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Evaluating Competitiveness of Tourism Destinations: Insights from Marketing and Experience Indicators

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Abstract

Various indicators were employed to gauge the competitiveness of tourist destinations. Among them, marketing and experience indicators stood out as pivotal factors, emphasized by numerous authors and established theoretical models. Nonetheless, merely possessing robust marketing strategies and memorable experiences didn't guarantee true competitiveness in the tourism market. It was imperative to leverage these indicators effectively to entice travelers to the locale. This article clarified the existing methodology utilized in the TOURCOMSERBIA initiative for continuously evaluating the status of Serbia as a competitive tourism spot, with a specific emphasis on marketing and experience indicators and their impact on tourist appeal. The development of this model occurred across four stages, encompassing extensive literature review, expert consensus gathering, initial testing, and final model verification. Within the TOURCOMSERBIA research, a comprehensive examination of literature pertaining to the competitiveness of the tourism industry was conducted, revealing marketing and experience as prominent indicators, which were underscored within this article. This research endeavored to emphasize the significance of utilizing marketing and experiential indicators to improve the allure of a tourist destination within the global tourism sector. As we delved into the results of the TOURCOMSERBIA exploration, we underscored the pivotal function that marketing and experience indicators played in shaping tourists' perceptions and decisions. By understanding and harnessing these indicators effectively, destinations like Serbia could enhance their competitiveness and stand out in the global tourism market.

Keywords: tourism destination competitiveness; marketing and experience indicators; Serbia; TOURCOMSERBIA model

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1. Introduction

In today's highly competitive market environment, attaining the desired competitive standing is essential for a tourism destination, and this largely hinges on effective management practices. This approach entails a clear commitment from tourism destinations to fostering the growth of tourism with a focus on delivering exceptional visitor experiences. It involves destination management efforts that prioritize responsible utilization of the destination's resources, the implementation of well-defined strategies, continuous development of the tourism product, and enhancing the overall value offered to tourists.

Assessing the competitiveness of tourism destinations is an ongoing process deeply embedded within destination management practices. Adopting a long-term approach involves consistently and systematically reviewing the destination's competitive status over time. These insights serve as a basis for targeted efforts to enhance the advantageous attributes of the tourism destination.

The evolution of competitiveness evaluation in tourism has led to various approaches and models tailored to different destination contexts. This has resulted in the identification of indicators that effectively measure the position of a travel locale in the present dynamic tourism market, regarding competitiveness. However, not all models are universally applicable to every destination. Every destination and its distinct landscape demand a tailored strategy and framework that mirrors their unique environments and competitive conditions.

Several notable models have emerged, including the World Economic Forum's Travel & Tourism Competitiveness Index (WEF T&TCI) and Travel & Tourism Development Index (WEF T&TDI), (WEF, 2019; WEF 2022), Dwyer and Kim's Integrated Model of Competitiveness (Kim and Dwyer, 2003) and Ritchie and Crouch's model (Ritchie and Crouch, 2003). Other authors have also contributed by defining competitiveness principles and proposing evaluation frameworks. For instance, Poon (1993) identified competitive success principles, while De Keyser and Vanhove (1994) analyzed Caribbean destinations and identified five key competitiveness indicators. Go and Govers (1999) suggested an evaluation determined on seven criteria: includes amenities, ease of access, service standards, general accessibility, perception of the destination, weather conditions, local surroundings, and overall

appeal. Kim (2001) proposed a framework dividing indicators into primary, secondary, and tertiary categories, with separate considerations for competitiveness consequences such as tourism demand, employment, and income.

Numerous scholars emphasize the crucial link between a tourism destination's marketing and experience metrics and its capacity to attain competitiveness in the market. Extensive research has explored how tourism destinations are perceived (for example, Harrill, 2009; Richards and Wilson, 2007; Mazanec and Wöber, 2010), where people's perceptions and familiarity with destinations regularly originate from their mental images of these locations (Xiang *et al*, 2008; Keller, 2003). Competitive factors of a destination comprise economic standing, political environment, psychological appeal, social and cultural dynamics, and environmental conditions and, notably, marketing, and experiential dimensions are becoming increasingly significant (Mulec and Wise, 2013; Dwyer and Kim, 2003; Cucculelli and Goffi, 2016; Petrović *et al*, 2017). Furthermore, individuals involved in tourism governance and strategic development, alongside planners and other relevant stakeholders, dedicate considerable time and financial resources to enhance destinations (Kozak, 2004).

The issue arises regarding whether a single model can effectively compare the competitive edge of every tourism destination globally. While adopting a single model for destinations in similar geographic areas, possessing akin natural and cultural resources, and offering comparable tourism experiences is feasible, it may not be applicable universally. Since numerous models concentrate on assessing the competitive status of tourism locales, they are not able to be universally applied across all destinations (Popesku and Pavlović, 2013).

The tourism industry in Serbia is undergoing development, yet there's a considerable journey ahead, particularly regarding enhancing the destination's market positioning. On the report of the World Travel and Tourism Council (2022), in 2019, tourism contributed for 5.9% to Serbia's gross domestic product, followed by 3.7% in 2020 and 3.6% in 2021. Consequently, the objective of this research is to spotlight the suitability of the framework model TOURCOMSERBIA, tailored specifically for the context of Serbia, along with the marketing and experience indicators selected through literature analysis and comprehensive methodology. Additionally, it seeks to deliver the results concerning the status of these metrics concerning Serbia.

2. TOURCOMSERBIA methodology - marketing and experience indicators selection

The development of the TOURCOMSERBIA model involves several stages, encompassing an exhaustive examination of literature, the utilization of the Delphi technique and conducting pilot trials and the final stage of model establishment and validation. The primary objective of this model is assessing the competitive edge of Serbia as a tourist hotspot. This paper focuses predominantly on indicators concerning the marketing and experience of the tourism destination. Furthermore, this paper will only delve into the initial three stages of this process in detail.

The study utilizes the SCOPUS repository to assess academic works concerning marketing, experience, tourism destination attractiveness, and competitiveness. The objective is to comprehensively explore citation metrics, with particular emphasis on the methodologies and models, particularly highlighting the approaches and indicators, employed for evaluating marketing, experience, and tourism destination attractiveness.

A total of 55 English-language articles mentioning "marketing and experience indicators" were identified in SCOPUS spanning from 2000 to March 2022. These articles were further scrutinized for evaluation. Consequently, Table 1 provides a synopsis of academic studies on marketing and experience indicators, deemed relevant by Serbian tourism stakeholders (both internal and external) for promoting Serbia as a tourism destination. Particular focus was placed on analyzing the conceptual framework proposed by Ritchie and Crouch regarding destination competitiveness, the comprehensive framework for evaluating destination competitiveness crafted by Dwyer and Kim, along with additional pertinent research on tourism competitiveness to identify a diverse array of marketing and metrics of experience for assessing Serbia's competitive stance as a prime destination for tourism. During this phase, experts meticulously reviewed the indicators, eliminating redundant entries and those not pertinent to the study of destination competitiveness.

To reach a consensus on the key marketing and experience indicators crucial for evaluating the competitiveness of the tourism sector of Serbia, the Delphi technique is employed. The principal aim is to secure backing from professionals in the field to guarantee the incorporation of pertinent indicators in the survey. The Delphi technique consists of several iterations of confidential questionnaires, with each successive iteration, leveraging the knowledge acquired in the preceding rounds. This approach is frequently utilized in situations marked by significant indeterminacy, intricacy, or divergence of opinions. Its purpose is to mitigate biases, reduce the impact of strong-willed individuals, and ensure that every specialist has a fair chance to express their viewpoints. In the final round, specialists are provided with previous findings to inform their decision-making process.

The selection of specialists and academics as participants in the Delphi approach is crucial for ensuring the validity of the collected data. The specialists engaged in the Delphi technique encompassed delegates from both government and corporate sectors of the tourism industry, including tourism organizations, tour operators, hotel managers, NGOs, as well as experts from academic circles such as professors and researchers. Three testing iterations were conducted, involving 42 specialists in the initial iteration and 35 investigators in the subsequent two iterations. In the final round of the research, a total of 17 experts from academic societies and 18 industry professionals participated.

The selected indicators are categorized across three investigations: one targeting interior parties involved, such as residents of the local community and industry experts, another aimed at global travelers, and a third tailored for targeting travel agencies globally. Figure 1 depicts the TORUCOMSERBIA model Framework.

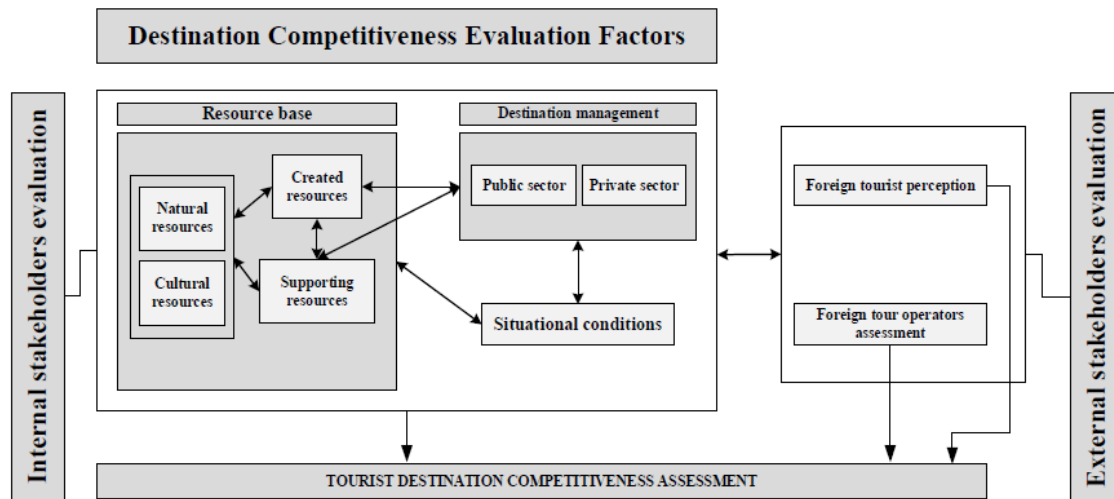


Figure 1. TOURCOMSERBIA Conceptual model Framework

Alongside other elements impacting competitiveness, each questionnaire incorporated fourteen indicators pertaining to marketing and experience considerations. To ensure accuracy and clarity in the ultimate study phase, initial testing commenced with pilot trials. Pilot trials were carried out both through electronic and in-person arrangements during the period encompassing July and August of the year 2022. Participants were tasked with assessing assertions regarding the current destination competitive status of the Republic of Serbia on a spectrum ranging from 1 (firmly dissent) to 5 (completely endorse). Additionally, participants could select 0 or 6 if they felt they lacked sufficient knowledge to answer or if they believed the question was inadequately formulated. Figure 2 illustrates the methodological process for developing the model.



Figure 2. The elucidation of the TOURCOMSERBIA model

130 participants took part in the initial survey, comprising 63 global travelers, 3 overseas travel agencies, and 64 interior parties. Aside from existing as pivotal indicators of tourism competitiveness, we have observed that marketing and experience resources are often overlooked in Tourism Destination Competitiveness (TDC) research. The marketing and experience component encompasses factors such as brand perception, destination image, brand awareness, and availability of destination information. Upon examining the competitive set, it becomes evident that EU member states typically adhere to more stringent regulations concerning marketing and experience component compared to Serbia (Pavlović *et al*, 2022). Therefore, addressing the challenge of meeting high standards and effectively utilizing marketing and experience resources is imperative for enhancing Serbia's competitive edge in the travel industry. Consequently, the TOURCOMSERBIA approach will integrate marketing and experiential perspectives when assessing Serbia's competitive edge as a travel spot, while also considering indicators related to marketing and experience.

The exploration of the quality of marketing and experience resources within the tourism sector has gained prominence in contemporary research. During the preceding decades, there has been a remarkable proliferation in the amount of scholarly literature devoted to this topic. Interviews (14%), the Panel/Delphi technique (10%), and polls and forms (45% of the analyzed documents) emerged as the most prevalent methods for gauging marketing and experience resource utilization as tourism attractiveness indicators. Additionally, secondary data from various sources including tourism data from Eurostat and the WEF (World Economic Forum) were commonly utilized (Pivčević *et al*, 2020). Insights from various organizations, statistical agencies, and national authorities were also incorporated (Lozano-Oyola *et al*, 2019; Foronda-Robles *et al*, 2020). Moreover, studies aimed to pinpoint primary target demographics within the tourism industry, encompassing the local populace (Rasoolimanesh *et al*, 2020; Islam, Lovelock, and Coetzee, 2021; Potgieter *et al*, 2019), destination management organizations (Font *et al*, 2021), government

and corporate spheres within destinations (Rasoolimanesh *et al*, 2020; Blancas *et al*, 2015; Potgieter *et al*, 2015), tourists (Lee and Xue, 2020; Rasoolimanesh *et al*, 2020; Potgieter *et al*, 2019), and experts/academics (Vagiona and Doxopoulos, 2017; Blancas *et al*, 2015).

