروقي.

Magairy, (2010). *Ash'ab's Donkey*. Aleppo, Syria:Dar Alarkam

ايري، (2010). حمار اشعب. حلب/سوريا: دار الارقم.

Magairy, (2010). *Ash'ab's Revenge towards the Fish*. Aleppo, Syria: Dar Alarkam

مغايري، (2010). اشعب والسمك. حلب/سوريا: دار الارقم.

Matah. (2012). *Juhaa's Money. Arabic is our language*. A book for fourth grade in elementary school.103-107. Dar-Elhuda and the Ministry of Education in Israel.

مركز التكنولوجيا التربوية (2012). العربية لغتنا، كتاب الصف الرابع، تل أبيب. 103 – 107.

**Appendix B. List of stories without humor learned in control class:**

Abu Hadra, F., Younis., A., Ganaiem, A. (2011). *The Castle. The new in reading and understanding for 4<sup>th</sup> Grade*. Dar-Elhuda and the Ministry of Education in Israel. P. 72-73.

أبو خضرة، ف.، يونس، أ.، غنايم، أ. (2011) الجديد في القراءة والفهم للصف الرابع، دار الهدى، وزارة التربية والتعليم، إسرائيل. 72-73.

Abu Hadra, F., Younis., A., Ganaiem, A. (2011). *The Elephant King of Time. The new in reading and understanding for 4<sup>th</sup> Grade*. Dar-Elhuda and the Ministry of Education in Israel. P. 88-90.

أبو خضرة، ف.، يونس، أ.، غنايم، أ. (2011) الجديد في القراءة والفهم للصف الرابع، دار الهدى، وزارة التربية والتعليم، إسرائيل. 88-90.

Abu Hadra, F., Younis., A., Ganaiem, A. (2011). *The Purse. The new in reading and understanding for 4<sup>th</sup> Grade*. Dar-Elhuda and the Ministry of Education in Israel. Pp. 99-102.

أبو خضرة، ف.، يونس، أ.، غنايم، أ. (2011) الجديد في القراءة والفهم للصف الرابع، دار الهدى، وزارة التربية والتعليم، اسرائيل.

Abu Hadra, F., Younis., A., Ganaiem, A. (2011). The Spider and the Ant. *The new in reading and understanding for 4<sup>th</sup> Grade*. Dar-Elhuda and the Ministry of Education in Israel. P. 74-75.

أبو خضرة، ف.، يونس، أ.، غنايم، أ. (2011) الجديد في القراءة والفهم للصف الرابع، دار الهدى، وزارة التربية والتعليم، اسرائيل. 75-74.

Matah. (2012). The three Fish. *Arabic is our language*, the Ministry of Education in Israel: Pp. 39-40.

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Matah. (2012). The Wise King. *Arabic is our language*. A book for fourth grade. the Ministry of Education in Israel. Pp. 218-221.

مركز التكنولوجيا التربوية (2012) العربية لغتنا، كتاب الصف الرابع، تل أبيب/إسرائيل. 218-221.



# Towards A Digital Health Information Framework for Essential Medicine Supply Chain Management in Public Healthcare Facilities in Kenya

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## Abstract

This study sought to develop a digital health information framework for management of essential medicine supply chain in Kenya's public healthcare facilities. The study sought to address issues related to production, analysis and dissemination of accurate, reliable, complete, relevant, and timely information to support essential medicine supply chain management as a mitigation measure against essential medicine stockout. The study employed both quantitative and qualitative research design. The study sites were Kajiado, Makueni and Mombasa Counties. Simple random sampling was used to identify respondents to the study. The study targeted 15 medical officers, 18 clinical officers, 18 pharmacists, 16 health records and information officers and 14 key informants drawn from 11 levels 4 and 3 level 5 public healthcare facilities from the three counties. 95 participants were sampled using Nasiruma D.K (2000) formula calculated at a 95% confidence (risk) level. Ethical approvals were sought from relevant organizations authorities and study participants. Quantitative and qualitative information was collected using key informant interview guide and semi structured questionnaire. Collected data was cleaned, transformed, and analyzed using NVivo, Qualitative Data Analysis (QDA) Miner and SPSS software. Multiple regression analysis, hypothesis testing (Inferential statistics) and qualitative information were applied to describe data, draw inferences and conclusion on the findings. Findings is presented using charts, graphs, themes, and tables. The study found that a majority of the healthcare facilities in Kenya do not have a functional digital HIS that support the management of essential medicine supply chain. Due to lack of functional digital HIS, information was not reliable and complete, hence, had not improved essential medicine supply chain management in public healthcare facilities in Kenya. The study concludes that: quality of digitized health information has positive and significant influence on essential medicine supply chain management in public healthcare facilities in Kenya; there is a significant relationship between digitized health information processing strategy factor and essential medicine supply chain management in public healthcare facility in Kenya; there is a significant relationship between ICT infrastructure support for health information and essential medicine supply chain in public healthcare facilities in Kenya; there is a significant relationship between workforce skills and essential medicine supply chain management in public healthcare facility in Kenya; and there is a significant relationship between policy framework and essential medicine supply chain management in public healthcare facility in Kenya.

**Keywords:** Digital health information framework<sup>1</sup>, Essential medicine supply chain management<sup>2</sup>, public healthcare facilities<sup>3</sup>

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## 1. INTRODUCTION

The health information system (HIS) is an integral component of the six building blocks of health systems, essential for managing the supply chain of essential medicines (WHO 2007, WHO 2021, Oreni et al., 2021, Aila and Kithuka, 2021). Ensuring the availability of safe and effective essential medicines is considered a basic human right and a priority under Kenya's vision for 2030 (Adebisi et al., 2022, MOH Kenya 2020, WHO 2019). However, global concerns persist regarding critical shortages of essential medicines, particularly in middle- and low-income countries, leading to severe health and economic crises (MOH Kenya 2020, WHO 2019, Shukar et al., 2021).

Sub-Saharan Africa, in particular, experiences diverse impacts on public hospitals and patients due to essential medicine shortages (Ogollah et al., 2022, Shukar et al., 2021). Stockouts occur when there is insufficient supply to meet patient needs or when demand exceeds supply capacity, resulting in treatment failures, care delays, extended hospital stays, and increased risks of disabilities or death (Shukar et al., 2021). Despite efforts to implement digital health interventions for medical stock availability, challenges persist, including workforce skills, lack of access to electricity and connectivity, integration issues, and usability of digital tools (WHO, 2019).

Many resources have been allocated globally to develop digital health information systems to support evidence-based service delivery in the health sector (Tulu et al., 2021). Several countries, such as Slovenia, Estonia, and the Netherlands, have successfully implemented digital health information systems capable of collecting, processing, and disseminating information across various platforms (CIC, 2021). In 2017, European stakeholders advocated for early detection of essential medicine shortages through improved data infrastructure and collaboration (European Association of Hospital Pharmacists, 2022). Despite efforts by governments in developing countries to implement digital HISs, challenges such as poor planning, fragmentation, and lack of integration hinder successful implementation, particularly in managing essential medicines at the facility level (Bagayoko et al., 2020).

The persistence of essential medicine stockouts in public healthcare facilities in Kenya despite the implementation of the Kenya Health Information System and other electronic health information systems is concerning (Kenya MOH Supply Chain Strategy 2020-2025, Hellen et al., 2021, Ogollah et al., 2022). Gaps contributing to these stockouts include inadequate use of digital health information systems, poor data quality, inaccurate consumption information, inadequate analysis, and quantification of essential medicines, as well as insufficient supervision of staff responsible for supply chain management (MOH Kenya Supply Chain Strategy, 2020-2025).

These gaps result in inferior quality information, inaccurate orders, and inefficient inventory management, leading to essential medicine stockouts and compromising patient care (FEAM, 2021, Ganatra et al., 2020, Shukar et al., 2021, Ogollah et al., 2022, European Association of Hospital Pharmacists, 2022). Addressing these challenges is crucial to ensure timely access to essential medicines and improve healthcare outcomes.

## 2. LITERATURE REVIEW

### 2.1. Essential medicine Supply Chain Management

Arora and Gigras (2018) highlight the importance of accurate and reliable medicine consumption data due to the challenges in predicting actual demand for medicines. They argue that understanding supply chain principles is crucial for hospitals to avoid issues such as low availability, over-supply, or expiry of medicines.

According to the Ministry of Health (MoH) Kenya Supply Chain Strategy (2020-2025), quantification is a fundamental function of the essential medicine supply chain, to be carried out at national, county, and facility levels. Poor record-keeping, particularly from Bin Cards and Daily Activity Registers, leads to inaccurate summary data, contributing to inappropriate stock levels and poor visibility of essential medical data at facilities in Kenya. Additionally, the lack of commodity-based dashboards in most facilities hampers distribution, stocking level monitoring, and restocking efforts. The reliability and accuracy of quantification outputs in Kenya are acknowledged as significant challenges, resulting in weak procurement plans, inaccurate budget estimates, and issues such as stockouts and service disruptions.

Iqbal et al. (2017) suggest that quantification involves using various data sources such as consumption data, Essential Drug Lists (EDL), morbidity data, stock levels, prescription patterns, and procurement cycle lengths. They emphasize that analyzing consumption patterns, real-time data, effective inventory management, and forecasting can help reduce wastage of essential medicines. Trained pharmacists can utilize consumption data over different time frames to estimate demand accurately.

Furthermore, the distribution of essential medicines and medical products is essential for ensuring steady supply within and between healthcare facilities, according to Iqbal et al. (2017). They stress the importance of timely information on available stock and inventory control for effective distribution. The primary goal of distribution in the essential medicines supply chain is to maintain a consistent supply of essential medicines to healthcare facilities.

### *2.2. Quality of digitized health information for use for management of essential medicine supply chain*

A functional information system plays a vital role in ensuring the timely, accurate, and reliable production, analysis, and distribution of data concerning health system performance, determinants of health, and health status. This, in turn, contributes to the improvement of healthcare service delivery (WHO, 2007; PAHO, 2021; Nkanata et al., 2018; Koumamba et al., 2021; Lemma et al., 2020). Quality data encompasses attributes such as accuracy, completeness, timeliness, and consistency, making it easier to process into usable information for dissemination within healthcare facilities (Rumisha et al., 2020). Lugada et al. (2022) stress the importance of dependable and high-quality information for enhancing responsiveness and planning within facility-level supply chains. Despite this, WHO (2021) highlights deficiencies in many countries' health information systems (HIS) in providing information necessary for efficiently managing essential medicine supply chains. Globally, approximately 40% of countries fail to meet the required standards of information quality to support informed service delivery (WHO, 2021).

Smith (2019) suggests that the availability of medicines in UK health facilities relies heavily on the quality of information derived from the medicines information management system. Aila and Kithuka (2021) and Kuyo et al. (2018) argue that while the global community has committed to improving information relevance, quality, and timeliness, errors and insufficiencies persist due to widespread use of paper-based data collection and storage systems in Sub-Saharan Africa. Waithira et al. (2019) propose that ensuring the reliability and accuracy of data and findings is a fundamental prerequisite for effective information sharing. GSMA Intelligence (2017) reports that many African countries rely on paper-based records to manage and control medicine stocks, leading to issues such as medicine stockouts. The Ministry of Health Kenya (2020) underscores the importance of establishing a reliable mechanism for collecting, collating, and reporting information consumption to ensure a more accurate matching of demand and supply of commodities in hospital settings..

### *2.3. Digitized health information processing strategy for use for the management of essential medicine supply chain*

GSMA Intelligence (2017) warns that reliance on paper-based processes or inadequate investments in ICT could lead to issues with supply chain management of essential medicine, including stockouts. They argue that transitioning from paper to digitized supply chain management and medicine inventory is crucial in addressing stockouts. Bwana et al. (2014) highlight the potential of digital technologies to enhance various aspects of medicine supply chain, such as data collection, quantification, forecasting, and dissemination. They emphasize that digital dissemination of information can lead to better management of essential medicine supply within facilities.

Fahy and Williams (2021) point out the use of digital health technology in many countries to ensure quality and timely information for monitoring adverse responses to vaccines during mass vaccination campaigns. They cite examples of countries utilizing digital technologies to support the distribution of essential medicines to health facilities, including the use of digital surveillance in Israel to track vaccine distribution during the COVID-19 pandemic.

The World Health Organization (2008) stresses the importance of data analysis in ensuring quality comparable information for planning and service delivery. WHO (2021) emphasizes the need for quality processed information to be available to all users to promote transparency, accountability, and good planning and service delivery. Nkanata et al. (2018) highlight how delays in information systems producing timely analysis can hinder evidence-based planning and service delivery.

Kenya MoH (2020) observes that data collected through digital solutions can be analyzed regularly to assess essential medicine stock status and inform resupply decisions. Storbierski (2019) warns that flawed information processing can lead to incorrect decisions that impact planning and service delivery. Management Science for Health (2012) notes that digitized information systems can process data much faster, aiding in quantification and forecasting of medicines for supply chain management. They stress the importance of correct data entry to ensure accurate estimates of needed essential medicines.

Jen et al. (2022) discuss the limitations of electronic medical records (EMRs) in exchanging information between different providers but mention ongoing efforts to develop digital solutions to facilitate data retrieval across various health information systems. UNDP (2022) emphasizes the importance of efficient health information systems globally for producing quality information to inform timely planning and service delivery. WHO (2021) highlights the detrimental effects of poor-quality information on healthcare interventions and essential medicine supply chains, emphasizing the need for improved data collection to enhance health policies and service delivery.

#### *2.4. ICT infrastructure support for management of essential medicine supply chain*

GSMA Intelligence (2017) highlights the detrimental effects of inadequate or underutilized Information and Communication Technology (ICT) in processing essential medicine information, leading to medicine stockouts in the healthcare sector. They note that pharmaceutical companies and governments are increasingly turning to digital ICT solutions to enhance the quantification, visibility, and availability of essential medicines, aiming to mitigate against stockouts. Additionally, GSMA Intelligence (2017) underscores the advantages of information digitalization in healthcare, such as real-time visibility of essential medicines, continuous monitoring of stock levels, and facilitating timely requisition and resupply processes. Ayad (2011) observes the significant improvements in pharmacy inventory visibility and management facilitated by computerized information technology systems in healthcare facilities. Abdulla et al. (2017) highlight the essential role of electronic health information systems and ICT in automating hospital operations, including drug management. Agarwal et al. (2018) point out that the rapid global expansion of information technology offers solutions to challenges in essential medicine supply and stockouts. Bwana et al. (2014) emphasize the importance of ICT in facilitating information exchange between departments regarding medicine consumption demands and stockouts. GSMA Intelligence (2017) further notes that paper-based processes contribute to drug stock management issues, such as insufficient stock allocation and unavailability of medicines, particularly in facilities lacking ICT infrastructure, thereby struggling to meet the demand for essential medicines.

Nkanata et al. (2018) also acknowledge the role of ICT in healthcare facilities, particularly in easing the capture and dissemination of quality information for planning purposes. The adoption of Information and Communication Technology (ICT) by healthcare sector stakeholders promotes digitization and connectivity of processes, medical supplies, and products (Tortorella et al., 2022). Tortorella et al. (2022) suggest that an ICT-driven approach enables reliable real-time management of digital information systems related to medical supplies, supply chains, patient diagnosis, and treatment.

#### *2.5. Workforce skills in digital health information for management of essential medicine supply chain*

Demie (2021) emphasizes that despite significant investments in personnel and financial resources by developing countries to enhance the quality of information from Health Information Systems (HIS), these systems still yield poor-quality information. This is attributed to factors such as unskilled personnel, high workloads, and weak data management at health facilities. In Ghana and Tanzania, HIS implementation encountered substantial challenges due to inadequate personnel training, limited staff involvement, and increased workloads (Tull, 2018). Nkanata et al. (2018) underscore the lack of adequately trained human resources as a major challenge in the health sector of many developing countries, highlighting that insufficient investment in personnel training hampers effective ICT implementation for planning and service delivery in Kenya. Demie (2021) further highlights that the objective of training is to equip and enhance the skills of health facility staff to perform their tasks effectively.

WHO (2008) points out that inadequate training in data processing leads to the generation of poor-quality information, which cannot adequately support evidence-based planning and service delivery. Duncan et al. (2022) indicate that indicators such as education and training, data and digital literacy, individual competence, and technology use assess the competency of hospital personnel in utilizing digital health technology to support planning and service delivery. The level of education and training provided by hospitals to enable individuals to gain experience and improve their skills and collaboration abilities is reflected in the education and training index (ibid). Khubone et al. (2020) highlight research conducted in Botswana and Uganda, which illustrates the importance of a workforce with a robust background in health information systems. Aila and Kithuka (2021) point out that inadequate utilization of information at healthcare facilities results from staff members' lack of technical knowledge and capacity to collect and integrate data into actionable information. Ohia et al. (2021) observe that limited access to technological tools and insufficient technology literacy pose barriers to the adoption of digital health solutions in low- and middle-income countries.



## 2.6. Policy on Digital Health Information in management of essential medicine supply chain

Koumamba et al. (2021) highlight the importance of developing strategies and policies on Health Information Systems (HIS) in Africa, as it ensures HIS implementation even in the absence of external support. The goal of the Kenya National Pharmaceutical Policy, Sessional Paper 4 of 2012, is to guarantee access to essential pharmaceutical services, health technologies, and quality essential medicines (MoH Kenya, 2020).

Management Science for Health (2012) asserts that successful pharmaceutical management relies on a legal framework and policies that support and foster commitment to the supply of essential medicines. Ogollah et al. (2022) observe that health commodities management systems policy guidelines outline the necessary information system infrastructure, procedures for proper use, accurate collection of commodities consumption data, methods of data analysis, and dissemination of information for planning and service delivery.

Regulatory and legislative barriers impede data sharing and linkages in many countries (OECD, 2019). The OECD (2019) suggests that obstacles to data sharing could be addressed through the implementation of digital technology. UTI (2021) suggests that a fit-for-purpose policy and ICT infrastructure are key enablers of Africa's future competitiveness and prosperity.

Management Science for Health (2012) advises that a national medicine policy should include a human resources management element, delineating the roles of various healthcare practitioners and outlining plans for education and training of personnel. The Ministry of Health Kenya has formulated regulations on the use of health information for health products and technologies (HPT); however, efficient support for HPT supply chain is hindered by fragmented health systems (Ministry of Health Kenya Supply Chain Strategy 2020-2025).

## 3. METHODOLOGY

The research employed a nested mixed-method approach, integrating qualitative and quantitative methods to complement each other and provide a comprehensive understanding of the multifaceted phenomena under investigation. This approach aimed to address shared research problems and draw common conclusions by combining insights from both context-driven qualitative data and numerical quantitative data.

For the quantitative aspect of the study, a correlation research design was adopted to examine the potential influence of digital health information on the essential medicine supply chain in public healthcare facilities in Kenya. Data collection involved conducting interviews with a representative sample population, utilizing semi-structured standardized questionnaires. Statistical analysis of the numerical data included correlation and regression analysis to measure the relationship between the independent variable (digital health information) and the dependent variable (essential medicine supply chain).

The study population comprised clinical officers, medical officers, pharmacists, and health records and information officers from level 4 and 5 public healthcare facilities in the counties of Kajiado, Makueni, and Mombasa. Participants were selected based on their roles within the health facility related to health information and essential medicines supply chain management.

A multistage sampling approach was employed, with health facilities grouped into clusters based on county and level of operation (level 4 or level 5). Simple random sampling was then used to select a sample from the identified clusters. Specifically, 12 level 4 public health facilities from Makueni County, 4 from Mombasa County, and 4 from Kajiado County were chosen as units of the study.

The sampling process involved subdividing the health facilities per county (cluster), followed by simple random sampling of level 4 public healthcare facilities per county. The number of human resources for health (clinical officers, medical officers, pharmacists, and health records and information officers) from the sampled public healthcare facilities in the three counties was determined. Finally, the key informants were purposively selected based on their roles in health information management and leadership in essential medicine supply chain management at the public healthcare facility level.

Sample size calculation followed the formula provided by Nasiurma, D. K. (2000), taking into account the population size (N), coefficient of variation (C), and level of precision (e) to determine the sample size (n).

$$n = \frac{NC^2}{1 + (N-1)e^2}$$

Based on the above calculations 81 respondents from 14 sampled public healthcare facilities responded to the semi structured interview. With this consideration from the sample frame and in conformity with the 81 respondents; 15

medical officers (Makueni 6, Kajiado 4 and Mombasa 5), 18 pharmacists (Makueni 6, Kajiado 6 and Mombasa 6), 18 clinical Officers (Makueni 6, Kajiado 6 and Mombasa 6) and 16 health records and information officers (Makueni 6, Kajiado 4 and Mombasa 6) responded to the semi structured interview. 14 key informants: 1 from each of the 14 participating public healthcare facilities were interviewed. In total 81 participants were interviewed.

#### 4. FINDINGS AND DISCUSSIONS

##### 4.1. Influence of Quality of Digitized Health Information on Essential Medicine Supply Chain Management in Public Healthcare Facility in Kenya

###### Correlation Analysis

Correlation analysis was conducted between quality of digitized health information (independent variable) and essential medicine supply chain management (dependent variable). Results are presented in Table 4.9.

Table 1: Correlation Matrix

		Essential medicine supply chain management	quality of digitized health information
Essential medicine supply chain management	Pearson Correlation	1.000	.317**
	Sig. (2-tailed)		0.000
Quality of digitized health information	Pearson Correlation	.317**	1.000
	Sig. (2-tailed)	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Results in Table 1 indicated that there was a positive and a significant association between quality of digital health information and essential medicine supply chain management ( $r=0.317, p=0.000$ ). These findings agree with that of Nsaghurwe *et al.* (2021), who found a positive relationship between the quality of digitized information and pharmaceuticals supply chain management.

###### Regression Analysis

The results presented in table 2 present the fitness of model use of the regression model in explaining the study phenomena. Quality of digitized health information was found to be satisfactory variable in explaining the essential medicine supply chain management. This is supported by coefficient of determination also known as the R square of 10.1%. This means that the quality of digitized health information explains 10.1% of the variations in the dependent variable which is essential medicine supply chain management.

Table 2: Model Fitness

Variables	Values
R	<b>0.317</b>
R Square	<b>0.101</b>
Adjusted R Square	<b>0.094</b>
Std. Error of the Estimate	<b>0.513</b>

The results on analysis of variance are represented below

Table 3: Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4.178	1	4.178	15.906	0.000
Residual	37.299	143	0.263		
Total	41.478	144			

Table 3 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable (quality of digitized health information) is a good predictor of essential medicine supply chain management. This was supported by an F statistic of 15.906 and the reported *p* value (0.000) which was less than the conventional probability of 0.05 significance level.

Regression of coefficient results is presented in Table 4.12

Table 4: Regression of Coefficients

	<b>B</b>	<b>Std. Error</b>	<b>T</b>	<b>Sig.</b>
(Constant)	1.597	0.455	3.509	0.001
Quality of digitized health information	0.468	0.117	3.988	0.000

Regression of coefficients showed that quality of digitized health information and essential medicine supply chain management had a positive and significant relationship ( $r=0.468, p=0.000$ ). These results were consistent with that of Nsaghurwe *et al* (2021) who found a positive relationship between the quality of digitized health information and medicine supply chain management.

$$Y = 1.597 + 0.468X_1$$

From the regression equation when quality of digitized health information change by 0.468% the essential medicine supply chain management changes by 1%, showing there is a positive relation between the two variables.

#### 4.2. Influence of Digitized Health Information Processing Strategy on Essential Medicine Supply Chain Management in Public Healthcare Facility in Kenya

##### Correlation Analysis

Correlation analysis was conducted between digitized health information processing strategy (independent variable) and essential medicine supply chain management in public healthcare facilities in Kenya (dependent variable). Results are presented in table 5.

Table 5: Correlation Matrix

		Essential medicine supply chain management in public healthcare facilities in Kenya	Digitized health information processing strategy
Essential medicine supply chain management in public healthcare facilities in Kenya	Pearson Correlation	1.000	0.577**
	Sig. (2-tailed)		0.000
Digitized health information processing strategy	Pearson Correlation	0.577**	1.000
	Sig. (2-tailed)	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Results in Table 5 indicated that there was a positive and a significant association between digitized health information processing strategy and medicine supply chain management in public healthcare facilities in Kenya ( $r=0.577, p=0.000$ ). These findings agree with that of Muinga *et al.* (2021) who found that digital information processing is positively related to medicine supply chain management.

##### Regression Analysis

Table 6: Model Fitness

Variables	Values
R	0.577
R Square	0.333
Adjusted R Square	0.329
Std. Error of the Estimate	0.44133

The results presented in table 6 present the fitness of model use of the regression model in explaining the study phenomena. Digitized health information processing strategy was found to be satisfactory variable in explaining essential medicine supply chain management in public healthcare facilities in Kenya. This is supported by coefficient of determination also known as the R square of 33.3%. This means that digitized health information processing strategy explain 33.3% of the variations in the dependent variable which is essential medicine supply chain management in public healthcare facilities in Kenya.

Table 7: Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	13.82	1	13.82	70.959	0.000
Residual	27.657	143	0.195		
Total	41.478	144			

Table 7 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable, digitized health information processing strategy, is a good predictor of essential medicine supply chain management in public healthcare facilities in Kenya. This was supported by an *F* statistic of 70.959 and the reported *p* value (0.000) which was less than the conventional probability of 0.05significance level.

Regression of coefficient results is presented in Table 4.18.

Table 8: Regression of Coefficients

	B	Std. Error	t	Sig
(Constant)	1.987	0.172	11.542	0.000
Digitized health information processing strategy	0.406	0.048	8.424	0.000

Regression of coefficients showed that digitized health information processing strategy and essential medicine supply chain management in public healthcare facilities in Kenya were related ( $r=0.406, p=0.000$ ).

$$Y = 1.987 + 0.406X_2$$

From the regression equation, when digitized health information processing strategy changes by 0.406%, the essential medicine supply chain management in public healthcare facilities in Kenya changes by 1%, showing there is a positive relation between the two variables

#### 4.3. The Influence of ICT Infrastructure Support on Essential Medicine Supply Chain Management in Public Healthcare Facility in Kenya

##### Correlation Analysis

The results presented in table 4.22 present the fitness of model use of the regression model in explaining the study phenomena. ICT infrastructure support was found to be satisfactory variable in explaining essential medicine supply chain management in public healthcare facility in Kenya. This is supported by coefficient of determination also known as the R square of 12.6%. This means that ICT infrastructure support explain 12.6% of the variations in the dependent variable, which is essential medicine supply chain management in public healthcare facility in Kenya.

Table 9: Model Fitness

Variables	Values
R	0.354
R Square	0.126
Adjusted R Square	0.119
Std. Error of the Estimate	0.50537

Table 9 shows the findings on the analysis of the variance (ANOVA). The results reveal that the overall model was statistically significant. Further, the results imply that ICT infrastructure support, which is the independent variable, is a good predictor of essential medicine supply chain management in public healthcare facility in Kenya. This was supported by an *F* statistic of 20.405 and the reported *p* value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 10: Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	5.211	1	5.211	20.405	0.000
Residual	36.266	143	0.255		
Total	41.478	144			

Regression of coefficient results is presented in Table 11

Table 11: Regression of Coefficients

	B	Std. Error	T	Sig.
(Constant)	2.035	0.306	6.648	0.000
ICT infrastructure support	0.379	0.084	4.517	0.000

Regression of coefficients showed that ICT infrastructure support and essential medicine supply chain management in public healthcare facility in Kenya were related ( $r=0.379, p=0.000$ ). Gemma (2019) also found out a positive relationship between ICT and supply chain of medicine in Hospitals in Zambia.

$$Y = 2.035 + 0.379X_3$$

From the regression equation, when ICT infrastructure support changes by 0.379%, the essential medicine supply chain management in public healthcare facility in Kenya changes by 1%, showing there is a positive relation between the two variables. These results are consistent with those of Tshibanda (2022), who found a positive relationship between information technology and supply chain of pharmaceutical departments within public hospitals of Johannesburg.

#### 4.4. Influence of Workforce Skills on Essential Medicine Supply Chain Management

##### Correlation Analysis

Correlation analysis was conducted between workforce skills (independent variable) and essential medicine supply chain management in public healthcare facilities in Kenya (dependent variable). Results are presented in Table 4.27.

Table 12: Correlation Matrix

	Essential medicine supply chain management in public healthcare facilities in Kenya	Workforce Skills

Essential medicine supply chain management in public healthcare facilities in Kenya	Pearson Correlation	1.000	0.418**
	Sig. (2-tailed)		0.000
Workforce Skills	Pearson Correlation	0.418**	1.000
	Sig. (2-tailed)	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Results in Table 12 indicated that there was a positive and a significant association between workforce skills and essential medicine supply chain management in public healthcare facilities in Kenya ( $r=0.418, p=0.000$ ).

#### 4.1.1 Regression Analysis

The findings in table 4.28 present the fitness of model use of the regression model in elucidating the study phenomena. Workforce skills was found to be satisfactory variable in explaining essential medicine supply chain management in public healthcare facilities in Kenya. This is reinforced by coefficient of determination also known as the R square of 17.5%. This means that workforce skills explain 17.5% of the variations in the dependent variable which is essential medicine supply chain management in public healthcare facilities in Kenya.

Table 13: Model Fitness

Variables	Values
R	0.418
R Square	0.175
Adjusted R Square	0.169
Std. Error of the Estimate	0.491

Table 14: Analysis of Variance

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	7.243	1	7.243	30.045	0.000
Residual	34.234	143	0.241		
Total	41.478	144			

Table 4.29 shows the results on the analysis of the variance (ANOVA). The results show that the overall model was statistically significant. Further, the results imply that the independent variable, which is workforce skills, is a good predictor of the dependent variable, which is the essential medicine supply chain management in public healthcare facilities in Kenya. This was supported by an *F* statistic of 30.045 and the reported *p* value (0.000), which was less than the conventional probability of 0.05 significance level.

Regression of coefficient results is presented in Table 15.

Table 15: Regression of Coefficient results

	B	Std. Error	T	Sig
(Constant)	1.950	0.268	7.264	0.000
Workforce Skills	0.434	0.079	5.481	0.000

$$Y = 1.950 + 0.434X_4$$

From the regression equation, when workforce skills changes by 0.434% the essential medicine supply chain management in public healthcare facilities in Kenya changes by 1%, showing there is a positive relationship between the two variables

4.5. Policy Framework and Essential Medicine Supply Chain Management in Public Healthcare Facilities in Kenya

Correlation Analysis

Correlation analysis was conducted between policy framework (independent variable) and essential medicine supply chain management in public healthcare facilities in Kenya (dependent variable). Results are presented in Table 16.

Table 16: Correlation Matrix

		Essential medicine supply chain management in public healthcare facility in Kenya	Policy Framework
Essential medicine supply chain management in public healthcare facility in Kenya	Pearson Correlation	1.000	0.004**
	Sig. (2-tailed)		0.000
Policy Framework	Pearson Correlation	0.004**	1.000
	Sig. (2-tailed)	0.000	

\*\* Correlation is significant at the 0.01 level (2-tailed).

Results in Table 16 indicated that there was a positive and a significant association between policy framework and essential medicine supply chain management in public healthcare facilities in Kenya ( $r=0.004$ ,  $p=0.000$ ). These findings agree with that of Mopowo (2019), who found that a pharmaceutical product categorization framework taxonomy has a positive relationship with South African public healthcare pharmaceutical supply chain.

4.1.2 Regression Analysis

The results presented in table 4.33 present the fitness of model used of the regression model in explaining the study phenomena.

Table 17: Model Fitness

Variables	Values
R	0.278
R Square	0.077
Adjusted R Square	0.075
Std. Error of the Estimate	0.2932

Policy framework was found to be satisfactory variable in explaining essential medicine supply chain management in public healthcare facility in Kenya. This is supported by coefficient of determination also known as the R square of 7.7%. This means that policy framework explains 7.7% of the variations in the dependent variable, which is essential medicine supply chain management in public healthcare facility in Kenya.

Table 18: ANOVA

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	2.87	1	2.87	33.378	<b>0.000</b>
Residual	34.22	398	0.086		
Total	37.09	399			

Table 18 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results infer that the independent variable, which is policy framework, is a good predictor of essential medicine supply chain management in public healthcare facility in Kenya. This was supported by an F statistic of 33.378 and the reported *p* value (0.000) which was less than the conventional probability of 0.05 significance level.

Table 19: Regression Coefficients

	<b>B</b>	<b>Std. Error</b>	<b>t</b>	<b>Sig.</b>
(Constant)	-0.33	0.204	-1.618	0.107
Polic framework	0.101	0.017	5.777	<b>0.000</b>

Regression of coefficients showed that policy framework and essential medicine supply chain management in public healthcare facility in Kenya were positively and significantly related ( $r=0.101$ ,  $p=0.000$ ). These findings agree with that of Amadi and Tsui (2019), who found a positive relationship between the quality of essential medicines policy framework and the pharmaceutical supply chain in Nigeria.

$$Y = -0.33 + 0.101X_5$$

From the regression equation, when policy framework changes by 0.101%, the essential medicine supply chain management in public healthcare facility in Kenya changes by 1%, showing there is a positive relation between the two variables. These results are consistent with those of Amadi and Chou (2019), who found a positive relationship between the quality of essential medicines policy framework and the pharmaceutical supply chain in Nigeria.

### Correlation Analysis for Primary Data

The results below shows the correlation results for primary data.



Table 20: Correlation Analysis for Primary Data

		<b>Essential medicine supply chain management</b>	<b>Quality of digitized health information</b>	<b>Digitized health information processing strategy</b>	<b>ICT infrastructure support</b>	<b>Workforce skills</b>	<b>Policy framework</b>
Essential medicine supply chain management	Pearson Correlation	1					
	Sig. (2-tailed)						
Quality of digitized health information	Pearson Correlation	.196**	1				
	Sig. (2-tailed)	0.000					
Digitized health information processing strategy	Pearson Correlation	.118*	.731**	1			
	Sig. (2-tailed)	0.019	0				
ICT infrastructure support	Pearson Correlation	.729**	.572**	.418**	1		
	Sig. (2-tailed)	0.000	0	0			
Workforce skills	Pearson Correlation	.729**	.572**	.418**	1.000**	1	
	Sig. (2-tailed)	0.000	0	0	0		
Policy framework	Pearson Correlation	.278**	.730**	.578**	.751**	.751**	1
	Sig. (2-tailed)	0.000	0	0	0	0	

\*\* Correlation is significant at the 0.01 level (2-tailed).  
 \* Correlation is significant at the 0.05 level (2-tailed).