Additionally, we observe that the collaborative method has received inadequate attention in studies regarding the competitiveness of tourism locales thus far, despite being recognized in both literature and practice as a suitable method for assessing attitudes toward sustainable development (Pizzitutti *et al*, 2017). A genuine participatory approach entails considering everyone's perspective and involving various stakeholders, especially those influenced by a particular initiative or regulation (such as tourism) during the assessment phase (Guijt, 2022). Therefore, this study adopts a participatory approach, facilitating communication between researchers and stakeholders (both internal and external) to enhance understanding of indicators and promote increased public participation in tourism policymaking decisions.

3. Results

Table 1. Evaluation of marketing and experience indicators and the precision of item wording

Indicators	Reference (tailored to fit the context of Serbia)	Tourism stakeholders Mean	Local community Mean	Tourists Mean	Foreign tour operators Mean
Marketing and experience indicators					
1. The National Tourism Organization of Serbia (TOS) unequivocally delineates Serbia's designated tourist markets	Mulec and Wise (2013); Dwyer and Kim (2003)	3.11	x	x	x
2. The outcomes of marketing endeavors in Serbia are consistently evaluated by TOS	Mulec and Wise (2013); Luštický and Štumpf (2021); Dwyer and Kim (2003)	3.18	x	x	x
3. Social media platforms (Facebook, Instagram, Twitter) are efficiently leveraged to bolster Serbia's marketing endeavors as a tourist hotspot	Wise, Aquilino and Armenski (2018); Dwyer, Cvelbar, Edwards and Mihalic (2012); Armenski, Dwyer and Pavluković (2018); Kuhzady and Ghasemi (2019)	3.41	3.42	3.66	3.00
4. In Serbia, tourism offerings, content, and activities contribute to delivering a high-quality visitor experience	Gomezelj and Mihalič (2008); Cucculelli and Goffi (2016); Mulec and Wise (2013); Goffi, Cucculelli and Masiero. (2019);	3.54	3.58	4.21	4.00
5. The strategic placement of Serbia as a tourist destination in the global market is efficacious	Petrović, Vujko, Gajić, Vuković, Radovanović, Jovanović and Vuković (2017); Krešić and Prebežac (2011)	3.74	4.05	4.08	x
6. The global market is distinctly cognizant of Serbia's status as a tourist destination	Cucculelli and Goffi (2016); Petrović, Vujko, Gajić, Vuković, Radovanović, Jovanović and Vuković (2017); Pansiri (2014);	2.97	3.00	3.29	2.67

	Gomezelj and Mihalič (2008); Pavić, Veljković and Bilić (2016)				
7. Serbia is an attractive tourist destination	Zainuddin, Radzi and Zahari (2015); Prideaux (2005); Bahar and Kozak (2007); Armis and Kanegae (2020); Krešić and Prebežac (2011)	3.87	3.80	4.16	4.33
8. The market perceives Serbia's image and reputation favorably	Del Chiappa (2012); Dragičević, Jovičić, Blešić, Stankov and Bošković (2012); Dwyer and Kim (2003); Hossain and Islam (2019); Kuhzady and Ghasemi (2019)	3.31	3.53	3.76	3.33
9. Details regarding Serbia's tourist appeal are readily accessible within the international sphere	Pyo (2005); Liu, Ko and Chiang (2021); Medarić, Sulyok, Kardos and Gabruč (2021)	3.24	x	3.67	3.33
10. Tourist information is readily accessible to visitors throughout their sojourn in Serbia	Milićević, Petrović, Kostić and Lakićević (2020); Vodeb and Rudež (2017); Albayrak, Caber, González-Rodríguez, and Aksu (2018); Wilde, Cox, Kelly and Harrison (2017); Lozano-Oyola, Blancas, González and Caballero (2019)	3.10	3.12	4.16	3.33
11. Securing travel services and conducting online bookings for products and services are convenient and dependable	Dragičević, Jovičić, Blešić, Stankov and Bošković (2012); Tavitiyaman, Qu, Tsang and Lam (2021); Ghanem and Shaaban (2022); Hallmann, Mueller and Peters (2015)	3.59	3.71	4.27	3.33
12. Serbia's tourism brand is identifiable within the global tourism market	Dragičević, Jovičić, Blešić, Stankov and Bošković (2012); Shahabi, Sanayei Kazemi and Teimouri (2018); Bulatović, Stranjančević, Đurašević and Vlahović (2018); Petrović, Vujko, Gajić, Vuković, Radovanović, Jovanović, Vuković (2017); Wilde, Cox, Kelly, Harrison (2017)	3.08	3.18	3.67	3.00

13. Touristic experiences in Serbia align with the needs and expectations of travelers	Zainuddin, Radzi and Zahari (2015); Sarwar (2013); Pansiri (2014); Yoon and Uysal (2005); Baloglu, Pekcan, Chen and Santos (2004)	3.49	3.40	4.19	2.67
14. Travelers are inclined to endorse Serbia as a destination worth visiting	Han, Kiatkawsin, Koo and Kim (2020); Lee and Xue (2020); Zeng, Li and Huang (2021); Shahabi, Sanayei Kazemi and Teimouri (2018); Tavitiyaman, Qu, Tsang and Lam (2021)	3.69	3.61	4.69	4.00

Table 1 highlights several key findings. Firstly, all marketing and experience indicators have been established. During pilot testing, no responses indicating poorly formulated questions were encountered, indicating the validity of the selection and formulation process. However, certain items were not evaluated by all stakeholders and were subsequently excluded from the questionnaire for specific groups, as determined during the workshop. This exclusion was based on the stakeholders' limited ability to assess certain indicators. These instances are denoted by an "X" in Table 1. Internal stakeholders, specifically those from the tourism industry and tourist organizations, possessed the capacity to evaluate all items comprehensively.

At the workshop, specific indicators were omitted from the assessment, as illustrated in Table 1. The utilization of the Delphi method during the workshop facilitated the attainment of stakeholder consensus regarding the model's indicators. Through quantitative ratings and qualitative discussions with stakeholders, clarity was achieved, leading to decisions on which indicators should be evaluated by each stakeholder group.

Additionally, Table 1 illustrates the variance in average ratings across entire set. The indicator "Social media platforms (Facebook, Instagram, Twitter) are efficiently leveraged to bolster Serbia's marketing endeavors as a tourist hotspot" received a higher evaluation from tourists (Mean: 3.66), whereas the local community and tourism stakeholders rated it slightly lower (Mean: 3.42; 3.41). Conversely, foreign tour operators showed the least agreement with this assertion, as indicated by their lowest rating (Mean: 3.00). "In Serbia, tourism offerings, content, and activities contribute to delivering a high-quality visitor experience" similarly garnered a higher evaluation from tourists (Mean: 4.21), whereas tourism stakeholders and the local community assigned the lowest rating (M: 3.54; 3.58). The circumstances correspond to the statement "The strategic placement of Serbia as a tourist destination in the global market is efficacious" was evaluated higher by tourist and local community (M: 4.08; 4.05), while tourism stakeholders ranked it lower (M: 3.74). The perception of "The global market is distinctly cognizant of Serbia's status as a tourist destination" was more positively rated by tourists (M: 3.29), whereas tourism stakeholders and the local community assigned slightly lower ratings (M: 3.00; 2.97). Conversely, foreign tour operators were the least inclined to agree with this notion, as evidenced by their lowest rating (M: 2.67). Internal stakeholders and local residents hold varying perspectives on the statement "Serbia is an attractive tourist destination", whereas external stakeholders consistently rate this indicator significantly higher. Tourists provided the highest rating for the indicator "The market perceives Serbia's image and reputation favorably" (M: 3.76), whereas tourism stakeholders were the least inclined to concur with this idea (M: 3.31) and the situation is similar to the statement "Details regarding Serbia's tourist appeal are readily accessible within the international sphere", where tourists gave a higher rating (M: 3.67), compared to the tourism stakeholders (M: 3.24). Tourists express high satisfaction with the statement "Tourist information is readily accessible to visitors throughout their sojourn in Serbia" (M: 4.16), while tourism stakeholders and local authorities display comparatively lower satisfaction levels (M: 3.10; 3.12). Additionally, tourists indicate a high level of satisfaction with "Securing travel services and conducting online bookings for products and services" (M: 4.27), while the local community and tourism stakeholders rate it somewhat lower (M: 3.71; 3.59). In contrast, foreign tour operators are less inclined to support this idea, resulting in the lowest rating (M: 3.33). Tourists highly rate the recognition of Serbia's brand as a tourist destination within the global tourism market (M: 3.67), whereas tourism stakeholders and foreign tour operators gave lower ratings (M: 3.08; 3.00). The assessment of whether "Touristic experiences in Serbia align with the needs and expectations of travelers" varies. Tourists provide the highest rating (M: 4.19), while the local community and tourism stakeholders rate it somewhat lower (M: 3.40; 3.49). The lowest rating comes from foreign tour operators. Internal stakeholders and local residents exhibit contrasting attitudes towards the statement "Travelers are inclined to endorse Serbia as a destination worth visiting", whereas external stakeholders assess this indicator significantly more favorably.

Some limitations of the study exist. While the Delphi method may slightly accentuate subjectivity among participants, it remains the primary method for attaining consensus with experts. Since the findings constitute the initial phase of the investigation (pilot trials), subsequent inquiries will concentrate on a wider sample range and confirmation. TOURCOMSERBIA's forthcoming

exploration endeavors will encompass minimum 150 local stakeholders, 300 community members, 400 international visitors, and 50 overseas tour operators. Additionally, similar research will be conducted in countries identified as competitive counterparts to Serbia.

4. Conclusions

In conclusion, the assessments from different stakeholder groups shed light on various areas for improvement in enhancing Serbia's standing as a tourist hotspot. Internal stakeholders have highlighted deficiencies in Serbia's recognition on the global market, as well as its positioning and brand recognition. Addressing these shortcomings should be prioritized in future strategic planning to bolster Serbia's competitiveness in the tourism sector. The local population's perspective underscores the need for improvements in the Marketing and Experience factor. While they acknowledge the willingness of tourists to recommend Serbia and the efficacy of social media promotion, there's considerable room for enhancement in establishing a recognizable brand and improving Serbia's positioning on the international stage.

Foreign tour operators' evaluations emphasize the importance of hospitality, destination ambiance, and Serbia's overall attractiveness as tourist destinations. However, they also highlight challenges in brand recognition, destination awareness, and the innovation of tourist products, which necessitate attention for improving competitiveness. Foreign tourists' feedback indicates satisfaction with the destination's attractiveness, accessibility of tourist information, and ease of booking services. These positive ratings underscore areas of strength that can be leveraged to enhance Serbia's appeal as a tourist destination further.

Overall, the insights gathered from diverse stakeholder groups provide valuable guidance for strategic planning and initiatives aimed at improving Serbia's competitiveness in the tourism industry. Addressing the identified shortcomings and building on strengths will be crucial for fostering sustainable growth and success in the tourism sector.

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Strengthening Economic Security: The Essential Role of Forensic Accounting

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Abstract

In recent times, fraud detection has become increasingly crucial in the accounting profession. The dual need to protect market capital and safeguard the reputation of the accounting profession necessitates a stronger focus on enhancing the capacity of forensic accounting. This paper explores the crucial role of forensic accounting in strengthening economic security. By uncovering fraudulent activities and pinpointing weaknesses in financial systems, forensic accounting acts as a cornerstone in preserving financial integrity. Through a thorough examination, the study emphasises the importance of integrating forensic accounting methods into economic security strategies. Utilizing these techniques enables stakeholders to combat financial crimes, ensure regulatory adherence, and foster trust within financial markets.

Keywords: forensic accounting, economic security, financial fraud

1. Introduction

In today's era characterized by swift technological progress and intricate global connections, economic security emerges as a critical priority for individuals, businesses, and nations. The solidity and flourishing of economies hinge not solely on sturdy financial structures, but also on the capacity to identify, forestall, and alleviate cases of fraud, corruption, and financial impropriety. Economic security is traditionally considered the most important qualitative characteristic of the economic system, as the most important element of national security (Godina et al., 2017; Kroklicheva et al., 2021). Every economic entity aims for growth, development, higher income, and improved financial security. However, these goals are not always pursued through legal means. The challenging economic conditions of the past year have led to an increase in corporate fraud in most countries.

Forensic accounting, a discipline now over half a century old, emerged in response to the frauds that plagued the early 21st century. It has since garnered attention from both the public and private sectors. Forensic accounting can be defined as using or applying accounting techniques in courtrooms (Alzahrane, 2024). As forensic accounting is a complex, multidisciplinary field, it is crucial to adopt an inclusive definition of forensic accounting when developing suitable educational approaches (Alshurafat et al., 2020). Forensic accounting often serves as a crucial tool in cases of fraud and embezzlement (Clavería Navarrete & Carrasco Gallego, 2023), shedding light on the intricacies of financial deception. „The three main fields of activity of forensic accountancy are fraud auditing or investigative accountancy (administrative support), litigation support (legal support) and expert witnessing (expert testimony)” (Aksoy & Uzay, 2021; Okaye & Obegi, 2013).

Power (2013) notes that although there is a distinction between fraud and the risk of fraud, the terms "fraud" and "fraud risk" are often used interchangeably. He emphasizes that fraud inherently involves an element of probability. Financial fraud, an intentional deceit involving monetary transactions for personal gain, is a common target of forensic accounting analysis. Moreover, forensic accounting is instrumental in identifying and uncovering various forms of financial fraud and crimes within organizations (Kaur et al., 2023). External auditors offer an independent opinion on the fair presentation of management's financial statements. Users of these financial statements rely on auditors and expect them to detect financial statement fraud (FSF).

Setting targets for organizations, particularly private companies, is a common practice driven by the need for sustainability and employee support. However, it's often observed that these targets are set unrealistically high, surpassing the management's capacity to achieve them (Handoko et al., 2019). This can initiate fraudulent actions by the management. Management or company leaders sometimes succumb to pressure, leading them to produce inaccurate reports. This can occur in an attempt to mask poor company performance or to meet investor/creditor expectations (Aris et al., 2015). However, this practice contradicts the fundamental principles of accounting, which mandate the accurate recording of transactions as they occur, reflecting the true financial status of the company (Vadoodparast & Hamdan, 2015).

The work is organised in the following way. After the introduction, the second chapter deals with the role of forensic accounting in fraud risk management. Trends in the development of forensic accountants' skills is the topic of the third chapter.

2. The role of forensic accounting in fraud risk management

According to Mohd-Nassir et al. (2021), categorizing fraud based on risk levels for structured and less structured tasks simplifies the detection of criminal and fraudulent activities. Financial fraud, a subset of economic fraud, has adversely affected the global economy and significantly impacted the socio-economic environment (Akinbowale, 2020).

Forensic accounting is a crucial tool in the fight against fraud, encompassing prevention, detection, and investigation. The literature has various definitions of auditing or forensic accounting. Its scope extends to addressing tax evasion, money laundering, and corruption, highlighting the interconnectedness of these illicit activities. Although corruption can be complex and difficult to uncover, forensic accounting is a modern method, among others, that can be effectively used for this purpose (Alabdullah, et al., 2014). "Forensic accounting can be considered the financial equivalent of crime scene investigation" (Honigsberg, 2020, p. 148). Serving the interests of society at large as well as private and public entities, forensic accounting operates at the intersection of accounting and law. This field harnesses accounting expertise alongside contemporary investigative techniques to scrutinize individuals' or businesses' financial affairs. In cases of fraud and embezzlement, forensic accounting plays a vital role in elucidating the intricacies of financial crimes within legal proceedings.

Forensic accounting serves as a powerful tool in safeguarding economic security by actively tackling fraud through prevention, detection, and investigation. It deals with a range of issues such as tax evasion, money laundering, and corruption. Positioned at the intersection of accounting and legal systems, it combines traditional financial expertise with contemporary investigative methods. This harmonious blend allows for in-depth scrutiny of financial activities, unveiling intricate schemes, and aiding legal processes. Thus, forensic accounting plays a pivotal role in upholding the economic health of societies and preserving the integrity of both public and private entities. To prevent and detect fraud, it's essential to utilize accounting tools like financial surveillance, forensic audit investigations, and proactive deterrence tactics. The results of Beke Trivunac et al. (2024) show that the internal audit function in the Serbian public sector is still at the initial stage of its development and the change of the model of organization of the internal audit function is necessary.

Fraud detection and prevention are critical aspects of accounting activities, with internal and external auditors having specific responsibilities. However, auditors' primary duty is not to prevent or detect fraud directly but to ensure that a company's financial statements adhere to accounting standards and applicable regulations (Anghel & Poenaru, 2023). Expertise in accounting facilitates the forensic analysis and interpretation of financial data, crucial for constructing a case in various financial investigations, spanning bankruptcies, money-laundering schemes, and embezzlement cases. This proficiency extends to understanding effective internal controls, including those about corporate governance (Ismaila et al., 2023).

The findings of Fortvingler and Szívós (2016) suggest that the higher the assessed fraud risk, the more likely auditors feel the need to consult with external forensic experts. Rehman and Hashim (2021) stated that forensic accounting can become an essential part of internal and external audits of organisations. Forensic accounting serves as a dynamic and strategic instrument in the fight against corruption, financial crimes, and fraud, leveraging forensic auditing techniques for effective intervention (Jain & Lamba, 2020; Evans, 2020). Fraud examination in forensic accounting differs from traditional accounting because forensic accountants possess the intuitive ability to detect and analyse fraud (Okoye, 2009).

3. Trends in the development of forensic accountants skills

Globally, fraudulent and suspicious financial activities are rising (PricewaterhouseCoopers, 2022). As a result, businesses are increasingly at risk of unethical and dishonest practices (Wijerathna and Perera, 2020). Forensic accountants actively search for fraudulent transactions and misrepresentations. Given their crucial role in today's business environment, universities have the responsibility to train future accountants to adequately meet the demands of the business world (Ramaswamy, 2027).

Forensic accounting, as well as any other type of auditing, is inherently an *ex post facto* activity. Since fraud can result from internal control failures, it should involve a combination of preventive and detective measures to help deter such incidents. The skills of forensic accountants are crucial for implementing preventive measures. Economic and financial crimes are often more difficult to detect and prove than other types of traditional crimes due to their complexity, and, in that sense, special skills of forensic accountants are needed. Forensic accountants collaborate with professionals from various fields, including accounting, auditing, law, psychology, criminology, and mathematics, to identify criminal activities and uncover fraudulent acts within their respective domains (Karabayir, 2019). Effectively preventing or detecting economic crimes involves identifying and quantifying the impact of qualitative factors on the risk of fraud.

The increasing complexity of the business environment and the rising propensity for legal action have created a demand for accountants who are knowledgeable about the legal process and capable of conducting investigations, performing financial analyses, and executing accounting or auditing procedures to a court-acceptable standard (Knežević et al., 2021). The lack of quality forensic analysis of financial reports and records, due to a shortage of forensic accounting experts and an inadequate implementation framework, poses a significant problem in combating financial crime. In criminal proceedings, forensic accountants can serve in various roles, including financial forensic experts, witnesses, and professional advisors (Janović et al., 2023).

The intentional provision and publication of false information in financial statements constitute fraudulent activity, which has become a significant economic and social problem. Forensic accountants are tasked with uncovering the true financial standing of companies. Their expertise enables them to delve deep into the roots of financial fraud, pinpointing discrepancies and unravelling complex schemes (Mishra et al., 2021). Forensic accountants need adequate know-how and skills, or the necessary expertise and capabilities for investigating and conducting proactive audits to combat fraud effectively. With the globalization of the economy, perpetrators of fraud can emerge within any organization. These individuals exploit vulnerabilities such as suspicious financial statements, deficient internal controls, and inadequate corporate governance (Afriyie et al., 2023). Al Shbeil et al. (2023) state that the forensic accounting profession's reality is varied across contexts. Further, Capraş & Achim (2023) state that forensic accounting must be recognized as an independent profession.

Banks, insurance companies, law enforcement agencies, and governmental bodies commonly rely on forensic accountants to investigate and trace criminal activities post-occurrence (<https://abcnews.go.com>). While the demand for forensic accountants is steadily increasing and projected to grow over the next decade, there is a persistent shortage of students adequately prepared for this profession. Perhaps, the absence of forensic accounting courses and concentrations in the accounting curriculum could stem from limited awareness and understanding among students regarding the career opportunities in this field (Hatch, 2023).

4. Conclusions

With its comprehensive approach encompassing fraud prevention, detection, and investigation, it addresses critical issues such as tax evasion, money laundering, and corruption. The demand for forensic accountants is on a steady rise and is expected to continue growing over the next decade. However, the supply of adequately trained students for this profession remains insufficient.

Forensic accounting has become a dynamic and essential discipline in combating financial fraud. The integration of traditional investigative techniques with advanced digital technologies has significantly enhanced the field's effectiveness. Forensic accounting has become essential for businesses aiming to achieve long-term goals. Firms are encouraged to support and promote forensic accounting to ensure success and sustainability in their strategies, techniques, and operations, especially in highly turbulent environments.

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The Role of Artificial Intelligence in the Development of Accounting

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Abstract

Artificial intelligence (AI) is one of the most advanced technologies in the world. The development of technology has initiated strong changes in the practice of the accounting profession. The advent of innovative technology is revolutionizing numerous facets of our lives. We are experiencing a profound era of transformation, with projections suggesting that artificial intelligence will exert influence over every aspect of human life in the years to come. This paper attempts to point out the support that AI has for the improvement of accounting. New technologies bring various challenges and opportunities to the accounting profession and the education of accounting personnel.

Keywords: accounting, artificial intelligence, development, benefits

1. Introduction

The primary responsibility of the accounting profession is to generate accounting information that is both relevant and reliable. The reliability and relevance of this information are contingent upon the presence of a robust internal control system, alongside ethical integrity demonstrated by management and employees. In recent times, there have been notable advancements in artificial intelligence, particularly in its application within the accounting profession. These advancements have transformed the focus of accounting practices from traditional paper and pencil entries to computerized and software-based entries (Odoh et al., 2018). Corporate managers must navigate a complex and rapidly evolving landscape characterized by an expanding array of interconnected factors (Losbichler & Lehner, 2021).

As stated in the introduction, “Artificial intelligence is defined broadly as a computer program or software application that can imitate or simulate human behaviour” (Ng & Alarcon, 2021, p. 4). Artificial intelligence, often referred to as the *Fourth Industrial Revolution*, aims to assist humans in performing tasks and making decisions by leveraging machine capabilities (Khaled AlKoheji & Al-Sartawi, 2023). Artificial intelligence is increasingly assuming numerous tasks within the accounting field, automating processes in accounting, tax, bookkeeping, and auditing. „If machines are assuming a greater role, where do we, the professionals strike a balance? What does the future of the accounting profession look like with the growth of artificial intelligence?” (Greenman, (2017).

Accounting tasks involve a wide range of structured, semi-structured and unstructured decisions (Moudud-Ul-Huq, 2014). As researchers delve into advancing Artificial Intelligence in accounting and exploring its potential applications, it is imperative to acknowledge the consequential impact on accounting professionals, the accounting profession, and society at large. Alongside the pursuit of technological innovation, researchers have a parallel responsibility to pause and carefully consider the broader implications for the future (Sutton et al., 2016).

The article is arranged in the following way. After the introductory part, the second chapter refers to the consideration of the accounting information system as a decision-making platform. The second part deals with the application of AI in accounting and auditing. The third part points to the impact of AI development on jobs in accounting and auditing. At the end of the paper, conclusions and recommendations for future research are given.

2. Accounting as the language of business

Appreciating the roles of accounting within a broader social context necessitates an understanding of the external perceptions of accounting and accountants (Carnegie & Napier, 2010). As the “language of business”, accounting was first established by Luca Pacioli in 1494 (Coate & Mitschow, 2018). “Accounting is a special-purpose tool for communicating about financial state and performance” (Bloomfield, 2008). Its main functions are to measure an organization’s economic activities and communicate such information to related stakeholders, such as corporate managers, creditors, consumers, and regulators (Zhang et al., 2020). “Recent

developments in intelligent automation have introduced dramatic changes to the practice of many traditional professions, including accounting. According to a study performed by the BBC, accountants rank 21st of a total of 366 occupations that are likely to be eliminated due to the introduction of artificial intelligence (AI), with an elimination rate of 96%” (Stancheva-Todorova, 2018).

The existing landscape of accounting education and the skill sets possessed by accountants often do not align with the demands of dynamic global business environments (Mohamed & Lashine, 2003). The Big Four accounting firms recently launched their financial robots capable of automatically recognizing data, entering invoices and generating financial reports. These financial robots are likely to replace basic accounting clerks, allowing business managers with zero accounting knowledge to make informed business decisions based on basic accounting information (Bullock, 2017).

The current situation regarding artificial intelligence in audit and accounting, including the newest trends, opportunities and threats, is attracting a lot of attention. The dynamic nature of the audit and accounting field is driven by continuous innovation, with major companies committing substantial investments to promote the widespread adoption of artificial intelligence (AI). These investments underscore the importance of leveraging AI technologies to enhance efficiency, accuracy, and insights within audit and accounting practices (Zemankova, 2019).

3. Where is AI being used in accounting and auditing?

Artificial intelligence, alongside recent technological advancements, has initiated a revolution in global business processes. Artificial intelligence techniques empower computer systems with capabilities akin to human reasoning and learning. As AI continues to replace human processing and decision-making, its transformative influence on business practices persists. While the adoption of AI in the accounting profession is still nascent, practitioners must grasp the implications of this technology. Artificial Intelligence (AI) technologies find extensive application in areas such as predicting financial distress (Špiler et al., 2022; Matejić et al., 2022), detecting financial fraud, forecasting stock market trends, and conducting audits.

Using artificial intelligence (AI) enables the automation of identifying and rectifying weaknesses within the internal control system. As a result, this automation minimizes control risk and detection risk while enhancing audit quality through the mitigation of accounting information risk (Askary et al., 2018). AI technology integrated into accounting software or solutions serves as a valuable risk management tool (Lee & Tajudeen, 2020).

Artificial intelligence, particularly expert systems and neural networks, holds significant promise for accounting applications. These AI techniques are utilized across various accounting domains, including auditing, financial and management accounting, taxation, and government. Artificial intelligence opens up fresh avenues for strengthening management decisions, particularly within the area of management accounting (Korobeynikova et al., 2021). Recent technological advancements have expedited the digitalization and infusion of intelligence into contemporary business practices. In particular, the rising adoption of Artificial Intelligence (AI) within managerial accounting is anticipated to enable precise measurement of corporate performance, deliver intelligent analyses, and forecast the future path of companies (Zhang et al., 2023).