The results in table 20 revealed that quality of digitized health information and essential medicine supply chain management have a weak positive and significant relationship ( $r=0.196$ ,  $p=0.000$ ). These findings agree with that of Nsaghurwe (2021) who observes that the quality of digitized health information is positively related to medicine supply chain in hospital across Tanzania. The results also revealed that digitized health information processing strategy and essential medicine supply chain management have a weak positive and significant association ( $r=0.118$ ,  $p=0.019$ ).

These findings agree with that of Muinga *et al.* (2021) who found a positive relation between information processing and supply chain management in hospitals across Kenya. The results also revealed that ICT infrastructure support and essential medicine supply chain management have a strong positive and significant relationship ( $r=0.729$ ,  $p=0.000$ ). In addition, the results revealed that workforce skills and essential medicine supply chain management have a strong positive and significant relationship ( $r=0.729$ ,  $p=0.000$ ). These findings agree with that of Duque-Urbe *et al.* (2019), who found a positive relation between workforce skills and supply chain management.. Lastly, the results revealed that policy framework and essential medicine supply chain management have a weak positive and significant relationship ( $r=0.278$ ,  $p=0.000$ ). These findings agree with that of Amadi and Chou (2019), who found a positive relationship between the quality of essential medicines policy framework and the pharmaceutical supply chain in Nigeria

## 5. CONCLUSION

Based on the study findings, the study concludes that the quality of digitized health information, digitized health information processing strategy, ICT infrastructure support, workforce skills and policy framework have a positive and significant effect on essential medicine supply chain management in public healthcare facilities.

The study concludes that quality of digitized health information influence essential medicine supply chain management in public healthcare facilities in Kenya. This is deduced from the fact that quality of digitized health information has positive and significant influence on essential medicine supply chain management in public healthcare facilities in the counties of Kajiado, Makueni and Mombasa.

The study concludes that digitized health information processing strategy influences essential medicine supply chain management in public healthcare facilities in Kenya. This is because there is a significant relationship between digitized health information processing strategy factor and essential medicine supply chain management in public healthcare facility in the counties of Kajiado, Makueni and Mombasa.

The study also concludes that ICT infrastructure support for health information influences essential medicine supply chain management in public healthcare facilities in Kenya. This was deduced from the fact that there is a significant relationship between ICT infrastructure support for health information and essential medicine supply chain in public healthcare facility in the counties of Kajiado, Makueni and Mombasa.

The study further concludes that workforce skills influence essential medicine supply chain management in public healthcare facilities in Kenya. Form the analysis, there is a significant relationship between workforce skills and essential medicine supply chain management in public healthcare facility in the counties of Kajiado, Makueni and Mombasa.

Finally, the study concludes that policy framework influences essential medicine supply chain management in public healthcare facilities in Kenya. This is based on the fact that there is a significant relationship between policy framework and essential medicine supply chain management in public healthcare facility in the counties of Kajiado, Makueni and Mombasa

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# Socio-cultural Services for People with Disabilities

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## Abstract

This article highlights the impact of socio-cultural services on family members of people with disabilities through a study of academic discourse and informants' experiences. The phenomenon of disability affects not only the disabled person, but the whole of his or her environment, which faces stigma, prejudice, fear, pity, ignorance and reluctance to be around a disabled person. As a result, relatives are confronted with the multiple challenges of the realities of life. The study highlights the importance of accessibility and targeted personalization of socio-cultural services, as this has a direct impact on the quality of life of disabled people and their families.

**Keywords:** disabled person, caregivers, support, self-realisation, social service.

## 1. INTRODUCTION

Attitudes towards the participation of disabled people in public life are changing in today's world. However, it must be acknowledged that there is often a lack of attention paid to the family members of people with disabilities, who often give up their own personal lives and goals of self-realisation to devote their time and lives to caring for and helping the person with a disability. Lara and Carpio de los Pinos (2017) and Cambbell-Enns et al. (2023) point out that the focus on meeting the needs of people with disabilities often leads to imbalances in the family system, negative feelings, as well as financial and health problems for their relatives. The multiple experiences of those living with and caring for the disabled are still poorly analysed. Therefore, it is the family members or caregivers of the disabled person who are the focus of this article.

The aim of this article is to show the impact of socio-cultural services on the families of people with disabilities.  
Objectives:

1. To highlight in the scientific discourse the specificities of socio-cultural services for people with disabilities as an impact on the full self-realization of their family members;
2. To identify the challenges faced by the family members of people with disabilities.

This article presents an excerpt from a qualitative study conducted between 2018 and 2022. It reveals the experiences of family members of people with disabilities. The results testify the personal situations experienced by

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people dealing with the disability of a loved one. The article describes the experiences of relatives in a situation of disability and the experiences of receiving socio-cultural services from different institutions. The study is based on the stories and interviews of 16 people, including disabled people and those who interact with disabled people in various ways. The study is based on ethical and moral principles that guarantee personal confidentiality and anonymity. Therefore, the names of participants are changed and no personal data that could identify them is provided.

## 2. CHARACTERISTICS OF THE POPULATION OF PEOPLE WITH DISABILITIES

In Lithuania, for the period 2018-2023 (see Figure 1), the highest number of persons with disabilities is observed in the working age group. However, in the years analysed, there was an overall downward trend in the number of persons with disabilities, which decreased from 160340 to 142897. During the period under review, the smallest number of people diagnosed with a disability were children, but even in this group there was an upward trend from 14,992 to 16,957. There is also an upward trend in the retirement age group, which ranges from 55277 to 65044.

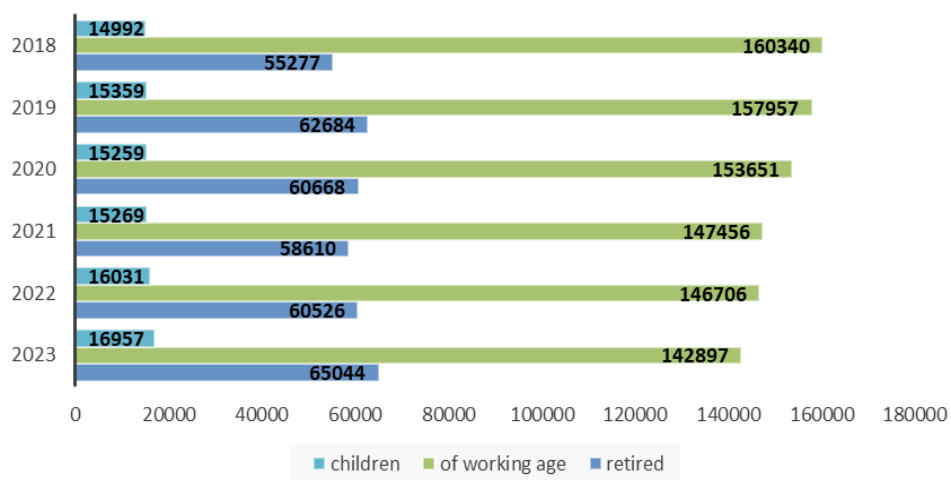


Fig. 1. Distribution of people with disabilities (Oficialios statistikos portalas, 2024)

In Lithuania, looking at the distribution by level, the number of people with a first diagnosis of a participation disability (see Figure 2) per 1,000 of the working age population over the period 2018-2022 suggests that the dynamics are not high. In 2020, the figures fell to 5.9 for men and 4.7 for women. Over the last three years, the numerical representation of both genders has been on an upward trend.

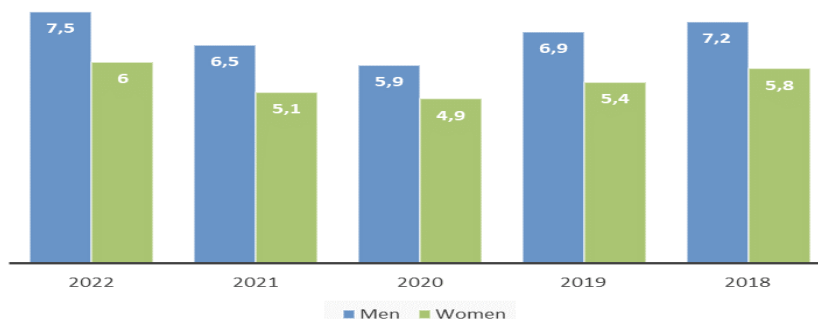


Fig. 2. Number of persons of working age with a reduced level of participation established for the first time per 1,000 working-age population (Oficialios statistikos portalas, 2024)

The number of children per 1000 at first diagnosis of disability in Lithuania (see Figure 3) fluctuates over the period 2018-2022. According to the Official Statistics Portal (2024), the number of boys in this group is significantly higher than the number of girls during the analysis period. In 2020, the number of children with disabilities of both genders is on a downward trend. However, there is an upward trend in the dynamics of the number of children of both genders from 2020 to 2022.

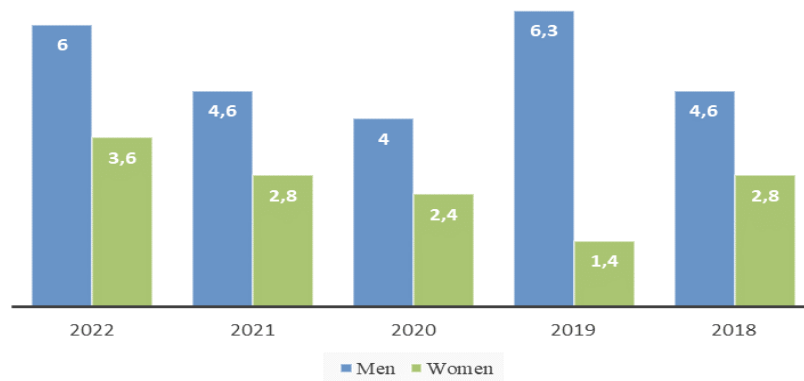


Fig. 3. Number of children recognized as disabled for the first time per 1000 children (Oficialios statistikos portalas, 2024)

In Lithuania, the highest number of people with disabilities in the 2018-2023 period was recorded in the working age group. Children are the smallest group of people with a disability, but there is an upward trend, which can also be seen in the group of people of retirement age.

### 3. EXPERIENCES OF FAMILY MEMBERS CARING FOR PEOPLE WITH DISABILITIES

UNICEF (2023) states that families with disabled children often face financial difficulties, leading to poverty and social exclusion.

Antwi (2023) and Zulfia (2020) suggest that children with individual needs experience long-term physical, mental, social and emotional limitations that also affect the physical, mental and social well-being of their families. The authors point out that mothers, who are often the primary caregivers, are particularly affected by raising a child with special needs. Support for mothers is therefore essential to ensure the quality of life of children with disabilities. In her research, Antwi (2023) highlighted that mothers of children with disabilities have the most difficult experience of receiving a diagnosis. They often experience physical and mental health problems, the frightening situation of being unfamiliar with care and supervision, and social isolation as they usually perform the roles of both carers and nurses. Furthermore, mothers of disabled children often have to learn to accept the stigma of disability and try to protect their children from the negative attitudes and stereotypes of the outside world.

Setijaningrum et al. (2019) found that families with a child with a disability who live further away from a large city are more likely to experience stress, shame and discrimination from the community. The results of the research show that families who actively seek solutions and take part in community activities strengthen their social resilience. Active participation is a part of the recovery from the stress of your child’s disability and the rebuilding of community ties.

Whitney’s (2022) study of mothers of children with developmental disabilities highlighted the problem: schools often fail to meet the learning needs of children with disabilities due to staff shortages, and teachers are challenged in ways that disadvantage children. In many cases, mothers feel the need to become advocates for their children, to defend their rights, but they lack support and are rarely listened to by those in authority. For mothers of children with disabilities, all of this adds to their multiple insecurities. In some cases, motherhood becomes an important factor in developing the independence of disabled children.

Lara et al. (2017) and Nicholson (2017) argue that in families with disabled children, much attention and resources are devoted to the person with disability, often overlooking the needs of other family members. These families face disability-related challenges: family system imbalances, emotional difficulties, educational weaknesses. However, there are also positive aspects, as the families learn to communicate with the professionals, to discover their strengths and to gain self-esteem. Parenting of children with disabilities has a positive impact on the family micro-climate and fosters mutual understanding, openness and tolerance. There is an emphasis on the fact

that such children can strengthen family ties and the personal development of parents. The cohesiveness of the family allows you to learn to experience the joy of small successes. Community support, education and health services are important as they have a significant impact on all those involved in caring for the disabled person. The provision of the right resources and targeted information is an important contribution not only to the well-being of the child with a disability, but also to the well-being of the whole family.

Campbell-Enns et al (2023) point out that people with disabilities living further away from major cities experience a lack of personalised services, resulting in multiple psychosocial problems for their families. The results of this study show that, in many cases, the members of small communities have a close and trusting social bond with each other. There are examples of non-professional members of the community who have kindly helped disabled people and their loved ones. However, there have also been instances where empathetic behaviour has been the subject of negative comments from others. One of the reasons for this is the stigma attached to disability. Social ties in the community also allow the disabled person to engage in activities that he or she likes and enjoys, according to his or her personal abilities and needs, and to feel comfortable, while the family members are in a sense liberated; they no longer have to take care of the disabled relative for a certain period of time and are free to devote this time to relaxation or other needs.

The changing social environment in the face of disability was noted by Sučylaitė (2015). A person with a disability cuts off the whole family from friends, acquaintances and even the wider community, and the psychosocial environment of the disabled person is often characterised by feelings of loneliness, exclusion and abandonment. Women who are carers for disabled relatives are more likely than men to suffer from psychosomatic disorders. The caregivers live in constant fear of not being able to properly care for the person they are caring for, as well as fear for the future: “<...> *fear of a meaningless life that will end in death; fear of the Alzheimer’s that his or her mother suffered from, and guilt for not having done everything possible for his or her mother* <...>” (p. 60). As a rule, all caregivers are sleep-deprived, which is the cause of fatigue and emotional exhaustion.

Baužienė (2023) argues that relatives who are caregivers for a severely disabled person accept everything as the reality of their lives; they have accepted that this is their normal life. Nevertheless, insecurity and uncertainty about the future persist and are a constant part of everyday life, as evidenced by the statements of the mother who participated in the study: “<...> *we are looking for someone to look after him, to help him, because he is eighteen* <...>, <....> *my husband works and I spend time with my son* <...>” (p. 79). If the disability is severe, both the disabled person and their family have to make an enormous effort to prevent the disability from dominating their lives. It also requires a coherent set of policies in the external environment.

In conclusion, high levels of stress, financial hardship and social exclusion or even (self-)isolation are often experienced by relatives of people with disabilities. To avoid this, and to reduce the burden on the disabled person’s family, it is important to provide targeted information and prompt access to socio-cultural services from the psychosocial sector, meeting the needs of all family members and contributing to the creation of shared well-being.

#### 4. EXPERIENCES AND CHALLENGES IN THE CASE OF DISABILITY

In order to analyse the perceptions of the family members of a disabled person regarding the relationship between disability and the external environment, a study was carried out (see Table 1). The informants’ statements show the fear and pity of those meeting a disabled person for the first time. This manifest itself in attitudes towards the disabled person and includes both the disabled person and his or her relatives. Disability more or less directly touches, affects and influences the whole of the disabled person’s immediate environment. Findings show that people often choose to ignore, not to see, not to talk about disability because they fear hurting loved ones and/or the disabled themselves.

Table 1. The relationship of a disabled person with his or her environment. Feelings and insights from those affected.

Informant*	Illustration	Interpretation
Valentina	<...> <i>I think disabled people are the same, but my first reaction is fear &lt;....&gt; but how hard it is for parents &lt;...&gt;.</i>	The findings confirm that family members of people with disabilities feel that others feel sorry for their disabled loved ones; communication is often difficult for those who know
Laura	<...> <i>I feel the pity of the people around me and, at the same time, an avoidance of communication &lt;...&gt; most of the time we are pitied &lt;...&gt;; &lt;...&gt; I am told that I am not allowed to see her (the disabled girl) because I don't know what to say in her presence &lt;...&gt; I do not want to disturb her because she is busy, so I understand that she avoids talking to my disabled daughter &lt;...&gt;.</i>	

Antanas	<...> fear, avoidance of talking about disability <...>; once you've talked more and got to know someone, you don't see the disability <...>.	him or her little, and there is a fear of not knowing how and what to say.
Genutė	<...> why her classmates don't want to be friends with her <...>.	

\* Informants' names are changed

The study, which analysed the accessibility and adequacy of the services provided to people with disabilities and their families (see Table 2), revealed that the problem is multi-faceted: children with disabilities receive more attention to meet their needs, while the needs and problems of adults with disabilities are often left to those who care for them. The latter, when caring for a disabled child or elderly person, are faced with the lack of a multifaceted service system. There are no coherent, long-term solutions; it is necessary to search for the right and appropriate services in individual institutions, first by discovering them and then by managing all the necessary documentation. This is extremely time-consuming and often requires legal knowledge as well as a strong will to argue that access to targeted and personalised services for disabled people and their families is a way of ensuring human rights and dignity.

Table 2. Access to targeted and personalised services for people with disabilities. Experiences of family members.

Informant*	Illustration	Interpretation
Ona	<...> lack of a right system, as the same documents have to be resubmitted to different offices <...>.	The findings show the need and importance of targeted and personalised services for people with disabilities and their families, but those seeking them face barriers that are time-consuming, physically and emotionally demanding and often reinforce feelings of inferiority.
Laura	<...> if it's wrong for her (the disabled daughter), it's also wrong for me <...>; <...> having a disability assistant also helps the family, as we can all have our own personal activities <...>; <...> but gathering all the information, liaising with different services and providing all the necessary documentation can take a long time to get the right help <...>.	
Martyna	<...> it takes a lot of time and patience to find out what kind of documents you need and to sort them out <...>.	
Valentina	<...> there is no special help for relatives; help is given to the disabled person and this help is perceived as being for relatives <...>; <...> children receive more care than adults <...>.	

\* Informants' names are changed

By analysing the experiences, observations and insights of those who live with the disabled person (see Table 3), it becomes clear that the reality of the disabled person and his or her family is often considered to be an exception. A disabled person's family member, usually a mother, is a dedicated caregiver who performs many necessary socio-cultural functions, making her an ideal special mother for those around her, but it is not an option to become one voluntarily, as it requires an extraordinary level of dedication and commitment. The results show that the phenomenon of disability has an impact not only on the individual but also on his or her entire environment. Family carers often feel that they are stigmatised or stigmatise themselves, which leads to feelings of insecurity, inferiority and inequality in their interactions with the socio-cultural environment.

It is important to note that caregivers of older relatives have anxieties about their own future. The visible disability of old age becomes a projection of one's possible future.

Table 3. The reality of a disabled person and their relatives. Experiences/insights from the surroundings.

Informant	Illustration	Interpretation
Rimantė	<...> She takes care of her child with love, even though he has a lot of disabilities, he doesn't speak, but his mother understands and feels what is happening to him; she does not withdraw from him <...>.	The results show that the family members of people with disabilities are extremely caring and devoted to them. Caring for a person with a disability can be said to be an essential part of the life of carers, in some ways even becoming a sense of being human. It evokes a dual feeling in those around you: respectful
Zuzana	<...> doesn't dare, or perhaps is afraid, to tell the nurse that she is being very rude to her disabled son <...>; <...> she sleeps very little, just a few hours, because she's always at her son's side being afraid not to get tired <...>.	
Valentina	<...> placed her mother in a nursing home, but still visits her and can't get used to the fact that she, her mother, is no longer the same; talks with fear about herself and what awaits her in old age <...>.	
Saulius	<...> I used to watch my mother when she left me with a neighbour; in her behaviour, in the way she spoke, it seemed to me that she was very uncomfortable, as if she felt guilty that I was a different child from the neighbour's <...>.	



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Genutė	<...> in parents' meetings it is often avoided to talk openly about a girl with a disability <...>; <...> parents do not go on school trips <...>.	admiration on the one hand, and pity on the other.
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\* Informants' names are changed

To sum up the analysis of the informants' experiences, it is possible to say that disability affects both the disabled person and his or her family, whose reality is to some extent marked by the stigma of disability. This is most evident in how disabled people and their loved ones interact with the outside world. It is noteworthy that people feel uncomfortable, anxious and pitiful when they rarely meet and know the disabled person and the relatives who care for him or her, most often the mother. As a result, they avoid starting a relationship and instead choose to ignore the disability, to overlook it and, by extension, the person. It is important to note that relatives caring for a person with a disability are, in a sense, living out their own existence through a multifaceted relationship of care, concern and love. This requires exceptional dedication, knowledge of many different fields and the inner strength to overcome the stigma of disability.

## 5. CONCLUSIONS

The analysis of the scientific discourse has revealed the need for socio-cultural services in cases of disability, both for the disabled person and for the family members caring for them. This includes physical services to help care for the disabled person and ensure that their individual needs are met, as well as multidimensional support services for family members, focusing on strengthening their physiological resources and improving their emotional state. Sociocultural services often directly affect the quality of life of disabled people and their immediate environment. Meeting the needs of the person with a disability frees family members from caring for him or her and enables them to take care of their own personal needs and to achieve personal fulfilment.

In the case of disability, research has shown that this phenomenon poses multiple challenges for relatives. First of all, they have to recognize and accept the disability and learn to live with it, but not to identify with it, so that the disability does not become the dominant feature of their lives. They need to find the inner strength to challenge prejudices and stigmatizing attitudes towards the phenomenon of disability and to demonstrate the undeniable value of the human person, especially in the reality of disability experiences. The socio-cultural services, their accessibility and their targeted personalization are one of the key aspects that determine the ability of a person with a disability and his or her caregivers to face challenges and to build personal well-being.

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# Vegetables for Health and Disease Prevention

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## Abstract

Despite the World Health Organization (WHO) advocating a healthy and balanced diet for consumers for many years, inadequate fruit and vegetable (FV) consumption remains a substantial issue with economic, social, environmental, and nutritional implications. The European Union considers the solution to the problem of low consumption of fruit and vegetables as one of its priorities, and supports the development of the sustainable food consumption, including fruit and vegetables, as evidenced by the provisions of the European Green Deal, objectives of the Farm to Fork strategy the State of Food Security and Nutrition in the World 2022 and 2021 report, and including the fruit and vegetable sector in Common Agriculture Policy (CAP) Strategic Plans in EU countries. The Food and Agriculture Organization (FAO) of the United Nations says that up to 3.9 million lives could be saved each year if the consumption of fruit and vegetables were sufficient (EC, 2020; FAO, 2021; FAO, IFAD, UNICEF, WFP, WHO, 2023).

Vegetables are an important part of a balanced diet; they provide not only vital nutrients, but also have many healing properties. Vegetables have flavor, aroma and color due to polyphenols - phytochemicals that have health benefits such as reducing the risk of chronic diseases, activating antioxidant enzymes, inhibiting chronic inflammation and the progression of cancer.

The aim of this article is to provide a comprehensive overview of the various therapeutic properties found in vegetables, to explore their potential for health promotion and disease prevention, and to highlight the importance of including them in the daily diet. After a comprehensive analysis of the existing literature, this study aims to shed light on the role of vegetables in preventive and therapeutic nutrition (Pem et al., 2015).

**Keywords:** consumption of vegetables, medicinal properties, antibacterial properties, antioxidant effects.

## 1. INTRODUCTION

The WHO (2019) recommends maintaining a healthy diet from an early age, which includes eating a significant amount of fruit and vegetables. The daily intake of fruit and vegetables among adults should be at least 400 g (about 150 kg per person per year). There is also a second, more stringent and less frequently cited WHO recommendation that takes into account the age of consumers. It is recommended that the consumption of fruit and vegetables should be at a level of 600 g per day for adults and adolescents (aged  $\geq 15$  years), 480 g per day for children aged 5–14 years, and 330 g per day for children aged 0–4 years. Consumption of fruits and vegetables has gained new impetus due to consumer awareness of the nutritional and health benefits of these products during the pandemic.

Despite the compelling evidence of the importance of fruits and vegetables in human nutrition described above, we still consume them too sparingly (Gorynska-Goldmann et al., 2023). Vegetable consumption has long been recognised as the basis of a healthy diet. They are a rich source of essential nutrients, including vitamins, minerals, dietary fibre and antioxidants. The recommended minimum number of servings is five per day: two fruits and three vegetables (excluding potatoes, sweet potatoes, cassava, and other starchy roots). Due to the fact that individual

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fruits and vegetables do not present a uniform nutritional value, care should be taken to ensure their diversity in a daily consumption (Gorynska-Goldmann et al., 2023). It is known that nutrients are vital for a wide range of physiological functions such as maintaining immunity, bone health and reducing oxidative stress.

Scientific studies have shown that a daily intake of foods rich in polyphenols can prevent and reduce the incidence of chronic diseases, such as cardiovascular disease, because foods rich in polyphenols reduce cholesterol levels. Polyphenols also protect the body and slow down the ageing process. Foods rich in polyphenols can also be used for gastrointestinal diseases and joint problems. They are also useful for people who have mobility problems, improving mobility. The therapeutic properties of vegetables, ranging from their antioxidant and anti-inflammatory effects to their anti-cancer compounds, have been the subject of extensive research (Grosso, 2018).

The aim of the study is to investigate the various medicinal properties of vegetables, their use for the improvement of human health and the possible prevention of diseases.

Materials and methods. A review of various online sources was carried out to analyse the therapeutic properties of vegetables, their applications examples of health promotion and disease prevention. Information was searched in English, using keywords and various combinations of keywords. The review included 24 online sources.

An online survey (manoapklaua.lt) was also carried out to find out the level of awareness of the respondents about the health benefits of vegetables and the habits related to their consumption.

## 2. LITERATURE REVIEW

Studies have confirmed that low consumption of fruit, vegetables and fruit and vegetables combined, is associated with increased risk of cardiovascular disease, type 2 diabetes, cancer, and all-cause mortality (Steaid et al., 2020). In addition to positive health impacts, a shift towards healthier plant-based diets will most likely have important environmental impacts by reducing the environmental footprint (Mason-D'Croz D et al., 2019). Thus, increasing fruit and vegetable consumption is an important component of a shift towards both healthier and more sustainable diets. A healthy and balanced diet is an important factor contributing to overall health and wellness (Dedele et al., 2021).

Numerous studies have shown that regular consumption of vegetables is associated with a lower risk of chronic diseases, including heart disease, stroke, diabetes and certain types of cancer. The high fibre content of vegetables promotes digestive health and helps with weight control. In addition, vegetables have antioxidant and anti-inflammatory properties due to the presence of phytochemicals such as flavonoids and polyphenols (Stanaway et al., 2022). Vegetables such as carrots and sweet potatoes, which are rich in beta-carotene that supports healthy vision and skin, have an impact on eye and skin health and vision correction. The beta-carotene in carrots can be used to make natural dyes for contact lenses or optical devices to help people with color vision problems. Lutein and zeaxanthin in kale and spinach are essential for maintaining vision. Supplements containing these compounds can also be used to reduce the risk of age-related macular degeneration (Abdel-Aal et al., 2013).

Some vegetables have antibacterial properties, such as garlic, whose active compound allicin has been studied for its effect on bacterial infections. The application of these properties may lead to the development of natural antibacterial agents or complementary therapies. Many vegetables have antioxidant effects, including vitamin C, vitamin E and phytochemicals such as carotenoids and flavonoids. These compounds help to neutralise harmful free radicals, reduce oxidative stress and the risk of chronic diseases such as cancer and cardiovascular disorders, such as tomatoes, which contain lycopene, which may protect against certain cancers and heart disease.

Nanoparticles of plant origin, such as those from tomato extracts, can be used as drug carriers for targeted drug delivery in cancer therapies, increasing the efficacy of treatment and reducing side effects (Filho et al., 2023).

Melons contain biologically active compounds that can help regulate blood sugar levels. Research into these compounds could help develop natural treatments or supplements for diabetes.

Celery and carrots are important for oral health and, due to their natural fibre content, can help stimulate saliva production, reducing the risk of tooth decay. Extracts of these vegetables can be used in oral hygiene products.

Vegetable extracts, rich in vitamins, minerals and other bioactive compounds, can be used in dietary supplements to help meet specific health needs, such as immune system, bone health or antioxidant protection.

The compounds in beetroot are important for detoxification and support the liver detoxification processes. Research on these compounds may lead to the development of natural detoxification supplements or interventions for individuals with liver disease (Al-Harbi et al., 2021).

Sweet potatoes can be used for bone regeneration and fracture healing and are rich in vitamin A, which is very important for bones. Garlic and horseradish have traditionally been used to relieve respiratory symptoms and contain compounds that can be used to create natural remedies for colds and sinusitis.

For menstrual pain relief, ginger and turmeric are known for their anti-inflammatory properties and can be used in natural remedies to relieve menstrual cramps and discomfort. Turmeric and its active compound curcumin are important in the treatment of inflammatory bowel diseases such as Crohn's disease and ulcerative colitis.

Vegetables rich in folic acid, such as spinach and broccoli, are important for mood and mental health and play an important role in the regulation of neurotransmitters (Khalid et al., 2022).

Some vegetables, especially cruciferous vegetables, have anti-inflammatory properties and contain anti-inflammatory compounds such as sulforaphane and quercetin. These substances reduce chronic inflammation, which is associated with various diseases including arthritis and diabetes. Broccoli, for example, is rich in sulforaphane, which has a strong anti-inflammatory effect and helps reduce the risk of chronic diseases.

For pain management, capsaicin patches derived from chilli peppers can be administered as topical treatments for chronic pain, including neuropathic pain and osteoarthritis.

Vegetables such as spinach and kale are recommended for cardiovascular disease, as they are high in fibre and potassium, and stimulate cardiovascular activity by lowering blood pressure and cholesterol levels. Beetroot juice can also be used as a natural dietary remedy for heart disease (Jovanovski et al., 2015).

Cucumbers are used for skin care due to their soothing and moisturising properties. Cucumber extracts can be added to moisturising creams and masks to improve skin hydration and reduce inflammation. Tomatoes and carrots contain compounds such as lycopene and beta-carotene, which have protective properties against UV rays. These compounds can be used in the formulation of natural sunscreens to reduce the risk of skin damage from UV radiation. Spinach can be used in the cosmetic industry to produce anti-ageing products. These antioxidants help to protect the skin against oxidative stress and premature ageing.

Cancer prevention can be achieved by using cruciferous vegetables such as broccoli, which contain sulforaphane, a compound that can fight cancer. Research is currently underway to investigate the use of sulforaphane in the prevention and treatment of oral cancer. Cabbage also contains glucosinolates, which can help the body detoxify carcinogens and inhibit the growth of cancer cells (Connolly et al., 2021).

The digestive system is influenced by fibre-rich vegetables such as celery and radishes, which aid digestion, reduce constipation and maintain a healthy intestinal microbiome. Broccoli and Brussels sprouts can also help the digestive system by promoting regular bowel movements and preventing constipation. Fibre supplements derived from these vegetables can be used to treat gastrointestinal diseases. Combining certain vegetable extracts with medicinal products can lead to the development of nutraceuticals, i.e. products with both nutritional and therapeutic benefits. They can be used for a variety of health purposes such as joint health, weight management and mental well-being (Puri et al., 2022).

Some EU countries advise on eating potatoes daily (Bulgaria, Denmark, Germany, Estonia, Latvia, Ireland, Cyprus, Portugal, but others prefer to limit the intake (Greece, Malta, Romania— $\leq 3$  servings, Italy—1–2 servings a week, Hungary—maximum every other day). We do believe that potatoes could pose some risk due to the high glycemic index, especially for diabetic patients and particularly fried, roasted with oil or fat, consumed with additional sauces of saturated fat and salt (Halton et al., 2006). However, potatoes cooked using healthy cooking methods over frying or roasting with oil or fat, should be consumed instead of refined pasta or rice. One portion per day of steamed or baked with skin potatoes without the addition of excess saturated fat, sugar or sodium was proven to result in better diet quality, K and fiber intake, without raising cardiometabolic risk, when consumed instead of refined grains. Chips, french fries or other processed potato products should be limited (Johnston et al., 2020).

Although the health benefits of fruits and vegetables are usually studied together in most studies, it is recommended that the benefits of these two food groups are assessed separately. Fruits and vegetables share health benefits due to common phytochemicals (e.g., phenolics, flavonoids, carotenoids), vitamins (e.g., vitamin C, folate, pro-vitamin A), minerals (e.g., potassium, calcium, magnesium) and fibers, but bioactive compounds differ widely in composition and ratio between fruits and vegetables. Moreover, fruits have usually a higher concentration of sugars than vegetables, while vegetables are more likely to have a higher concentration of fibers and proteins (Kalmpourtzidou et al., 2020).

Dietary risks were responsible for 7.94 million deaths and 188 million disability-adjusted life years globally among adults in 2019. This aggregate risk factor was for all dietary risks: a diet low in whole grains, fruit, fiber, legumes, nuts and seeds, omega-3 fatty acids, polyunsaturated fatty acids, vegetables, milk, and calcium; and also diet high in sodium, trans fats, red or processed meat, sugar-sweetened beverages (Dedele et al., 2021).

The prevalence of overweight among adolescents has significantly increased since 2006. Dietary habits improved in all three Baltic countries, as consumption of vegetables increased, and soft drink consumption decreased during this time period. Although Baltic adolescents’ daily vegetable consumption has increased over the last decade, it is still lower than the HBSC average. Similarly to physical activity, daily consumption of vegetables and soft drinks has been used as an indicator of a healthy lifestyle. Vegetable consumption among adolescents is linked to many positive health outcomes. The lowest levels of fruit and vegetable consumption are found in Northern Europe and the Baltic countries (Oja et al., 2020).

Preference for healthy and safe food products depends on individual orientation and this is expected to increase public awareness of health and the desire to consume organic food products. Consumers of organic products, including organic vegetables, tend to be more selective in determining which products to buy. Consumer awareness is still not fully evenly distributed about organic vegetable products. The problem is the price of organic vegetables, which is considered high compared to non-organic vegetables. Information regarding organic vegetable products still needs to be improved. This is expected to increase people’s preference for organic vegetable products. Study conducted by Stanton et al. (2018) stated that people prefer non-organic vegetables compared to organic vegetables because there is still a lack of public awareness about the benefits of organic vegetables for health, so it is not an important thing in purchasing decisions for organic vegetable products (Adawiyah et al., 2021).

### 3. STUDY RESULTS

In September 2023, an online survey was carried out on manoapklausu.lt with 8 questions. 135 respondents took part in the survey, with an average age of 35.1 years, of which 113 were women and 22 men. Figure 1 presents the answers to the question on the family status.

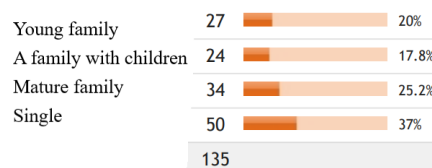


Fig. 1. Family status of the respondents

The responses show that the majority of respondents have families, while 37% were single people. In response to the question on vegetable production, 67.4% of the respondents answered that they grow their own vegetables and 32.6% do not.

When asked about the frequency of eating vegetables, the responses were that vegetables are eaten 2-3 times, 4-5 times a week, and some eat vegetables 1 or 2-3 times a day, with a distribution of 23-26.7 %.

The following answers were received to the question why vegetables are eaten (see Figure 2):

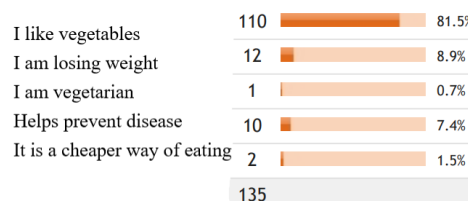


Fig. 2. Respondents' need to eat vegetables.

The answers show that 81% of respondents eat vegetables because they like them, 9% to lose weight and 7% to prevent disease.

When asked what vegetables they like to eat, the answers were mixed; 92% like to eat fresh vegetables and 8% like to eat fresh vegetables sometimes; 63% like to eat cooked vegetables sometimes; 27% often and 4-5% do not like or do not know if they like cooked vegetables. The responses on the range of vegetables they like were divided as follows (see Table 1):

Table 1. A range of favourite vegetables

Assortment	Often	Sometimes	I don't like
Potatoes	38	55	7
Beetroot	30	57	12
Carrots	53	46	0
Cabbage	33	59	8
Lettuce	64	35	0
Spinach	24	48	27
Spinach	58	31	11
Garlic	44	44	12
Pumpkin	14	59	26
Cucumbers	82	18	0
Courgettes	23	53	23
Tomatoes	77	23	0
Peppers	48	41	10
Radishes	18	65	17
Dill	50	41	8
Parsley	31	47	21
Avocado	37	41	22

The most popular vegetables were cucumbers 82%, tomatoes 77%, lettuce 64%, onions 58%, carrots 53%, dill 50%, peppers 48% and garlic 44%, according to the answers given. The list of occasional favourite vegetables included radish 65%, pumpkin and cabbage 59%, beetroot 57%, potatoes 55%, courgettes 53%, spinach 48%, parsley 47%, garlic and carrots 44-46% each. As can be seen, there are no respondents who do not like cucumbers, tomatoes, lettuce or carrots.

The following answers were obtained to the question posed on the therapeutic purposes for which vegetables can be used (see Figure 3):

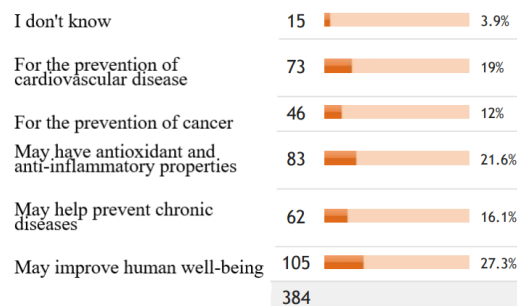


Fig. 3. Respondents' knowledge about the use of vegetables for therapeutic purposes.

The responses show that 27% of respondents know that vegetables can improve human well-being, 22% think that vegetables can have antioxidant and anti-inflammatory properties, 19% think that vegetables are used to prevent cardiovascular disease, 16% think that vegetables can help prevent chronic diseases, 12% think that vegetables are used to prevent cancer, and 4% do not know what therapeutic purposes vegetables can have.

When the question whether vegetables can be used as a preventive measure to treat diseases was clarified, the answers as follows: 68.1% said *yes*, 24.4% *did not know* and 7.4% said *no*.

When respondents were asked how they learned about the healing properties of vegetables, a multiple-choice question was asked, resulting in the following answers (see Figure 4):

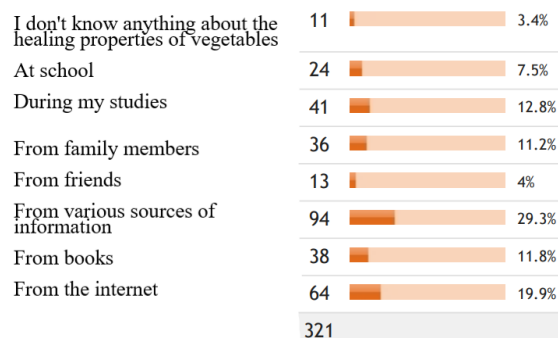


Fig. 4. Information received from respondents about the sources on the therapeutic properties of vegetables.

As can be seen from Figure 4, 94% of the respondents mostly learned about the healing properties of vegetables from various sources of information, 64% from the internet, 41% during their studies, 38-36% from books or family, 24% at school, 13% from friends, but 11% of the respondents did not know anything about the healing properties of vegetables.

In summary, while there are some respondents who do not know what therapeutic purposes vegetables can be used for, the majority of respondents like vegetables, include them in their diet and are interested in the possibilities of using them for health promotion and prevention of diseases.

#### 4. CONCLUSIONS

Each vegetable has its own unique nutritional composition and bioactive compounds, ranging from antioxidants to anti-inflammatory substances, which can have a significant impact on human health. Incorporating a variety of vegetables into your daily diet vegetables rich in fibre, vitamins, minerals and antioxidants, which are important for the body's function and immune system, can help prevent chronic diseases, reduce the risk of cancer and improve well-being. Vegetables have great potential for improving health and preventing disease. However, it is important to vary their consumption in order to get the full range of nutrients and to take into account individual health conditions and possible contraindications. Integrating vegetables into a healthy and balanced diet can help to promote healthy lifestyles and reduce the risk of disease.

While there are some respondents with the low awareness level about therapeutic purposes vegetables can be used for, the majority of informants like vegetables, include them in their diet and are interested in the possibilities of using them for health promotion and prevention of diseases.

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# Enriching Vocabulary through Teaching Idioms in Context

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## Abstract

Idioms are an important part of English learning. They help learners communicate better and in a more effective way. The best way to teach idioms is by presenting them in an authentic and meaningful situations. The aim of this study is to answer the following research questions: Which are some of activities teachers use in teaching idioms; what are some of the challenges when teaching idioms in context? The subjects of this study were 5 teachers working in high schools. This research applied qualitative data, which involved these teachers in an informal group discussion. The findings showed that despite some difficulties teachers face in the learning process, teaching idioms through videos, dialogues or stories help enrich the vocabulary. The results call for teachers to create learning environment that focus on the use of different activities to improve idioms lexicon.

**Keywords:** idioms, context, vocabulary

## 1. INTRODUCTION

One of the way to boost our conversational skill is by knowing and understanding the idioms. This means that a person is able to understand the cultural meaning and context behind an idiom used. Knowing how to use an idiom make the writing more attractive and keep the readers engaged. So, in other words, idioms are not only used as a daily routine, but also in performing writings. Idioms have been problematic for some type of English learners. An idiom is “the language or dialect of a group of people or a country” (Advanced Learner’s Dictionary, 1995). Thus, learners could not be interpreted within contexts. Clark and Lucy (1995, as cited in Al-Ramahi & Smadi, 2015) found out that subjects first understood the requests at a literal level and then, only if this interpretation is contextually inappropriate, make their non-literal interpretations. The study, in fact reveals the significance of context in relating the intended meaning of language. In this respect, video games can make available different contexts where idioms can be easily tested and interpreted within different social contexts. Different scholars have given different interpretation of what an idiom is. For example, Glucksberg (2001, p.68) states that “what sets idioms apart from most other fixed expressions is their ‘non-logical’ nature, that is, the absence of any discernable relation between their linguistic meanings and their idiomatic meanings”. Glucksberg (2001) gives the expression kick the bucket as an example where “one could not infer the meaning to die from the literal meaning” (p.73) but “the idiom’s literal meaning can does constrain its use and comprehension” (p.73). Abel (2003, as cited in Zarei, 2020) also views idioms as expressions that are almost fixed in such a way that the figurative meaning of the whole idiom is usually not always obvious on the basis of the meaning of the lexical components. According to Zorana (2015, p.2) idioms remain a source of perplexity for second language learners. Tabatabbei and Reisi Gahroei (2011) study the impact of applying

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movie clips including idioms for the purpose of learning idioms. In their study, 30 gifted high school students received the treatment as teaching idioms through movie clips. They found that the experimental group outperformed the control one. Thus, they suggested movie clips in L2 idiom learning and teaching.

### *1.2 Purpose and goal*

The purpose of this study is to answer the following research questions:

1. What are some of the activities teachers use in teaching idioms?
2. What are some of the challenges when teaching idioms in context?

### *1.3 Teaching idioms through stories, dialogues and videos*

Teaching idioms in context may help students comprehend idioms correctly. Liontas (2003, as cited in Rizq, 2015) stated that the context can effectively facilitate understanding as well as learning and teaching of idioms and idiomatic expressions (p.17). Teachers use role-play to enhance teaching strategies. Role-plays also play a crucial role in motivating the students and also help them learn in real-life situations. Students put themselves either into somebody else's shoes, or put themselves into imaginary situations. Role-plays take the form of conversation, debates etc. Nunan (2003) stressed that role-plays are also excellent activities for learners' speaking in the relatively safe environment of the classroom before they must do so in a real environment. That is, oral activities help students practice different dialogues before entering the real world. It is easier for the students to remember idioms better and also enjoy learning them. On the other hand, Asl (2013) used the schema theory. According to him, participants who learnt the meanings of unfamiliar words through context performed better in remembering the meanings of those words (p.8).

Another study concerning the use of materials in teaching language was conducted by Irujo (1986). She concluded that students should be given ample opportunity to practice using idioms in naturalistic situations in order to give them confidence that they can use them correctly (p.24). Teaching idioms in context may help students comprehend idioms correctly. Liontas (2003, as cited in Rizq, 2015) stated that the context can effectively facilitate understanding as well as learning and teaching of idioms and idiomatic expressions (p.17).

### *1.4 The importance of idioms*

Knowing idioms plays a vital role in improving the conversational skills. It shows native speakers that you understand the cultural meaning of an idiom and also the context that it is used. In fact, native speakers use most of the time idioms because they are more familiar with them and also know the context they should be used. Despite the importance of learning idioms we cannot leave without mentioning the ideas of the challenges that teaching idioms has. They are confusing and unpredictable. For example, take the idioms "talk is cheap". If it is taken literally, meaning speaking is not expensive, it might be confusing. The meaning as an idioms should be "you want to see someone take concrete steps to achieve something rather than just talking about it". So, in other words students have to know better the meaning of the idioms in order to understand and communicate better. Roberto de Caro and Edith (2009) has conducted a study at Santo Tomas University. Students had to take their first English level since their first semester. They took 3 hours per week and 1 tutoring hours. Most of the students had to face implications such as time consuming, sources such as English books etc. Some other who had the chance to study abroad and then come back to Columbia said that there was very important to learn idioms. They faced difficulties when they came back in America because they did not understand the meaning of idioms that native speakers used. So, we come to the conclusion that a strong knowledge of idioms will help students be better speakers.

Nowadays people have many opportunities to take part in various exchange programs or be part of a training in one the English-speaking countries. So they are going to face difficulties in understanding the natives. Therefore, learning idioms is a very crucial factor in acquiring language.

Each country has its own culture. All the differences in culture are manifested through language. Language is that element that conveys messages and creates ties. The same happens with the idiomatic expressions. The person who receives a certain idiomatic expression cannot understand what is conveyed if he does not know the culture of the interlocutor. Here the example is given by Chomsky (1980) who notes that "John kicked the bucket" has two meanings; the first is that "John hit the bucket with his foot" secondly, "John died". Thus, we come to the conclusion that cultural diversities bring cultural misunderstanding and confusion.

Another survey was designed by Jiang (2000), including native Chinese speakers and native English speakers. There were given 10 words as prompts related to peoples' lives. The subjects were asked to write down six additional

words that they associated with each of the ten words. The results showed that the relationship between language and culture is illustrated by word associations. The items filled by Chinese speakers conveyed Chinese culture and items filled by English speakers conveyed English culture. To conclude, there is always an interactive influence between language and culture: the two cannot exist without each other.

The way or strategies that students use in understanding the idiomatic expressions is very important. One of the models is given by Babrow and Bell (1973) stating that when learners encounter an idiom, they first interpret it literally. Then, if the literal meaning does not fit with the context in which the expression is being used, they search for the idiom in their mental lexicon and then choose its figurative meaning. Another model is given by Swinney and Culter (1979) where idioms are treated as long words that are retrieved from the mental lexicon along with all other words. Despite the strategies or models that learners use to learn idiomatic expressions, they still face challenges in acquiring, recognizing and interpreting them.

## 2. METHODOLOGY

### 2.1 Research design

The study uses a qualitative data which aims at finding out answers to how and why. The interview uses open-ended questions. It aimed at finding out the teacher’s perceptions toward the activities they use when teaching idioms and also some challenges they face during their teaching.

### 2.2 Participants and the instruments

The participants of this study were 7 English teachers working in high school. The research conducted a focus group interview with the teachers being aware that the reason for this interview was because of a conduction research. All the participants were provided with the information about what the study is about. All of them were coded as T1, T2 until T5.

### 2.3 Data collection procedure

All the data were collected during the study period and it used primary data approach through a direct interaction with the participants. The technique used was that of a focus group. The language used was English one and all the teachers expressed their attitude towards the use of idioms in context. All this process took half an hour in the National Library of Tirana, in February 2024.

### 2.4 Data analysis procedure

This research used a thematic data analyses with the inclusion of codes and themes. All the teachers answered 3 questions in total, including the research questions as well. The researcher uses also a deductive approach including some previous theory and knowledge. All the process included a six-step process such as: familiarization, coding, generating themes, reviewing themes, naming them and then writing them up.

### 2.5 Results

The researcher prepared 3 open-ended questions to collect data regarding the teaching of idioms in context. According to the focus group interview, there are presented themes and codes.

Q1. What are some of the challenges when teaching idioms in context?

Table 1. Themes and codes of 1<sup>st</sup> question

<b>Participants</b>	<b>Word encoding</b>	<b>Codes</b>	<b>Themes</b>
<b>T1</b>	<i>Some students have rarely used idioms in class. They have lack of experience.</i>	rarely used lack of experience	Unfamiliarity with idioms
<b>T2</b>	<i>We need to consider the level of students when teaching idioms since a class consists at least 33 students.</i>	level 33 students	Regarding students’ level

<b>T3</b>	<i>It takes time to find the appropriate material regarding students' need.</i>	time students' interest	Time limit for preparation
<b>T4</b>	<i>It is sometimes difficult to teach idioms because depending much on the strategy students use to learn them faster.</i>	difficult strategy	Find the best strategy learning idioms.
<b>T5</b>	<i>Hard to have a matching between students' need and the material you bring to them.</i>	students' need material	Choosing the right material of the same student's level.

Q2. Which are some of activities teachers use in teaching idioms?

Table 2. Themes and codes of 1<sup>st</sup> question

<b>Participants</b>	<b>Word encoding</b>	<b>Codes</b>	<b>Themes</b>
<b>T1</b>	<i>I used mostly dialogues to teach idioms. This activity help students also to improve their speaking skills.</i>	dialogues speaking skills	Using dialogues when teaching idioms.
<b>T2</b>	<i>I prefers sing games and videos as well. Games help students to feel as they are competitors and see who wins the first.</i>	games videos competitors race	Learn idioms through games and videos
<b>T3</b>	<i>Stories are wonderful when it comes to learning idioms. My students read stories and highlight idioms and then look up their meaning in the dictionary.</i>	stories meaning dictionary	Using dictionaries to find out meaning of an idiom in stories.
<b>T4</b>	<i>I prefer to have a list of all idioms that we come across during the learning process. This list then can be used by students in writing or speaking.</i>	list of idioms writing speaking	Gathering idioms and using them in speaking or writing.
<b>T5</b>	<i>I use videos as a form to urge speaking among students. My students watch videos containing songs and then discuss idioms used in it.</i>	video urge speaking	Videos help students enhance speaking abilities.

Q3. What are some advantages when learning idioms?

Table 3. Themes and codes of 3<sup>rd</sup> question

Participants	Word encoding	Codes	Themes
T1	<i>One of the benefits is that it would give students the competence to communicate better and how to do so.</i>	competence communicate	Help students communicate better
T2	<i>If they do not understand the idiom they are unable to understand what is being spoken.</i>	understand idioms spoken	Speaking is enhanced through idioms understanding
T3	<i>Students speak naturally and without mistakes.</i>	speak naturally	Using idioms to speak naturally.
T4	<i>Idioms develop a thinking approach since they are the backbone of English</i>	thinking approach	Idioms help to think more and make sense of them.
T5	<i>Learning idioms gives an opportunity to absorb content from new sources .Students fell stronger and more competent.</i>	opportunity content competent	Knowing idioms means being competent in language

### 3. DISCUSSION

This study aimed at answering three questions. The results of the first research question showed that there were some challenges that teachers face when teaching idioms, including the lack of experience students have when coming across idioms, the strategy to use when teaching idioms or the time limit for the materials’ preparation. Also, here that data suggests that the teacher should find the adequate material regarding student’s need and level. Additionally, the second research question evidenced that videos and games were some methods teachers use while teaching idioms. Another point to be mentioned here is that teachers try to gather and list as many idioms as possible in order to be used in the class later. Moreover, there were some advantages during the process of learning idioms. The results indicate that using idioms help students communicate better, improve their speaking process and be competent in class as well.

The results of the study are consistent with Lontas (2003), stating that the context can effectively facilitate understanding as well as learning and teaching of idioms and idiomatic expressions. Furthermore, the study support Nunan (2003) stressing that role-plays are also excellent activities for learners' speaking in the relatively safe environment of the classroom before they must do so in a real environment. The data contribute a clearer understanding of the fact that teachers use different activities to teach idioms and that role-play, videos and stories are some three ways of making the understanding easier.

All the results of the study have provided an insight into the importance of the method chosen by the teachers to make lesson easier. However, the generalizability of these results is limited by the characteristics of the study participants which includes only 5 teachers. Further studies should be taken into consideration to establish a better understanding of teaching idioms in context and also the challenges the teachers face. It could also contribute to finding out other ways how to teach idioms in context.

### 4. CONCLUSIONS

This study paved the way for using some forms of teaching idioms in context. Choosing the right materials for students’ means having positive feedback in the end. The evidence is clear: Despite the challenges that teachers face when teaching idioms, there are some advantaged to be considered at the beginning of the learning process. The advantages include: students feel more competent when communicating, improve their speaking skills etc. These

finding should be interpreted with caution, given the small sample size. However they encourage future studies for the methods of teaching idioms in context as a way to enrich lexicon.

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**Appendix A. Lesson plan**

*A1. Teaching idioms through songs (the video includes the song)*

**Objectives:**

- identify and explain the meaning of common idioms
- use idioms in context

**Time:** One class period

**Steps:**

1. Start by telling students that they're going to hear a song that contains strange types of phrases. Play the song. While students are listening, ask them to think about what these strange phrases have in common.
2. After the song, display the following sentences on the board. Underline the idioms.
  - The situation is getting out of hand.
  - Let me cut to the chase.
  - We hit the hay.
  - They bit off more than they could chew.
3. Ask students to write down or discuss in small groups what they think these sentences mean. Before the students start, explain that there is something special about the underlined parts of the sentences, and ask if they can figure it out.
4. The teacher defines the idioms. For the advanced students, the teacher introduce also the terminology of “figurative” and “literal language.”
5. Go through the examples on the board to show the difference between the idiom meaning and word meaning.
6. Replay the Idioms song. Ask students to complete the worksheet by drawing the literal and figurative meanings of four more idioms.

**Appendix B. Lesson plan (teaching idioms through stories)**

**Objectives:**

1. Read the text fluently
2. Identify the idioms
3. Use idioms by creating your own stories

**Timing: one hour**

**Steps:**

1. The students read the story “The road to success”.
2. Then, they identify and highlight all the idioms such as: carry the torch, come out ahead, dog eat dog, foot the bill etc.
3. The teacher asks them to give the meaning of the idioms in context.
5. Students then are asked to create another story by using these idioms learnt from the lesson.



**Appendix C. Lesson plan (teaching idioms through role-play)**

**Objectives:**

1. Identify idioms and give their meaning
2. Be able to incorporate idioms naturally

**Timing: 1 hour**

**Steps to follow:**

1. Choose a context by selection a specific scenario where idiomatic expressions can occur.
2. Assign roles, ensuring each role involves the use of idiomatic expressions.
3. Prepare dialogues including idioms related to the given context.
4. Allow students to practice their roles.
5. After the activity encourage students to reflect on their performance.
6. Provide feedback and guidance on their performance.

# The Need for Learning the Spanish of Tourism as a Specialty Language in Albania

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## Abstract

In recent years, Albania has experienced a rapid increase in interest in tourism from tourists from various Spanish-speaking countries. Representatives of the Albanian touristic industry have worked hard to promote the various destinations in the Hispanic market through their participation in important tourism activities. This development with this new market is evidenced not only by the large number of tourists who have visited Albania in the last two years, but also by the high interest that some serious investors are showing for Albania's potential in tourism for all its historical, cultural and natural values that the country has. As a result of this immediate development, there has arisen a need for the preparation of young professionals who intend to be part of the tourism sector according to the needs and in accordance with the criteria of the labor market, with the aim of transforming tourism into a sustainable sector for development of the domestic economy. Young people who choose to study foreign languages are worthy candidates to be part of the tourism industry after completing their university studies. This paper analyzes the need to include the Spanish of tourism in the university curriculum as one of the most requested specialty languages today as a result of the need generated by the recent developments of the tourism sector in the country. It would help improve and facilitate communication between all actors involved in the tourism industry. Communication in tourism is an essential element that affects the construction of a better experience for tourists, making them more welcome and understood in the chosen destination, as well as directly affects the creation of a good image for Albania, which still remains a country little explored by foreigners.

**Keywords:** Spanish for Specific Purpose, tourism, university curriculum, needs analysis

## 1. INTRODUCTION

Tourism is already one of the main sectors and activities of economic development of many countries of the world. This fact is also confirmed by the World Tourism Organization (2024), which states that tourism has become the sector with the fastest growth not only in the income of world economies, but also with the increase in the number of jobs. Albania is a country that is experiencing significant and rapid growth in the development of the tourism sector in recent years. So, we can affirm that even for Albania, tourism is seen as a potential for a sustainable development of the economy which provides employment, more income and development. The need for the preparation of professionals who intend to work in this field goes in a straight line with the developments and demands that this sector is bringing. A general reflection of the situation would give importance to the realization of this paper, which aims at highlighting the needs of students to be professionals prepared in accordance with the professional criteria they must possess in order to respond to the needs of the market work nowadays. In recent years, there has been an increase in the interest of Spanish-speaking tourists to visit Albania as an interesting, little-known destination for

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them, which offers both coastal and mountain tourism, adventurous but also cultural, which seems to be the strongest point for the typology of Spanish tourist.

According to data from INSTAT (2023), the number of Spanish tourists who visited Albania in the period January - July 2023 was over 40,000. This is an increase of 128% from 2022 when the number of Spanish visitors was 18,820. This rapid increase came as a result of the increase of direct flights from Spain to Albania. Direct flights are expected to keep the number of Spanish visitors high as the ease of travel has increased interest in visiting the country. Until now, it was the WizzAir Company that offered during the last season 3 direct flights a week from Madrid. It is expected that another company like IBERIA will launch other direct flights from Madrid also offered three times a week. But these data are not the only ones that speak of increased interest from tourist companies in Albania. We are not only concerned with increasing the number of Spanish visitors, but also with increasing investments and promoting Albania as a destination in their tourist market. Meliá Hotels International has just launched its first event in Albania, and Sol tour and World2Meet (W2M) have included it, for the first time, in their programming. Likewise, the Albanian Chamber of Commerce for Spain and Portugal, based in Madrid, has opened a tourist representative office in Palma de Mallorca. In addition to promoting the visits of Spaniards to Albania, this office aims at encouraging investments from tourism companies.

But what is the reality and the challenges tourism is facing today in terms of human resource capacities equipped with the necessary professional skills to cover the needs of the market?

Tourism is an industry which, despite the serious investments that can be made in the establishment of accommodation structures, logistics, services, etc., cannot exist without providing well-trained human resources to achieve the final goal, to achieve the satisfaction of tourists during their stay and their visit to a tourist destination. At the core of the quality services that tourism offers are human resources. Direct contacts with foreign tourists have an essential role in forming a positive or negative image for the country they visit.

Which are the needs of tourism sector in Albania today?

Tourism is a complex industry that constantly needs to employ professionals of different profiles, but one of the biggest gaps that was identified at least in the last two years by the managers of serious tourism companies in the country, was the lack of tourist guides of the Spanish language. Taking into consideration the official list of tourist guides published by the Ministry of Tourism and Environment (2024), this list contains only 16 Spanish-speaking guides in the national category and 3 in the local category. These figures show that the need for the preparation of tourist guides in Spanish is necessary and immediate.

## 2. METHODOLOGY

This paper introduces a general overview of the need that the job market has today for Spanish-speaking tourist guides as a result of the rapid developments of the tourism sector, mainly with the Spanish-speaking market in Albania. One of the problems that tourism is facing today is the lack of qualified Spanish-speaking tour guide staff. For this reason, it was considered necessary to reflect on the reasons that may have created this gap in one of the main sectors of local economic development today, raising the hypothesis that to work in the tourism sector, it is not enough to simply be familiar with the language Spanish as a foreign language but have specific knowledge of the language related to the tourism sector. For this reason, this paper investigates the inclusion of specialty languages in general in the university curriculum and tourism Spanish in particular, examining the teaching programs of the different departments of the Faculty of Foreign Languages of Tirana as the main artery of market supply of working with young graduates with a university degree in foreign language teaching. As a result of the importance that would be the inclusion of the Spanish language for a specific purpose in the field of tourism in parallel with the teaching of the language as a foreign language, in this paper there are also analyzed the specifics and knowledge that must be possessed as well as the role that the professors of this specialty in order to fulfill the needs of the student and the common learning objectives. However, we could not have convincing conclusions about this hypothesis without knowing more concretely the interest of Spanish students in relation to language learning, but from another perspective. For this reason, in accordance with the approach that the qualitative methodology has, a questionnaire was carried out in which 26 students participated using the well-known platform in the development of questionnaires Google Forms. The results of this questionnaire helped to identify the degree of interest and motivation on the part of students for learning the Spanish of tourism, also aiming at their direct involvement in the teaching-learning process as a fruitful method that directly affects both the fulfillment of objectives, the best acquisition of the language, achieving high results by placing interactivity at the center of the development of the learning process.

### *2.1 The importance of knowing the language of the specialty in the tourism sector*

In the tourism industry, which nowadays is experiencing a rapid development in Albania, it is very necessary that individuals who work in this sector, mainly tourist guides, are able to communicate in an efficient way with tourists who come from different Spanish-speaking countries and represent different types of tourists based on their needs and interests for the destination they visit. Even the culture from which they come is different from the Albanian one in various aspects. For this reason, it is not easy for a tour guide to interact with them to meet their needs if he does not have the necessary linguistic and cultural knowledge.

The role of a tourist guide is that of a mediator between the resources that a country offers and the individuals who visit it. Since its role is to present, interpret and convey the values and assets of a place by promoting it as an attractive space, it contributes directly to the image created for the tourist destination. For this reason, the presentation of natural assets, cultural heritage and not only requires a guide and a good formation at the level of knowledge and of course the language, since the language used in the right way is the main tool for the transmission of all information. A tourist guide is not just a speaker of the language but he is a cultural mediator as well as an individual who has the task of solving a series of problems that may arise from the involvement of several actors and of a chain work which is done to provide a series of services as the final product of what a tourist consumes during his stay in a certain destination.

It could refer to the National Agency for Quality Assessment and Accreditation ANECA (2004) in Spain, cultural tourism requires that those who promote it must possess not only professional technical skills or even management, information technology or communication skills, but and the skills related to the language field. Currently, in the labor market, one of the main professional competences that companies look for among their minimum criteria for employment is related to a sufficient language proficiency that allows appropriate linguistic interaction in all possible social and social contexts. Therefore, from this request, there is a need to think of new teaching strategies that influence the development of intercultural communicative competence as part of Spanish language learning for tourism professionals, especially for those oriented to the cultural tourism market. From the experience in the classroom during these years, we have come to understand that one of the biggest weaknesses of our students is that they fail to use languages with the main purpose for which they were created for example: to communicate, interact and mediate in situations real communicative.

According to Zapata and Madeley (2019), a tourist guide is a trained professional whose task is to welcome, inform, orient and accompany a tourist until the end of his trip. He is a representative of the host tourism, polyglot and the right person to respond to the requests and concerns of a visitor in his own language throughout the days of the stay. His knowledge should include areas such as history, geography, archaeology, art, folklore, architecture, economy, politics, religion, customs and traditions of a community, province or state. The basic pillars which are considered as the basis for every tourist guide, according to Picazo (2014, p.35) are: "Knowledge, language and behavior during the service". So, according to these authors, a tourist guide is the representative of the history, culture and traditions of a country, but the foreign language used during guide-tourist communications means the most important tool for conveying this information. Through the way he communicates and transmits information in a foreign language, a tour guide has the ability to significantly improve the experience of tourists during their tour. We must admit that the foreign language of the tourist guide has a vital role and occupies the main weight in the experience experienced by the tourists he accompanies. This fact explains the absolute need and necessity for mastering the foreign language of the specialty in the tourism sector at a good level.

### *2.2 The inclusion of specialty languages in the university curriculum*

As we mentioned above, taking into consideration the specifics of this sector and the role that a tourist guide has when accompanying a group of individuals who have chosen to visit a tourist destination, there is a need for tourism professionals to have specific knowledge of a foreign language. In the Faculty of Foreign Languages, University of Tirana, since 2008, the Spanish language has a department dedicated to Hispanic studies in three study cycles, Bachelor, Master of Science and Doctorate. It is even a language that can be chosen to be studied by students of other departments as a second or third foreign language. Depending on the student's choice, the Spanish language is studied in 240 hours spread over two semesters for those who study it as a first foreign language, in 40 hours over 6 semesters for those students who have chosen it as a second language and belong departments of other languages and 40 semester hours for those students who have it as a third choice during their academic training. This panorama seems positive in terms of learning Spanish as a foreign language. But how included is the foreign language of the specialty in the university curriculum? If we were to make an observation of the lesson plans of all foreign language departments offered at the Faculty of Foreign Languages, University of Tirana, we would understand more clearly what importance the specialty languages have in the university curriculum.

First cycle of Bachelor studies:

The Department of English language in the Study Program "Bachelor in English Language" offers in the second year of studies, in the second semester, Business English as an elective subject. The Saranda's branch follows the same curriculum. It is also offered as a subject with solutions in the second semester of the second year and in the "English Language" study program with the profile "Translation and Interpreting". In the same study program, but in the third year of the second semester, it offers optional subjects such as: "Translation of political terminology" or "Translation of legal and economic terminology", which also connect students with the languages of the specialty. The same distribution of these subjects occurs in the Bachelor study program in "English Language" of "British and American Studies" profile.

The French, German and Italian language departments offer three study programs in the first cycle of Bachelor studies:

1. Bachelor in Language and Communication.
2. Bachelor in Language, Literature and Civilization
3. Bachelor in Translation and Interpretation.

The Department of Slavic and Balkan Languages offers two study programs:

1. Turkish Language in Language, Literature and Civilization
2. Russian Language in Translation and Interpretation.

The Spanish language has only one study program in the Bachelor cycle in:

1. Language, Literature and Hispanic Civilization.

While the Greek language department offers three study programs in the first cycle of Bachelor studies:

1. Bachelor in Greek Language, Literature and Civilization
2. Bachelor in Translation and Interpreting
3. Bachelor in Translation and Interpreting in Greek and English

In none of the curricula of all branches offered for the cycle of Bachelor's studies, from these departments of the Faculty of Foreign Languages of the University of Tirana, there are no courses related to the languages of the specialty and specifically not even to the specific language used in the sector touristic. But on the other hand, in each of them it is described that the employment opportunities offered to students after finishing their studies. In addition to other profiles, there are also opportunities such as tourist guides in museums, historical and cultural centers, as well as tourist info points near municipalities in the whole country.

If we were to refer to the curriculum offered for the second cycle of Master of Science studies, we would notice that in the Master of Science program in "Teacher Upper-secondary education" offered by the departments of different languages such as English, French, German, Italian, Greek, and Turkish, it is planned to offer the subject "Language for specific purposes" in the second year of studies, in the second semester. It is even a compulsory course with 60 hours in the auditorium and 6 credits, but this course prepares students as future teachers of these languages. In the curriculum of the master's program dedicated to the preparation of future tourism professionals, such as the one in "Language and Intercultural and Tourism Communication" where students who follow this study program would be ideal candidates for job positions as tourist guides, field interpreters cultural, companion for tourist groups inside and outside the country, guides in museums, historical and cultural centers, manager of tourist enterprises or different agencies, etc., specific language training is totally missing. It is very necessary for these students to be equipped during their training with very good language knowledge and for the language used in the specific sectors where they intend to work and for which they choose to follow this master's program.

So, we can say that the language of the specialty is part of the university curriculum, but even though this teaching practice has been developing for years, there is still a need to work on solving some complex problems, as it is difficult to establish a boundary between the teaching of foreign language with a general and sectoral character. In this case we can say that learning the Spanish language for specific purposes requires an analysis of the needs both for the specifics of language use in the given sector and the needs of future professional students. This detailed analysis would help us to prepare the course by correctly identifying the purpose, the content in accordance with the student's needs and defining the learning activity based on the predetermined objectives so that the process of teaching and learning the language responds to the real demands of the sector. . However, we must admit that even though the study of specialized languages is still in the first steps, the translation of professional scientific literature has not been missing from the side of Albanian researchers.