The introduction of AI in accounting and auditing requires many answers to questions, and some of them are (Hasan, 2021):

- Will traditional professions remain unchanged, or will there be transformations?
- How can practices and literature in given professions be changed?
- How will real-world practice change due to the adoption of AI technologies in accounting and auditing?
- Are global communities on the right track when it comes to accepting AI applications in these professions?
- How can the ethical implications of these changes be considered?

Johnson et al. (2021) found that a significant portion of surveyed accountants have not previously integrated artificial intelligence into their company's operations. Moreover, only a small fraction of accountants currently utilize artificial intelligence to execute accounting processes or tasks.

4. How will AI affect accounting and auditing jobs?

Today's computers and software create and demonstrate remarkable intelligence, yet their advancements also raise significant concerns alongside promising prospects. In accounting, artificial intelligence is increasingly shouldering a growing array of tasks. Comparing and contrasting the narrative surrounding AI in accounting with its actual impact on a specific area allows for a deeper understanding of its implications (Batiz-Lazo et al., 2022). Artificial Intelligence is rapidly transforming the landscape of the accounting field, offering significant benefits by enhancing and reshaping traditional practices within the domain (Stancu & Duțescu, 2021).

There are fears that there will be an increased demand for IT professionals with accounting knowledge compared to accounting graduates. The growing adoption of digitalization and artificial intelligence applications has fostered an anticipation of reduced reliance on human resources. Undoubtedly, these technological advancements, enabling faster and error-free work, will impact the accounting and auditing professions, necessitating significant changes in the roles and expected skills of professional members. Educational institutions, both higher education and vocational training institutions, must make strategic decisions to offer courses that equip students with the skills needed to adapt to technological advancements. Additionally, these institutions should focus on enhancing the capabilities of existing human resources to facilitate the attainment of this objective (Mohammad et al., 2012).

The incorporation of ChatGPT and similar AI technologies in finance and accounting encounters various challenges. Ethical quandaries surface regarding issues such as data privacy, security, and the potential for biased decision-making algorithms. Moreover, concerns arise regarding the accountability of AI-driven financial decisions, necessitating a delicate equilibrium between human expertise and machine intelligence.

4. Conclusions

Accountants are increasingly integrating technology into their daily routines to enhance efficiency and productivity. With AI systems already in use, its implementation represents a familiar step in their career trajectory. However, the adoption of AI offers substantial advantages, enabling data-driven decision-making, uncovering valuable business insights through data analytics, and substantially reducing time spent on repetitive tasks.

Business owners and top management must comprehend the impact of artificial intelligence on their organizations. AI has the potential to enhance business sales, reduce costs, and optimize performance across various tasks within firms. However, companies investing in artificial intelligence may encounter challenges along the way. The accounting profession should adapt to the environment and adapt to the new technologies.

Current accounting education and the skill levels of accountants should be aligned with what is required in the dynamic environments of global business, to use the advantages of AI in the best possible way. It needs deeper research on how much educational institutions are ready to support integration into accounting curricula as well. Also, accounting professionals must view innovative solutions like artificial intelligence and automation as opportunities rather than threats. Embracing these new technologies will streamline processes and ultimately make life easier.

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The Role of Ethical Leadership and Public Relations in Advancing Corporate Social Responsibility

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Abstract

The interconnected and interdependent world driven by the exponential growth of convergent technologies imposes the need for continuous efforts by organizations in building a socially conscious world. This paper argues that ethical organizational leaders in strategic partnership with public relations managers, as ethical advisors, can enhance their organizations' impact for positive social change, by practicing and advancing the CSR initiatives, which will lead to socially responsible reputable organizations and long-term organizational success. The findings suggest that authentic leadership based on humility, empathy, self-awareness, honesty, respect and transparency is a key driver for ethical organizational culture. Companies, like individuals that are facing social dilemmas, must balance self-interest with the collective good. Public relations managers play crucial role in creating socially responsible organizations, by promoting socially responsible practices. They contribute to a greater stakeholder engagement through structural dialogue in addressing mutual challenges and aligning, which leads to transformative action, that fosters relationships based on trust, and credibility, expressed through enhanced organizational reputation and support. We argue that company's genuine intention, based on value-driven and stakeholder-aligned CSR strategies, has a positive impact on the institution's relationships and reputation, which also contributes to the support of its products and services.

Keywords: leadership, ethics, corporate social responsibility, public relations management.

“Ethical behavior helps protect individuals, communities, and the environment, and offers the potential to increase the sum of good in the world” (Israel and Hay, 2006, p. 2).”

1. Introduction

In today's technology-driven networked society, opportunities for communication, research, socialization, collaboration, association, and crowdsourcing are more accessible-democratized, demonetized and instantaneous than ever before. That contributes to greater and faster opportunities for impact. We are witnesses of actions that highlight the drive for positive societal change, particularly evident among younger generations, such as “Generation Z” and “Millennials.” They highly value ethical leadership and corporate social responsibility, holding organizations accountable and asking for their positive impact on society and the environment.

In the above context ethical and moral principles, along with social responsibility, are elevated to a higher level, embodying a shared societal goal, where businesses and individuals alike are expected to practice humility, empathy, and transparency or they risk relentless criticism, rejection and erosion of trust. Despite the numerous and continuous global efforts and investments aimed at promoting and ensuring freedom, peace, security, dignity, equality, respect for human rights, we are still witnessing economic inequality, environmental degradation, continuous societal polarization. These destructive trends threaten the values that ethical leaders and responsible organizations strive to uphold. The erosion of values, and destructive tendencies are most starkly expressed through armed conflicts that claim innocent lives daily. This underscores the pressing need for leaders, especially those in corporate settings, to ground their work on ethical and moral principles. To incorporate the CSR programs into their Strategies, and to work together with the PR Managers.

It is interesting to note that 74% of respondents of the Global Communication Report (GCR, 2018) believe that discussions on ethics should be led by CEOs. However, according to the literature review in this field, we can conclude that the responsibility is shared between the executive management and public relations managers. The authenticity of the CEO's leadership is extremely important, but public relations managers, as the bridge between the public and the organization, are the ones who should act as the organizational corrective and advisor on ethical issues.

Leaders along with PR managers should enhance their efforts in the direction of overcoming the challenges by creating credible, socially responsible organizations, which will contribute to strengthening and developing the trust as a ground for organizational reputation.

Leaders should practice humility and empathy, transparency, and truthfulness, as antidote to the natural human tendency toward “hubris” and “self-centeredness”. This will strengthen the position of their organization as agent of positive societal impact.

2. Literature review

A. Authentic Leadership and Ethical Culture

The authentic leadership of the Chief Executive Officer (CEO) is a key driver of ethical organizational culture, according to the findings of research conducted by Bowen. Authentic leadership is clearly the leadership style that participants say supports the ethical climate and culture within their organizations (Bowen, 2008, p.15). Authentic leadership, therefore, implies honesty, respect, integrity, and reflectiveness.

Across the literature there is a wealth of data that addresses the underlying assumptions about our human and leadership tendencies and their impact on the organizational climate. Is our nature altruistic or focused on maximizing our own gain? Do we incline toward hubris and self-focus or are we nourishing humility and empathy? It is crucial for Leaders to ask this questions to understand the ethical frameworks which guide leadership and organizational behaviours. Below are Arguments that support the affirmation of the pronounced altruistic nature of humans in conditions of exceptional interconnectedness.

Suskind and Suskind, (2017) point out that “we generally encounter a spirit of cooperation that defies the popular belief about human nature, which assumes that people are predominantly self-centered, or in other words, selfish.” At the same time, it challenges the classical economic, somewhat Machiavellian claim although meant for rulers and leaders behaviour, which assumes that 'people are solely driven by the maximization of their own interests and are not inclined to help others when there is no obvious or direct benefit for them, according to Suskind. An additional argument for the desire to contribute to societal well-being, without financial gain, is seen in the increasingly common instances of online collaboration and crowdsourcing, where numerous individuals, enthusiasts, and philanthropists dedicate their time to contribute to a greater cause, often beyond the capabilities of individuals and organizations, such as "Wikipedia" and "Linux." “Unilever’s Sustainable Living Plan 2010-2020 (USLP) became a point of reference for practicing corporate sustainability, by actively promoting social and environmental causes. Microsoft is another example of practicing CSR toward building a more inclusive, equitable, and sustainable future for everyone.

In the search for the meaning of selflessness, expressed in the dedication to a greater cause, without considering narrow personal interests and the triumph of cooperation over personal gain, Susskind quotes an excerpt from 'The Penguin and the Leviathan' by Yochai Benkler, (p.23): “The internet has allowed social, non-market behaviors to move to the periphery of the industrial economy. Information and news, knowledge and culture, computer-mediated social and economic interactions form the entire foundation of all aspects of our lives—from the quest for democracy and human rights, to the latest trends in business and media, to the best innovations in the most advanced economies. The internet has revolutionized the ways we produce information and the foundation of knowledge in our society.”

The basis for overcoming narrow self-interest and 'non-market' behavior is explained through the perspective of Benkler (2011) that: “People dedicate their time and effort without compensation because they believe it is the right thing to do, because they feel that contributing is fair, because it strengthens their sense of identity and community, and quite simply, because it is fun.”

Fitch and L’Etang (2020) argue that by investing in corporate social responsibility, we create space for opening a new chapter in the practice of public relations. Specifically, they point out that understanding historical complexity not only ensures that public relations actions in corporate social responsibility and community relations take the right direction in addressing past injustices (and acknowledge responsibility when appropriate), but also contributes by mitigating previous harms while offering the possibility for restitution.

“In recent decades, we have come to understand that prosperity—for the country, as well as for companies—means much more than accumulating wealth. We also need to nurture and protect the natural environment, develop true intellectual resources, create a strong and motivated workforce, and support stable societies. Yet, the world remains on an unsustainable path. Despite enormous progress over the past century, challenges are increasing. The rapid deterioration of environmental conditions, the widening income gap, serious resource constraints, economic uncertainty, widespread social unrest, and conflict—a set of tough, interconnected problems that seriously threaten to disrupt our social stability and prosperity. Humanity is on a deeply troubling path.”(UN Global Compact, p.20).

From this arises the concern and the need for every individual, organization, corporation, and institution to work unambiguously, sincerely, inclusively, and continuously toward achieving positive social change that benefits all individuals and entities, especially for future generations and the survival of humanity.

Ban Ki-moon, former Secretary-General of the United Nations, emphasizes that change does not come by itself. It must be energetically led by the entire society. The sustainable journey we must undertake is in the best interest of all. No one can benefit from catastrophic climate change or from uncontrolled unemployment and the social unrest that comes with it. Prosperous, stable societies and a healthy planet are the cornerstone of political stability, economic growth, and flourishing new markets. Everyone has a role to play. The UN Global Compact has brought business to the table as a key partner. We have seen that responsible business practices, combined with innovation and collaboration, can bring about powerful change. Now we need more companies around the world to commit to sustainability and take shared responsibility for creating a better world. Former Executive Director of the UN Global Compact, Georg Kell, stated, "Since our launch in 2000, it was already clear that for businesses to be truly sustainable, they would need to change the way they operate to ensure responsible practices, take steps to positively engage with society, and then communicate their achievements to their stakeholders and the world. These are the core commitments that remain, taken by our participant companies today." (Global Compact, p.2) The UN Global Compact is a positive example of sustainable business development, aiming to align corporate practices with ten universal principles, mobilizing the global business community to advance the goals of the United Nations, and building a sustainable, inclusive global economy in which both businesses and societies can thrive within the limited environmental boundaries of the planet.

In the direction of building individuals who are expected to contribute to society, rather than fostering self-centered experts in specific fields, the Times Higher Education ranking, inspired by the United Nations' Global Goals, introduced a new ranking of universities based on their global impact. Specifically, this ranking evaluates what universities are doing to address social and environmental challenges. The ranking assesses the activities of institutions in areas such as climate change, gender equality, poverty, and sustainable growth, aiming to contribute to a world based on the principles of tolerance, inclusiveness, and compassion.

This paper, as an analogy to individual altruistic motives, conceptualizes corporate social responsibility by demanding higher performance standards, first and foremost, from oneself and every department and aspect of a given organization's functioning, toward achieving positive social change.

In doing so, positive social change will result from the continuous, sincere, and transparent support of organizations. Key challenges in the areas of environmental and social governance will be integrated into the organization's strategic plans and will be subject to ongoing review by executive management.

B. Enhancing the common good by Fostering Humility and Empathy

Battilana and Casciaro (2021) argue that 'when humans engage with power all of us are susceptible to two power poisons: Hubris and Self-Focus, as psychological consequences of interacting with power, which lie in our human nature. We must counteract them and stay vigilant. No matter of our humble intentions, purpose and goodwill, the risk of intoxicating effects of power on us and the possibility of abusing it are a real danger.' Embracing power while avoiding its pitfalls rests on two foundations: awareness of interdependence, which counters self-focus with empathy, and awareness of impermanence, which fights hubris with humility- according to Battilana and Casciaro (2021). They conclude that empathy and humility make it easier to let go of selfish goals and pursue altruistic ones – 'the key to virtuous use of power.' According to them we must create structural safeguards (structural checks, structural limits and personal interventions) on personal and on organizational level, which will keep us accountable and ensure that we are using our power in a positive way, to empower others and to enhance the common good.

We live in an interdependent world. We need to rely on each other and on the safeguards that we create together to ensure that we are accountable for appropriate and reasonable use of power. (Battilana and Casciaro, HBS Online, 2023). "Expressed humility is an important component of effective leadership in modern organizations-according to Owen et al., 2013. Their Study showed that "humble leaders foster learning-oriented teams and engaged employees as well as job satisfaction and employee retention." Their study is based of Research Samples on the effects of expressed humility on several important organizational outcomes, including performance, satisfaction, learning goal orientation, engagement, and turnover. "Leader humility involves leaders modeling to followers how to grow and produces positive organizational outcomes by leading followers to believe that their own developmental journeys and feelings of uncertainty are legitimate in the workplace. We discuss how the emergent humility in leadership model informs a broad range of leadership issues, including organizational development and change, the evolution of leader-follower relationships, new pathways for engaging followers, and integrating top-down and bottom-up organizing." (Owens& Hekman, 2012)

The above represents the positive trend of expressed interest of the concept of humility in the organizational and leadership scholarship. Labouff et al. (2012) concluded that humble persons were more helpful than less humble persons, according to their conducted studies, that search the connection between humility and other personal qualities. The results of a study that researches the connection between humility and international altruism showed that humility has a direct impact on international altruism. The authors further explained that "developing people's humility and helping them to identify with all humanity are key to promoting inter-group altruism, especially for those who can empathize with other people or groups." (Yue, Y. et al., 2024). "Intellectual humility was associated with higher levels of empathy, gratitude, altruism, benevolence, and universalism, and lower levels of power seeking.", according to Mancuso, (2016). Cameron includes humility, generosity with

resources and integrity as core “organizational and leadership virtuous behaviors” that contribute to the leadership and organizational success. (Cameron et al., 2003, Cameron in Hess&Cameron, 2006, p.143).

Research confirms that altruistic behavior leads to better performance in individuals and at organizational level. “Compassion at work leads to a climate based on altruism, which indirectly increases firm performance by means of organizational resilience.” (Barghouti et al. (2022), on personal level see (Casciaro, and Kouchaki, 2016). Adam Grant’s process of rethinking which leads to new discoveries ‘starts with intellectual humility-knowing what we don’t know. ‘It helps to open our minds for learning which will foster good judgement (Grant, 2021).

3. Social Dilemmas and Human Tendencies: Balancing Self-Interest with Collective Good

Social dilemmas arise when individuals or groups face situations where pursuing personal gains results in worse outcomes for everyone involved. Dawes and Messick (2000) explain that in these scenarios, “each member of a group has a clear and unambiguous incentive to make a choice that when made by all members provides poorer outcomes for all than they would have received if none had made the choice.” Even when acting rationally in their own interest, individuals can create worse outcomes than if they had acted irrationally or in the collective interest.

Human tendencies that counteract hubris and self-focus—such as humility and empathy—often lead people to consider the group’s well-being over personal gain. In a corporate context, companies facing similar dilemmas must balance short-term profits with long-term sustainability. This requires prioritizing social welfare, environmental protection, and ethical practices over immediate financial gain, thus applying empathy to stakeholders like employees, customers, and society at large.

Corporate social responsibility (CSR) can be viewed as a solution to these social dilemmas. Engaging in CSR activities helps companies act in the collective interest, building trust and contributing to long-term corporate success. By acknowledging their interconnectedness with society, companies counteract self-focus and foster humility, ensuring their actions benefit not only the business but also the broader community.

Research shows that CSR is increasingly valued by both businesses and consumers. Studies, such as those by the Aspen Institute, reveal a growing preference among MBA students and consumers for companies with strong ethical standards that positively contribute to society. Holmes (2018) highlights that this shift reflects a growing recognition that companies should balance profit with purpose, moving away from the traditional belief in maximizing shareholder value.

According to Rochlin et al. (2005), corporate responsibility, when aligned with business strategy, creates long-term value for both the business and society. Public relations expert Theaker (2012) underscores that CSR is essential for business legitimacy in today’s networked society, while the UN Global Compact (2000-2015) stresses that business should balance profit with purpose.

Critics, such as Milton Friedman, argue that a company’s sole responsibility is to maximize profits. However, the stakeholder model, advocated by Evan and Freeman (1993), suggests that corporations should consider the interests of all stakeholders, including employees, communities, and customers. Kotler and Lee (2005) further emphasize the importance of strategic CSR for both competitive advantage and community well-being.

Lantos (2001) distinguishes between altruistic CSR, which he sees as illegitimate, and ethical CSR, which he deems necessary. Strategic CSR benefits both business and society, fostering trust and improving reputation. Studies by Ellen, Webb, and Mohr (2006) indicate that consumers respond positively to CSR efforts they perceive as genuine and value-driven, while Sen, Bhattacharya, and Korschun (2006) show that stakeholders’ awareness of CSR strengthens relationships and enhances business success.

Ultimately, genuine CSR, rooted in authentic social change, is critical for building a positive reputation and sustaining long-term success. As Duff (2020) notes, today’s activists demand meaningful action from corporations, pushing for real change rather than superficial gestures. The next generation of business leaders is expected to focus on creating sustainable legacies, with an emphasis on transforming society through innovative and responsible business practices.

4. The Impact of Corporate Social Responsibility on Businesses and Societies

A. The Evolution of Corporate Social Responsibility: Strategic Approaches and Ethical Dilemmas

Corporate social responsibility (CSR) has evolved from a purely financial focus to a broader approach that includes long-term value for society and the environment. Fred Holmes, founder of the public relations reports 'Holmes,' highlighted findings from several studies that show a shift in the perception of CSR. Between 2002 and 2007, MBA students expressed a growing desire to work for companies that contribute positively to society, and fewer believed that maximizing shareholder value was the only responsibility of businesses (Holms, GCR, 2018).

Rochlin et al. (2005) argue that aligning business strategies with social, environmental, and economic performance ensures long-term value for both companies and society. Watts and Holmes define CSR as a commitment to ethical behavior, contributing to economic development while improving the quality of life for employees, families, communities, and society at

large. In contrast, economist Milton Friedman's conservative view holds that "the social responsibility of business is to increase its profits."

Despite Friedman's view, in today's networked society, CSR is crucial for maintaining legitimacy in business (Theaker, 2012). The UN Global Compact (2000-2015) emphasizes that balancing profit with purpose has begun to challenge the traditional focus on short-term profits.

Heath and Lee (2018) stress that modern CSR practices aim to align mutual interests between businesses and society. This requires moving from an internal focus on shaping markets to an external focus on building relationships with stakeholders. The postmodern approach highlights collaboration with stakeholders to create solutions based on shared goals, embedding these into corporate strategy.

B. The Stakeholder Model and Ethical Challenges

The stakeholder model, proposed by Evan and Freeman (1993), argues that corporate managers should balance the interests of all stakeholders who have a 'stake' in the company. This model promotes social responsibility by considering the needs of employees, customers, and the community. Incorporating Kant's categorical imperative—"Never use people merely as a means to an end; always treat yourself and others as beings of invaluable worth"—this model is based on ethical principles (Dienhart, 2000, cited in Theaker, 2012).

A criticism of CSR is that companies sometimes use it to pursue self-interest, exploiting the public without genuine dialogue or partnership. This raises ethical dilemmas about whether CSR is being used for public good or corporate gain. Kotler and Lee (2005) counter this criticism by advocating for strategic CSR, which focuses on improving community well-being while creating competitive advantages.

Lantos (2001) further delineates between altruistic and strategic CSR, arguing that altruistic CSR is not a legitimate business function. He supports mandatory ethical CSR, which he views as beneficial for both businesses and society.

C. Consumer Perspectives on Corporate Social Responsibility

Consumer preferences regarding CSR are more complex than traditionally thought. Ellen, Webb, and Mohr (2006) found that consumers differentiate between motives behind CSR efforts. Companies with egocentric motives (strategic or selfish) often face negative responses, while those with value-driven or stakeholder-driven motives see positive consumer reactions. These attributions influence purchase intent and mediate the company's reputation.

Sen, Bhattacharya, and Korschun (2006) highlight that stakeholder responses to CSR efforts are affected by the perceived authenticity of a company's motives. Positive relationships are formed in areas of consumption, employment, and investment when CSR is viewed as genuine.

D. The Role of Activism and Public Pressure on CSR

CSR efforts must be genuine to gain support from today's informed and active stakeholders. Brendan Duff, co-founder of 'March for Our Lives,' emphasizes that modern activists demand real change, not lip service (GCR, 2020). Social media and digital connectivity enable these stakeholders to apply significant pressure on corporations to change their behavior.

As public trust in political institutions declines, stakeholders are taking action to shape corporate practices. The ultimate goal of these movements is to inspire transformative action and create business models that solve today's challenges. The UN Global Compact suggests that the new generation of business leaders is focused on leaving behind a profitable and sustainable legacy.

E. Global Pressures and CSR in Social Change

Increasingly, global pressures are shaping CSR expectations. The Nielsen report (2018) shows that 81% of global respondents believe companies should help improve the environment, with Millennials leading this demand. Additionally, 73% of consumers are willing to change their habits to reduce environmental impact, and 41% are willing to pay more for products with natural or organic ingredients.

This growing awareness of the common good signals that businesses must increasingly respond to global challenges, helping to create a more sustainable and prosperous world.

F. Values-Based Leadership and Ethical Public Relations

Values-based leadership, which emphasizes honesty, respect, and dignity, plays a crucial role in promoting positive social change. Paul Polman, CEO of Unilever, highlights the importance of ethical leadership, noting that "If the head of the fish is rotten, you don't want to eat the fish." Over the past 15 years, leadership has shifted from focusing on shareholders to building relationships with stakeholders.

Public relations (PR) play an essential role in fostering trust and transparency. Ethical PR practices help create socially responsible organizations that maintain trust with the public, and PR managers act as ethical advisors, helping companies align their values with stakeholder interests (Bowen, 2004).

G. Positive Trends and Challenges for CSR and Purpose-Driven Business Practices

Recent surveys, including the 2023-2024 World PR Report, indicate a growing trend toward CSR and purpose-driven strategies. Companies are increasingly aligning their values with stakeholder demands, leading to brand loyalty and higher valuations. PR agencies predict that CSR and purpose will be key areas of growth, with issues like sustainability, diversity, and social inclusion gaining priority.

Despite these positive trends, challenges such as AI-driven misinformation and a lack of consequences for unethical behavior remain. Continuous efforts are needed to establish strategic CSR practices and involve stakeholders in shaping business solutions.

5. Conclusions

In today's interconnected, rapidly evolving world, faced with many challenges there is a growing pressure toward the organizations to act ethically, responsibly, transparently toward social and the environmental well-being. Organizations play a crucial role in building a world that will enable a happier life, by reducing and overcoming today's global challenges. There is a clear need for every individual, organization, corporation, and institution to work unambiguously, sincerely, inclusively, and continuously toward achieving positive social change, shaping a more sustainable and inclusive future for our children, the future generations and the survival of humanity.

This paper argues that Ethical Leadership, aligned with PR and stakeholder engagement, can significantly enhance the organizational impact through corporate social responsibility (CSR).

Integrating CSR into Business Strategies enhances organizational success and fosters broader social impact. Authentic leadership and PR are crucial for building an ethical organizational culture which leads to prosperous organizations and positive social change. Engaging in strategic CSR practices helps organisations resolving the social dilemma, encouraging ethical behaviour and sustainable practices that benefit the collective good, and in turn helps building and sustaining trust which contributes to corporate success and legitimacy.

This paper argues the need for managing corporate social responsibility by demanding higher performance standards, humility, empathy from oneself and every organization, toward achieving positive social change. Public relations managers play an important role in creating socially responsible organizations that aim for the overall welfare of society. Public Relations Managers should play a vital role as ethical advisors or correctors of the organization's ethical culture, due to their role as a bridge between the organization and the public ensuring transparency, inclusion and ethical integrity through value driven a stakeholder driven practices. Their effectiveness depends on their direct involvement in the organization's management team, creation of organizational policies and decision-making process, as well as the qualities and authenticity of the leader and the collaboration between them.

We can conclude that despite the visible positive trends toward the CSR and the purpose driven practices, which express the stakeholder driven motivation for positive change, continuous efforts are necessary toward establishing strategic corporate social responsibility (CSR) and involving stakeholders in the process. There is a need for greater awareness and responsibility of the positive social changes that every organization can strive for and work toward achieving. This requires a shift in the mindset, focusing not only on one's own selfish goals but on the mutual good of society and the organization. There is also a need to incorporate of CSR topics, real projects and practices in the curricula of higher education institutions, as well as by formal and informal organizations that offer professional development programs to PR managers, management, and leadership.

This article contributes to the ongoing discussions on business ethics, leadership and CSR, especially with the offered perspective on the importance of collaboration of the business leaders with the PR Managers on implementing CSR as genuine stakeholder oriented and driven integrated strategy that leads to organizational success and social and environmental well-being.

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Building a Personal Brand: Personal branding strategies and their impact on the professional success of students

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Abstract

This paper presents the process of building a personal brand. Personal branding represents the creation of a unique and recognizable identity with the intention of making an individual more distinctive primarily in the labor market. Creating a personal brand includes elements such as a consistent visual identity, effective representation of yourself and your values, as well as active engagement with the public on social networks and events.