### *2.3 Teaching tourism Spanish and the challenges the professor faces in the classroom*

As we mentioned above, in the Albanian university curriculum there is still room for changes in terms of the preparation of subjects that would focus on the teaching of specialty languages and more specifically tourist Spanish. Despite the importance that the teaching of tourism Spanish is gaining because the development of tourism in the Spanish-speaking world has brought a high and vigorous demand for specialists in different tourism sectors, it seems that meeting the demands of the market today will be a slow process because there is a lack of tradition and experience in teaching specialist languages. First of all, it is necessary for Spanish language professors to have the necessary training before they start teaching a group of students who would learn Spanish for specific purposes because the challenges are not few.

The work of a tourist Spanish professor is made difficult by the fact that at the time of creating a certain course I cannot support his program in documents such as the Curriculum Plan of the Cervantes Institute (1994) or the Common European Framework of Reference for Languages (2002), both of these very popular and important documents for the teaching and learning of Spanish as a foreign language since they provide guidelines and standards for the objectives, content, planning, implementation and evaluation of teaching programs and language competence.

On the other hand, we must say that there do not exist in Albania manuals for learning the Spanish language for tourist purposes. Under these conditions, the professor can choose to work through authentic materials and adapt them into didactic materials for the goals and objectives of his class. Another option is to choose between several manuals published in Spain by well-known publishing houses such as Edelsa, Difusión, SGEL or the Cervantes Institute, but again he has the duty to have knowledge of the work profile and the real context of the complex communicative situations of professionals of tourism in order to determine if or which of these manuals would be appropriate for his students.

Based on the aforementioned difficulties, another concern arises. Should the tourism Spanish teacher be a linguist or a field professional? So, in addition to knowing the foreign language, to what extent should this professor know the specifics of the sector whose language he intends to teach to his students and what is his role, different from that of a teacher of a foreign language. Hutchinson and Waters (1987, as cited in Miranda Sá Rangel, 2015) prefer to use the term professional Spanish for specific purposes (ESP practitioner) instead of the term teacher of Spanish for specific purposes (ESP professor) precisely because of the variety of functions that a professor of specialty languages must perform. Dudley – Evans y St. John (1998, as cited in Miranda Sá Rangel, 2015, pp.13-18) speak about 5 crucial roles of the specialty language teacher:

The SSP (Spanish for Specific Purposes) professional as a teacher – The teacher of the language of the specialty is not the main expert or the sole expert of the specific technical content of the didactic material. In many cases it may happen that the student has more knowledge about the field than the professor himself. This gives the professor the opportunity to use the technical knowledge of his students to create an original and real communication in the auditorium in context of the specificity of the subject. In this case, the professor acts as a consultant to practice communication as well as the linguistic and discursive skills that the student needs for the academic context and/or professional experience.

1. The SSP (Spanish for Specific Purposes) professional as a creator and promoter of materials - In most cases, it should be exactly the professor of the specialty languages and the creator of the didactic materials, since it is difficult to have a published manual that meets all the needs of the students of a group. It is exactly their task to create or select, adapt and even analyze the effectiveness of these materials after they have worked in the classroom.
2. The SSP (Spanish for Specific Purposes) professional as a researcher – The SSP teacher should play the role of a researcher and do his research related to the language of the specialty and above all, be able to incorporate

the results of the research in his classes. The SSP professional must investigate the most common communicative situations, language skills, written and spoken texts in order to be able to bring to the audience practices that resemble reality as much as possible.

3. The SSP (Spanish for Specific Purposes) professional as a collaborator – The SSP (Spanish for Specific Purposes) professional must collaborate with specialists in the field. It can be a simple collaboration, in which the professor receives information about a thematic part of the course program or about the tasks that his students have to perform in their professional environment or a collaboration when there is an integration between specialized studies and language.
4. The professional as an evaluator – The SSP (Spanish for Specific Purposes) professional has the role of a double evaluator: the progress and performance of the student as well as the efficiency of the material used in the course. In this way, he makes an analysis between the students' achievements, the suitability of the materials and the methodology used, leaving room to make necessary changes in the service of learning with future students.

Based on the analysis of these authors regarding the function of the specialty language teacher, we can say that he does not necessarily have to be a specialist in the field. We believe that a specialist language teacher should have at least some basic general knowledge of the main concepts of the discipline. His experience in teaching then gives him the opportunity to approach the specialized text by analyzing different elements from content to lexical, morphosyntactic and textual ones. On the other hand, the possibility is not excluded that a specialist in a certain discipline with linguistic and didactic knowledge can also be a good teacher of the specialty language.

#### *2.4 Needs analysis as a didactic tool for creating a tourism Spanish course.*

As we have mentioned throughout the development of this paper, based on the latest developments that the tourism industry has undergone in Albania, it is necessary to give special importance to the learning of the Spanish language not only as a foreign language but for certain purposes professional related to the field of tourism in order for our students to be trained at all levels of competences to be worthy professionals of the future. But, since this subject still does not exist in the university curriculum and is not even offered in foreign language centers, then we will have to start working on the preparation of a course dedicated to Spanish for specific purposes in tourism, starting from the key point of this process which is the study and analysis of the student's needs for a more personalized, effective teaching and in accordance with the objectives we aim to achieve.

Individuals who are part of the process of learning a foreign language vary enormously in terms of the rate of learning and the final achievements during this process. Language skills, the student's general abilities and the influence of personal factors interact in a complex way in the evolution of this process. For this reason, language learning becomes more effective if the student is emotionally involved. That being the case, personal needs analysis is one of the most effective tools because it makes it easier for the professor to reflect on the fact that student objectives vary and must be determined before making decisions about teaching content and method (Richards and Rodgers, 2003, p.151).

In relation to needs analysis, Dörnyei (2008, as cited in Cordeiro, 2019) gives us two important recommendations: a) what are the students' objectives for the future and the topics they would like to address about which they are interested in learning and 2) the professor of the subject to include all of them in the syllabus of the subject as much as possible. There are some well-known techniques on how to generate this data, such as through questionnaires, individual interviews, group discussions, etc. The analysis of these data and their interpretation would provide us with some important results in order to identify some meaningful elements for the students and thus make a connection between the personal needs of the students and the activities that the professor would develop in the classroom.

By using the analysis of personal needs as a teaching and research tool we make it possible to be closer to fulfilling our objectives as teachers. In this case, we developed a questionnaire carried out through the Google Forms platform where 26 students who study the Spanish language were interviewed, the answers of which present the results on the students' motivation towards learning Spanish as a foreign language and for specific purposes; the competencies and skills they consider essential to become a competent speaker and finally their perspective on the activities, practices and materials with which they feel most identified according to their learning preferences. The analysis of these data allows us to recognize and reflect on the influence of personal factors in the learning process and the need to propose and offer a teaching practice that is related to the personal needs of students at the cognitive, linguistic and affective level.

Needs analysis is a useful and necessary tool to plan teaching and to think more clearly: a) objectives based on the institution's curriculum; b) the needs, interests and learning styles of students and c) adapting to the available time (Orta, 2015, as cited in Cordeiro, p.63).

The results of this questionnaire convince us of the need and motivation students have for learning Spanish for professional purposes. In order to know the level of students' motivation regarding learning the Spanish language, the first question is precisely related to the reason that urged them to make this choice for their university career. According to the results of the questionnaire, 61.5% of the interviewed students answered that they chose to learn Spanish because they want to be employed in one of the job profiles that these university studies guarantee as a teacher, translator or tourist guide in the future. From this data we understand that for the most part interest in language is related to the reason for employment in relation to 34.6% who answered that they made this choice because they like to study foreign languages to get to know new people, places and cultures.

To analyze the importance of the language skills that they themselves consider most necessary to be an effective speaker of the Spanish language, 80.8% of students have chosen fluency in speaking, 42.3% vocabulary, 26.9% listening, 23.1% grammar, 11.5% pronunciation and understanding of the text and 3.8% writing. This result clearly shows that they consider the development of communicative competence very important in the entire process of learning a foreign language.

Regarding the interest in learning the Spanish of tourism, in this questionnaire they were specifically asked if they would like to have a special course dedicated to learning the Spanish language specific to the tourism sector and 92% of them answered positively. Also, 69.2% of them admitted that they would like to have an experience as a tourist guide, but they know very little tourist terminology. These results, again, speak of their need to be closer to the language of the specialty in addition to the general language they study in the classroom.

Part of this analysis could not have been the typology of activities that students would prefer to develop during class hours and the materials, methods or tools they require are made available to them. According to the results, 53.8% of them would prefer to work with authentic materials and activities related to role play and simulation, 26.9% have remained more faithful to the materials prepared by the professor and the use of the interactive table and 19.2% would prefer to work with a manual for teaching the Spanish language in tourism as a more traditional way with which they still feel familiar.

### 3. CONCLUSIONS

This paper shows the current situation of the inclusion of specialty languages, and more specifically tourism Spanish in the university curriculum in Albania. The needs that the labor market is showing as a result of the development of tourism in the country as well as the readiness of the students of our auditoriums to learn the languages of the specialty as a means to develop their linguistic competences towards a more effective communication of the language, are indicators that policy makers as well as language professors should pay special attention to their inclusion in teaching curricula in order to prepare worthy professionals of the future.

Human resources constitute one of the main pillars for the functioning of the tourism sector. They are considered vital in the entire range of services offered in tourism. In all job positions offered in the tourism sector, communication is the key to guaranteed success. For this reason, special importance should be given to the acquisition of the communicative competence of Spanish students so that they become effective speakers of the foreign language after finishing their studies. It is necessary to match the teaching of the Spanish language with the real needs of academic and professional communication. It is necessary to orient the teaching of the Spanish language in the tourist context, to analyze the lexicon, terminology, ways of expression and types of texts in the tourism field in order for the student to become familiar with them according to the need for communication and interaction in real communicative situations with interlocutors of the interests of different in the tourism sector. But this will simultaneously require the formation and continued training of foreign language professors. To improve didactic strategies in function of intercultural tourism communication.

Finally, through the developed questionnaire, we had the opportunity to know more concretely the degree of motivation and interest of the students in relation to learning tourism Spanish. It is very important that teaching extends and recognizes everything that can directly or indirectly affect the learning process, not forgetting that affective factors, such as motivation, the reasons for learning a foreign language, individual differences in the way learning consists of several issues that directly affect the achievement of learning objectives. According to the results of the students who took part in the questionnaire, most of them have chosen to study Spanish for employment reasons, they estimate that communication skills are what must be acquired the most, they are interested in Spanish for tourism, you would like to accompany a group of tourists but they know very little tourist terminology and prefer to work with authentic materials, role plays and simulations. This underlines once again the need for the inclusion of languages for



professional purposes in the teaching programs as well as the motivation of students to be participants and the main protagonists of the lesson. There is still a lot of work to be done regarding the compilation of lesson plans and the design of these subjects, always based on the analysis of student needs as a successful instrument in facilitating the learning process for students.

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## Appendix

1. Why have you chosen to study Spanish at the Foreign Language Faculty?

- Because I want to be employed in the future as a teacher, translator or tourism guide in Spanish language
- Because I like to study foreign languages to know other people, places and cultures
- Because I have plans to emigrate

2. Which of the following language issues would you like to acquire more during the lesson in order to communicate as well as possible Spanish language?

- Grammar
- Vocabulary
- Pronunciation
- Fluency of speaking
- Understanding of the text
- Listening
- Writing

3. Do you think that with the language level that you acquire will accompany a group of Spanish speaking tourists?

- Yes, I think I have good abilities to communicate with them.
- I would like but I know very little tourism terminology.

4. Would you like to develop a special subject related to Spanish for specific purposes in the field of tourism?

- Yes
- No

5. What would be the typology of materials and activities that you would like to work on in class for this subject?

- a manual for learning the terminology of tourism Spanish
- authentic materials such as: leaflets, brochures, posters during role-playing activities and simulation
- prepared materials from the lecturer combined with the use of interactive boards.

# Evaluation of the Open Data Maturity of European Countries Employing Data Envelopment Analysis

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## Abstract

Open data maturity refers to the extent to which an organization, sector, or government has progressed in implementing open data practices. By understanding and enhancing these aspects, organizations and governments can improve their open data maturity, leading to more transparent operations and greater collaboration and innovation across sectors. The aim of this study is to measure the open data performances of the European Countries employing data envelopment analysis (DEA).

**Keywords:** Data envelopment analysis, Open data maturity, Performance evaluation

## 1. INTRODUCTION

Open data maturity refers to the extent to which an organization, sector, or government has progressed in implementing open data practices. This concept encompasses several dimensions such as [1]:

**Availability and Accessibility:** This measures whether data is readily available to the public and easily accessible. It includes the scope of data released and the ease with which it can be found and used. High maturity in this area means data is openly licensed and freely available to anyone without restrictions.

**Data Quality and Format:** Mature open data practices ensure that data is not only available but also of high quality and in usable formats. This includes having data that is accurate, timely, complete, and provided in machine-readable formats that facilitate easy processing and integration with other data sources.

**Policies and Governance:** This dimension evaluates the presence of formal policies and governance structures that support the ongoing release and maintenance of open data. High maturity involves clear data standards, regular reviews, and updates, as well as strong leadership advocating for open data practices.

**Usage and Impact:** The ultimate goal of open data is to be used effectively to achieve positive impacts, whether economic, social, or environmental. Maturity in this area is assessed by the extent to which open data leads to innovation, improves public services, promotes transparency, and contributes to economic development.

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Capacity and Culture: This involves the skills and resources available to publish and use open data, as well as the organizational or societal culture around data sharing and transparency. High maturity levels mean that there are sufficient training, support, and incentives for individuals and organizations to engage with open data.

Different frameworks and indices assess open data maturity across these dimensions, such as the European Data Portal’s Open Data Maturity assessment, which evaluates European countries annually on their open data practices.

By understanding and enhancing these aspects, organizations and governments can improve their open data maturity, leading to more transparent operations and greater collaboration and innovation across sectors. The aim of this study is to measure the open data performances of the European Countries. For this purpose data envelopment analysis (DEA) method is employed and the results are analyzed. The rest of the study is as follows. Section 2 explains DEA method. Section 3 illustrates the case study, finally conclusions are provided in the last section.

## 2. DATA ENVELOPMENT ANALYSIS

The initial data envelopment analysis (DEA) model, called as the CCR model, developed by Charnes et al. [2], calculates the efficiency value of DMUs. It maximizes the ratio of its total weighted outputs to its total weighted inputs. There is a condition that ensures that the output to input ratio of every DMU should be less than or equal to unity. The conventional DEA formulation can be given as

$$\max E_{j_0} = \frac{\sum_{r=1}^s u_r y_{rj_0}}{\sum_{i=1}^m v_i x_{ij_0}}$$

subject to (1)

$$\frac{\sum_{r=1}^s u_r y_{rj}}{\sum_{i=1}^m v_i x_{ij}} \leq 1, \quad \forall j,$$

$$u_r, v_i \geq \varepsilon, \quad \forall r, i.$$

where  $E_{j_0}$  is the efficiency value of the DMU that is under evaluation,  $u_r$  is the weight of output  $r$ ,  $v_i$  is the weight of input  $i$ ,  $y_{rj}$  is the amount of output  $r$  formed and  $x_{ij}$  is the quantity of input  $i$  utilized by DMU  $j$ , respectively, and  $\varepsilon$  is a small positive number.

Formulation (1) has nonlinear and nonconvex properties but it can be converted into a linear programming model through a transformation. The linear programming model to compute the efficiency of a DMU is represented in the following formulation.

$$\max E_{j_0} = \sum_{r=1}^s u_r y_{rj_0}$$

subject to (2)

$$\sum_{i=1}^m v_i x_{ij_0} = 1$$

$$\sum_{r=1}^s u_r y_{rj} - \sum_{i=1}^m v_i x_{ij} \leq 0, \quad \forall j,$$

$$u_r, v_i \geq \varepsilon, \quad \forall r, i.$$

### 3. CASE STUDY

This section introduces a case study related to the evaluation of open data performances of 35 countries employing DEA-CCR model.

The numerical illustration involves evaluating 35 countries with “open data policy”, “open data impact”, “open data portal”, and “open data quality”. Data are obtained from <https://data.europa.eu/en/publications/open-data-maturity/2023> and are provided in Table 1 [1].

Table 1. Open data maturity results in 2023[1]

Country	Dimension 1: Open Data Policy	Dimension 2: Open Data Impact	Dimension 3: Open Data Portal	Dimension 4: Open Data Quality
Belgium	517	320	550	456
Bulgaria	532	405	537	409
Czechia	600	600	444	580
Denmark	592	545	545	615
Germany	592	470	546	556
Estonia	640	600	630	570
Ireland	622	520	630	569
Greece	512	130	452	451
Spain	635	580	621	569
France	640	600	627	630
Croatia	392	195	469	462
Italy	627	565	604	549
Cyprus	630	600	610	543
Latvia	572	350	567	551
Lithuania	592	585	620	576
Luxembourg	560	445	584	513
Hungary	620	440	433	525
Malta	490	65	330	437
Netherlands	507	460	604	540
Austria	612	540	586	560
Poland	640	600	640	605
Portugal	502	555	526	581
Romania	470	235	555	393
Slovenia	615	495	620	558
Slovakia	595	590	554	585
Finland	582	415	581	545
Sweden	547	505	506	497
Iceland	457	270	404	335
Norway	557	525	622	590

<b>Switzerland</b>	540	435	495	532
<b>Bosnia and Herzegovina</b>	240	30	55	40
<b>Montenegro</b>	505	300	417	365
<b>Albania</b>	447	105	353	163
<b>Serbia</b>	470	440	549	455
<b>Ukraine</b>	625	600	607	611

DEA-CCR formulation presented by Charnes et al. [2] is employed and ranking results are reported in Table 2. Poland is determined as the most efficient country, whereas Bosnia and Herzegovina is ranked last.

Table 2. Ranking results

<b>Country</b>	<b>CCR efficiency</b>	<b>Rank</b>
<b>Belgium</b>	0.8594	19
<b>Bulgaria</b>	0.8391	23
<b>Czechia</b>	0.6938	29
<b>Denmark</b>	0.8516	22
<b>Germany</b>	0.8531	21
<b>Estonia</b>	0.9844	2
<b>Ireland</b>	0.9844	2
<b>Greece</b>	0.7063	28
<b>Spain</b>	0.9703	6
<b>France</b>	0.9797	4
<b>Croatia</b>	0.7328	27
<b>Italy</b>	0.9438	11
<b>Cyprus</b>	0.9531	9
<b>Latvia</b>	0.8859	16
<b>Lithuania</b>	0.9688	7
<b>Luxembourg</b>	0.9125	14
<b>Hungary</b>	0.6766	30
<b>Malta</b>	0.5156	34
<b>Netherlands</b>	0.9438	12
<b>Austria</b>	0.9156	13
<b>Poland</b>	1	1
<b>Portugal</b>	0.8219	24
<b>Romania</b>	0.8672	17
<b>Slovenia</b>	0.9688	8
<b>Slovakia</b>	0.8656	18
<b>Finland</b>	0.9078	15
<b>Sweden</b>	0.7906	25

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<b>Iceland</b>	0.6313	32
<b>Norway</b>	0.9719	5
<b>Switzerland</b>	0.7734	26
<b>Bosnia and Herzegovina</b>	0.0859	35
<b>Montenegro</b>	0.6516	31
<b>Albania</b>	0.5516	33
<b>Serbia</b>	0.8578	20
<b>Ukraine</b>	0.9484	10

#### 4. CONCLUSIONS

In this study, DEA-CCR model is employed in order to determine the open data performances of the European Countries. The data are obtained from <https://data.europa.eu/en/publications/open-data-maturity/2023>. According to the results, Poland is determined as the most efficient country, whereas Bosnia and Herzegovina is ranked last. Research in the future will concentrate on the performance evaluation employing different analytical methods.

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# Intuitionistic Fuzzy Cognitive Map Approach for Determining the Effect of the Influencer Marketing on e-commerce

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## Abstract

Influencer marketing has become a pivotal element in the e-commerce landscape, profoundly impacting how brands engage with potential customers and boost sales. It leverages the social credibility of influencers to enhance brand presence, engage with potential customers on a more personal level, and drive e-commerce sales. Influencer marketing has become an important marketing strategy for both brands and e-commerce platforms and an easy way to reach users. In the study, Intuitionistic Fuzzy Cognitive Map Method (IFCM) is used to analyze the effect of the influencer marketing on e-commerce.

**Keywords:** E-commerce, Influencer marketing, Intuitionistic fuzzy cognitive map

## 1. INTRODUCTION

E-commerce, or electronic commerce, refers to the buying and selling of goods or services using the internet, and the transfer of money and data to execute these transactions. It encompasses a wide range of businesses, from consumer-based retail sites, through auction or music sites, to business exchanges trading goods and services between corporations. E-commerce is facilitated by technologies such as mobile commerce, electronic funds transfer, supply chain management, internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. The rise of e-commerce has significantly changed the landscape of retail and has facilitated international trade and logistics [1].

Influencer marketing has become a pivotal element in the e-commerce landscape, profoundly impacting how brands engage with potential customers and boost sales. Here are some key effects of influencer marketing on e-commerce [2]:

**Increased Brand Awareness:** Influencers can expose a brand to a larger or more targeted audience. Since influencers often have loyal followers, their recommendations can serve as powerful endorsements, increasing brand visibility and credibility.

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**Enhanced Customer Trust:** Consumers tend to trust peer recommendations more than traditional advertising. Influencers, being viewed as trusted peers, can significantly sway buying decisions by endorsing products, often leading to improved consumer trust in the brand.

**Boost in Sales:** Direct promotion of products by influencers can lead to immediate increases in sales. Through personalized storytelling and authentic product placements, influencers can effectively persuade their followers to make purchases.

**Improved Content Strategy:** Collaborations with influencers can enrich a brand's content strategy. Influencers create engaging, relatable content that can attract and retain a brand's target audience. This content can be repurposed across various marketing channels.

**Greater Customer Insights:** Influencers can provide brands with valuable insights into customer preferences and behaviors. Feedback from influencer campaigns can inform product development and marketing strategies, tailoring offerings to meet consumer needs more effectively.

**SEO Benefits:** Influencer marketing can also contribute to a brand's search engine optimization (SEO) efforts. Influencer posts that link back to the brand's website can drive traffic and improve search rankings.

**Long-term Partnerships and Brand Loyalty:** Effective influencer partnerships can lead to long-term benefits for e-commerce brands, including sustained customer loyalty and repeat purchases. Followers of influencers often develop a positive long-term perception of the brands promoted.

**Market Segmentation and Personalization:** Influencers often cater to niche markets, allowing brands to target specific demographics more precisely. This segmentation can be crucial for personalized marketing, which is increasingly important in attracting and retaining customers.

Overall, influencer marketing leverages the social credibility of influencers to enhance brand presence, engage with potential customers on a more personal level, and drive e-commerce sales. However, the success of influencer marketing campaigns heavily depends on choosing the right influencers whose image and audience align well with the brand's values and customer base.

Influencer marketing has become an important marketing strategy for both brands and e-commerce platforms and an easy way to reach users. In the study, Intuitionistic Fuzzy Cognitive Map Method (IFCM) is used to analyze the effect of the influencer marketing on e-commerce. This study aims to gain a new perspective on the future of the developing influencer marketing industry, to determine the points that e-commerce platforms in the sector can pay attention to while collaborating, to measure the trust of followers in influencers based on sales and views, and to contribute to the improvement of existing business processes according to the needs of the future. The rest of the study is as follows. Section 2 describes IFCM method, case study is illustrated in Section 3. Finally, conclusions are provided at the last Section.

## 2. INTUITIONISTIC FUZZY COGNITIVE MAP TECHNIQUE

Intuitionistic fuzzy cognitive map (IFCM) technique includes intuitionistic fuzzy numbers into cognitive maps in order to determine the power of cause-and-effect relationships [3]. First, concept nodes and power of causal links among them are defined by obtaining experts' opinions. Second, the power of causal links is represented by intuitionistic fuzzy numbers that are associated with intuitionistic fuzzy scale. Hence, membership, non-membership, and hesitation values are identified. Finally,  $N \times N$  weight matrix is formed by employing the information collected from the experts.

The following iterative formulation of IFCM is run until the system will be stabilized, in other words, all factor weights will converge [4]. In this way, the concepts' values are computed.

$$A_i^{(k+1)} = f \left( A_i^{(k)} + \sum_{j=1}^N A_j^{(k)} w_{ji}^{\mu} - A_j^{(k)} w_{ji}^{\pi} \right) \quad (1)$$

where  $A_i^{(k)}$  is the value of concept  $C_i$  at  $k$ th iteration,  $w_{ji}$  is the weight of the connection from  $C_j$  to  $C_i$ ,  $w_{ji}^{\mu}$  and  $w_{ji}^{\pi}$  denote the weight matrices that show membership values and hesitation values of causal links, respectively, and  $f$  is a threshold function, which is considered as sigmoid function for this work.

### 3. CASE STUDY

The purpose of this analysis is to measure the success and impact of the influencer marketing industry in e-commerce and to make the industry more efficient by identifying the main points of this impact. For the analysis, 8 criteria, given in Table 1, are determined based on previous literature reviews and expert recommendations.

Table 1. Influencer Marketing Industry's Impact Factors on e-commerce

Label	Concept
<i>c1</i>	Conformity between influencer and brand/target audience
<i>c2</i>	Influencer's product description
<i>c3</i>	Category of product
<i>c4</i>	Price of product
<i>c5</i>	Discount status of product
<i>c6</i>	Number of shares of advertised product
<i>c7</i>	Number of influencers' followers
<i>c8</i>	Commission rate offered to influencer for advertising

To determine the causality relationship between the criteria, 3 experts working in Turkey's largest e-commerce site are interviewed and causality relationships are determined. The three experts provided their opinions by reaching a consensus and they used the linguistic scale shown in Table 2.

Table 2: Linguistic Scale

Linguistic term	Intuitionistic fuzzy number
VH	<0.95,0.05>
H	<0.70,0.25>
M	<0.50,0.40>
L	<0.25,0.70>
VL	<0.05,0.95>

The linguistic data, membership values, non-membership values, and hesitation values for causal relationships, are given in Tables 3, 4, 5, and 6, respectively.

Table 3. Linguistic Data for Causal Relationships

	C <sub>1</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>6</sub>	C <sub>7</sub>	C <sub>8</sub>
C <sub>1</sub>	-	H	H	-	-	-	-	-
C <sub>2</sub>	VL	-	-	-	-	-	-	-
C <sub>3</sub>	-	VH	-	H	-	-	-	-
C <sub>4</sub>	-	VH	-	-	-	-	-	-
C <sub>5</sub>	-	VH	-	VH	-	M	-	-
C <sub>6</sub>	-	-	-	-	-	-	-	-
C <sub>7</sub>	L	-	-	-	-	VL	-	-
C <sub>8</sub>	-	H	-	-	-	VH	-	-

Table 4. Membership values

	$C_1$	$C_2$	$C_3$	$C_4$	$C_5$	$C_6$	$C_7$	$C_8$
$C_1$	0	0.7	0.7	0	0	0	0	0
$C_2$	0.05	0	0	0	0	0	0	0
$C_3$	0	0.95	0	0.7	0	0	0	0
$C_4$	0	0.95	0	0	0	0	0	0
$C_5$	0	0.95	0	0.95	0	0.5	0	0
$C_6$	0	0	0	0	0	0	0	0
$C_7$	0.25	0	0	0	0	0.05	0	0
$C_8$	0	0.7	0	0	0	0.95	0	0

Table 5. Non-membership values

	$C_1$	$C_2$	$C_3$	$C_4$	$C_5$	$C_6$	$C_7$	$C_8$
$C_1$	0	0.25	0.25	0	0	0	0	0
$C_2$	0.95	0	0	0	0	0	0	0
$C_3$	0	0.05	0	0.25	0	0	0	0
$C_4$	0	0.05	0	0	0	0	0	0
$C_5$	0	0.05	0	0.05	0	0.4	0	0
$C_6$	0	0	0	0	0	0	0	0
$C_7$	0.7	0	0	0	0	0.95	0	0
$C_8$	0	0.25	0	0	0	0.05	0	0

Table 6. Hesitation values

	$C_1$	$C_2$	$C_3$	$C_4$	$C_5$	$C_6$	$C_7$	$C_8$
$C_1$	0	0.05	0.05	0	0	0	0	0
$C_2$	0	0	0	0	0	0	0	0
$C_3$	0	0	0	0.05	0	0	0	0
$C_4$	0	0	0	0	0	0	0	0
$C_5$	0	0	0	0	0	0.1	0	0
$C_6$	0	0	0	0	0	0	0	0
$C_7$	0.05	0	0	0	0	0	0	0
$C_8$	0	0.05	0	0	0	0	0	0

IFCM technique is employed and importance weights of digital transformation factors are obtained by running the formulation (1) until it will be stabilized, and the values of concepts will remain same. FCMapper software is used for these operations. The concepts' values are given in Table 7.

Table 7: Importance weights of success factors

Label	Weight
$C_1$	0.708854
$C_2$	0.983249

Label	Weight
C <sub>3</sub>	0.774787
C <sub>4</sub>	0.882023
C <sub>5</sub>	0.659046
C <sub>6</sub>	0.855466
C <sub>7</sub>	0.659046
C <sub>8</sub>	0.659046

#### 4. CONCLUSIONS

Influencer marketing has become an important marketing strategy for both brands and e-commerce platforms and an easy way to reach users. In the study, Intuitionistic Fuzzy Cognitive Map Method (IFCM) is used to analyze the effect of the influencer marketing on e-commerce. Influencer's product description and price of product is determined as the most important factors however discount status of product, number of shares, and communication rate are the least important criteria. Future research will focus on proposing group decision making approaches for determining the effects of influencer marketing on e-commerce.

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# Brand Avoidance: Systematic Literature Review and Framework for Future Research

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## Abstract

Brand avoidance refers to a consumer's choice on not to use a certain brand. It is defined as a situation in which a consumer intentionally dismisses a brand, even if it is accessible, readily available, and financially affordable for the consumer. In that sense, it is an active and intentional rejection of a brand. This study aims to advance the body of the knowledge on brand avoidance, to provide an integrated understanding on the consumers' brand avoidance attitude/behavior, and to put forward a framework for the future studies. By using a data-driven approach, both, qualitative and quantitative methodology were employed, and 95 articles were analyzed on the basis of SPAR-4-SLR protocol. As a result of analysis, four theme-clusters were defined and discussed along with the suggested further research questions.

**Keywords:** brand avoidance, anti-consumption, anti-choice, systematic review, SPAR-4-SLR

## 1. INTRODUCTION

Approach and avoidance motivation have been thoroughly examined in psychology. According to Elliot (1999), an avoidance motivation is one in which the behavior is "*instigated or directed by negative/undesirable event or possibility*" as opposed to an approach motivation, which is "*instigated or directed by a positive/desirable event or possibility*." In marketing literature, Oliva et al. (1992), as a first attempt, claim that contentment leads to brand loyalty, while dissatisfaction leads to brand avoidance. However, brand avoidance concept was not clearly defined until 2000s. One of the early definitions was made by Lee (2008, p. 225) as "*the conscious, deliberate, and active rejection of a brand that the consumer can afford, owing to the negative meaning associated with that brand*." This illustrates an anti-choice scenario in which the brand is not thought to be in line with the consumer's values while making a purchase decision (Hogg, 1998). Later, Lee et al. (2009) classified the underlying reasons of brand avoidance into two categories: pre-purchase factors and post-purchase determinants, as the former is based on personal, social, and societal demands, while the latter is tied to personal experiences that consumers have with the product or brand. According to Hogg et al. (2009), avoidance, aversion, and abandonment involve varying degrees of anti-choice depending on the strength of the feelings and behaviors expressed by consumers. Brand avoidance

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can emerge rapidly in certain instances (Rindell et al. 2013), but it has also been observed in the context of anti-consumption (Cherrier, 2009). On that sense, brand avoidance is a solid and long-term rejection.

There is an extant literature on brand avoidance since 2000s. Although there is a body of work, we lack a unified understanding of it. This study, as a first attempt, aims to review the brand avoidance literature by integrating and synthesizing current knowledge. By doing so, this study contributes to the literature on two ways. First of all, this study attempts to deepen the extant knowledge while identifying the current gaps, and hence, provides a state-of-the-art understanding. Secondly, this study constitutes a framework for the future studies by mapping the brand avoidance literature.

## 2. THEORETICAL FRAMEWORK

Brand avoidance refers to “*the deliberate and conscious act of refraining from using and purchasing a particular brand*” (Knittel et al., 2016, p. 28). It is applicable when the brands are physically and financially available to purchase. Brand avoidance is a type of anti-consumption, which signifies an opposition to consumption (Kuanr et al., 2020).

There are various underlying factors that lead to avoidance of a brand. Lee et al. (2009) defines three types of brand avoidance: experiential, identity and moral brand avoidance. Experiential avoidance is related with the unmet expectations. Consumers hold expectations for any product or brand before the purchase. Consumers compare their initial expectations with the performance of the product/brand, and that comparison leads to satisfaction or dissatisfaction. Expectation-confirmation theory (ECT) was proposed by Oliver (1980), has been widely used to expose the relationship between expectation, satisfaction, and post-purchase actions in a variety of scenarios. The comparison between initial expectations and performance of the product dominantly affects repurchase intentions of consumers. When the expectations of consumers are met, consumer continue to buy that brand/product, however when a product/brand fails to meet those expectations, consumer develop negative attitudes. Lee et al. (2009) concluded that behavior derived from the unconfirmed expectations as experience avoidance. Experience avoidance is a result of the negative product/service experience and the poor performance of the brand. Negative experiences also affect brand retaliation and brand hate which have direct impact upon brand avoidance (Pinto and Brandao, 2021). Brand retaliation is conceptualized as “taking revenge or (wanting) retaliation for whatever wrongdoing the brand has committed” (Hegner et al., 2017 p.15). It about punishing a brand to get “even”, and avoidance of a brand is likely to be seen as a punishment.