This paper focuses on Generation Z, and the research was conducted on first-year students of the Belgrade Business and Arts Academy of Applied Studies (BAPUSS). The main goal of the research was to determine how familiar students are with the concept of personal branding, then to determine the importance of personal branding for the respondents, as well as familiarity with the process of creating a personal brand. Since Generation Z is the first generation to be born and grow up in the digital age, particular emphasis is focused on examining how much students use social media to build their personal brand. Since the students have attended the Management and Marketing courses, which dealt with SWOT analysis, setting goals and building plans, students were asked whether they use the acquired knowledge in order to build their personal identity.

Based on the obtained results, the authors concluded that they should present the process of personal branding to students in more detail as part of the Marketing course in order for them to be more competitive on the labor market.

Keywords: Four to six keywords are to be provided for indexing purposes.

1. Introduction

Personal brand was popularized in 1997, when Tom Peters stated: „We are CEOs of our own companies: Me Inc. To be in business today, our most important job is to be head marketer for the brand called You.“ (Shepherd; 2005)

Until that time, terms “brand” and “branding” were used only for products, services and companies. Further, until that time, the degree was the most important thing for job seekers and employees. Since the beginning of the 21st century, job seekers and employees apart the degree had to possess different skills as power skills and soft skills.

The American Marketing Association defined a brand as „any distinctive feature like a name, term, design, or symbol that identifies goods or services“, and personal branding as “the act of promoting yourself as a brand by crafting a distinct identity, reputation, and online presence to showcase your skills, expertise, and personality. This type of branding is normally used by professionals, influencers, and entrepreneurs to enhance their careers, attract opportunities, and build a strong online presence”.

Since the end of the 20th century, the personal brand has been promoted according to the same principles as the promotion of products and companies. One of the reasons for the development of the concept of personal branding is the great competition in the labor market. The 21st century is characterized by great turbulence on the labor market. Using the principles of personal branding, individuals have the opportunity to enhance their strengths and reduce or adapt their weaknesses into strengths. By applying personal branding, individuals find out their distinctive trait by which they stand out from the competition.

According to Shepherd, personal branding is the process by which an individual positions themselves for success (Szántó& Radácsi; 2023). Personal brand represents the unique image and reputation of an individual, which is built on the basis of crucial differentiation and is directly correlated with career satisfaction. (Dingus *at al*; 2005)

2. Process of Building a Personal Brand

The process of building a personal brand should include the following:

- Setting the vision and mission;
- Creating a personal SWOT analysis;

- Setting goals;
- Setting plans;
- Brand development;
- Evaluation brand value.

The first step in the process of building a personal brand is determine where individual would like to be in the future, what he would like to achieve, how he would like to present themselves and how they want to be perceived by others. This is necessary to set up the vision and the mission. In management, vision is defined as "the most general picture of where the organization intends to move." If the definition is transferred to a person, it means that the vision is the most general image of what an individual would like to achieve.

Creating a SWOT analysis is the next step. The SWOT analysis identifies strengths and weaknesses, as well as opportunities and threats from the environment. Based on the obtained results, the individual can identify own characteristics, knowledge, skills and abilities. Weaknesses indicate traits, knowledge and skills that an individual does not possess or possesses to an insufficient extent. By observing the environment, an individual can notice beneficial opportunities.

After the SWOT analysis done, individual have to set up goals. Goals represent the outcome of what the individual would like to achieve.

The goals should be (Robbins& Coulter; 2005):

- Measurable;
- Timed;
- Challenging;
- Written.

The most common division of plans is short-term, medium-term and long-term. Short-term plans are made for a period of up to one year, medium-term plans are made for a period of one to five years, and long-term plans are for a period longer than five years. Planning is important because it reduces uncertainty. "By planning the future, we try to control the future and reduce entropy (the natural tendency for systems to go towards chaos and destruction)." (Mašić *at al*; 2013)

Personal brand can be developed in several ways. The brand is constantly being built, every day in continuity. An individual builds his personal brand through his attitudes and behavior in public. A very important way of building a personal brand is through social networks as a posts, comments and statements. Accordingly, it is very important to design every statement and performance well, because everything published on social networks is not easy, and sometimes it is not even possible to remove.

Brand value is defined as the marketing outcomes or results from a branded product compared to those that would result from a non-branded product (Ailawadi *at al*; 2003).

3. Study Results

The authors set up three hypotheses:

- Respondents have a lack of knowledge about the process of building a personal brand.
- Respondents are not willing to develop their skills.
- Respondents have difficulty in recognizing their comparative advantage (the unique characteristic something that sets them apart from their colleagues).

The survey was conducted in a period of 25.03. -05.04.2024. The data was gathered online and in written form. 92 (75.41%) women and 30 (24.59%) men took part in the survey. Respondents are students in Belgrade Business and Arts Academy of Applied Studies. They attend study programs in the field of social-humanistic sciences. This is the reason why more women than man participated in the survey. Traditionally more women than men used to join study programs in social-humanistic sciences. Respondent are members of the Generation Z. Generation Z was born between 1995. and 2010. According to Rüdiger Maas, founder of the Institute for Generation Research, Gen Z has two main characteristics. The first is the number of cohort; this is the smallest cohort since the Second World War. The second main characteristic is about knowledge. Historically, the knowledge was transferred from parents to their children, but now, parents gain knowledge from their children, especially the knowledge about technology and digitalization.

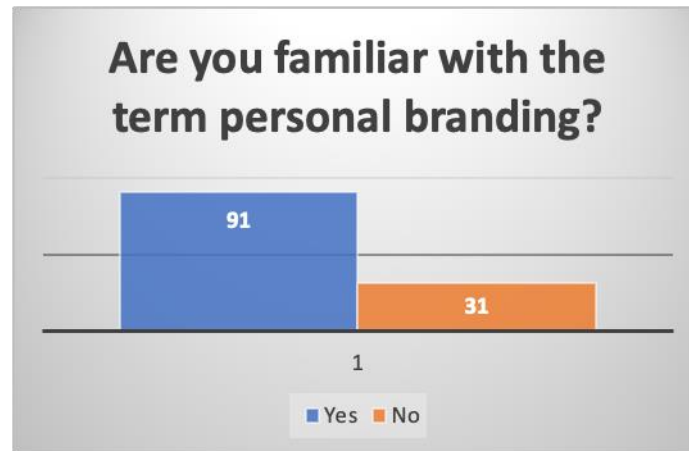


Figure 1. Are you familiar with the term personal branding?

Almost three quarters of respondents are familiar with the term personal branding.

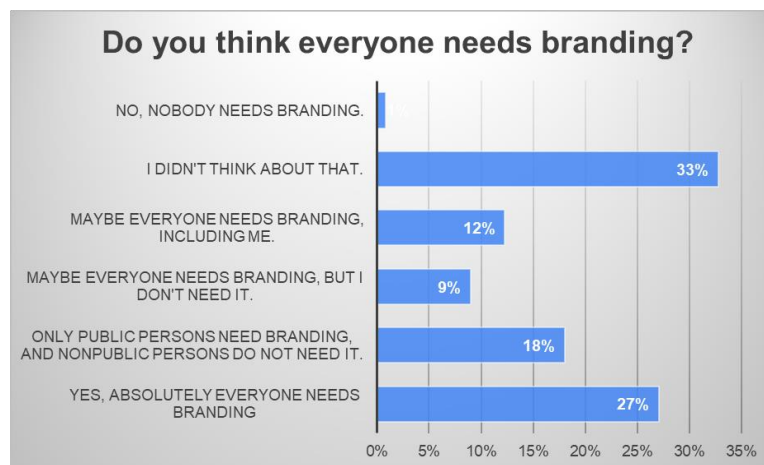


Figure 2. Do you think everyone needs branding?

27% (33) of respondents are absolutely convinced that everyone needs personal branding and 12 % of respondents have a lack of conviction in the necessity of personal branding.

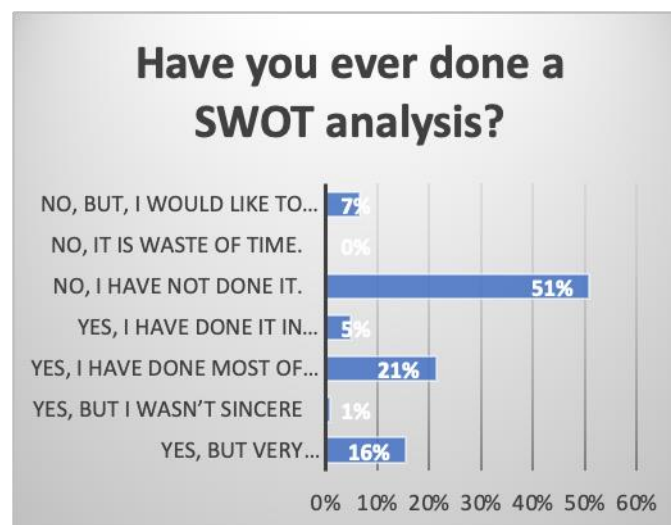


Figure 3. Have you ever done a SWOT analysis?

According to the results, conclusion is respondents are not willing to identify their skills and to develop their skills, because only 5 (5%) respondents have done SWOT analysis in detail and 7% of respondents would like to do it. 46 (37%) respondents have already done SWOT analysis but not in detail, it was very superficially done or insincere. Half of respondents 62 (51%), haven't done it yet. These responses present that the respondents are not willing to develop their skills.

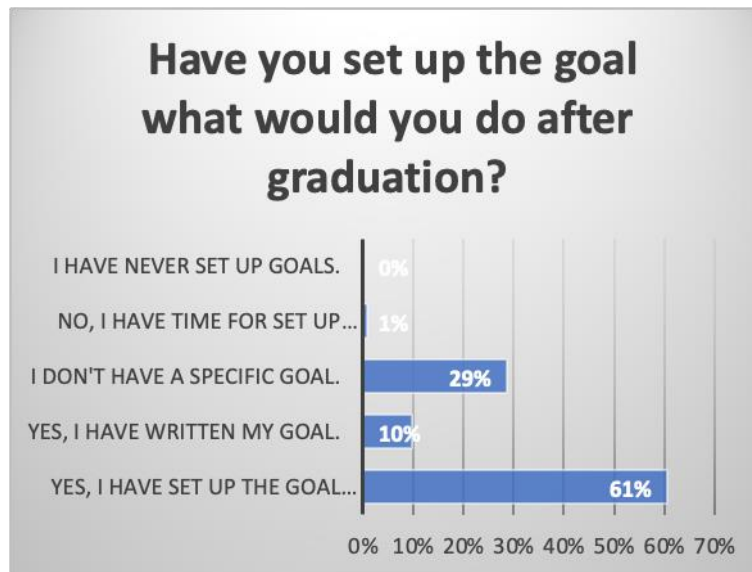


Figure 4. Have you set up the goal what would you do after graduation?

The majority of respondents (61%) have set up the goal in their minds. Only 10% of respondents wrote down their goal.

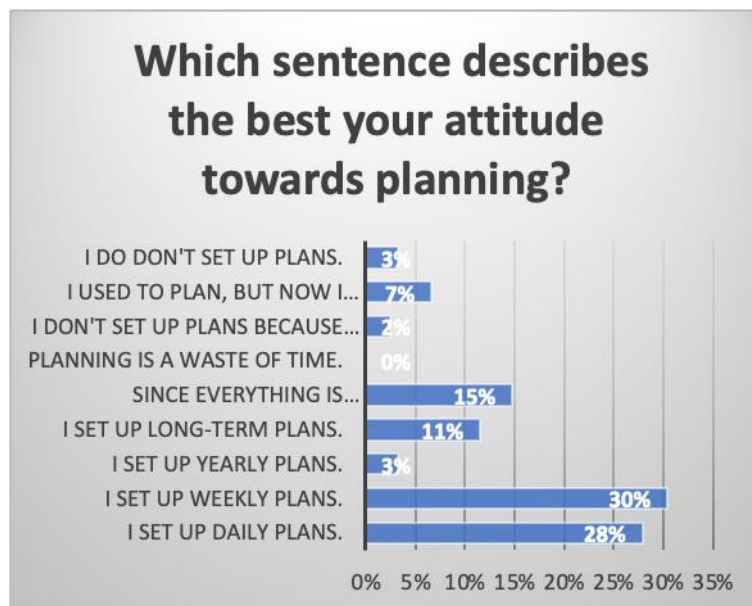


Figure 5. Which sentence describes the best your attitude towards planning?

According to the results, the majority of respondents set up daily and weekly plans. In total 27% of respondents don't set up any plan.

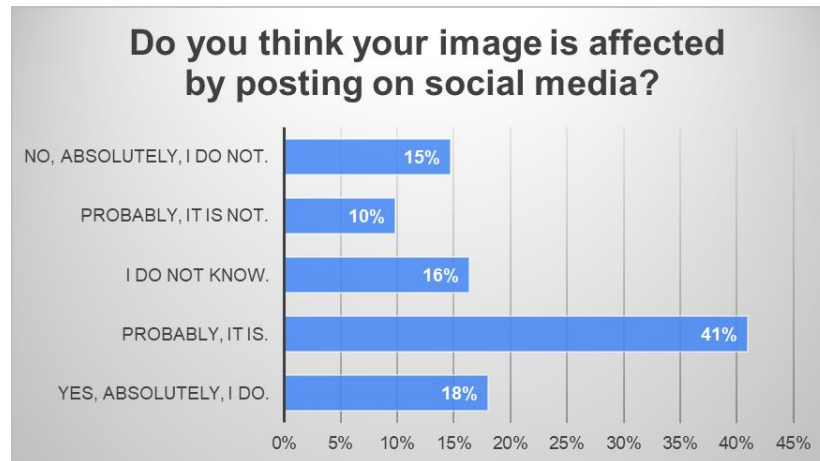


Figure 6. Do you think your image is affected by posting on social media?