Identity avoidance stems from the symbolic incongruence between the self and the brand. Consumers develop a self-concept via the brands that they buy and use. They also detach from the brands that they believe do not align with their self-image (Bhattacharya and Elsbach, 2002). People purchase goods not just for their functionalities but also for their symbolic meanings. As a result, brands can function as markers that help define and shape consumers' perceptions of themselves (Escalas and Bettman, 2005). Regarding the self-concept, Kim et al. (2016) stated that attention to social comparison information influences the avoidance behavior. Consumers, who have high attention to social comparison are anxious about the reactions of their social circle, and therefore, they avoid uncommon or noticeable items and brand icons that may attract the attention of others, preferring to be safe with their brand decisions rather than risk social condemnation. Identity avoidance also occurs due to the perception of the negative meanings of the brand, inauthenticity, or deindividuation. In the case of negative meaning transfer, consumers avoid brands in order to avoid undesired self (Lee et al., 2009). Sometimes consumers may want to avoid mainstream brands in order to protect their individuality. That is called deindividuation, and it is also causes brand avoidance (Knittel et al., 2016). Aside from that, consumers may choose not to be identified as a member of a reference group, which is incongruent with their self-concept. Those reference groups have been named as dissociative reference groups. White and Dahl (2006) suggest that dissociative reference groups will affect consumer assessments and decisions, and that this impact will be stronger in situations when self-presentation issues are significant.

Moral avoidance is related with the ideological incompatibility. The perceived unethical acts of brands influence consumers' decision not to buy that brand. When brands violate the code of ethics, consumers may feel compelled to avoid them in order to demonstrate their disapproval to such behaviors. Leanidou et al. (2013) found that high levels of perceived corporate unethicity decrease consumer trust and consumer satisfaction, and negatively impacts the customer loyalty. Moral avoidance is an outcome of the behavior of the brands in the marketplace. When a brand is perceived as hypocritical, consumers act to protect their self-esteem and disengage from that brand, and that desire is so strong that they display more negative reactions. This negative attitude is stronger for the high self-brand connected consumers than the low ones (Baghhi and Antonetti, 2021). On that ground, brand hypocrisy negatively

impacts the self-brand connection. Self-brand connectedness indicates the extent to which a brand is linked to a person's perception of him- or herself (Escalas, 2004). High-connected consumers are more loyal, and hence more valuable for the companies. Moral avoidance may also stem from the country-of-origin effects. Due to the boycotts or animosity, consumers may reject or avoid foreign brands (Knittel et al., 2016).

In addition to those three types of brand avoidance, the literature concluded two more avoidance types, deficit-value avoidance, advertising avoidance. Deficit-value avoidance is associated with low quality, unfamiliarity, aesthetic insufficiency or just being unfavorable (Lee et al., 2009). Low quality creates a deficit value, since the consumer does not get what he/she paid for, and that leads to avoidance. Moreover, when consumer do not know the brand, or the brand is aesthetically insufficient then they may evaluate those brand as having low quality, and therefore avoid that brand. In addition to the quality, the avoided brand may be just not the favorite of the consumer. (Knittel et al., 2016). More recently, Nguyen (2021) concluded that brand hate, active or passive, leads to brand avoidance. Active brand hate involves disgust, rage, and contempt, whereas passive brand hate combines disappointment and shame emotions, and in both cases, consumers avoid that brand. Furthermore, safety concerns also generate a kind of deficit-value, and so may cause brand avoidance. Yang et al. (2018) explored the safety concerns regarding the airline accidents and found that accidents do harm consumer trust, and damaged trust causes brand avoidance.

Advertising avoidance is derived from the negative feelings regarding the advertising and communication of the brand (Odoom et al., 2018). Consumer may reject or avoid a brand simply because they do not like the celebrity/endorser in the advertising or the slogan, or the music, etc. In other words, the communication of the brand may generate a negative feeling or irritate the consumer. It is a more recent type of avoidance defined in the literature.

The conceptualization and the underlying factors of brand avoidance are well defined in the current literature. On the other hand, when we consider its effects on the consumer behavior, there is not a unified knowledge on the structure and the evolution of this concept. This study aims to provide a systematic review of the brand avoidance concept and specifically to answer the research questions below:

RQ1. What are publication and citation trends in the brand avoidance literature?

RQ2. What are the top sources, publications, and authors of the brand avoidance studies?

RQ3. What are the major themes in the brand avoidance literature?

RQ4. What are the further research avenues regarding the brand avoidance concept?

### 3. METHOD

This study is a systematic literature review. Based on Paul and Criado's (2020) article, the following criteria were applied to decide to proceed the method of the study:

- The domain should include at least 40 articles.
- There should be no systematic literature review in the domain in recent years (at least within 5 years).
- There should be no review of the domain in high-quality journals (e.g., CABS = 4\*/4/3, ABDC = A\*/A, WOS or Scopus = Q1/Q2, SCI or SSCI = Impact Factor  $\geq 1$ ).
- When there are gaps or shortchanges in existing systematic literature reviews.

In order to provide a review-driven insight, SPAR-4-SLR protocol suggested by Paul et al. (2021) was used. This protocol involves three main stages to follow: (1) assembling, which includes identification and acquisition; (2) arranging, which include organization and purification; and lastly (3) assessing, which includes evaluation and reporting. This protocol aims to provide “a state-of-the-art understanding of existing literature and a stimulating agenda to advance understanding through new literature in the review domain” (Paul et al., 2021 p. 02).

### 3.1. Assembling

Assembling includes identification and execution. The identification stage is about deciding the topic of the investigation, the research questions, the source type, and the quality of the source, while in the acquisition stage the keywords are defined (Paul et al. 2021, Gupta and Dhingra, 2022). The assembling phase was executed in this study as follows: The domain is defined as “brand avoidance”. The source type is “academic sources”. Source quality and material acquisition is gathered from “web of science (WoS)”. WoS database was selected because of it includes high-quality research, that date back to 1990s (Gupta and Dhingra, 2022). Search period is executed as “undefined to March 2024”. One keyword is used as “brand avoidance”, since this is the conceptualized term of the domain that is studied and there is no other keyword in defining this domain. As a result, 541 documents were acquired in assembling stage.

### 3.2. Arranging

Arranging includes organization and purification. In this stage, the inclusion and the exclusion criteria are defined according to the research area, language, source type and document type. In this study, as a research area the studies in Business and Economics, and peer-reviewed articles were included. Besides that, the studies in languages other than English were excluded. The organization stage yield to 319 studies. Then the articles retrieved from the database and screened in details for purification. Finally, the articles that are not related with marketing and consumer behavior, or duplicated within the database were deleted. The final set, that would be analyzed were defined as 95 studies.

### 3.3. Assessing

Assessing stage consists of two actions; evaluation and reporting. In evaluating the articles, VosViewer and Biblioshiny R were used as software. Content analysis of the documents, keyword co-occurrence, bibliographic coupling and the overall structure of the domain were investigated and reported.

## 4. FINDINGS

### 4.1. Publication and Citation Trends

The production of countries on brand avoidance is given in Table 1. Top three countries were detected as United States of America, China and United Kingdom. It is interesting to note that Pakistan ranked fifth with 12 articles produced.

Table 1. Countries Scientific Production- Brand Avoidance

Region	Frequency	Region	Frequency
USA	44	INDIA	10
CHINA	22	ITALY	10
UK	14	AUSTRALIA	9
FRANCE	12	SOUTH KOREA	9
PAKISTAN	12	GERMANY	8

In Table 2, the production over years can be seen. First article was published in 2008 and since then there is a growing interest on this concept. The biggest volume of articles was published in 2023.

Table 2. The Evolution of Production

Year	Articles	Year	Articles	Year	Articles
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2008	3	2014	0	2020	9
2009	1	2015	3	2021	11
2010	1	2016	6	2022	8
2011	1	2017	6	2023	14
2012	2	2018	4	2024	6
2013	6	2019	9		

4.2. Top Sources, Publications and Authors

In Table 4, top sources were presented. According to the analysis, Journal of Product and Brand Management is the top source on brand avoidance, due to having the highest publication volume. Journal of Business Research has the second rank, while European Journal of Marketing, and Sustainability share the third rank.

Table 3. Sources of Publication

Sources	Articles
Journal of Product and Brand Management	10
Journal of Business Research	8
European Journal of Marketing	4
Sustainability	4
Journal of Brand Management	3
Psychology & Marketing	3
Asia Pacific Journal of Marketing and Logistics	2
Australasian Marketing Journal	2
Journal of Consumer Marketing	2
Journal of Travel & Tourism Marketing	2
Marketing Intelligence & Planning	2
Qualitative Market Research	2
Others	1

Table 4 displays the most global cited articles. The most globally cited article is “Lee, M. S., Motion, J., & Conroy, D. (2009). Anti-consumption and brand avoidance. Journal of Business Research, 62(2), 169-180”. This article is one of the very the first study that conceptualizes the brand avoidance. Therefore, it is the most cited article.

Table 4. Most Global Cited Articles

Article	Total Citations
LEE MSW, 2009, J BUS RES	307
ZARANTONELLO L, 2016, J PROD BRAND MANAG	183
HEGNER SM, 2017, J PROD BRAND MANAG	163
BRYSON D, 2013, QUAL MARK RES	92
JAPUTRA A, 2018, EUR J MARKETING	91
TEIXEIRA TS, 2010, MARKET SCI	88
FETSCHERIN M, 2019, J BUS RES	88
KHAN R, 2013, PSYCHOL SCI	76

CHATTERJEE P, 2008, J ELECTRON COMMER RE	69
KIM H, 2013, J FASH MARK MANAG	59

The second most cited article is “Zarantonello, L., Romani, S., Grappi, S., & Bagozzi, R. P. (2016). Brand hate. Journal of Product & Brand Management, 25(1), 11-25”. This article associates brand hate with the avoidance behavior. The third most cited article is “Hegner, S. M., Fetscherin, M., & Van Delzen, M. (2017). Determinants and outcomes of brand hate. Journal of Product & Brand Management, 26(1), 13-25”. This article also defines brand avoidance as a construct related with anti-consumption and brand hate.

### 4.3. Major Themes

Figure 1 displays the result of keyword co-occurrence analysis. As a result of analysis, four main cluster were gathered.

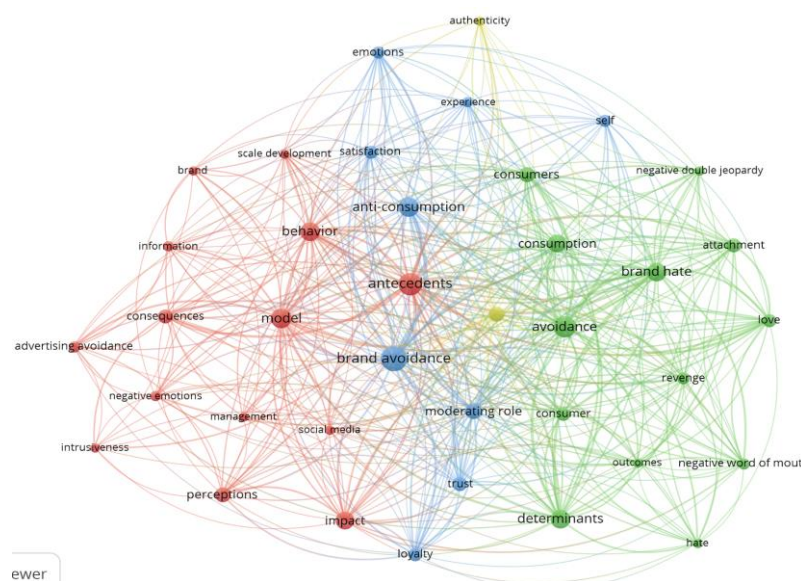


Figure 1. Keyword Co-occurrence

The red cluster is one of the largest clusters. The main keywords within this cluster were found as “advertising avoidance”, “intrusiveness”, “antecedents”, “consequences”, “information” and “negative emotions”. Even though avoidance of purchasing a product is found a place in the marketing literature since the earliest times, the brand avoidance concept and its dimensions were defined by Lee et al. (2009). Since than the antecedents or the underlying mechanism of that behavior is studied dominantly in the literature. Advertising avoidance gained interest as an antecedent of brand avoidance. Advertising avoidance first studied as “all actions by media users that differentially reduce their exposure to ad content” (Speck and Elliot, 1997 p. 61), and it is extensively studied in the advertising literature. Then recently it is associated with brand avoidance and concluded that it may trigger brand avoidance.

The green cluster is the second largest cluster. The main keywords within this cluster were “brand hate”, “revenge”, “negative word of mouth”, “negative double jeopardy” and “love, hate and attachment”. Brand hate is a strong negative feeling that defined in relation with the brands. The literature stated that negative experiences generate brand hate and brand hate leads to brand avoidance. Brand hate and brand avoidance is also associated with retaliation and revenge behaviors.

The blue cluster is the third cluster that was detected. The main keywords within this cluster were “anti-consumption”, “experience”, “loyalty”, “satisfaction” and “self”. One of the very early studies (Olivia et al. 1992) stated that brand avoidance is the anti-thesis of brand loyalty, and dissatisfaction leads to switching or avoidance. In the case of dissatisfaction, experiences are the key since they constitute an outcome of brand performance. Besides, brand avoidance is conceptualized as an anti-consumption behavior and it is an intentional rejection.

The yellow cluster is the last cluster that includes the least keywords. “Authenticity” is the dominant keyword in this cluster. There is not much study in this cluster, but this cluster is identified as a stand-alone cluster, which does not have a high correlation with the other studies. Charmly et al. (2013) concluded that within the socio-cultural contexts, collective avoidance of a brand may take place. Besides that, lack of authenticity affects the perception of the quality of the product, and therefore may cause brand avoidance (Lee et al., 2009).

#### 4.4. Further Research Avenues

The articles consisted in the study were screened, and analyzed by the author via employing qualitative methodology to define the future research framework. The variables and the structure of the brand avoidance literature was coded by using content analysis. As a result of the analysis, it was found that brand avoidance is a well-established concept. The literature discussed the underlying themes and motives behind that behavior. On the other hand, there is not much study, and therefore brand avoidance concept has a potential for the future research avenues. The possible further research question may be formulated as below:

- What are the outcomes of brand avoidance? (word-of-mouth, advocacy on avoidance, lynching?)
- What are the moderating and mediating factors affecting brand avoidance positively or negatively?
- Are there any other avoidance behaviors that consumers hold? (such as city brand avoidance, or celebrity avoidance?)
- Is brand avoidance an enduring attitude/behavior? If so, when and why?
- Is there any retail avoidance? How it is different from or similar to the brand avoidance?
- What is luxury brand avoidance? What are the factors leading the luxury brand avoidance? (bandwagon consumption, or the number of counterfeit products?)
- What is the cultural context of brand avoidance?

## 5. CONCLUSION AND LIMITATIONS OF THE STUDY

This study systematically analyzed the brand avoidance literature. Four main research questions were developed as; (1) What are publication and citation trends in the brand avoidance literature? (2) What are the top sources, publications, and authors of the brand avoidance studies? (3) What are the major themes in the brand avoidance literature? (4) What are the further research avenues regarding the brand avoidance concept? To answer those research questions, SPAR-4-SLR protocol was employed, and accordingly 95 articles in WoS database were covered in the study. VosViewer and Biblioshiny R were used as softwares. In addition to that, content analysis was used to map the literature and to identify the novel research questions.

This study contributes to the literature by integrating and unifying the brand avoidance literature in order to advance the current knowledge, and provides a further research agenda. Although its contribution to the literature, this study has also several limitations. First of all, this study used descriptive analysis to identify the brand avoidance literature. The future studies may employ thematic analysis to define the theories and integrate the findings. In addition to thematic analysis, meta- analysis may also be used to detect the total effects of the relationship among variables. This study included only the peer review articles in WoS database, therefore more studies covering the other databases and source types may be executed to expand the scope of this study.

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# Resistance is Always There! Resistance to Trending Products and Services<sup>1</sup>

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## Abstract

Occasionally, consumers may exhibit resistance towards certain innovations. Can they also resist trending products or services that have a large market share? To answer this question, this study seeks to investigate consumer responses to mobile payment systems and robotic vacuum cleaners, with the goal of offering a unique perspective on consumer resistance towards trending products and services. The study involved doing qualitative research through in-depth interviews with a total of eight individuals. Thematic analysis of the data revealed the presence of several barriers, namely: usage barrier, value barrier, risk barrier, tradition barrier, image barrier, personal factors, perceived control, and privacy and security concerns. The findings encompass both theoretical and practical implications.

**Keywords:** Technology resistance, consumer resistance, resistance barriers, mobile payment systems, robotic vacuum cleaners

## 1. INTRODUCTION

Digital technologies constitute the base of several different products (e.g., smart devices) and services (e.g., mobile payment systems). These smart devices/services are one of the representatives of the digital age. They use personal-level information about the users and then provide the users personalized offerings based on the gathered information (Kwon and Kim, 2012; Aguirre et al., 2015). Besides, they also make decisions for their owners (e.g., the temperature selection of smart homes for the user, getting an appointment by voice assistants for the user) (Van De Garde-Perik et al., 2008; Pierantoni, 2019). Similarly, digital services such as online entertainment platforms (e.g., Netflix, Spotify) try to know the users better and personalize the services based on personal-level information to provide them unique offerings (e.g., recommendations based on preferences of the users or similar users) (Ochi et al., 2010). Furthermore, due to their nature, these technologies are very close to humans as friends or family members. In parallel with this, one of the area of interests observed in academia is consumer responses (e.g., adoption, acceptance, intention) toward these technologies since the receiver of these technologies is consumers. Therefore, consumer responses show the success of the device/service in the market (Alter, 2013). Thus, behavioral

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researchers' efforts to understand user adoption, acceptance, and other behavioral responses continue in parallel with emerging technologies (e.g., Son and Han, 2011; Canhoto and Arp, 2017; Lazar et al., 2020). Although these digital technologies provide such benefits for consumers (Westerman and Bonnet, 2015; Goodman et al., 2016), this situation also brings negative and undesired consumer feelings, reactions, and behaviors (Kane, 2016). However, when it comes to negative issues on this topic, it is evident that the negative perspective on the subject is more limited, and there is less research conducted on negative responses.

An effective technique to addressing the issue from a negative perspective involves gaining a comprehensive understanding of customer resistance. When customers come across an innovation, they may interpret it as a deviation from their usual routines and habits in their everyday or business lives, which might lead to resistance as a reasonable response (Sheth and Stellner, 1979; Ram, 1987; Ram and Sheth, 1989). Gaining a comprehensive understanding of resistance would significantly enhance the corporate world by improving performance across several stages, including new product development, value creation and communication. In this study, our primary focus is on the phenomenon of resistance towards trending technological advancements. We hold the idea that there is a tendency for individuals or groups to oppose and fight the adoption of new technologies.

The aim of this study is to comprehend a consumer reaction in the context of mobile payment systems and robotic vacuum cleaners, and subsequently provide consumer understanding from a neglected viewpoint on trending products and services. The worldwide transaction value of the Digital Payments market in 2022 is projected to be US\$ 8,487.9 billion (Statista, 2023a). By 2028, it is projected that the total transaction value will reach around US\$ 16.59 trillion, with an annual growth rate of 9.52% (CAGR 2024-2028) (Statista, 2024a). From Turkey's standpoint, the aggregate worth of digital payment transactions conducted in the nation is projected to reach over 63.5 billion US dollars by 2022, with an estimated increase to nearly 137 billion US dollars by 2027 (Statista, 2024b). When it comes to robotic vacuum cleaners market, the market was assessed at a value of US\$1.84 billion (Statista, 2019). It is projected that the market value will increase to 4.98 billion US dollars by 2025. On the other hand, there is a consistent rise in the demand for top-tier automated vacuum cleaners in Turkey (Statista, 2024c). This is mostly fueled by the expanding middle class and their inclination towards convenience. This study investigates the resistance demonstrated towards even these widely trending product categories in important markets.

This work will make considerable theoretical and practical advances as a result of this approach. In theoretical terms, this study would adopt a dual perspective and demonstrate how consumer resistance is evident in both service and product domains. Furthermore, this study enhances the existing theory by examining the potential impact of utilizing very trending product categories. Ultimately, a qualitative study will be undertaken using the in-depth interview technique to offer comprehensive insights from a methodological standpoint. The investigation will additionally facilitate the advancement of new product and service development endeavors in the business realm. Besides, highlighting the presence of resistant persons as an individual segment would significantly aid businesses in their efforts to divide their target market into segments. This, in turn, will promote the development of targeted marketing and positioning strategies.

## 2. THEORETICAL FRAMEWORK

When analyzing the theoretical perspectives on individuals' rejection of any consumer product, the concept of resistance becomes apparent, and the innovation resistance approach serves as a fundamental theoretical framework in this context. The investigation of customers' resistance to embrace innovation originated from the research conducted by Sheth and Stellner in 1979. Previously, the emphasis was on the diffusion of innovations. However, this endeavor has now shifted towards investigating the reasons behind the failure of innovation diffusion and aims to comprehend the pertinent notion and its triggers.

Sheth and Stellner (1979) examined the role of habit and risk constructs in explaining the phenomenon of resistance to innovation. The argument posits that an individual's habits and risk perceptions will impact their approach to any innovation, ultimately determining their ability to exhibit resistance. Sheth and Stellner (1979) developed a typology of innovation resistance while making their argument. They categorized the options into four distinct groups based on the mix of habit and level of risk, either low or high. Subsequently, they developed a paradigm to address resistance to innovation.

The notion that most individuals who lack an inherent inclination for change may be more representative and logical than the minority who actively pursue change for its own sake, rather than solely resisting the inherent worth of new ideas, was further explored by Ram (1987). Based on theories that propose consumers possess an innate inclination for psychological equilibrium, Ram (1987) contended that any alteration imposed on individuals'

behavior has the capacity to disrupt this equilibrium. Consequently, consumers frequently opt to resist change rather than undergo a disruptive process of readjustment. Ram (1987) provided a model for innovation resistance, defining it as a typical response. In this model, the crucial components are innovation characteristics, consumer characteristics, and propaganda mechanism. It is disclosed here that the characteristics of innovation can either depend on the consumer (i.e., relative advantage, compatibility, perceived risk, complexity, effect on adoption of other innovations) or be independent of the consumer (i.e., trialability, divisibility, reversibility, realization, communicability, form of innovation). This approach categorized consumer characteristics into psychological variables (i.e., perception, motivation, personality, value orientation, beliefs, attitude, previous innovative experience) and demographics (i.e., age, education, income). The concept of propagation can be divided into two main components: types (i.e., marketer controlled vs. non-marketer controlled, personal vs. impersonal) and characteristics (credibility, clarity, source similarity, informativeness). Simultaneously, this approach emphasizes the situational, cultural, and social aspects that shape all of these elements. Subsequently, the study formulated propositions that encompassed all of these elements and their respective sub-factors.

The work of Ram and Sheth (1989) is a valuable resource for understanding the final conception of innovation resistance. The study conducted by Ram and Sheth (1989) elucidated the necessity of examining innovation resistance with a more comprehensive methodology. The main emphasis here is that innovation brings about a transformation in people's everyday lives and can potentially challenge their existing belief systems. Due to these factors, it was emphasized that a thorough study should be conducted, and subsequently, the features of resistance to innovation were elucidated. Initially, it has been documented that the presence of innovation resistance can influence the timing of adoption. Furthermore, it is highlighted that the level of innovation resistance can differ. Additionally, it has been asserted that there is a possibility of encountering resistance to innovation in several product categories. Subsequently, a classification of barriers was conducted, specifically focusing on barriers related to innovation resistance. These barriers were then examined and categorized into two groups: functional barriers and psychological barriers. Functional barriers encompass three main components: usage barrier, value barrier, and risk barrier. Usage barrier refers to instances in which an innovation is incompatible or unsuitable for existing practices, habits. Value barrier arises when an invention is unable to provide significant price-performance value compared to current or other offerings. Risk barrier pertains to the uncertainties that arise from the inherent nature of innovation, encompassing physical, economic, functional, and social risks. Psychological barriers encompass two main types: tradition barrier and image barrier. When an invention goes against the established social norms and traditions of the user, it encounters a tradition barrier. Similarly, if the product (brand, origin, etc.) is associated with negative connotations, it faces an image barrier. Following the explanation of these barriers, marketing strategies are introduced to effectively address each specific barrier. For example, one suggestion is to develop a systems perspective as a product strategy to overcome the usage barriers. As another example, it is advisable to educate consumers and use change agents as effective means of communication to overcome traditional barriers.

Consumer resistance has been the subject of study in the literature since its conceptualization. Upon analysis within the study's context, no research pertaining to the product category of robotic vacuum cleaners was discovered. Mobile payment systems have garnered interest in this regard, although it cannot be claimed that several studies are available. Previous research on mobile payment has primarily focused on investigating the impact of barriers on individuals' intention to use/reuse mobile payment, as demonstrated by studies conducted by Kaur et al. (2020), Pal et al. (2020), and Hameed et al. (2023). Furthermore, there are research that specifically aim to enhance the benefits posed by the theory and go into the subject with greater depth. As an example, Cham et al. (2022) examined functional barriers such as perceived complexity, perceived incompatibility, and perceived cost. Psychological barriers encompass the lack of trust, inertia, and technological anxiety. Risk barriers such as privacy risk, security risk, financial risk, and economic risk are being discussed. Behera et al. (2023) identified two more barriers in addition to the theory framework: complexity concern and price concern. These studies also aimed to elucidate this factor by examining the dependent variable of innovation resistance. Furthermore, they desired to comprehend the subsequent outcomes of this particular variable.

### 3. RESEARCH METHODOLOGY AND FINDINGS

#### 3.1. Research design

A qualitative investigation was carried out in this study to look at the composition of consumer resistance, what causes it, and how it compares to trending products and services. We have conducted exploratory research to better understand consumer resistance to trending products and services (Nunan et al., 2020). Here, the goal is to pose questions about the topic to those who have witnessed the relevant phenomena. In light of people's experiences and thoughts, the pertinent phenomenon was thus explored and identified. It was decided that using the in-depth interview technique to acquire qualitative data for this exploratory research was appropriate (Yildirim and Simsek, 2021). By giving the researcher detailed knowledge to comprehend the pertinent phenomenon, in-depth interviews benefit the researcher. For in-depth interviews, a semi-structured interviewing style was employed (Malhotra, 2019). The semi-structured interview allowed for the freedom to gather more detailed information based on the theory that trending products and services may have various triggers for issues like resistance. The appendix section contains the semi-structured interview form.

#### 3.2. Sampling and data collection

In order to interview people who were resistant to the trending technologies, a data gathering company provided assistance in order to get in touch with them. Here, the research design determines early on who will be contacted to reach persons, who have encountered the relevant occurrence through the use of purposive sampling (Yildirim and Simsek, 2021). Here, sample saturation served as the foundation for the study (Boddy, 2016), which concluded with eight participants. Of these, four are capable of resisting robotic vacuum cleaners, and the other four can resist mobile payment services. Details about the sample are provided in the table below.

Table 1. Interview respondents

Respondent no	Product category	Gender	Age
1	Robotic vacuum cleaner	Female	33
2	Robotic vacuum cleaner	Female	42
3	Robotic vacuum cleaner	Male	36
4	Robotic vacuum cleaner	Female	36
5	Mobile payment systems	Female	42
6	Mobile payment systems	Female	36
7	Mobile payment systems	Female	55
8	Mobile payment systems	Male	59

The participants, seen in the table, were initially briefed about the research and informed that their responses would be scrutinized as part of a scientific study, while ensuring anonymity and adhering to all other scientific standards. The interviews, with a duration of around 30 minutes, were meticulously transcribed and subsequently underwent thematic analysis (Braun and Clarke, 2006). Thematic analysis allows us for the exploration of novel themes while considering the existing theoretical framework described in the literature on the issue.

Reliability and validity checks were conducted to verify the data gathered in the research (Hayashi et al., 2019; Healy and Perry, 2000), ensuring external reliability. The entire procedure was thoroughly examined after each new interview. Furthermore, each step may be thoroughly detailed within the confines of this review. To assure internal reliability, the research findings were collected through independent studies conducted by researchers. The data is provided in a descriptive manner and a robust conceptual framework is utilized. Furthermore, a thorough gathering of data was given high importance in order to assess internal validity. Subsequently, participants' consent was obtained to validate the obtained results. Here, the advantages of employing semi-structured interviews are applied. In order to assure the external validity, the findings were reported in a thorough and precise manner, and a purposive sampling method was employed.



### 3.3. Findings

#### **Consumer resistance: Thoughts about technology**

Initially, the researcher assessed the participants' perspectives on technology as a whole. It is evident that the predominant opinions expressed here are negative.

*When contemplating technology, convenience is the foremost concept that springs to my thoughts. The level of convenience is excessive and beyond my control. (Respondent 1)*

*When used appropriately, technology may be highly beneficial. However, I believe that its utilization is increasingly driven by the pursuit of financial gain. I am dissatisfied with this as well. (Respondent 4)*

*Regrettably, technology is a predominant factor in today's society. Allow me to rephrase it in a more direct manner: There exists a global cycle that is exerting a force onto us, causing us to be drawn into it. (Respondent 6)*

#### **Usage barrier**

When analyzing the topic of barriers, the first aspect to be addressed is the usage barrier. There is a noted phenomenon where people feel confused when using the product or service, creating a barrier to its effective utilization.

*It fails to meet my desired specifications. I engage in the activity by exerting pressure on myself, which I believe leads to a superficial approach and a failure to notice minor details. It has limited penetration and incomplete collection capabilities. The reservoir has a minuscule capacity, causing it to quickly reach its limit. Its small size and rapid filling make it highly inconvenient, requiring frequent emptying. The tediousness of this task is such that it becomes a recurring necessity. In fact, my sister was compelled to demolish and reconstruct the entire house due to this issue. (Respondent 2)*

*Numerous problems, difficulties, and troubles frequently develop... I repeatedly hit the button, but it fails to function. I inquired about the nature or identity of this object... As I approached it, the object emitted a squeaking sound, which frightened me. (Respondent 7)*

#### **Value barrier**

The value barrier was the second barrier that was noticed. For both product categories, individuals underlined their ability to function manually without the necessary digital technology and expressed dissatisfaction with the value they received for their payment.

*What is its cleaning capacity? It simplifies my life, but it also complicates it. It compels someone to do it. It renders things indispensable. For instance, over time, you behave as though there were no previous experiences or events. Thus, we develop a dependency on it. (Respondent 1)*

*As previously mentioned, I am of the opinion that there is no solution or tool that would facilitate my job. Indeed, this is a subjective notion. I am capable of completing the task independently, using the methods that I am familiar with. (Respondent 6)*

#### **Risk barrier**

Participants expressed concerns about the potential risks associated with related technologies in multiple domains. Occasionally, both social and performance risks are referenced. They also discussed a comprehensive risk-taking scenario in a broader manner.

*Despite wiping the area that he swept once, the cleanliness will not be achieved due to the mixing of dust particles with each other... Consequently, the condition of the item will be detrimental to one's health since it will not undergo any cleaning process. After I thoroughly clean and remove dust and dirt from my surroundings using a cloth and a vacuum cleaner, everything seems completely clean and free of any blemishes or imperfections. (Respondent 2)*

*There is a possibility that you could unintentionally encounter it when walking in the living room, as it might be occupied with work. Alternatively, it is generating excessive noise and causing disruption. (Respondent 3)*

*With the advent of robots and similar technologies, the domains reliant on human labor are likewise diminishing. This circumstance is quite unfavorable for our nation. (Respondent 4)*

*There is no longer a need for anyone. There will be a rise in unemployment. Due to technological advancements, robots have been introduced into factories... There is a lack of employment opportunities in those factories as well... Indeed, while technology is advancing, it is also leading to a rise in unemployment among individuals. (Respondent 5)*

*Engaging with technology entails exposing oneself to potential dangers and hazards. (Respondent 8)*

#### **Tradition barrier**

Participants exhibit reluctance to incorporate these technologies into their familiar routines, and at times, their personal values and beliefs may hinder their adoption of these technologies.

*I anticipate that, over time, the cleaning process will revert to its previous state of being automated. Since it refreshes at regular intervals. It resembles the global hierarchy. Indeed, everything is undergoing a cycle of resetting, progressing, and then resetting once more. I have faith in this. (Respondent 1)*

*Personally, I prioritize interpersonal communication and human connections. When visiting a store, there are instances where it is necessary for the salesperson to inquire about your well-being and inquire whether you are feeling alright. (Respondent 6)*

*We are experienced individuals who are not really content with technology. I desire interpersonal communication. (Respondent 8)*

#### **Image barrier**

There is a lack of established trust or believe in the brand for the related product and service. This also functions as an image barrier.

*According to our observations on social media, it captured video recordings and photographs. I am uncertain about the veracity of this information, but there is a circulating rumor regarding an unidentified corporation or brand. There is a lack of clear explanations and trustworthy individuals in the field of technology that can provide me with a 100% guarantee or instill a sense of trust. (Respondent 3)*

*Furthermore, it fails to instill in me a sense of trust at the brand level. I am uncertain about the identity of the developer and the person I am conversing with. (Respondent 5)*

#### **Additional barriers**

##### **Personal factors**

Simultaneously, it has been noted that individuals' personality attributes can sometimes function as barriers, impeding progress or acceptance. It has been shown that various personality factors lead individuals to avoid using pertinent technologies.

*I am not inclined to make purchases based solely on curiosity or recommendations. I prefer to thoroughly evaluate and test a product before making a decision. To be honest, I have a preference for personally experiencing it. (Respondent 1)*

*I shall maintain awareness of my sweeping location to ensure the thoroughness of my work and prevent the need for someone else to complete it. (Respondent 4)*

*Furthermore, I have limited usage of technology. I am unable to utilize it in its current state; I believe I may be committing an error... I am concerned that something unfavorable may occur. (Respondent 5)*

*I have anxiety when I have the intention of purchasing an item for someone or when I place an order several days ahead of time. I assure myself. (Respondent 6)*

*No endeavor that is effortless or readily achieved would provide tranquility upon the human existence. Experiencing difficulty can be pleasurable. I dislike convenient accessibility. (Respondent 8)*

### **Perceived control**

Another element that contributes to users' uneasiness when using such devices is their lack of perceived control. It has been found that their resistance may stem from a desire for control.

*I prefer to have it under my supervision at all times and not let it to freely roam the house. I possess a strong inclination towards exerting control over my surroundings, as I am averse to any occurrences within my household that are outside my influence. I desire to maintain control of it. (Respondent 2)*

*Technology can pose a significant risk when used improperly. So, to clarify, the topic at hand is the emergence of artificial intelligence. While the emergence of artificial intelligence is pleasing, it is also causing concern due to the potential lack of control humans may have over it. (Respondent 4)*

*Lack of tracking and control is evident. Naturally, you adhere to it whenever possible, but to what extent? (Respondent 5)*

*I would prefer to avoid excessive interference in my life. What would be the purpose or benefit of doing so? I desire to experience unrestricted autonomy in my life. What is the rationale behind the recording and storage of all my possessions? I have a strong fixation on this. (Respondent 7)*

### **Privacy and security concern**

Privacy and security issues arose as another barrier. Participants hold the belief that these technologies have the capability to capture and distribute their personal information. Conversely, they experience a lack of security when utilizing these technologies.