According to the results of the survey, respondents are not aware of building personal brand through social media. Only 22 respondents (18%) are aware of the contribution of social media posts.

18 (15%) respondents are convinced that posting on social media doesn't influence on their personal image.

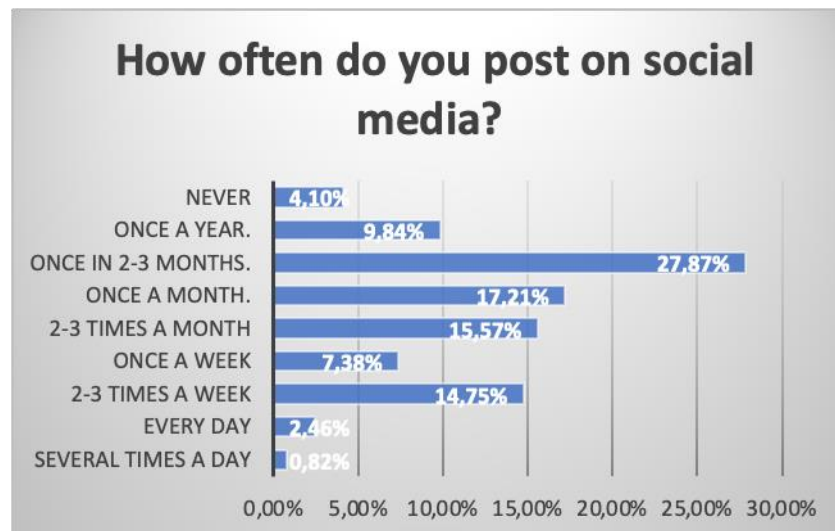


Figure 7. How often do you post on social media?

Based on data, the conclusion is the respondents post rarely on social media. The most common answer is "once in 2-3 months".

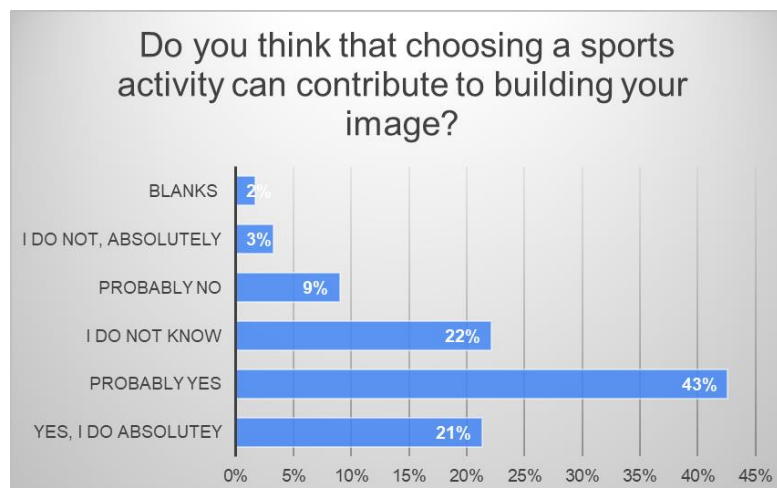


Figure 8. Do you think that choosing a sports activity can contribute to building your image?

Only 26 (21%) respondents are absolutely convinced that sports activity can contribute to building their image.

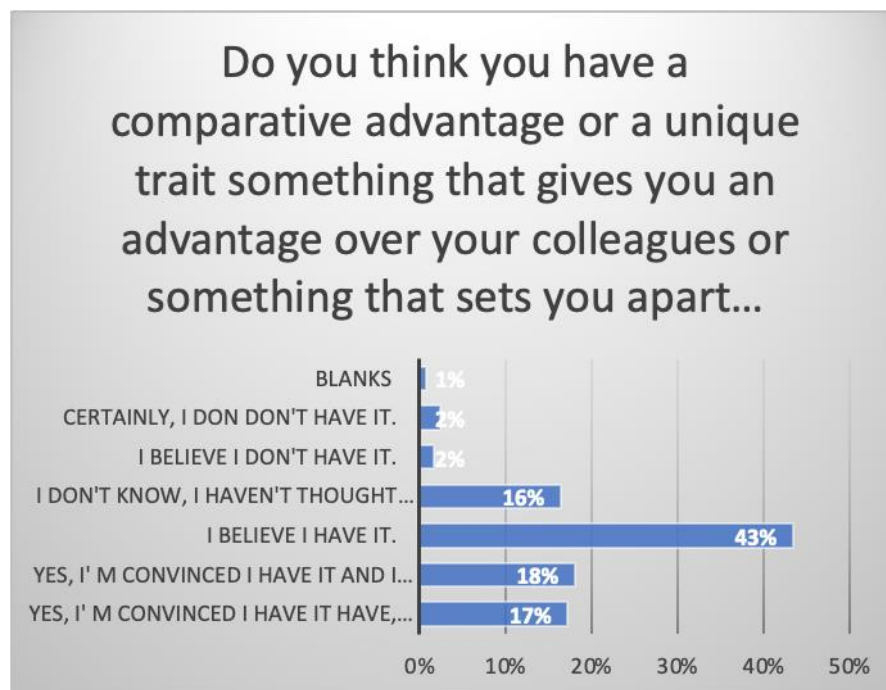


Figure 9. Do you think you have a comparative advantage or a unique trait something that gives you an advantage over your colleagues or something that sets you apart from the rest?

Only 22 (18%) respondents are convinced that they have unique trait, and they know which one. 21 respondents are convinced that they have unique characteristic but they don't know which one. 20 respondents haven't even thought about that. More than half of respondents believe that they have comparative advantage. Based on this responds we can conclude that the respondents have difficulties to find out some comparative advantage or a unique trait.

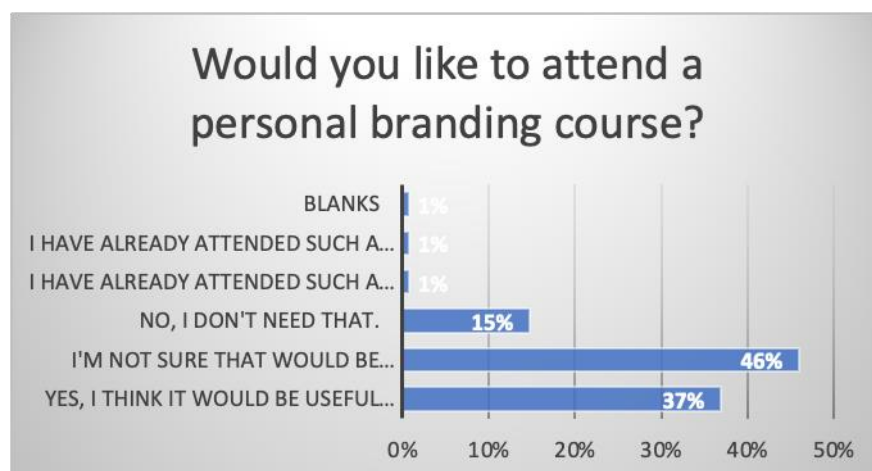


Figure 10. Would you like to attend a personal branding course?

Only 45 respondents (37%) think personal brand course would be useful for them. 46% of respondents are indecisive, they are not sure the course would be useful for them.

4. Conclusions

All of three hypotheses are proved.

H1- Respondents have a lack of knowledge about the process of building a personal brand.

Based on the obtained results, the conclusion is that students are not familiar with the way of building a personal brand. The conclusion is based on the answers to the question: *Do you think your image is affected by posting on social media*, only 22 (18%) respondents answered that they are absolutely convinced that posts on social networks contribute to their image, further, according to the responses on the question *Do you think that choosing a sports activity can contribute to building your image?*, 26 (21%) respondents answered that they are convinced that the choice of sports activities affects the building of a personal brand.

H2- Respondents are not willing to develop their skills.

Based on the answers to the question *Have you ever done a SWOT analysis?*, the conclusion is the respondents are not interested in discovering and developing their talents and skills. Only 8 respondents answered that they would like to do a SWOT analysis. Further, only 45 (37%) of respondents answered that they would like to attend the personal brand course and think that it would be useful for them, while all the others think that they do not need it and that it would not be useful for them.

H3- Respondents have difficulty in recognizing their comparative advantage (the unique characteristic something that sets them apart from their colleagues).

Only 22 (18%) respondents are convinced that they have a comparative advantage or a unique characteristic and know exactly which one. 21 (17%) respondents are convinced that they have a comparative advantage, and 53 (43%) respondents believe that they have it, but neither of them can identify it.

There are some following recommendations:

Importance of personal branding should be described in detail to the students. The benefits of personal branding should be presented to students and students should develop their skills, especially soft skills through different courses as Marketing and Management courses. Faculty and academies should organize and offer students personal branding course.

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Environmental Standard Environmental Performance Evaluation (EPE)

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Abstract

This paper refers to definition, explanation and implementation of environmental standard - environmental performance evaluation – ISO 14031. Environmental Standards, so called ISO 14000, are a series of international standards designed to meet the needs of governments, industry or business. ISO 14000 refers to standards such as environmental management systems (EMS), environmental labels and declarations, environmental performance evaluation, life cycle assessment, vocabulary, environmental communication and others. Environmental performance evaluation – ISO 14031 has to facilitate management decisions regarding an organization`s environmental performance by selecting indicators, collecting and analyzing data, assessing information regarding environmental performance criteria, as well as reporting and periodically reviewing and improving.

Environmental performance evaluation (EPE) refers to environmental policy, objectives, and indicators that reflects an organization`s environmental performance goals. ISO 14031 has been implemented according to the same Plan-Do-Check-Act (PDCA) model. Regarding planning, standard ISO 14031 must be based on significant environmental aspects and specified criteria for evaluation of environmental performance. ISO 14031 uses relevant performance indicators including environmental performance indicators (EPI) and environmental condition indicators (ECI), both of which involve the collection, analysis, assessment, reporting and review of relevant data.

In this paper we will point out that it is necessary to improve monitoring of environmental standards, especially ISO 14031. Also, Environmental performance evaluation (EPE) standard contributes to the Sustainable Development Goal regarding Climate Action (SDG 13).

Key words: Environmental standards, Evaluation, Indicators, SDG 13

1. Introduction

The 2030 Agenda for Sustainable Development has been adopted by all United Nations (UN) Member States in Paris in 2015, aiming to monitor and improve 17 Sustainable Development Goals (SDGs) which refer to clean water, land, responsible consumption and production, industry and others. UN Secretary General presents SDG Progress report every year. In their latest report, progress assessment regarding climate action (SDG 13) was mostly moderate, with stagnation and regression in many countries. In the SDG Progress report 2023 it is pointed out that "129 countries reported the adoption and implementation of national disaster risk reduction strategies, increasing from 55 countries in 2015. Among these countries, 122 countries have reported promoting policy coherence and compliance with the SDGs and the Paris Agreement as a key element in the strategy" (UN General Assembly, 2024, p. 4-20).

Beside, European Union (EU) has approved the European Green Deal in 2020 as set of policy initiatives with the "overarching aim of making the EU climate neutral in 2050. It is also an impact assessed plan aiming to increase the [EU's greenhouse gas emission](#) reductions target for 2030 to at least 50% and towards 55% compared with 1990 levels" (Arezina, 2023, p. 282). EU Green Deal includes [new EU Strategy on Climate Adaptation, European Climate Law, 2030 Climate Target Plan, European Climate Pact](#) and Sustainable Strategy to engage citizens and all parts of society in climate action (SDG 13).

The significance of this paper is to point out the importance of environmental standards due to adoption and implementation of 17 SDG's with 169 associated targets, according to the UN Agenda 2030 and the European Green Deal in the EU countries and countries in the process of accession. Usually, environmental standards, so called ISO 14000, have defined by government or organization as regulations and policies with aim to protect the environment and sustainability. They can be national (adopted by government and defined in national laws and other acts) or international (adopted by international organization and defined in international agreements). UN Environment Programme (UNEP) defines it as "limit for environmental disturbances, in particular, from ambient concentration of pollutants and wastes, that determines the maximum allowable degradation" (UNEPa, 2024) of the environment. Beside, International Organization for Standardization (ISO) it is authorized to set up many standards, as well the environmental standards. ISO defines environmental standards as international standards on environmental management to provide tools for a strategic approach to environmental issues (ISOa, 2024).

There are many environmental standards, such as environmental management systems (EMS), environmental performance evaluation (EPE), environmental labels and declarations, life cycle assessment, vocabulary, and others.

Main problem is that they may be mandatory or voluntary. Government agencies usually have mandatory environmental standards for air and water quality and for emissions of pollutants, pesticides and other hazardous chemicals (Helfand, 2013, p. 217). Moreover, some countries such as Australia has developed national environmental standards in order to improve environmental protection and decision making. Australian national environmental standards cover regional planning, participation in decision-making, community engagement and consultation, restoration actions and matters of National Environmental Significance (Australian Government, 2024). But, many environmental standards are voluntary, "such as guidance provided by industry trade groups" (Helfand, 2013, p. 217–218).