*As an example, I acquired knowledge that it possesses a functionality for capturing photographs... It hinders the safeguarding of personal data... It consistently captures photographs and consistently creates sketches... An object that exhibits perpetual motion within the household may also possess the capability to capture and store auditory information. Ultimately, it is an activity that we refrain from engaging in, but perhaps we could consider documenting discussions or a similar endeavor. It fails to instill confidence. (Respondent 3)*

*We frequently encounter information regarding surveillance and monitoring using the camera feature on these technological devices. While I cannot determine the accuracy of the information, it is plausible that it may be real, as future events can materialize even if they are currently nonexistent. (Respondent 4)*

*You have reservations regarding these banking payment activities, and it instills fear in you when you provide your ID to someone. You personally handle the task of making your payments at the office. (Respondent 5)*

*Regrettably, the aforementioned entity stays active in the background due to an inability to guarantee reliability. However, in the present circumstance, we are unable to perceive the underlying aspects as we once believed throughout the developmental process. (Respondent 6)*

*I am quite concerned about the possibility of our account being compromised by an unauthorized individual. (Respondent 7)*

#### 4. CONCLUSION

This study performed exploratory research to get insights into a consumer response regarding mobile payment systems and robotic vacuum cleaners. It aimed to explore consumer resistance towards trending products and services from an overlooked perspective. To do this properly, thematic analysis was performed on data acquired from in-depth interviews with four individuals who expressed resistance towards robotic vacuum cleaners and four persons who expressed resistance towards mobile payment systems.

The results demonstrated that the barriers identified in the literature (Sheth and Stellner, 1979; Ram, 1987; Ram and Sheth, 1989) are applicable to both product categories. These findings align with other studies in the literature, where the theory is reevaluated within a particular setting (e.g., mobile payment systems; Kaur et al., 2020; Pal et al., 2020; and Hameed et al., 2023). In addition, the analysis revealed the existence of three new barriers. We argue that there has been a comparable expansion done here in relation to the studies of Cham et al. (2022) and Behera et al. (2023). The identified new barriers include personal factors, perceived control, and concerns about privacy and security.

The study's findings allow for both theoretical and practical implications. From a theoretical perspective, the study initially conducts a comprehensive assessment of both the product and service aspects. This technique has broadened the understanding of resistance across several product categories (Ram and Sheth, 1989) and enhanced the existing literature by incorporating a two-dimensional viewpoint into studies focused on a specific product category (e.g., Kaur et al., 2020; Behera et al., 2023). Furthermore, this study made a valuable contribution to the expansion of the theory inside the realm of trending and in-demand products and services. The literature has highlighted certain novel and recently developed technologies in the identification of barriers (e.g., Cham et al., 2022). Nevertheless, this study demonstrates that it is possible to develop resistance even towards trending products and services that are widely embraced by the public and have a significant market share. At last, there has been a methodological extension. The current studies were enhanced (e.g., Kaur et al., 2020; Cham et al., 2023) by gathering comprehensive perspectives on trending products and services using the in-depth interview technique.

When it comes to practical implications, the study primarily supports the efforts of developing new products. This is because it is widely acknowledged that not all attempts to produce new products are successful, and one contributing factor to this lack of success is consumer resistance (Ram and Sheht, 1989). Simultaneously, this approach can also provide support for both value creation and communication activities. Besides, segmentation plays a crucial role in the current competitive landscape, since it enables accurate targeting and positioning (Kotler et al., 2021). This study emphasizes that persons who are resistant should be regarded as a distinct group and, thus, advocates for targeting and positioning strategies in the business world.

It is important to note that this study has also limitations. The study may also provide direction for future research, taking into account both these limitations and many other approaches. One primary constraint of the study is the inability to access individuals across all age cohorts. For instance, it may be advantageous to target both younger and older age groups. In future research, solutions can be discovered by examining the problem of resistance within the framework of generational marketing. One further constraint of the study is its lack of emphasis on resistance levels. By examining resistance levels, future research can uncover subgroups within this particular segment.

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**Appendix A. Semi-structured interview questions**

1. What are your opinions on technology? What ideas or concepts come to mind when you think of technology?
2. What is the extent of technology's presence in your life, and to what degree do you actively interact with it?
3. Have you ever harbored a bad perception towards a particular technology and actively resisted incorporating it into your life?
4. Can you provide a thorough explanation of why you are avoiding this technology and what alternatives you are considering?
5. What are your justifications for abstaining from using this technology into your lifestyle?
6. How do the unique aspects of this technology affect your unfavorable approach?
7. How does your anxiety or fears affect your negative approach?
8. Which other emotions do you tend to view in a negative manner?
9. What are the potential hazards associated with your negative approach, and what are the risks you wish to avoid by not utilizing this technology?
10. Do you not perceive this technology as valuable?
11. What is your perception of the reputation or portrayal of this technology?
12. What is your perception of the societal acceptability of this technology?
13. What is your perspective on the environmental implications of this technology?
14. What further benefits do you believe this technology could possess?
15. When considering your lifestyle, what other factors do you believe impact your tendency to avoid certain things?
16. Do you have any more information to provide?

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# Insights from Tourism Businesses' Perspectives: Mapping the Needs of Tourism Destination - A Case Study of the Vlora Region

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## Abstract

Compared to long-established industries, the rapid growth of the tourism industry plays a crucial role in driving Albania's economic development. In recent years, the tourism industry and related sectors have contributed significantly to Albania's GDP, accounting for 26.2%. They also play a crucial role in generating employment opportunities, fostering growth for small and medium-sized enterprises, and promoting the overall welfare and social progress of the country. Despite the progress made in this sector, there are still challenges such as seasonality, the utilisation rate of tourist attractions, infrastructure, and the implementation of sustainable development policies. Developing countries are clearly dealing with a crucial issue when it comes to achieving sustainable development across various economic and non-economic sectors. This research study aims to analyse the challenges faced by tourism companies in the Vlora Region. The main goal is to evaluate this tourism destination from the perspective of tourism businesses, mapping the needs and challenges to sustainable tourism development. The data were gathered by administering a structured questionnaire that focused on the analysis of the variables related to the level of development in the tourism sector. The disseminated questionnaire included closed-ended questions related to (i) the type of tourism developed mostly in the destination, (ii) the evaluation of infrastructure and facilities in the touristic destination, (iii) the perceived quality of the services offered by tourism companies, (iv) the current level of tourism development in the destination, and (v) the factors that hinder the performance of the companies. After the pilot phase, a structured questionnaire was used to collect the primary data. A total of 235 businesses in the tourism sector were sent the questionnaire by mail. Out of these, 182 businesses responded and provided valuable information regarding the assessment of the tourist destination, as well as identifying its challenges and weaknesses. According to the data analysis on the current situation of the tourism industry in the Vlora region, the respondents highlighted several needs and challenges for the future development and improvements of the destination. The findings of this study make a valuable contribution to existing research by emphasising the crucial role of tourism development. They also provide useful suggestions for local authorities managing the destination, aiming to overcome challenges and promote year-round tourism in the region.

**Keywords:** business perspectives, challenges and needs, sustainable development, tourism industry

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## 1. INTRODUCTION

Tourism in Albania is considered one of the main pillars of the country's economy and continues to develop, despite the high competition from other international destinations. According to the statistics, the tourism industry and related industries contribute 26.2% of Albania's GDP (World Travel & Tourism Council, 2018), and there is enormous growth potential in comparison to other developed nations that have attained a sustainable growth rate. Furthermore, Albania's increasing popularity as a tourist destination over the past few years has enormous potential for diversifying the types of tourism offered beyond conventional package vacations.

Albania is included on the list of nations with significant potential for natural, historical, and cultural heritage. This destination is home to an abundance of natural attractions, including the Adriatic and Ionian coasts, national and nature parks, protected areas, and wetlands. Tourism and agricultural development have tremendous potential in riverine and wetland environments (Ministry of Tourism and Environment, 2018). It is one of the country's most important socioeconomic resources for creating employment opportunities, job growth, and the advancement of infrastructure and technology (Rovo et al., 2020). Compared to other well-known cross-border countries, Albania is a rather new tourism destination. Due to its impressive natural environment and diverse attractions, this destination offers opportunities for a wide range of tourism categories. The abundance of opportunities, coupled with the variety of landscapes and the mild, moderate climate, allows for a rich and diverse product offer (RisiAlbania, 2015). As the country has almost paved the way for further development, the typical tourism product is a rather general one that encourages visitors to discover the many facets of Albania's culture and nature. Under this umbrella, specialised tourism products are developed, increasing the variety of opportunities for the primary tourism market and other specialty markets (RisiAlbania, 2015; Dincu et al., 2016).

Similar to other markets, the tourism market economy is influenced by the interplay of supply and demand (Mbrica et al., 2023). Multiple studies highlight the importance of stakeholders' collaboration as a key component for effective destination management (Evans, 2009; Sotiriadis & Shen, 2017) and creating a balanced performance towards development and growth. As tourism continues to evolve and destination faces diverse challenges, the need for cohesive efforts among local governing bodies, private enterprises, and communities becomes increasingly evident. Effective coordination serves as essential for satisfying the needs of the destination and creating a desirable location for tourists (Roxas et al., 2020). For this reason, this study is seen as an extended analysis to evaluate the destination from the perspective of tourism industry companies as a key actor stakeholder. Its goal is to map the need analysis in order to further improve the destination management.

## 2. METHODOLOGY

The methodology is mainly based on a summary of the main variables related to the development of tourism and the difficulties encountered, followed by the assessment of their importance from the perspective of companies operating in the tourism industry. The research is based on the analysis of primary and secondary data related to the current situation of the tourist destination and the challenges that tourism sector faces. The implementation of a questionnaire as the primary means of gathering information has been recognised as a widespread approach in empirical research. The questionnaire was carefully designed with a particular emphasis on the primary research objective, which relates to the examination of the tourism sector through the lens of business enterprises that operate within this domain. The first section of the questionnaire directed towards tourist companies aims to obtain fundamental information regarding the study's population, such as the duration of the company's operation within the tourism sector, its geographical location, the nature of its activities, the size of its workforce, the occupancy rate, and its main consumer demographic. In addition, the questionnaire comprises inquiries aimed at providing insights from companies regarding the factors that motivate tourists to visit the tourist destination. The questionnaire comprises a crucial set of inquiries concerning the challenges and prospects of conducting business in the tourism sector. Additionally, it aims to evaluate the perception of companies regarding the infrastructure and amenities accessible in the tourist destination, the standards of services offered, existing obstacles to conducting business, and the expectations of public institutions with regard to the development of the tourism industry.

The target demography for touristic enterprises includes the Vlora region, which comprises the city of Vlora, as well as businesses involved in the tourism sector along the coastline of Orikum to Himara and nearby areas. It mainly involves entities such as accommodation, maritime infrastructure and coastal facilities, travel organisers and recreational activities along these stretches of coastline. According to the Institute of Statistics, during the year 2018, 1,326 accommodation structures (hotels, camps, guesthouses, farmhouses, mountain shelters, apartment, villas and



other structures for short-term stays) operated throughout the country. Hotels occupy about 65% of the total, while the rest are houses and rooms. Additionally, in the study population for this touristic destination, there are 14 registered companies, including 6 tourist operators and 8 travel companies.

In order to enhance the representativeness and reliability of our findings, we attempted to disseminate the survey to a vast majority of accommodations, the well-known and traditional restaurants in the city which have a good reputation and popularity in the area, and the travel agency. The data were collected through a self-administered questionnaire survey. Questionnaires were sent to almost 235 different companies in the industry. Out of the total number, 182 responses were received completing correctly the questionnaire. The questionnaires were administered between September to October 2023, and the response rate, determined by dividing the number of companies that responded by the total number of companies contacted, resulting in a response rate of 77.4%. The statistical value meets the acceptable threshold for further analysis, indicating that the sample size is representative of the population.

### 3. RESULTS AND DISCUSSIONS

All the surveyed companies operate within the tourism industry and include accommodation structures, restaurants, and other companies providing tourism services, such as tourism operators and travel agencies. Starting in 1993, the surveyed companies had different industry lifespans. By weighing the lifespans of the surveyed companies, we see that the average lifespan in the industry is relatively high at 17 years. The average longevity shows that the second and third decades, in these 30 years of Albanian development after the difficult period of economic and political transition that our country went through, have had the highest rates of companies registered in the tourism sector. The development of the tourism sector in Vlora refers to the suitable conditions and high resources that this region has, which create development opportunities for different types of tourism. Table 1 summarises information about the sample size's demographics. As can be seen from the total number of surveyed companies, 52.4% of them are sole proprietorships and 38.1% are partnerships. Influenced by seasonality, many of the accommodation structures along the coastline have been established as family businesses or small businesses. This evidence was shown in several statistics published by the Institute of Statistics in Albania.

Table 1. Sample characteristics [n= 182]

Demographic Category	Percentage	Companies' distribution by the number of employees	Percentage
Sole proprietorship	52.4%	Less than 9 employees	54.8%
Partnerships	38.1%	10 - 20 employees	19%
Limited liability company	7.1%	21 - 50 employees	19%
100% foreign companies	2.4%	More than 50 employees.	7.1%
Companies' distribution by field of business		Companies' distribution by operating area	
Accommodation	54.8 %	Vlora	81%
Bars and restaurants	28.6%		
Tour operators	14.3%	Dhermi, Himara, Orikum, Llogora, and other nearby areas	19%
Touristic agencies	2.4 %		

Source: Authors' calculations

Regarding the number of employees, 54.8% of companies employ less than nine people, 19% have between 10 and 20 employees, and the same percentage represents companies with between 21 and 50 employees. Finally, 7.1% of companies employ more than 50 people. It's evident that the majority of companies employ fewer than nine people. These results are directly related to the size of the companies, mainly small ones, but are also influenced by the seasonal character of the tourism sector. The summer has the highest level of activity, with a low extended tendency during the autumn and spring seasons. Additionally, some small companies operating in this industry tend to cut transaction costs by using family members as human resources during the low seasons.

Based on the collected data, 81% of the surveyed companies operate mainly in Vlora city, while the other remaining companies operate in Dhermi, Himara, Orikum, Llogora, and nearby areas. These areas are known for their large number of tourist attractions, heritage sites, the sea, the archeological park, and the Llogora National Park. Although the low number of tour operators and travel agencies compared to other types of tourism businesses, the majority of responses focused on the high presence of accommodation structures and restaurants, which remain one of the pillars

of tourism development, and the potential for value-added creation in this industry. As can be seen from the sample characteristics shown in Table 1, most of the companies offer accommodation services. 54.8 % of them are accommodation structures, and 28.6% are identified as bars and restaurants. The remaining part, respectively 14.3% and 2.4% of the companies, perform as tour operators and tourist agencies. As Evans (2009) highlighted, it should be noted that in most of the cases, the companies operate across two or more sectors in the tourism industry.

Seasonality is one of the most important aspects of our country's tourism industry development. This is noticed through tourist movements, seasonality in employment, and annual fluctuations, passing from the peak to the worst period for these businesses. Due to the seasonality of tourism, companies face many problems with the level of services provided, resulting in inefficient resource use, loss of profit potential, and scheduling difficulties. In particular, seasonality affects the number of tourists and therefore can threaten the viability of businesses in this destination (Kruja et al., 2012). Referring to seasonality, 92.2% of companies point out that the most frequented period of the year is the summer season, and according to 7.8% of the surveyed cases, the most frequented period by tourists is the autumn season. Despite the maritime and coastal tourism that "conditions" the tourist flow during the warm summer season, the district of Vlora is known as an attractive destination as a result of many investments in new types of cultural tourism products, the presence of the National Park of Llogara, which is easily accessible, as well as the rich culinary tradition that characterises this destination.

As cultural heritage attractions and natural beauties are attractive throughout the year, this type of tourism should be one of the reasons to increase the seasonal span of tourism in this destination. In addition to the aforementioned factors, the influence of seasonality is also evident when monitoring the occupancy rate of tourist accommodation structures. During the summer season, it is observed that the highest frequency of cases, approximately 65.7%, corresponds to an occupancy rate ranging from 81–100%. Conversely, the lowest rate of occupancy in accommodation structures, from 0 to 20%, has the highest value during the winter period.

Referring to the reasons that motivate tourists to visit this tourist destination 85.7% admit that one of the main reasons to frequent this destination is coastal and maritime tourism. Due to the favorable conditions of the Albanian coast, with a long coastline, a geographical position, and a mild climate, the tourism industry is currently focused on balneal tourism. In addition to balneal tourism, natural beauties, visits to the national park and surrounding areas, archeology, cultural heritage, and gastronomy are identified as strengths that develop the tourism sector in this tourist destination. Despite the infrastructural difficulties, the mountain tourism in the country is developing through organised tours of local and foreign tourists who choose to visit the mountain areas.

As a result, one of the challenges that the tourism sector faces is the continuous efforts that should be devoted to the diversification of the tourism product by the private sector and the government authorities by developing and improving this product to encourage existing tourists and attract new potential tourists (UNWTO, 2020; Burlea-Schiopoiu & Ozuni, 2021).

Developing countries are clearly dealing with a crucial issue when it comes to achieving sustainable development across various economic and non-economic sectors (Stevanović et al., 2023). Despite the challenges and difficulties faced by companies operating in the tourism industry, there is a high level of optimism about the potential and opportunities for development. Based on the collected data, Figure 2 presents the ability of the destination to develop the tourism industry. 14.3% of companies view the tourist destination as rich in potential and already well exploited; 19% of them are optimistic about the development opportunities, but these potentials are underexploited; and 59.5% confirm that the tourist destination is rich in opportunities to develop but not yet exploited. According the statistics about the average money spent by tourists in Albania, generally, it is notably lower in comparison to South/Mediterranean EU nations (UNWTO Tourism Highlights 2018) reflecting the "low-cost" tourism trending in Albania. However, it also indicates the existence of potentials that the tourism industry is a growing and very promising industry for the Vlora region to be exploited. The development of nature-based tourism, seaside landscapes, green landscapes, beaches, climate and biodiversity, parks, culture, and archeological sites provide great opportunities for tourism as a generator of economic development. The development of tourism along the coastline represents great potential and is seen as the focus of many investments. Despite coastal and maritime tourism, the declared protected areas, due to their high natural values, remain strong support for tourism development.

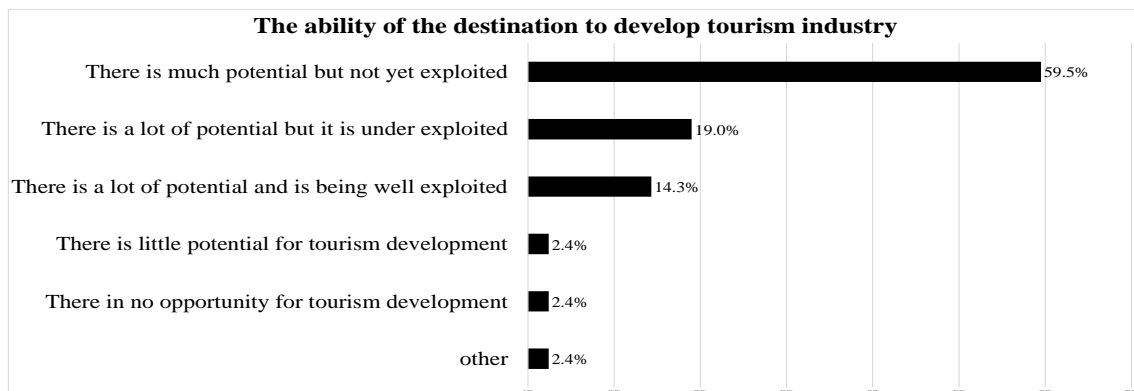


Fig. 1. Destination ability to develop tourism industry. Source: Authors elaboration

Another issue discussed in the questionnaire aims to evaluate some of the factors seen as advantages of doing business in the tourism industry based on a Likert scale ranging from 1 to 5 (1 = strongly disagree, 5 = totally agree). The summarised table shows the values of the mean, median, and standard deviation of each indicator. As can be seen in Table 2, the results show natural attractions (median score of 5) as one of the advantages of the development of tourism in this destination. Other important factors seen as advantages for tourism development (median score of 4) are historical and cultural attractions, low cost compared to countries in the region, destination reachability, the image of the destination, and the existence of a regulatory framework for the tourism sector.

Among the factors with the lowest positive impact and that do not constitute an advantage for the development of tourism businesses (median score of 3) are ease of management, support from local and central institutions, and fiscal facilities for these businesses. Due to the seasonality that characterizes the tourism sector in this destination, the short time of workforce employment is also impacted by the structure and company's size; mainly for small companies and family businesses, some of the employees are family members. The dependence on seasonal trends creates difficulties in managing these businesses.

Referring to the support from local and central institutions, many researchers argue that government involvement is fundamental for sustainable development. Externalities and investments in public goods and services are the main reasons for the government's involvement in tourism development. A constant concern, which is confirmed even through the results shown in Table 2, is related to how effectively the governments have been supporting the tourism industry and offering fiscal facilities during difficult periods. Despite the fact that the government has undertaken a number of legal initiatives in order to create and provide fiscal facilities, mainly for accommodation structures such as hotels/resorts that benefit from the special status until December 2024, not all small tourism companies are beneficiaries of this package.

Table 2. Evaluation of the advantages of doing business in the tourist destination [N=182]

	Mean	Median	Std. Deviation
Natural attractions	4.36	5	1.100
Cultural and historic attractions	3.81	4	1.194
Low cost	3.55	4	1.273
Easily managed	3.26	3	1.106
Support from local/central institutions	2.86	3	1.354
Destination reachability	3.71	4	1.175
Destination image	3.93	4	1.045
Existence of regulatory framework for tourism	3.33	4	1.356
Fiscal facilities	3.02	3	1.440

Source: Authors' calculations

The evaluation of the tourist infrastructure and facilities in this tourist destination is another question that requires the attention of the surveyed companies. Based on a Likert scale ranging from 1 to 5 (1 = I cannot judge, 2 = very poorly, 3 = rather poorly, 4 = rather good, 5 = very good), the companies have evaluated each of the variables related

to the infrastructure and tourist facilities. As can be seen in Table 4, accommodation (the adequate number of beds), transport infrastructure (roads, parking), and the proximity of trade centers, souvenir shops, and banks are some of the variables that most companies evaluate as rather good (median score of 4). According to the statistics analysed from secondary data (INSTAT, 2022), the indicators related to accommodation (the number of beds) have increased. This evidence was also confirmed by the surveyed companies. Nevertheless, the real figures should be higher due to the high level of informality in this sector.

Another variable rated with a median score of 4, is transport infrastructure. The road infrastructure has improved significantly in recent years, despite the fact that there are still some unfinished roads or others that need investment. Due to the geographical position of this destination, in recent years investments in infrastructure have facilitated the destination's reachability and the movement of domestic and foreign tourists. Furthermore, the geographical distribution and location of service units, banks, and shopping centers, easily enable accessibility for everyone. From the surveyed companies' point of view, among the factors with the lowest impact on this group of variables is the public transport and opportunities for recreational activities (medium score of 3). Currently, national transport for tourists is done through public transport buses or through the transport of tour operators. There are a significant number of travel companies in Albania which are focused on providing travel services for resident citizens and visitors. They operate in cooperation with tour operators or accommodation structures. Recently, a wide network of companies offering rental car services has started operating. However, this is a new service that need time to be consolidated. Most of the companies promote themselves by social media and have not invested in creating a more formalised system to be in touch with the tourist.

In the context of recreational activities, one of the priorities of tourism strategies is investing in other components of the tourist offer, such as sports and entertainment activities. In terms of cultural activities (opportunities for entertainment and social activities), there is a small percentage of companies that choose to offer this service (median score of 3). In the framework of the development of tourism in Albania, adventure tourism is one of the newest forms of tourism where tourists are oriented towards types of adventure sports and outdoor activities favored by the natural resources available in Albania (Skendo, 2021). As can be seen, this factor is actually the last-ranked evaluation from the companies, which means that investing in entertainment and social tourism activities can potentially enhance the appeal of Albania as a tourist destination and elevate its position in the competitive tourism market. Table 3 presents a summary of companies' evaluation regarding the infrastructure and facilities in this touristic destination.

Table 3. Evaluation of infrastructure and facilities in the touristic destination [N=182]

	Mean	Median	Std. Deviation
Accommodation (number of beds)	3.57	4	1.327
Transport infrastructure (roads, parking).	3.69	4	1.114
Public transport	3.07	3	1.154
Proximity of trade centers, souvenir shop, banks	3.64	4	0.931
Opportunities for entertainment and social activities (parks, garden, theatre)	3.07	3	1.294

Source: Authors' calculations

Information is attempted to be provided referring to the quality of the main services provided in this tourist destination. Table 4 provides a summarised overview of the results. As can be seen from the values of the median and standard deviations, the quality of food has a very high score (median score of 5). Restaurants and other food services enjoy a good image of healthy and traditional food, which is promoted as one of the main attractions of tourist products. Among the services, other important factors that were rather well evaluated are accommodation options, advisory lanes for motorcycles and bicycles, and hygiene and cleanliness of the destination (median score of 4). Investments in the city's main boulevard have created opportunities for bicycle lanes. The hygiene and cleanliness of the destination also received positive evaluations. There is an increased awareness among all interest groups of the importance of hygiene and cleanliness, creating a competitive advantage among tourist destinations. What is evident from the analysed data is that services for people with disabilities have a low rate of evaluation (median score of 3). This means that this group of individuals needs more investment in this tourist destination.

Table 4. Quality evaluation of the services in the touristic destination [N=182]

	Mean	Median	Std. Deviation
Food quality	4.31	5.00	1.047
Accommodation	4.14	4.00	.872
Transport	3.52	3.00	.994
Advisory lanes for motorcycles and bicycles	3.55	4.00	1.131
Services for handicap people	3.12	3.00	1.087
Hygiene and cleanliness of destination	3.55	4.00	1.064

Source: Authors' calculations

Based on a Likert scale with a range of 1 to 5. (1 = I cannot judge, 2 = very poorly, 3 = rather poorly, 4 = rather good, 5 = very good), the companies have evaluated each of the variables related to the current level of tourism development in this tourist destination. According to Table 5, the results show that the friendliness of locals toward visitors is the most relevant variable among others (median score of 5). The tourism industry is otherwise known as the hospitality industry. The high value of the median score concerning the hospitality of the local population and tourism companies, which seek to meet customer expectations, is one of the most important factors of the tourism development process. Among other factors, rather well evaluated (median score of 4) are: providing information about the destination (information centers, website), use of signage (including maps, directions), the care of touristic attractions, the care of visitors' safety, and small retail shops (souvenirs, gifts).

Table 5. Current level of tourism development [N=182]

	Mean	Median	Std. Deviation
Providing information about the destination (information centers, website)	4.31	4.00	1.124
Use of signage (including maps, directions)	3.60	4.00	1.073
Care of touristic attractions	3.38	4.00	0.976
Care of environment	3.29	3.00	1.088
Care of visitors' safety	3.71	4.00	1.215
Range of leisure programs	3.26	3.00	1.037
Small retail shops (souvenirs, gifts)	3.43	4.00	1.063
Friendliness of locals to visitors	4.31	5.00	1.137
Cooperation between public and private sector related with communication, exchange of information	3.19	3.00	1.174
Cooperation between public and private sector related with creation of tourist products (offer)	3.00	3.00	1.249
Cooperation between public and private sector related with promotional activities from local government	3.19	3.00	1.153
Involvement in social dialogue on tourism related issues	3.10	3.00	1.165

Source: Authors' calculations

Providing information about the tourist destination (median score of 4) has to do with obtaining online information through national or regional promotional and informative websites, or personal contacts. Although the use of the Internet is widespread, it remains difficult to fully and sufficiently search all online destinations. However, it is a fact that the use of the Internet has greatly increased the number of rooms occupied per night. The use of signage (including maps, and directions) is another important indicator of current-level development (median score of 4). Recently, there has been a significant improvement in equipping tourists with guide maps, as well as accurately determining the location of registered companies on electronic maps accessible via the Internet.

It seems that there is a growing awareness concerning the protection of tourist attractions (median score of 4) as an opportunity for tourism development, increasing the number of domestic and foreign tourists. Unlike many years ago, when development practices were accompanied by a high level of informality and several negative impacts on the natural heritage system, such as damage to protected areas, forest damage, habitat destruction, and water pollution, nowadays, there is an increased awareness to protect the environment and tourist attractions.

Care of visitors’ safety remains one of the dimensions of tourism development indicators closely related to the supply chain of this sector in cooperation with other industries (median score of 4). There is a growing awareness that the image of tourist safety is one of the competitive advantages of a tourist destination. Increased road safety, adding signage, and compliance with traffic rules are some of the indicators that are constantly improving. Furthermore, the development of sports and adventure tourism has created increased security measures for tourists, thus improving the credibility of the companies that offer this tourist product.

One of the expected benefits from the development of tourism and its impact on the local economy is the opening of many small retail (souvenir and gift) shops. Recently, small businesses that sell authentic and artisanal objects identifying the cultural heritage of this destination have become widespread and easily accessible to all tourists. Through the development of souvenir ‘production and handicrafts, this sub-sector has a special role and potential importance for the tourism value chain. It contributes to local economic development as well as keeping alive the traditions of the tourist destination.

Among the indicators assessed "rather poorly" are: care of the environment, range of leisure programs, cooperation between the public and private sectors, and involvement in social dialogue on tourism-related issues (median score of 3). There is still a lot to do in terms of environmental care, organising entertainment programs as tools for promoting an alternative tourism model (Porfido, 2022) (festivals, carnivals, theatre, celebrating local and national events, the opening of the tourist season, book promotions, exhibitions, fairs, and children's activities), and increasing cooperation between the public and private sectors. From the evaluation of the surveyed companies, there is still a lot to do to improve the efficiency of cooperation between the public and private sectors. In addition, 50% of the surveyed companies are not aware of the National Sustainable Tourism Strategy. This highlights the lack of comprehensive dialogue between the actors that are directly related to tourism, such as businesses, local and central government, and the local community.

Based on the data collected from the surveyed companies and as shown in Table 6, referring to the factors that hinder the activity and performance of business companies, some of the variables are seasonality, updating of new technologies, lack of experience working in tourism, and changes in the political and economic environment (median score of 4). Due to the high impact of this industry on social and economic development, it is necessary to continuously improve the factors that hinder the performance of companies operating in this industry. Referring to the updating of new technologies and a lack of experience, according to the 2018 survey of the World Bank, companies reported problems with lack of skills and skill mismatch. Similarly, even foreign-owned companies with the highest levels of productivity often experience limitations due to inadequate skills (World Bank, 2018). It's not uncommon for companies to face challenges related to skill gaps and mismatches, especially in rapidly evolving industries where new technologies emerge frequently (Buselic & Banko, 2021). Lack of relevant skills can hinder companies' ability to adopt new technologies effectively, innovate, and maintain competitiveness in the tourism market. Addressing skill gaps and mismatches requires concerted efforts from various stakeholders, including governments, educational institutions, and businesses themselves. Investing in education and training programs that are aligned with the needs of the labor market, promoting lifelong learning initiatives, and fostering collaboration between industry and academia are some strategies that can help mitigate these challenges and ensure a skilled workforce capable of driving innovation and economic growth.

Table 6. Factors that hinder the performance of the companies [N=182]

	Mean	Median	Std. Deviation
Environmental pollution	3.43	3.00	1.345
High level of competitiveness	2.83	3.00	1.187
Seasonality	3.74	4.00	1.212
Barriers on communication and language limitations	2.19	2.00	1.214
Lack of infrastructure	2.83	3.00	1.304
Lack of entertainment parks, gardens	3.07	2.50	1.437
Lack of professional training	3.40	4.00	1.288
Updating of new technologies	3.40	4.00	1.192
Government’s role enhancing the image of destination	3.29	3.00	1.348
Community and cultural factors	3.33	3.00	1.224

Lack of cooperation between businesses, government and the local community.	3.33	3.00	1.242
Financing and liquidity	3.36	3.00	1.225
Lack of experience working in tourism	3.48	4.00	1.272
Lack of tourism service packages	3.24	3.00	1.359

Source: Authors' calculations

Regarding the support from public institutions (median score of 3), some of the strategic priorities for helping and facilitating the tourism industry are presented in Figure 2. Financial investments in the tourism sector and investments in infrastructure, respectively 37 and 33 times, are seen as the most encouraging interventions with the highest frequencies. Other issues that need intervention from private and public sector institutions are: training to improve the quality of human resources (68% of the responses) and promotion of tourist destinations (67% of the responses). The following are some of the most important interventions in the promotion and marketing of the destination that will improve future development: promoting the destination in the key tourism markets through a strategic and comprehensive marketing campaign; incorporating the joint efforts of various stakeholders (national and local institutions and private businesses) in the tourism marketing process; and taking part in well-known international fairs and exhibitions.

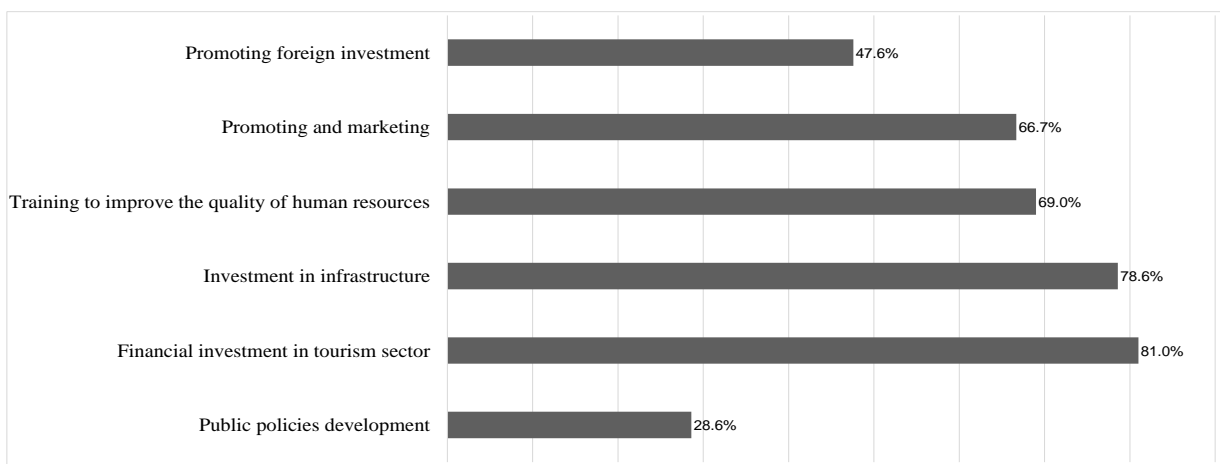


Fig. 2 Government issues to encourage the development of the touristic destination. Source: Authors elaboration

Figure 3 summarizes the companies' evaluations of why tourists should choose this destination in the future. Balneal tourism continues to remain one of the main attractions for tourists due to the warm climate and favourable conditions for its development. However, the seasonality that characterizes maritime and coastal tourism is an incentive to promote the creation of new opportunities for all-year tourism development. Based on the companies' responses, some of the reasons that tourists should choose this destination in the future are the potential development of sportive tourism, the exploitation of rural tourism through agrotourism and farms, the promotion of historical and cultural tourism, as well as walks and visits to parks and gardens. National natural parks can be turned into an effective way to generate good economic incomes through sustainable development while enriching the country's tourist offer.

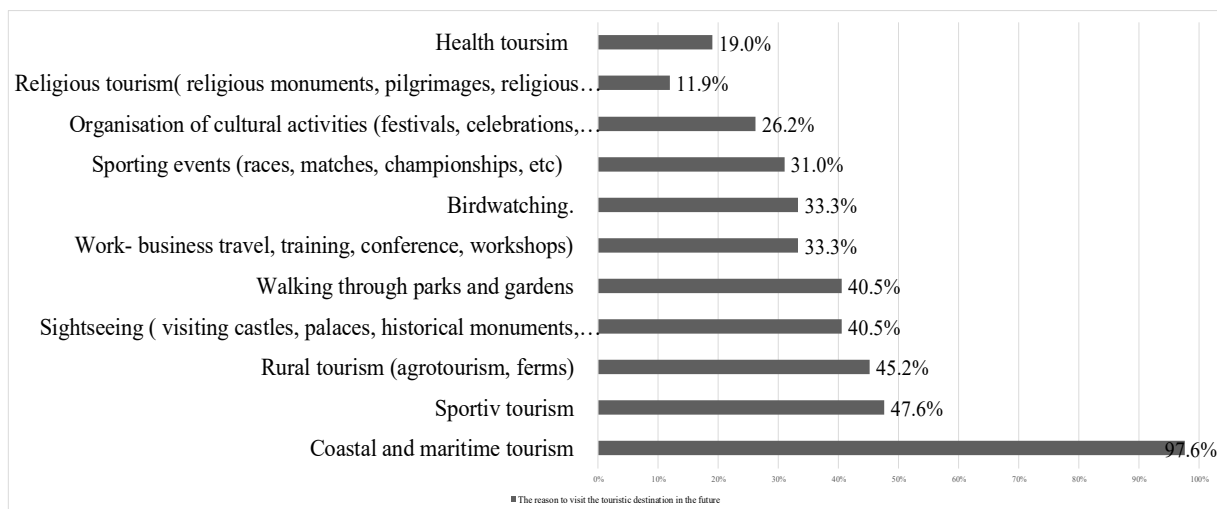


Fig. 3. Reasons to visit the tourist destination in the future. (Source: Authors` Elaboration)

#### 4. CONCLUSIONS

This paper focuses on the evaluation of the tourist destination from the point of view of tourist companies, with the aim of highlighting the difficulties and challenges that require continuous improvement in the fulfillment of sustainable tourism and the promotion of further tourism development. Vlora is a destination that offers plenty of resources, facilitating the growth of diverse forms of tourism. The geographical position, the favorable climatic conditions, the opportunity for investment and the opening of new businesses, and the increase in the employment of young people, are some of the conditions that categorise this industry among the national priorities of economic and social development in the country. For this reason, identifying and exploiting opportunities hold equal significance as the identification of challenges and obstacles, with the crucial aim of transforming them into tools and goals for sustainable development and growth.

For the same reason, it is worth emphasising that the role of tourists and reaching their level of satisfaction is equally important as the role of tourist companies and their assessment in helping to improve and support sustainable development.

In this study, multiple variables related to tourism sector such as: (i) the type of tourism developed mostly in the destination, (ii) the evaluation of infrastructure and facilities in the touristic destination, (iii) the perceived quality of the services offered by tourism companies, (iv) the current level of tourism development in the destination, and (v) the factors that hinder the performance of the companies, are used to assess the Vlora Region destination, from a business perspective.

Referring to the tourists' motivation to visit this destination, one of the main reasons is coastal and maritime tourism. In addition to balneal tourism (sun and sea tourism), natural beauties, visits to the National Park and surrounding areas, archaeology, cultural heritage, and gastronomy are identified also as strengths that develop the tourism sector in this tourist destination. Despite the infrastructural difficulties, mountain tourism in the country is developing through organised tours for local and foreign tourists who choose to visit the mountain areas. The most important factors, seen as advantages for tourism development are natural attractions, historical and cultural attractions, low cost services compared to countries in the region, destination reachability, the image of the destination, and the existence of a regulatory framework for the tourism sector. Among the factors with the lowest positive impact and that does not constitute an advantage for the development of tourism businesses are: the ease of management, support from local and central institutions, and fiscal facilities for these businesses. Direct support, such as funding for infrastructure development or marketing campaigns promoting the attractiveness of the country's tourism potential, can certainly benefit the tourism industry. This demonstrates that there is still a requirement for enhancement of these indicators.

Referring to the evaluation of the tourist infrastructure and facilities in this tourist destination, the accommodation (the adequate number of beds), transport infrastructure in terms of roads and parking and proximity of trade centers, souvenir shops, and banks are some of the indicators that most of the companies evaluate as rather good. From the surveyed companies' perspectives, among the factors with the lowest impact on this group of variables are public



transport and opportunities for recreational activities. This demonstrates that there is still a requirement for enhancement of these indicators.

The information on the quality of the main services provided in this tourist destination shows that the quality of food has a very high evaluation. Among the services, other important factors that are rather well evaluated are accommodation options, advisory lanes for motorcycles and bicycles, and the hygiene and cleanliness of the destination. What is evident from the analysed data, services for disabled people have a low rate of evaluation. This means that this group of individuals needs more investment in this tourist destination.

The companies have evaluated each of the variables related to the current level of tourism development in this tourist destination. According to the results, the friendliness of locals towards visitors is the most relevant variable among the others. Among other factors, rather well evaluated are: providing information about the destination (information centers, websites), use of signage (including maps and directions), care of touristic attractions, care of visitors' safety, and small retail shops (souvenirs, gifts).

Regarding the factors that hinder the activity and performance of business companies, some of the variables are seasonality, the updating of new technologies, a lack of experience working in tourism, and changes in the political and economic environment. Due to the great impact of this industry on social and economic development, it is necessary to continuously improve the factors that hinder the performance of companies operating in this industry.

The surveyed companies confirmed that the most strategic priorities for helping and facilitating tourism are: financial investments in the tourism sector (81%); investments in infrastructure (78.6%); training to improve the quality of human resources (68% of the responses); and promotion of tourist destinations (67% of the responses). As a result of the fact that the majority of visitors come to Vlora for coastal and maritime tourism, the companies have confirmed that this sector of the economy is still very popular due to the region's warm climate and favorable conditions. However, the seasonality that characterizes maritime and coastal tourism is an incentive to promote the creation of new opportunities for the development of all-year tourism. It is necessary to reshape and design tourist offerings that incorporate all the potential tourist attractions helping to distribute tourist visits evenly throughout the year by providing a comprehensive tourist experience that promotes sustainable tourism and enhances the quality of available resources.

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# **The Management of Social Environment of the School and its Impact on School Achievement**

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## **Abstract**

Every education system is located within a certain group or society and is affected by this society. It is influenced by the customs, traditions, political structure, economic structure and many other variables of the society, as education aims to provide people with certain behaviors in the desired direction according to the needs and expectations of the society. The educational institution, which is intertwined with the society, educates individuals within a certain system and program according to social elements. It is impossible to isolate the organizations or their parts that make up the educational institution, which has a close relationship with the society. The school educates individuals who can meet the needs of the society in which it exists. Schools that exist in line with the needs of society cannot be considered separately from societies. In this context, management of social environment of the schools is of great importance in terms of the success of educational institutions. In the study, the importance and the way of school management for social environments was researched under the light of literature. It has been found out that Management of the School's Social Environment is very important regarding school success and the quality of the communication among the students and school staff for social environment of the school.

**Keywords:** Management of School Social Environment, Educational Management, Student Achievements, Communication

## **1. INTRODUCTION**

Every system lives within an environment. The system can survive if its environment is favourable. The more the environment can provide the necessary inputs to the system, the more suitable it is. Every system has a general and a private environment. The general environment of the school is the society in which it lives. Many variables, such as the cultural structure of the society, political order, administrative units, economic structure, social changes and trends, resources, legal regulations, scientific and technological development, directly and indirectly affect the school. The specific environment of the school is the other organizations from which it receives its input, from which it releases its graduates, and from which it influences and impacts. These are higher education organizations, other schools, society, families, organizations and the like. Since the school depends on these with its input and output, it cannot exist or survive without them (Başaran, 2000).

Education is an absolute necessity in the life of a person in a particular environment. Education is useful to raise the standard of living of a nation. Human beings have talents and abilities that need to be developed through the experiences they create in their interaction with the environment. Environment is defined as the place where we live, work and play. Therefore, the environment plays an important role in a person's growth and development process

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(Bronfman et al., 2015). The person carrying out the educational process depends not only on the educational system applied, but also on the conditions of the educational environment that affect him. Educational environment has an impact on students' learning experiences and results. So the educational environment is an important thing to consider. Educational environment is all the elements around educational institutions, consisting of physical, social and academic aspects that affect the learning process and achievement of educational goals. It is an important element that directly affects the success of the learning process, thus covering all aspects needed in the learning process.

All educational processes have goals to be achieved. The education process that takes place in an educational institution aims to provide students with knowledge and skills, as well as to create physical, mental and spiritual aspects. This educational process is carried out through various educational activities, both academic and non-academic. Almost all education and training activities are carried out in educational institutions, in the school and campus environment. Educational institutions are official institutions where the educational process takes place, carrying out systematic guidance, teaching and training processes in order to help students develop their potential in both moral, spiritual, intellectual, emotional and social aspects. They have an important role in providing all students with knowledge and skills and developing positive attitudes and behaviours. Therefore, the existence of an educational institutional environment is very important in supporting the educational process, especially learning activities. This shows that the educational environment is a necessary element because it has a direct impact on the learning process.

## 2. MANAGEMENT OF EDUCATIONAL ENVIRONMENT

Management of educational environment is a process of managing all physical, social and academic elements that influence learning activities in an educational institution by implementing the functions of planning, organizing, implementing and supervising (Kudryavtsev, Stedman, & Krasny, 2012). It seeks to identify and optimize the physical, social and academic conditions that exist in an educational institution, which can enable the implementation of effective learning activities. It can be argued that educational environment management is the control of all activities of the entire academic community which have a significant impact on the educational process. Educational environmental management activities are mainly related to identifying objectives, determining whether these can be met, and developing and implementing the necessary facilities.

One of the objectives of educational environmental management is to provide a conducive educational environment (Asmendri, 2012; Sönmez, 2017). Several things that educational institutions can do to create a conducive educational environment include school and campus environmental arrangement, cleanliness of the school and campus environment, availability of required infrastructure, and teaching according to curriculum references. Apart from appropriate classroom arrangements, what is no less important is maintaining classroom cleanliness. Classroom cleanliness should be the collective responsibility of all class members. So there is a process that can teach the importance of responsibility. The availability of adequate learning facilities also needs to be met. The cleanliness of the classroom and the availability of adequate learning facilities have an impact on making teaching and learning activities more comfortable, making students more concentrated in receiving lessons.

The availability of adequate infrastructure for learning activities is vital, because it is directly related to learning activities. Infrastructure is the component that has the most influence on the effectiveness of learning activities in class and outside the classroom. Infrastructure is also needed to provide administrative services to the entire academic community. Limited infrastructure can result in disruption of the quality education process, thereby threatening the achievement of educational goals. The teacher's role in providing material in class is very important to create a conducive learning environment. This is because not all schools have been able to implement the latest curriculum as a whole. The learning approaches, strategies, methods and techniques applied by teachers in the classroom play a big role in creating a conducive classroom atmosphere.

There are various goals to be achieved in the educational environmental management process. These include:

- increasing the positive image of educational institutions, because they have school environmental quality management programs,
- increasing the quality of education, because it has an educational environment that is conducive to the learning process.
- creating a learning atmosphere and learning process that is active, creative and effective, fun and meaningful for students and educators alike.
- formation of students who are active in developing their potential so that they have spiritual strength, self-control, intellectual intelligence, noble morals, and the skills needed to be useful in society.

A conducive educational environment can also be built by providing various tools needed in the learning process, including:

- *school and campus hardware* such as laboratories, classroom and campus facilities, learning equipment, library in good condition. Hardware or infrastructure is one of the important aspects needed in learning activities, because hardware can make the learning atmosphere more effective and comfortable.
- *software components* such as management, curriculum, learning system, regulations. Clear software is needed so that learning activities have certainty and guidance in achieving educational goals.
- *professional thinking staff* such as teachers, school leaders and administrative staff. School human resource elements that manage the educational process and provide services in learning activities to achieve learning goals.
- *good natural environment*. The existence of a natural and beautiful environment around the school and campus can make the academic community feel more comfortable.
- *proactive social environment* such as residents around the school and campus. The concern and participation of residents around the school and campus in school activities makes the school environment more harmonious and conducive.

The scope of educational environmental management includes the management of the entire environment within educational institutions and the environment around educational institutions, which consists of physical environmental management, social environmental management and academic environmental management. Physical Environmental Management is namely the management of the components of facilities, infrastructure and the environment around the school that influence learning activities. Social Environmental Management is the management of harmonious relations between the entire academic community through fostering effective interaction and communication between the entire academic communities. Academic Environmental Management is the management of the academic atmosphere in learning activities to produce scientific personalities, developing a culture of mutual care and nurture and academic ethics. Environmentally Conscious Culture is the managing the quality of a sustainable educational environment is the responsibility of all education stakeholders. This requires an understanding from all stakeholders about the importance of the quality of a sustainable educational environment. This understanding can be obtained from intensive outreach efforts, both through meetings held by educational institutions and various other activities.

The academic environment or often also called the academic atmosphere is a situation and condition of learning activities that can encourage the growth and development of the education and learning process effectively and pleasantly (Hanson, 2003; Orr, 2004). An academic environment must be created to make the learning process at school run in accordance with its vision, mission and goals. The academic environment is actually a combination of the physical environment and the social environment. An adequate physical environment and a harmonious social environment can build a productive and effective academic environment. The combination of these three environments (physical, social and academic) really determines the success of learning activities and achieving educational goals.

The physical environment is the environment around students in the classroom, at school or around educational institutions whose management needs to be optimized so that learning interactions are more effective and efficient (Sari, 2014). The physical environment can be interpreted as the facilities, infrastructure and environment around educational institutions which play a role in supporting the success of learning activities. It can be said that the social environment is an environment related to the relations in the form of interaction and communication between students and students, students and educators, and educators and educators, educators and leaders, and with others.

Socialization can also be carried out through the use of information media available at schools and campuses. One way that is quite effective in managing the quality of the educational environment is through efforts to foster an environmentally conscious culture among all educational stakeholders (Wattchow, 2011; Mutohar, 2013). Environmental awareness culture is one way to make school environmental maintenance activities a pleasant behaviour carried out by all educational stakeholders on a daily basis at school and campus.

### 3. SUSTAINABLE EDUCATION ENVIRONMENT

Education will continue to change along with changes in the times that surround it, because education is the fruit of the times themselves. Therefore, education always requires efforts to improve and increase its quality in line with the increasing needs and demands of society. Quality is an essential thing as part of the educational process. Learning activities are the goal of educational organizations. The quality of the educational environment is an important factor that must be realized in the educational process. The quality of a good educational environment must be supported by a number of factors, both internal and external.

The quality of the educational environment is the quality or measurement in the process of changing the attitudes and behavior of a person or group of people in an effort to mature humans to get closer to God through teaching guidance and training efforts. The quality of the educational environment includes the quality of input, process and output. Educational input is declared quality if the human resources who will carry out the educational process are ready to proceed. The educational process is quality if it is able to create an active, creative and enjoyable learning atmosphere. Meanwhile, educational output is if the academic community involved in the educational process can achieve its goals in line with the goals of educational institutions and the goals of the State.

The quality of the sustainable education environment is a dynamic and challenging activity in the process of building and maturing the attitudes and behavior of the academic community through continuous guidance, teaching and training efforts. The quality of the sustainable educational environment is a process of continuously improving the quality of the educational environment, where the results can be felt now and into the future.

In controlling the quality of the educational environment, it is closely related to the system, namely input, process and output. If the system with all its accompanying components still prioritizes and emphasizes planning, organizing, implementing and monitoring all educational processes consistently well, then the quality of the educational environment can be maintained on an ongoing basis. Integration between the physical, social and academic environment must continue to be carried out to build the quality of a sustainable educational environment.

Improving the quality of the sustainable education environment is a plan and effort to improve the quality of the process of maturing the attitudes and behavior of the academic community which is carried out in a structured and continuous and ongoing manner. Efforts to improve the quality of the sustainable educational environment require the awareness and willingness of the entire academic community to be able to participate in managing the educational environment. Improving the quality of the sustainable education environment is a learning opportunity for all academics to increase their maturity and ability to innovate in managing an educational environment that is safer, healthier, more comfortable and enjoyable for learning activities. Improving the quality of the sustainable educational environment can be elaborated in plans and actions for managing the educational environment seriously, precisely and accurately. The management always carries out various improvements and continuous improvements to ensure that all educational environments have reached the specified quality standards. This means that educational institutions should always update the quality of the educational environment based on the needs and demands of educational stakeholders.

Several conditions in the educational process can be used as indicators of the quality of the sustainable education environment:

- Creating an active, creative, effective, enjoyable and meaningful learning atmosphere and learning activities.
- The creation of students who actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state.
- Achieving educational goals effectively and efficiently.
- Resolving the problem of education quality.
- Increasing the positive image of education.

To improve the quality of the sustainable education environment, there are several influencing factors, namely:

**Teacher.** Maximum involvement of teaching staff, through empowerment and support to develop themselves as well as providing opportunities to lead a program or activity to improve the quality of the educational environment.

**Learners.** Making students the center of learning, the subject of various learning activities, so that students' competencies and abilities can be explored optimally.

**Collaboration with stakeholders.** Building cooperation with all education stakeholders, both internal and external stakeholders, who come from various organizations, both education, business, industrial, social, religious, etc., private and government.

**Curriculum.** A curriculum that is consistent, dynamic and integrated, both implemented in academic and non-academic learning activities, so that it can enable and facilitate the achievement of the expected quality of the educational environment.

**Leadership of educational institutions.** Leaders of educational institutions must have and understand the organization's vision and mission, be able and willing to work hard, be persistent and steadfast in facing difficulties, and have strong work discipline.

In improving the quality of the sustainable educational environment, educational institutions must be in accordance with the vision and mission and have a systematic strategy for improving or increasing the quality of the educational

environment. Improving the quality of the sustainable education environment must also comply with the requirements regulated by Law or Government Regulation. Improving the quality of the educational environment must create a more comfortable and enjoyable atmosphere and environmental conditions for the educational process.

#### 4. CONCLUSION

While the school meets the educational needs of the society, it must be in relationship and interaction with other social subsystems. By carefully observing the school environment, it enables us to be aware of what is happening around us, to adapt to new situations and to keep up with the developing world. Personnel working in official institutions around the school should establish good relationships with institutions, associations and volunteers other than families. Schools are thus effective in increasing our standard of living. School administrators have important duties in ensuring that the school fulfills these functions (İnandı, 2014).

The position of school administrator requires understanding the expectations of the environment regarding the school and the ability of the school to meet these expectations. The manager also has the responsibility of constantly reviewing the expectations of the environment. The manager's task requires consideration and evaluation of the needs for future initiatives that can be proposed to all parties, for a dynamic balance that enables environmental and professional contributions, with the aim of achieving the highest level of development.

According to the community school model, the school should belong to the society and there should be interaction between the school and the society. The school must be open on evenings, weekends and holidays to be a center of community activities. The school should be open to both adults, children and young people, day and night, and in addition to courses, adults should also participate in social, cultural and recreational activities at the school. One of the most important features of the school, which is an educational institution, is that the human element is dominant and it continues to exist as a part of the environment in a social environment.

School management must communicate, cooperate and coordinate with all public and non-governmental organizations in the environment in order to meet the educational expectations of the environment and ensure the success of human resources for social, economic and technological development.

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# Prioritization of Strategic Goals for Smart Cities with Hesitant Fuzzy Linguistic MCDM Methods

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## Abstract

The population of cities in our country and around the world is increasing day by day, and as a result of this mobility, cities have to cope with new needs in many areas such as infrastructure, affordable housing, water, environmental cleanliness, health services, transportation and security. The concept of a “smart city” comes to the fore in responding to these needs and creating opportunities for urban development. Smart cities are being rapidly implemented in many cities around the world as an approach with significant potential to solve urban problems rationally. With this approach, cities that invest in human and social capital, establish smart transportation and modern communication infrastructure, ensure sustainable economic growth and high quality of life, and manage natural resources with participatory governance are targeted. To fulfill these goals and meet the increasing demand in a more efficient, safe, and environmentally friendly way, it is necessary to create long-term action plans and determine strategic goals for smart cities. This study aims to propose the integrated Hesitant Fuzzy Linguistic (HFL) Multi-Criteria Decision Making (MCDM) methodology to prioritize strategic goals for smart cities. This HFL approach is used to provide experts more flexibility by employing comparative linguistic terms and to create an evaluation environment that is more similar to human thinking. The HFL Analytic Hierarchy Process (AHP) method is used to compute the weights of the smart city evaluation criteria, while the HFL Multi-Attributive Border Approximation Area Comparison (MABAC) method is used to prioritize the strategic goals for smart cities. To demonstrate the effectiveness of the proposed research methodology, an application is provided. Finally, the results are presented along with suggestions for further research.

**Keywords:** AHP, hesitant fuzzy linguistic, MABAC, MCDM, smart cities

## 1. INTRODUCTION

The population of cities in our country and around the world is increasing day by day, and as a result of this mobility, cities have to cope with new needs in many areas such as infrastructure, affordable housing, water, environmental cleanliness, health services, transportation and security. The concept of a “smart city” comes to the fore in responding to these needs and creating opportunities for urban development [1-3].

Smart cities, with their ability to transform the information they provide into social benefit, will create gains in the fields of sustainable development, competitiveness and environmental sustainability, increase the quality of life,

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contribute to economic development, and serve to prepare our cities to reflect the perspective of history and civilization [4,5]. However, the implementation of smart cities will contribute to the achievement of many goals specified in the United Nations Sustainable Development Goals (SDGs), such as "Sustainable Cities and Communities", "Accessible and Clean Energy", "Industry, Innovation and Infrastructure" and "Climate Action" [5].

Definitions and parameters of a smart city are many and are often used in different ways, emphasizing one or more of its aspects. What is common, however, is the use of new technologies to find efficient and cost-effective solutions to urban challenges. The aims of smart cities are [6-8]:

- to transform the city's current and future demands and difficulties into a triggering force throughout all of the city's places and systems,
- to be able to deal with social, physical, and digital planning together,
- to estimate, detect and solve emerging challenges in a systematic, agile and sustainable manner,
- to demonstrate the potential of integrated service delivery and innovation by providing interaction between organizational structures in the city.

Smart cities will be sustainable by effectively managing resources and services based on coordination and interoperability between stakeholders. In order to ensure cooperation and coordination between smart city stakeholders in an agile and organic manner, it is necessary to determine the ecosystem approach, the governance mechanism that will implement this approach, and the responsible stakeholder organizations involved in this mechanism. The smart city accepts the approach of ensuring that expectations and problems are met with future predictions based on data and expertise as a necessity. Meeting this requirement will only be possible with a competent and productive smart city ecosystem [3,5,6,9].

In order to fulfil these goals, smart cities must be managed with the right strategic objectives to satisfy rising demand in a more effective, safe, and ecologically responsible manner. At this point, it is necessary to create long-term action plans and determine strategic goals for smart cities.

Prioritizing strategic goals for smart cities with numerous components is considered as a multi-criteria decision-making (MCDM) problem in this study. MCDM is a robust approach commonly used for analyzing problems with various, often contradictory criteria [10]. The smart city concept's composite structure includes a wide range of contradicting components. When information is uncertain, however, it is difficult to choose and rank alternatives. Decision-Makers (DMs) may have difficulty explaining their views in numbers [11]. Furthermore, DMs may express themselves more freely while using fuzzy numbers. Considering the complex and uncertain nature of this MCDM problem, the hesitant fuzzy linguistic (HFL) approach [12] is employed. This approach is used to provide experts more flexibility by employing comparative linguistic terms and to create an evaluation environment that is more similar to human thinking.

The aim of the study is to propose the integrated HFL MCDM methodology to prioritize strategic goals for smart cities. The HFL Analytic Hierarchy Process (AHP) method is used to compute the weights of the smart city evaluation criteria, while the HFL Multi-Attributive Border Approximation Area Comparison (MABAC) method is used to prioritize the strategic goals for smart cities. These methods are practical, applicable to many fuzzy situations, versatile, dependable, and resilient.

The following is how this paper is organized. The research methodology is discussed in the next section. Section 3 presents the implementation of the research methodology. Finally, the final part brings the paper to a conclusion.

## 2. RESEARCH METHODOLOGY

The proposed methodology in this study is divided into three steps:

- **Step 1.** Determination of the evaluation criteria and strategic goals for smart cities.
- **Step 2.** Calculation of the evaluation criteria weights with the HFL AHP method.
- **Step 3.** Prioritization of the strategic goals with the HFL MABAC method.

Fig. 1 illustrates this research methodology.

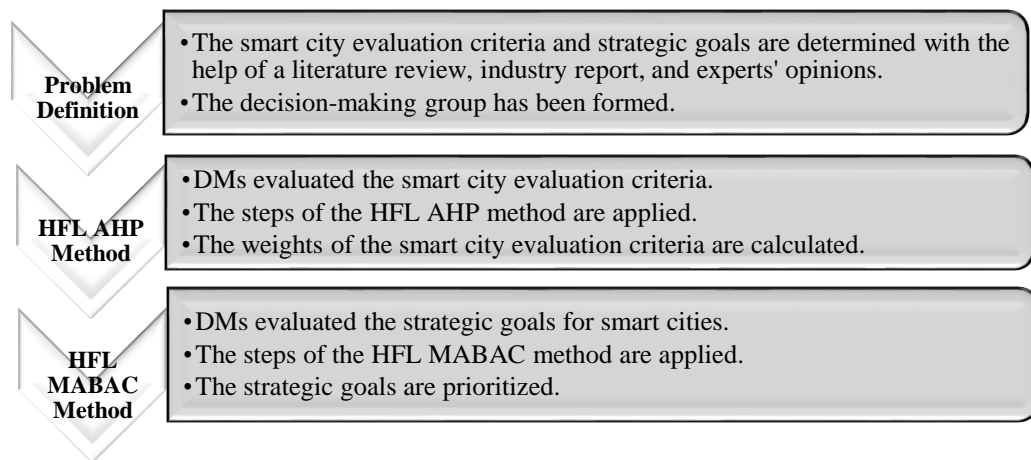


Fig. 1. The steps of the proposed research methodology

### 2.1. Hesitant fuzzy linguistic approach

Uncertain situations frequently present significant decision-making issues in the real world. Linguistic knowledge may be useful in managing ambiguity in this setting. Torra [13] introduced hesitant fuzzy sets in 2010. Rodriguez et al. [12] presented the Hesitant Fuzzy Linguistic Term Set (HFLTS). HFLTS is favored to address experts' hesitancy while expressing their ideas on the MCDM challenge. In HFLTS, experts may express themselves using language such as "at least," "between," and "at most," giving them versatility. As a result of using comparison linguistic terms in the HFLTS, a more human-like evaluation environment is created [12].

The superior ( $H_{s+}$ ) and inferior ( $H_{s-}$ ) bounds are explained as [12,13]:

$$H_{s+} = \max(s_i) = s_j, s_i \in H_S \text{ and } s_i \leq s_j \quad \forall i \tag{1}$$

$$H_{s-} = \min(s_i) = s_j, s_i \in H_S \text{ and } s_i \geq s_j \quad \forall i \tag{2}$$

Liu and Rodriguez [14] provide the envelope for HFLTS,  $env(H_S)$ , which is a linguistic interval with superior and inferior bounds:

$$env(H_S) = [H_{s-}, H_{s+}], H_{s-} \leq H_{s+} \tag{3}$$

### 2.2. HFL AHP method

The AHP model developed by Saaty [15] is the most often utilized in the MCDM field. It is a strong and simple MCDM tool that prioritizes a variety of criteria. When there is ambiguity in the decision-making process, HFL AHP is frequently used. Multiple alternative values reflect a tentative judgment [16]. The AHP approach is widely used in MCDM literature due to its simple structure and ability to solve complex choice problems. The HFL AHP approach was used to calculate the criterion weights in this article. The HFL AHP stages are outlined next [17]:

**Step 1.** The criteria are assessed using pairwise comparison matrices. The linguistic expressions are then transformed to HFLTS. Table 1 depicts the linguistic scale employed in HFL AHP.

Table 1. Linguistic scale for HFL AHP [18]

Linguistic expression	Fuzzy numbers
Absolutely Low Importance (ALI)	(0.11,0.11,0.14)
Very Low Importance (VLI)	(0.11,0.14,0.2)
Essentially Low Importance (ESLI)	(0.14,0.2,0.33)
Weakly Low Importance (WLI)	(0.2,0.33,1)
Equally Low Importance (ELI)	(0.33,1,1)
Exactly Equal (EE)	(1,1,1)
Equally High Importance (EHI)	(1,1,3)
Weakly High Importance (WHI)	(1,3,5)
Essentially High Importance (ESHI)	(3,5,7)
Very High Importance (VHI)	(5,7,9)
Absolutely High Importance (AHI)	(7,9,9)

**Step 2.** The fuzzy envelope, which produces a trapezoidal fuzzy number, is created using the OWA operator [14].  $A = \{a_1, a_2, \dots, a_n\}$  represents a set of components that will be aggregated. It is worth noting that it differs from the set of alternatives. In this case, the OWA operator  $F$  is described as follows [14]:

$$F(a_1, a_2, \dots, a_n) = wb^T = \sum_{i=1}^n w_i b_i, \tag{4}$$

where  $w = (w_1, w_2, \dots, w_n)^T$  denotes the weights vector, with  $w_i \in [0, 1]$  and  $\sum_{i=1}^n w_i = 1$  and  $b$  denotes the associated ordered values vector, and  $b_i \in B$  is the  $i^{\text{th}}$  largest value in  $A$ .

**Step 3.** In the pairwise comparison matrix ( $\tilde{C}$ ), reciprocal values are calculated as:

$$\tilde{c}_{ij} = \left( \frac{1}{c_{ij1}}, \frac{1}{c_{ij2}}, \frac{1}{c_{ij3}}, \frac{1}{c_{ij4}} \right) \tag{5}$$

**Step 4.** Each pairwise comparison matrix's consistency is checked. These matrices are de-fuzzified to ensure consistency [19]. Considering TFN  $A = (l, m_1, m_2, u)$ , it is converted to a crisp number with:

$$\mu_d = \frac{l+m_1+m_2+u}{6} \tag{6}$$

These equations are used to calculate the consistency ratio (CR):

$$CI = \frac{\lambda_{max} - n}{n(n-1)} \tag{7}$$

$$CR = \frac{CI}{RI} \tag{8}$$

where CI refers to the consistency index,  $\lambda_{max}$  is the largest eigenvector of the matrix,  $n$  is the number of criteria, and RI is the random index. Experts have to reconsider the pairwise comparison matrices if they are not consistent.

**Step 5.** The fuzzy geometric mean ( $\tilde{r}_i$ ) of  $\tilde{C}$  is calculated as:

$$\tilde{r}_i = (\tilde{c}_{i1} \otimes \tilde{c}_{i2} \dots \otimes \tilde{c}_{in})^{1/n} \tag{9}$$

**Step 6.** The fuzzy weight ( $\tilde{w}_i^{CR}$ ) of every main criterion is computed as:

$$\tilde{w}_i^{CR} = \tilde{r}_i \otimes (\tilde{r}_1 \otimes \tilde{r}_2 \dots \otimes \tilde{r}_n)^{-1} \tag{10}$$

**Step 7.** Fuzzy global weights of the sub-criteria's are calculated as:

$$\tilde{w}_{ij}^G = \tilde{w}_i^{CR} \times \tilde{w}_j^{CR} \tag{11}$$

where  $\tilde{w}_{ij}^G$  signify sub-criteria global weight.

**Step 8.** Trapezoidal fuzzy numbers  $\tilde{w}_{ij}^G$  are defuzzified and normalized as:

$$w_{ij}^G = \frac{\alpha + 2\beta + 2\gamma + \delta}{4} \tag{12}$$

$$w_{ij}^N = \frac{w_{ij}^G}{\sum_i \sum_j w_{ij}^G} \tag{13}$$

Steps 1-6 are performed for both the main and sub-criteria, and steps 7-8 are used to calculate the weights of the sub-criteria.

### 2.3. HFL MABAC method

In the literature, the HFL MABAC method is used for patients' prioritization and strategic renewable energy source selection, healthcare waste treatment technology selection, strategic analysis of health tourism [20-22]. The following are the steps of the HFL MABAC method:

**Step 1.** The DMs assessed alternatives using the linguistic scale shown in Table 2.

Table 2. Linguistic scale for HFL MABAC [23]

Linguistic term	Si	Abb.	Fuzzy Numbers
Perfect	s3	P	(0.83,1,1)
Very High	s2	VH	(0.67,0.83,1)
High	s1	H	(0.5,0.67,0.83)
Medium	s0	M	(0.33,0.5,0.67)
Low	s-1	L	(0.17,0.33,0.5)
Very Low	s-2	VL	(0,0.17,0.33)
None	s-3	N	(0,0,0.17)

**Step 2.** Using fuzzy envelope, these linguistic expressions are converted into fuzzy numbers [14].

**Step 3.** Fuzzy normalized matrix is determined as:

$$\tilde{R} = [\tilde{r}_{ij}]_{m \times n} \tag{14}$$

$$\tilde{r}_{ij} = \frac{y_{ij} - y_i^-}{y_i^+ - y_i^-}, j \in B; \tag{15}$$

$$\tilde{r}_{ij} = \frac{y_i^+ - y_{ij}}{y_i^+ - y_i^-}, j \in C; \tag{16}$$

with  $y_i^+ = \max (y_{1r}, y_{2r}, \dots, y_{mr})$  and  $y_i^- = \min (y_{1l}, y_{2l}, \dots, y_{ml})$ .

Here, B and C represent benefit and cost criterion sets respectively.

**Step 4.** Equation (17) is used to generate the weighted normalized matrix.

$$\tilde{U} = [\tilde{U}_{ij}]_{m \times n} \tag{17}$$

where  $[\tilde{U}_{ij} = \tilde{r}_{ij} \cdot w_i + w_i]$  and the weights of the components are denoted by  $w_i$ .

**Step 5.** The approximate border area matrix is calculated by using equation (18).

$$\tilde{B} = [\prod_{j=1}^m U_{ij}]^{1/m} \tag{18}$$

the total number of alternatives are denoted by  $m$ .

**Step 6.** The distances between the matrix components of alternative from the border area are calculated as follows:

$$\tilde{D} = U - \tilde{B} \tag{19}$$

**Step 7.** The ranking of alternatives is determined by adding the alternative distance from the border-approximation-area to the criterion function values for the alternatives. The total value of the criterion function of alternatives is computed by adding together all the matrix elements per row.

**Step 8.** The obtained values are defuzzified with equation (20) and ranked.

$$x_{ij} = \frac{(U_{x_{ij}} - L_{x_{ij}})(M_{x_{ij}} - L_{x_{ij}})}{(U_{x_{ij}} - L_{x_{ij}}) + L_{x_{ij}}} + L_{x_{ij}} \tag{20}$$

where  $\tilde{x}_{ij} = (L_{x_{ij}}, M_{x_{ij}}, U_{x_{ij}})$ .

### 3. APPLICATION OF THE RESEARCH METHODOLOGY

The proposed methodology is implemented using an application to demonstrate its applicability. An institution prepares an action plan to implement the smart city approach and wants to prioritize the strategic goals within this action plan.

#### 3.1. Step 1: Identification of smart city evaluation criteria and strategic goals

In this context, the evaluation model for smart city is presented in Fig. 2. The smart city components examined in this study were determined by the World Economic Forum (WEF) in 2020 [24].

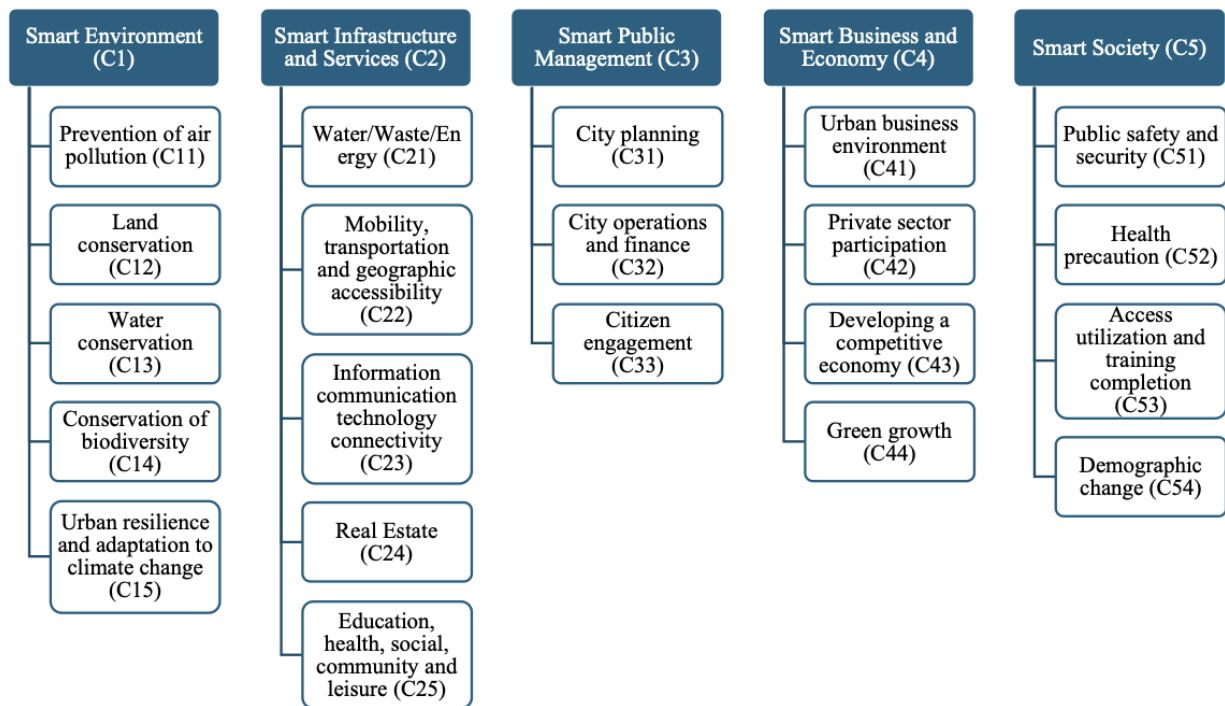


Fig. 2. The smart city evaluation model [24]

In addition, there are four strategic goals such as [6]:

- *Strategic Goal 1 (SG1):* Local Cohesion, Development and Prosperity
- *Strategic Goal 2 (SG2):* Smart City Transformation and Development
- *Strategic Goal 3 (SG3):* People-Focused and Access to Information
- *Strategic Goal 4 (SG4):* International Leadership

Three experts evaluate this proposed model. All experts have appropriate knowledge and expertise in the field of smart cities. The experts' weights are regarded as equal.

3.2. Step 2: Calculation of criteria weights with HFL AHP method

To begin, experts evaluate the main smart city criteria using the linguistic scale shown in Table 1. Table 3 shows the evaluation matrix of the main criteria.

Table 3. Evaluation matrix of main criteria

	C1	C2	C3	C4	C5
C1	EE	Between EHI and WHI	Between ELI and EHI	Between WHI and ESHI	Between ESLI and ELI
C2		EE	Between ESLI and ELI	Between ELI and EHI	Between ELI and EHI
C3			EE	Between ESHI and AHI	Between ELI and EHI
C4				EE	Between VLI and ESLI
C5					EE

The linguistic expressions in Table 3 are transformed into fuzzy numbers using (4). The weights of each main smart city criteria are then calculated using (5)-(10). Table 4 shows the relative weights of the main smart city criteria.

Table 4. Relative weights of the main criteria

	C1	C2	C3	C4	C5	Relative Weights
C1	(1,1,1,1)	(1,1,3,5)	(0.33,1,1,3)	(1,3,5,7)	(0.14,0.32,0.34,1)	(0.045,0.158,0.252,0.947)
C2	(0.2,0.33,1,1)	(1,1,1,1)	(0.14,0.32,0.34,1)	(0.33,1,1,3)	(0.33,1,1,3)	(0.026,0.102,0.146,0.580)
C3	(0.33,1,1,3)	(1,3,3,7)	(1,1,1,1)	(3,6.78,7.22,9)	(0.33,1,1,3)	(0.067,0.291,0.336,1.327)
C4	(0.14,0.2,0.33,1)	(0.33,1,1,3)	(0.11,0.14,0.15,0.33)	(1,1,1,1)	(0.11,0.14,0.2,0.33)	(0.019,0.053,0.072,0.299)
C5	(1,3,3,7)	(0.33,1,1,3)	(0.33,1,1,3)	(3,5,7,9)	(1,1,1,1)	(0.067,0.274,0.334,1.327)

Each sub-criteria evaluation matrices are generated using the linguistic scale supplied in Table 1 to determine the weights of sub-criteria. The linguistic expressions are translated into fuzzy numbers using (4). The weights of each sub-criteria are determined using (5)-(11). The values are then normalized with (13) after being defuzzified using (12). Table 5 summarizes the final findings.

Table 5. Weights of smart city evaluation criteria

Sub-Criteria	Global Weights				Defuzzified Weights		Normalized Weights
C11	0.003	0.028	0.082	0.910	0.189		0.057
C12	0.001	0.010	0.025	0.307	0.063		0.019
C13	0.004	0.028	0.132	1.008	0.222		0.068
C14	0.002	0.024	0.068	0.781	0.161		0.049
C15	0.002	0.019	0.055	0.660	0.135		0.041
C21	0.001	0.009	0.018	0.236	0.049		0.015
C22	0.002	0.026	0.056	0.698	0.144		0.044
C23	0.002	0.031	0.053	0.662	0.139		0.042
C24	0.000	0.003	0.006	0.082	0.017		0.005
C25	0.001	0.017	0.038	0.427	0.090		0.027
C31	0.015	0.175	0.290	2.477	0.570		0.174
C32	0.004	0.038	0.061	0.898	0.183		0.056
C33	0.003	0.033	0.047	0.621	0.131		0.040
C41	0.002	0.022	0.039	0.506	0.105		0.032
C42	0.001	0.005	0.008	0.136	0.027		0.008
C43	0.001	0.007	0.012	0.236	0.046		0.014
C44	0.001	0.014	0.021	0.384	0.076		0.023
C51	0.011	0.121	0.205	1.953	0.436		0.133
C52	0.006	0.075	0.125	1.484	0.315		0.096
C53	0.002	0.027	0.051	0.693	0.142		0.043
C54	0.001	0.009	0.015	0.230	0.046		0.014

According to the results of the HFL AHP, the most crucial criterion is “City planning (C31)”. The second one is “Public safety and security (C51)”. The third one is “Health precaution (C52)”.

3.3. Step 3: Prioritization of the strategic goals with the HFL MABAC method

DMs used the linguistic terms in Table 2 to evaluate the strategic goals for smart cities. Table 6 displays the DMs' evaluation matrix between evaluation criteria and strategic goals.

Table 6. Evaluation matrix

	C11	C12	C13	C14	C15	C21	C22	.	.	.	.	.	.	C42	C43	C44	C51	C52	C53	C54
SG1	MG	H	H	MG	H	MG	MG	.	.	.	.	.	.	H	L	H	P	H	MG	MG
SG2	L	MG	MG	L	L	L	VH	.	.	.	.	.	.	L	L	VH	L	L	L	VL
SG3	VL	VL	L	VL	VL	VL	L	.	.	.	.	.	.	L	MG	MG	L	L	P	N
SG4	N	VL	VL	N	VL	L	VL	.	.	.	.	.	.	VL	L	MG	MG	MG	VH	MG

The linguistic terms in Table 6 have been transformed into fuzzy numbers. The evaluation matrix is normalized using (14)-(16) and the weighted normalized matrix is constructed with (17).

The approximate border area matrix and distances between the matrix components of the alternative from the border area are calculated with (18) and (19). Finally, these values are defuzzified and the results are shown in Table 7.

Table 7. The results

Strategic Goals	Si	Defuzz.	Rank		
SG1	-0.098	0.318	0.685	0.3017	1
SG2	-0.355	0.051	0.457	0.0512	2
SG3	-0.493	-0.102	0.283	-0.1041	3
SG4	-0.533	-0.163	0.240	-0.1522	4

The “Local Cohesion, Development and Prosperity (SG1)” is the most appropriate strategic goal at the end of the HFL MABAC method. The second, third, and fourth strategic goals are prioritized by SG2, SG3, and SG4, accordingly.

#### 4. CONCLUSION

Smart cities use information and communication technologies extensively to serve citizens better and use resources more efficiently. Smart city applications are becoming more widespread all over the world, therefore it is important for all public institutions, local governments, universities, private sector and non-governmental organizations to act in a common set of actions in order to plan and direct smart city studies on a national scale.

The aim of the study was to propose the integrated HFL MCDM methodology to prioritize strategic goals for smart cities. In this context, a smart city evaluation model was presented. Then, a research methodology for prioritizing strategic goals was provided. Firstly, the HFL AHP method was used for the computation of the smart city criteria weights, while the HFL MABAC method was used to prioritize the strategic goals for smart cities. To overcome uncertainty in the MCDM process, HFL approach was applied. This approach provides experts more flexibility by employing comparative linguistic terms and to create an evaluation environment that is more similar to human thinking. To demonstrate the effectiveness of the proposed research methodology, an application was provided. The most appropriate strategic goal was found as “Local Cohesion, Development and Prosperity (SG1)”.

One of the perspectives may be considering the dependence and the interaction between the criteria and extending our analysis by applying the analytic network process (ANP) approach. This MCDM problem can be solved using other advanced fuzzy MCDM techniques to compare the other results with our result from the second perspective.

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# Using Artificial Intelligence to Foster Performance: A Case Study of Public Organizations in the Kingdom of Saudi Arabia

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## Abstract

Human Resource Management (HRM) has developed through several decades to achieve its goals which are focused on improving the quality of HRM services to minimize cost and boost efficiency. In organizations, HRM is associated with the management of the workforce. At each stage of the development of HRM, we notice the existence of technologies that show technological growth and influence HRM practices, starting with the early adoption of computers, then office automation and now the Artificial Intelligence (AI) revolution. This study aims to review previous literature on how AI boosts HRM performance and to evaluate the effectiveness of AI in the practice of HRM. The study will involve two stages. The first stage, a preliminary survey, will identify public sectors in Saudi Arabia that use AI in their HRM processes, while the second stage will involve collecting comprehensive and accurate data for these public organizations and sectors. The findings of the review of the use of AI in HRM indicate that AI is gradually leading to the merging of organizational processes, and as leaders become more conversant with it, it will gain prominence across high, medium and low levels of organizational hierarchy. Organizations should evaluate their readiness to implement AI in their HRM processes. Moreover, AI has the potential to enhance the efficiency of HRM process, improve the accuracy of decisions, and reduce operational costs.

**Keywords:** Human Resource Management; HRM; Artificial Intelligence; AI; Performance

## 1. INTRODUCTION

There has been rapid development and transfer of technologies, leading to fierce competitions between nations while planning for the future and preparing to cope with any attendant changes. The adoption of intelligent technologies at different levels has become vital for countries as these technologies will help shape the future. Thus, organizations face a challenge to cope with such developments. There is massive technological revolution around the world, one of the most important being AI, which is already exerting a huge effect in business environment (Paschen et al. 2020). Moreover, Ehlomahn (2022) states that “[r]ecent advances in AI have enabled machines to learn, improve, and adapt, thus increasing performance over time” (p. 1721). Researchers have emphasized that AI application to HRM can provide technical support that improves organizational processes (Qiu and Zhao 2018). With continuous advancement in AI technology improving the efficiency of HR management, Qiu and Zhao (2018) state that AI brings for HRM both opportunities and challenges, viz.: “opportunities mainly include: reducing the cost of HRM; improving the efficiency and quality of HRM; and promoting the transformation of HRM. The challenges include: impact on

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low-end jobs; increased equipment maintenance cost; urgently need a large number of highly qualified professionals who understand the core technology of artificial intelligence; the traditional HRM model is affected; puts forward brand-new requirement[s] to the ability structure of employee[s]" p (144).

AI benefits may motivate organizations to find ways to overcome challenges, as AI applications improve process efficiency by automation of tasks to boost productivity and operational efficiency (Paschen et al. 2020). A survey of business executives by Garner show that the majority of executives believe that AI will be key to business development in the near future (Shin and Kang 2022). AI perceived as competence with organization and support operations through enhancing or enable AI applications (Borges et al. 2021). The literature highlights challenges of adopting AI applications (Collins et al. 2021). In a recent study, Mikalef et al. (2023) state that "there is to date a limited understanding on how organizations should plan to develop AI into a strategic asset that can be leveraged to gain a competitive advantage" (p.2).

AI has become a component that many countries around the global are leveraging to build knowledge economics that is based on data and new technologies. The Kingdom of Saudi Arabia (KSA) is exploiting new technologies on data and AI to achieve its Vision 2030 through the Saudi Authority for Data and Artificial Intelligence (SADAI), a national strategy for data and artificial intelligence. AI is one of the most important modern technologies that contribute to rapid development by increasing innovation and growth in different fields such as management, customer service production, marketing and finance (Alsheibani et al. 2018; Wang et al. 2019; Jelonek et al., 2020). AI can improve business quality, efficiency and productivity (Coombs et al. 2020. Kirchmer and Franz, 2019). As AI technologies are becoming widespread, there are concerns about ambiguity, exaggeration, and higher levels of expectations in their output that may not be representative of reality (SADAI. 2022). Thus the understanding of AI and its potential may be ambiguous for executives and decision-makers in the public and private sectors.

In recent years, organizations have been adopting AI across different fields (Timbe et al. 2019). The CEO of IBM, cited in Duan et al. (2019), argues about AI technologies: "technologies to augment human intelligence...By and large we see a world where this is a partnership between man and machine and this is in fact going to make us better and allow us to do what the human condition is best able to do" p(63). Others such as Stephen Hawking state that "the development of full artificial intelligence could spell the end of the human race" Duan et al (2019: 63). Therefore, the views of experts about the future of AI require more investigation on how humans can deal with it and mitigate its negative impact. The emergence of AI can be traced to the 1950s. The rapid growth and advancement of big data technologies, leading to the development of super-fast computers, have revitalized AI (Duan et al 2019). Therefore, top corporations are increasingly adopting AI (Schmidt et al. 2020. Jarrahi 2018). AI research in the field of business is rapidly expanding (Coombs et al. 2020; Alsheibani et al. 2018; Enholm et al. 2022). AI is transforming businesses (Daugherty and Wilson. 2018). Agrawal et al. (2018) argue that AI systems make it possible for organizations to make data-based forecasts. Therefore, AI can enhance decision-making (Duan et al. 2019). Duan et al. (2019) quote the 2018 Gartner technology survey, which found that 59% of organizations are working for their AI strategies while gathering information for the same purpose. Many studies demonstrate the role of AI in enhancing organizational performance (Coombs et al. 2020; Alsheibani et al. 2018; Enholm et al. 2022; Mikalef and Gupta 2021). AI can play a role in employee training, development, recruitment and selection, thus improving operational and financial performance of organizations while reducing human error (Afiouni 2019; Enholm et al. 2022).

The Kingdom of Saudi Arabia (KSA) established the Saudi Data & AI Authority (SDAIA), which is responsible for data and AI, including big data. The fifth strategic objective of the SDAIA is "maximizing data and AI's contribution to realizing the objectives of [Saudi] Vision 2030" (SDAIA, 2024). The emphasis of Saudi Vision 2030 is on creativity, innovation and new technologies. Thus, this study aims to review the application of AI in HRM and propose opportunities for organizations to benefit from this application. A review of the literature on the adoption of AI in the public sector highlights factors that support or do not support this adoption, including legal and political factors (Dwivedi et al. 2021). There is a dearth of studies that investigate how public organizations could utilize AI technologies to improve performance (Mikalef and Gupta 2021).

### *1.1. Study problem*

Nowadays, almost all HRM activities are performed using computers. Technological advancement has brought about office process automations, where various business processes are linked.. With AI becoming widespread, big data has become more readily available, and the computing capabilities of many applications have improved (Enholm et al 2022, Pumplun et al 2019). Although a lot of effort has led to advances in technology till the current stage of high technology, the field of HRM is still faced with challenges and obstacles to the benefits of technology (Mikalef et al. 2023; Davenport and Ronaki 2018). Previous studies have highlighted organizational and administrative

obstacles preventing the proper adoption of technology for HRM. Moreover, some studies (Wamba-Taguimdje et al. 2020; Dwivedi et al 2021; Mikalef et al. 2023) have indicated that employees lack the requisite skills to use AI applications and so are not motivated to use such tools. Mikalef et al. 2023 state that “[p]ublic organizations are likely to face challenges when it comes to acquiring the necessary data to deploy AI, securing financial resources invest in the necessary technological infrastructure, or are restricted by a lack of personnel and culture that does not promote digital transformation” (p.2). Therefore, it is important to investigate the implementation of AI in the Saudi public sector.

### *1.2. Artificial Intelligence in Saudi Arabia*

The Saudi government established the Saudi Authority for Data and Artificial Intelligence (SADAI) to regulate and organize the data and AI sector, and foster innovation and digital transformation through three main supportive entities: (a) Office of National Data Management, (b) National Information Center, and (c) National Artificial Intelligence Center, (SADAI 2022). The SADAI oversees four responsibilities to achieve the objectives of Saudi Vision 2030, viz.: (1) develop national strategic directions for data and artificial intelligence in the KSA, (2) coordinate the implementation of strategic directions for data and artificial intelligence at the government level, (3) supervise the implementation of the strategic directions of the Authority’s affiliated entities, and (4) effectively communicate data achievements at local and global levels (SADAI, 2022. P.28). All this shows that the government of the KSA is working systematically to establish and implement a national strategy for AI in the public sector.

## **2. LITERATURE REVIEW**

HRM is viewed as the backbone of organizations. Traditional HRM involves the management and organization of employee behavior through the application of HR functions, such as planning, controlling, etc., to maximize employee benefits and achieve organizational interests and goals (Qiu and Zhao 2018). In this era of the internet and technology revolutions, HRM needs to pay more attention to talented staff, meaning that organizations need to increase their focus on people besides management and adopt a more scientific approach to improve the level of management and efficiency (Qiu and Zhao 2018). Therefore, in this knowledge economy era, HR has become a main part of knowledge innovation. Thus, organizations should invest towards improving employee capabilities and skills in order to boost their employee quality and competitive advantages (Qiu and Zhao 2018; Enholm et al. 2022). Organizational contexts, such as structure and strategic orientation, are viewed as one of the main factors that determine if organizations are ready to adopt AI (Enholm et al 2022). Organizational culture is also regarded as a strong force that influences the decisions of organizations to adopt AI (Mikalef and Gupta 2021). Above all, top management support and organizational readiness are seen as the strongest factors that inform the decision to adopt AI (Alsheibani et al. 2018). A more rounded view of AI from a HRM perspective will make organizations less resistant to incorporating it into their HRM processes. The concept of AI may be better understood when its constituent notions are explained separately.

Artificial refers to something made by humans, rather than something that happens by nature (Mikalef and Gupta, 2021), whereas “intelligence” can be used to describe “[something that] involves some mental activities, such as learning, reasoning, understanding, seeing relationships and more” (Lichtenthaler, 2019 .p. 10). Thus, taken together, artificial intelligence means the ability of computers and machines to simulate human intelligence. Thus, it can be said that AI is about systems that simulate human intelligence to perform tasks and use machine learning principles to improve their performance based on previously collected data in different forms. The notion of AI has been defined as being generally about tools used to solve time-consuming and complex tasks that may be too tedious for humans (Enholm et al. 2022). AI is a branch of computer technology. As stated by Qiu and Zhao (2018), “AI is a discipline that studies computers to simulate certain thought processes and intelligent behaviors (such as learning, reasoning, thinking, planning, etc.)” (p.145). Table (1) presents some definitions of AI available in the literature. Most of these definitions refer to the attribution of human capabilities to computers so they can perform tasks that require human intelligence (Enholm et al. 2022). Through the concept of AI, computers can be made to emulate human performance. AI systems require input to learn, understand and then perform actions. AI technologies are trained with algorithms that support them to think and act like humans (Enholm et al. 2022). The definitions of AI in the literature can be classified into two main groups. The first group of definitions views AI as a tool that performs tasks that may be time-consuming, difficult or impossible for humans to accomplish (Makarius et al. 2020). The second set of definitions views AI as a system that collects and interprets data, learns from the data, and predicts behavior based on the data in a way that mimics human intelligence (Mikalef and Gupta 2021). These groups of definitions seem to suggest that AI can be

applied in a work environment to boost productivity, efficiency and competitive advantages. AI improves performance (Enholm et al. 2022) and the capabilities of organizations.

Table (1): AI definitions

Author(s) (date)	Definitions
SADAI (2022)	“[S]ystems that use technologies capable of collecting data and using it to predict, recommend, or make decisions—with varying levels of autonomy—and choose the best action to achieve specific goals” (p.8).
Afiouni (2019)	“AI is the general concept for computer systems able to perform tasks that usually need nature human intelligence, whether rule-based or not” (p.5)
Madanaguli et al. (2024)	“[T]he family of technologies that enable machine[s] to simulate human-like cognitive functions such as learning, thinking, and making decisions based on current and past inputs and outputs” (p.2)
Wang et al. (2019)	“AI is a broad concept that captures the intelligent behavior of [...] machine[s]” (p.2)
Wamba-Taguimdje et al. (2020)	A set of “theories and techniques used to create machines capable of simulating intelligence. AI is a general term that involves the use of computer to model intelligent behavior with minimal human intervention” (p.1894)
Mikalef and Gupta (2021b)	“AI is the ability of a system to identify, interpret, make inferences, and learn from data to achieve predetermined organizational societal goals” (p.3)

Previously, AI was restricted significantly to the theoretical domain (Mikalef et al. 2023), but with advancement in recent years in computing and data generation, AI now also finds application in the practical domain (Haenlein and Kaplan 2019). AI uses big data to train models and make decisions, thus data is fundamental to AI (Enholm et al. 2022, Pumplun et al. 2019). A critical feature of data is its quality, since quality data leads to better training (Baier et al 2019) and is very important for making reliable decisions and predictions (Alsheibani et al. 2018). Despite the rapid growth of AI technology, its value is viewed with some ambiguity (Fountaine et al. 2019). Although organizations invest effort, time and resources on AI, its benefits are not yet very convincing (Makarius et al. 2020. Alsheibani et al. 2020). Moreover, Duan et al. (2019) have noted that using AI for business operations has its challenges. One such challenge concerns how data from diverse sources should be cleaned, identified and integrated (Mikalef and Gupta 2021). Another challenge involves how to integrate AI applications with available business systems (Davenport and Ronaki. 2018). Enholm et al. (2022) state that “there is still a lack of a holistic understanding of how AI is adopted and used in organizations, and what are the main value-generating mechanisms” (p. 1710). Organizations, in order to plan or deploy AI applications to solve business problems, must assess their capacity and resources (Mikalef et al. 2023). This requires that organizations develop and build systems that allow them to leverage the full potential of AI. Schaefer et al (2021), in their study on the use of AI in public organizations, found that organizations face some hurdles that prevent the use of AI for business operations, and some of these hurdles are due to insufficient resources. Other studies have noted some challenges public organizations face in adopting AI for their operations, such as limited financial resources to invest in technological infrastructure and personal and cultural challenges that mitigate digital transformation (Mikalef et al. 2019, Wirtz et al. 2019, Mikhaylov et al. 2018).

2.1. Existing practical methods of using AI in HRM

The role of AI in HRM is growing tremendously, with far-reaching impact. With advancements in AI technology it has become possible to mimic human knowledge when using AI tools to screen job applications (Johnson et al. 2022). The use of computers to perform repetitive tasks previously done by humans boosts efficiency and increases accuracy (Elhom et al 2022). Although AI is still in its developmental stage, many organizations have realized its importance and value (Qiu and Zhao 2018), as it can help organizations to achieve their goals.

SADAI (2022) classifies the capability of AI into three levels:

1. Limited capability: AI has the ability to execute limited tasks (this includes the majority of AI technologies that are used nowadays)
2. General capability: AI has the ability to execute any task that humans can do (this is just theoretical ideas that face major challenges)
3. Supernatural capability: AI has the ability to outperform humans (this is just theoretical ideas that face major challenges)

In a previous section, we have seen some broad definitions of AI. Now, we discuss some of the technologies that are used to achieve the objectives highlighted by these definitions Table (2) presents these technologies.

Table (2): Most prominent AI technologies at the present time. Source: (SADAI 2022)

Technology	Definition
<b>A. Machine learning</b>	
Wave learning	Learn the relationship between inputs and outputs via a user-labeled dataset
Non-wave learning	Extract patterns from a dataset that is not labeled by a user
Reinforcement learning	Interact with the surrounding environment through trial and error and strive to achieve the highest result
Deep learning	Suing neural networks with multiple layers to process data, which may be wave, non-wave, or augmented
<b>B. Natural language processing</b>	
Text generation	Create useful texts in accordance with requirements
Answer the questions	Answer users' questions automatically
Machine translation	Translate text into different languages
<b>C. Computer vision</b>	
Recognize things	Recognize objects in photos or videos
Recognize people	Identify people through photo, audio or video
<b>D. Speech processing</b>	
Convert speech to text	Recognize and convert sounds into text
Convert text to speech	Recognize and convert text into sound
<b>E. Robots</b>	
Industrial robot	Used in industrial fields to automate processes and applications
Service robot	Used in business or personal areas to accomplish certain tasks or services.

Previous studies have focused on prominent AI technologies such as machine learning and deep learning (Enholm et al. (2022)). As indicated by SADAI (2022), the commonest application of AI nowadays is in machine learning, especially deep learning (p. 14). Machine learning is very suitable for data processing and pattern relation understanding, and boosts the accuracy of conclusions and the accuracy of decision-making in specific tasks. Machine learning relies on data availability and advancement in computers (Afiouni, 2019). As indicated in Table (2), machine learning has four sub-fields. Wang et al. (2019) have also noted that “there are four training categories of machine learning algorithms: supervised, semi-supervised, unsupervised and reinforcement” (p. 2).

### 3. METHODOLOGY

The HRM department plays a core role in organizations. Thus, advancement in how HR processes are performed could lead to competitive advantages and sustainability for organizations. Analyzing organizational data using machine learning in order to make predictions and/or decisions can disclose relationships and patterns. For example, financial companies may benefit from machine learning and deep learning if their models support the application of AI (Wang et al. 2019). Theoretically, AI can provide organizations with a typical working environment, as it supports business processes by using big data for different HR functions to perform tasks that would be tedious and time-consuming for humans. Therefore, AI may play a vital role in boosting the accuracy of decisions by eliminating errors, thus improving the overall HRM process. This study explores the role of AI applications in public organizations in the KSA.

#### 3.1 Data collection

This research aims to study public organizations in Saudi Arabia that use AI technologies in order to explore the effects of AI on HRM performance. A preliminary survey to reconnaissance organizations that have incorporated AI into their business processes was distributed to 49 leaders of office data management at public organizations in the KSA. The government of the KSA established an office of data management for each public sector. This initial survey was distributed to the supervisors of these offices since they are knowledgeable in the study subject.

#### 3.2 Preliminary findings

Having reviewed a series of guides regularly published by SADAI on artificial intelligence for executives in the public sector and the feedback from the preliminary survey distributed to leaders of Offices of Data Management of 49 public organizations in the KSA to evaluate the role of AI in the public sector, we have obtained some fundamental

information about how far AI technology has been adopted in the Saudi public sector. After the survey, we held preliminary meetings with 7 organizations that have implemented AI for their processes. The Office of Data Management executives highlighted the following few important points that organizations should take into account if they want to implement AI technologies for their processes: 1. the data should be clean, 2. they should have the requisite technological infrastructure, and 3. they should develop the relevant skills of their employees. This study will collect data through semi-structured interviews with leaders of organizations that have adopted AI.

### 3.3 Expected progress

This current stage of this study has reviewed the literature on the use of AI in HRM. It discusses opportunities and challenges of applying AI to HRM and identifies public organizations in Saudi Arabia that have implemented AI for their HRM processes. Rapid advances in AI technology might make organizations reluctant to adopt AI for their operations. This claim, however, will require qualitative investigations with data collected by interviewing organization leaders to gain in-depth insight about the adoption of AI by organizations. Nevertheless, these rapid advances in AI technology offer promising advantages for HRM, although they may require highly sophisticated infrastructure. This study aims to evaluate the performance of organizations that have incorporated AI into their HRM operations, and the preliminary findings from our survey of 49 organizations indicate that the use of AI in public organizations in the KSA is not widespread. Semi-structured interviews will be conducted with the leaders of the Offices of Data Management to get better understanding of these findings. Also, the reports and documents published by the SADAI will be studied. Data will be collected in June, July and August, and data analysis will take place in September and October. The paper is expected to be completed in the last quarter of this year.

## 4. CONCLUSION

The AI era has brought about the interaction and cooperation of machines and humans, and has introduced a new pattern in the workplace. It seems likely that new interactions and cooperations will be engendered in the future. Also, AI may bring new opportunities and challenges for humans. HR managers need to incorporate HR, science and technology and use AI to improve productivity and efficiency, and tasks can be distributed between staff and machines. There is also the need for talented employees with the requisite AI skills. Therefore, each organization has to adapt its HR strategies to suit its needs. AI is an important technology that will impact the future of business and the society at large. Organizations that want to leverage the full benefits of AI must invest in AI technologies and infrastructure as well as in their employees. Organizations need to establish and implement AI strategies and raise awareness of the benefits of AI for HRM. Employee AI skills and competencies should also be developed, as well as their knack for innovation and creativity. As more and more AI concepts, including machine learning, decision analysis and big data, find application in HRM, the nature of the profession continues to evolve. This evolution requires HR employees with new skillsets and capabilities and who are innovative.

The KSA has established the SADAI and launched a national strategy for data and artificial intelligence to encourage the use of AI technologies in the public sector. The Saudi public sector should establish a strategy for digital transformation and develop their employees' capabilities in that regard. As indicated by the SADAI (2022), "there is no doubt that artificial intelligence is one of the basic components of technical transformation in the modern era" (p.18). Organizations that intend to implement AI for their operations should start with a pilot AI project that is uncomplicated and practical, and they should put in place mechanisms for regular evaluation (Mikalef and Gupta, 2021; Afiouni, 2019). Furthermore, organizations should build an internal team of AI specialists and provide opportunities for extensive training and development for employees in order to boost their skills and expertise. (Keding 2020). Enholm et al. (2022) emphasizes the need for organizations to develop AI strategies in order to enjoy the benefits of systematic implementation of AI. This study highlights the importance of AI and intimates' leaders in public sectors in the KSA of the need to incorporate AI technology into public sector processes. In addition, this research illustrates the role of AI applications in boosting performance and the quality of services in public organizations.

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