Due to increasing pollution and degradation of many non-renewable resources, our hypothesis is that environmental performance evaluation – ISO 14031 has to be mandatory environmental standard and to be certified to all heavy industries such as oil, gas and steel production, mining, chemical production and others whose activities may endanger the environment irreversibly.

It is based on several of 27 principles of UN Rio Declaration adopted in 1992, such as the principle of environmental protection and sustainable development, principle of state sovereignty, principle of cooperation, principle of information availability, principle of prevention, the polluter pays principle and principle of the precautionary approach will be applied if there are "threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation" (UN General Assembly, 2024). Those principles has been implemented in many other UN documents, such as Agenda 21, Agenda 2030, etc. UNDP has recently published Social and Environmental Standards (SES), pointing out eight standards such as biodiversity conservation and sustainable natural resource management; climate change and disaster risks; community health, safety and security; pollution prevention and resource efficiency, and others. Social and Environmental Standards (SES) were approved by UNDP's Organizational Performance Group (OPG) in June 2014 and went into effect in January 2015. In many new UNDP social and environmental standards has been implemented Rio Declaration principles. Regarding SES biodiversity, UNDP ensures that "a precautionary approach is applied to the use, development, and management of natural habitats, the ecosystem services of such habitats, and living natural resources" (UNDP, 2023, p. 16).

2. Environmental performance evaluation – ISO 14031

Environmental performance evaluation is environmental international standard defined by the International Organization for Standardization (ISO) as ISO 14031. Environmental performance evaluation (EPE) is "an internal process and management tool designed to provide management with reliable and verifiable information on an ongoing basis to determine whether an organization's environmental performance is meeting the criteria set by the management of the organization" (Jasch, 2000). Goals of many environmental standards are to standardize compliance with environmental strategies, laws, regulations, and public requirements as well to minimize the impact that company activities have on the environment.

Further, goals of EPE is to improve environmental performance, sustainability and to increase productivity as key goal of the ISO standard on environmental management systems (EMS) or ISO 14001. From many standards, environmental management system (EMS) "is the only standard in the ISO 14000 family that can be certified to" (ISOa, 2024). According to the latest ISO survey, for Serbia have been issued 1921 certifications for environmental management systems (EMS) or ISO 14001 standard for sectors wholesale & retail trade, repairs of motor vehicles, etc. (306), construction (305), basic metal products (119), machinery and equipment (105), concrete, cement, etc. (23), mining and quarrying (10), agriculture, fishing and forestry (16), etc. (ISOb, 2023).

Also, although ISO has stated that environmental performance evaluation (EPE) can be applied to "small and large enterprises and may be used to support an environmental management system (EMS) or used independently. An organization with an EMS in place should assess its environmental performance against its environmental policy, objectives, targets and other environmental performance objectives" (ISOc, 2024). Among many UN SDG's, environmental standard EPE is contributing to the Sustainable Development Goal 13 – Climate Action (ISOc, 2024).

Falqi I., Alsulamy S., and M.Mansur have conducted a study regarding environmental performance evaluation (EPE) in construction sector industries in Saudi Arabia. They have described and analyzed the level of implementation EPE standard using a 7-point Likert scale questionnaire distributed to 1000 organizations in Saudi Arabia (Falqy, et al., 2020). Many authors have pointed out that the implementation of an EMS or EPE does not guarantee its effectiveness (Rondinelli, Vastag, 2000). Falqi and others have noted in their study that there is "a need for continuous monitoring of an EMS's critical points. While researchers advocate that EPEs are not directly linked to the maintenance of EMS, others advocate that companies that do not use a set of EMS performance indicators may not be managing their own environmental system. Therefore, EP must be continually monitored to ensure success in either developed or developing countries" (Falqy, et al., 2020).

We point out that environmental standards EMS ISO 14001 and EPE ISO 14031 should be *mandatory for heavy industry facilities* in developing countries. Furthermore, due to increasing pollution and scarcity of many resources, especially drinking water, it is inadequate that a company or organization should assess its environmental standards EMS or EPE. Who will control if they have assessed it? Who will be responsible for possible environmental damage? Although ISO issues certificate for EMS ISO 14001, ISO has technical committees (ISO/TC 207) and their subcommittee regarding different environmental standards. But regarding EMS ISO 14001, ISO will have one virtual meeting in October. Does the ISO organization monitors and controls which company with ISO 14001, ISO 14031 or other certificate has conduct their activities according to the goals of environmental standards, environmental strategies and laws and public requirements? Many developed countries have applied EMS ISO 14001,

EPE ISO 14031 or other environmental standard and has established government body to plan, monitor and control their application.

For example, in the United Kingdom, the Government Property Agency (GPA) has got EMS - ISO 14001 certificate. GPA is a member of the UK Green Buildings Council and the Institute of Environmental Management and Assessment and they support the UN Sustainable Development Goals, especially SDG 13 for climate action. Last year GPA has published *Environment, Social and Governance (ESG)* report to reduce carbon emissions and support sustainable development as well as small and medium enterprises and local communities. Since 2021, GPA noted that EMS standard will enable to fulfil their obligations regarding sustainability, climate change mitigation, water management, and they announced “that it has achieved savings of 3646 tonnes of carbon dioxide (tCO₂e) since 2021, with cost savings of over £1 million“ (UK Government, 2023).

3. How to measure EPE – ISO 14031?

If you don't measure it, you can't manage it, is a catch phrase in environmental policy and management. Environmental performance evaluation (EPE) is “an ongoing process of collection and assessment of data and information to provide a current evaluation of performance, as well as performance trends over time; environmental audits may be used to gather such data and information, either as part of EPE or as part of an EMS, to verify whether objectives and targets are being met” (ISOc, 2021).

Environmental standard ISO 14031 can be evaluated and implemented according to the Plan-Do-Check-Act (PDCA) model, as used in ISO 9001 and ISO 14001, for the collection, analysis, assessment, and reporting of data, and review (O'Reilly, M., et al., 2000, p. 267-275). EPE standard has to offer to organization relevant, reliable, and comparable measures or indicators.

PDCA model had its origin in the 1920s in the work of physicist Walter Shewart who developed a repeating cycle for improvement (specify – produce – inspect), and three decades later Dr. W. Edwards Deming’s expanded it and applied it into management (design – production – sales – research). In `50s, Japanese executives changed Deming’s model into PDCA model (design – plan, production – do, sales – check, and research – action), which became the basis for improvement (kaizen) in Japan (Moen and Norman, 2009, p. 6–7). Ishikawa stated “if standards and regulations are not revised in six months, it is proof that no one is seriously using them” (Ishikawa, 1985, p. 56–61). PDCA model has implemented in Lean manufacturing and the Toyota production system (Lean Enterprise Institute, 2024). PDCA model consists of Plan-Do-Check-Act.

3.1. Plan: First, we have to *identify problems*, such as pollution or resource scarcity. Next is to *set SMART objectives* (specific, measurable, achievable, realistic, and timely), for short and medium-term. After that, we can *develop a detailed plan*: to specify what we have to achieve; to determine who is responsible for each task; to determine phases of the implementation schedule; and to set what resources are required. Last step in planning is to select indicators. ISO 14031 uses relevant environmental performance indicators (EPI) and environmental condition indicators (ECI), both of which involve the collection, analysis, assessment, reporting and review of relevant data.

- *Environmental condition indicators (ECI)* provides information about the local, regional, national or global condition of the environment at certain point of time (ISOc, 2021). Aroonsrimorakot has developed methodology for both indicators (ECI) and (EPI). In his study for Koh Chang Marine National Park - KCMNP in Thailand, environmental Condition Indicators (ECIs) are: waste quantity, coastal-water quality surrounding Koh Chang, water quality and noise level in the dense activities recreation area. According to his study, 13 environmental performance indicators (EPIs) were established... and 4 environmental condition indicators (ECI). These 13 indicators covered EPE of KCMNP, which is based on environmental aspects and management plan of marine national park (Aroonsrimorakot, 2020, p. 20-26).

- *Environmental performance indicators (EPI)* – in the United Nations Economic Commission for Europe (UNECE) this indicator is based on “six constituent policy categories: water resources, agriculture, forests, fisheries, biodiversity and habitat, and climate and energy. The referenced database yields maps for each of EPI’s partial indices normalised: to 0 ... 100” (UNECE, 2024).

Since 1995, the World Bank by using 40 environmental performance indicators (EPI) ranks 180 countries. “These indicators measure how close countries are to meeting internationally established sustainability targets for specific environmental issues” (World Bank, 2022).

Also, the Yale Center for Environmental Law & Policy has recently published Policymakers` Summary, using 58 EPI indicators across 11 categories, they ranked 180 countries on climate change performance, environmental health, and ecosystem vitality. Upon those criteria, Luxembourg, Germany, Finland, UK are at the top five, 20-25 are ranked Spain, Croatia, Slovenia, while Serbia, North Macedonia, Montenegro are ranked at 60-70, and the last five countries by EPI indicators are India, Laos, Pakistan and Viet Nam. They point out that “Countries’ wealth is a strong predictor of their overall environmental performance, but some countries vastly outperform their economic peers, while others lag” (Yale, 2024, p. 4).

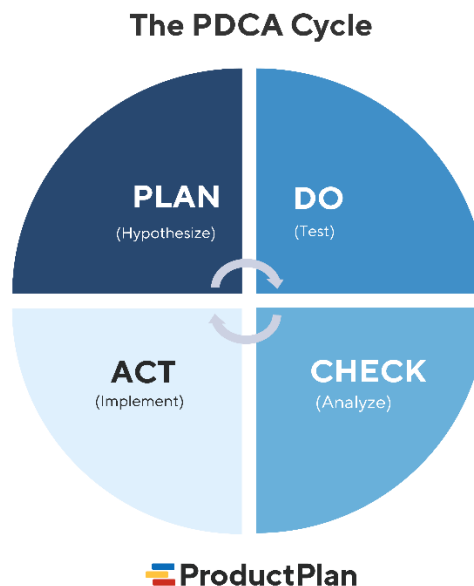
Beside those organizations, EPI has been used in many studies and researches, such as for Koh Chang Marine National Park in Thailand (Aroonsrimorakot, 2020), or to Evaluate Urban Development in Giza, Egypt (Hesham, et. al., 2024).

3.2. Do: In this phase of the PDCA model we have to allocate personell (management team, team and project leader, all employees), equipment, or budget to implement the plan in order to meet deadlines. Also, we have to conduct data collection and analysis, evaluation and assessment, and reporting.

Forms of measurement are evaluation and assessment. Measurement is procedure in order to quantitatively determine characteristic of a phenomenon or process (Arezina, 2010, p. 12–22), and. Evaluation determines quality, quantity, and the validity, while assessment determines the quantity, frequency, diffusion, probability and value of a phenomenon or process. Assessments are based upon evaluation, because we assess the upcoming situation on the basis of evaluation (Arezina and Spasojevic, 2020, p. 128–129). Assessment determines the quantity, frequency and probability of a phenomenon or process.

3.3 Check: We have to evaluate the effectiveness of the measures taken in the Do phase and each cycle process. Also, we have to determine whether we have achieved our planned *SMART objectives* (specific, measurable, achievable, realistic, and timely). If is successful, organization or company will implement the change (Jelenc at al., 2020, p. 15), but if the results don't meet expectations, we have to decide to maintain or change their plan.

3.4 Act: If implementation of change worked well, organization could implement it broadly, but if the results fall short expectations, we have to make corrective actions or to return to the plan phase. At the end of each check, we have to implement quality improvement (Liu, Tan, 2024, p. 104).



Source: *ProductPlan*, 2024.

In short, PDCA is one of the "well-known dynamic models for process improvement among other sets of quality tools and lean management methodology. Each process, product or service, improvement or project could be designed with the help of PDCA cycle" (Jelenc at al., 2020, p. 11).

4. Who will measure EPE – ISO 14031 and other environmental standards?

First problem is that EPE ISO 14031 is not mandatory standard. We point out that environmental standards EMS ISO 14001 and EPE ISO 14031 should be *mandatory for heavy industry facilities* in developing countries. Secondly, after assessment and evaluation – who will be responsible for potential environmental risks? Many developed countries have their own agencies or institute, such as in the United Kingdom, the UK Green Buildings Council and the Institute of Environmental Management and Assessment (UK Government, 2023).

But many developing countries don't have institutional possibilities to establish governmental body, like UK Green Buildings Council and the Institute of Environmental Management and Assessment. Also, many developing countries are facing with severe resource pollution or scarcity, or environmental risks due to mining or other multinational companies. Therefore, in developing countries it is essential that the United Nations Economic Commission for Europe (UNECE) monitors, assess *the environmental performance indicators (EPI) for heavy industry facilities*. UNECE is already evaluating EPI indicator, as well the World Bank, by using 40 EPI indicators, ranks 180 countries on "their national efforts to protect environmental health, enhance ecosystem vitality, and mitigate climate change. These indicators measure how close countries are to meeting internationally established sustainability targets for specific environmental issues" (World Bank, 2022). Beside, the UN Environment Programme - UNEP monitor and control the implementation of EMS ISO 14001 and EPE ISO 14031 for heavy industry companies, according to SDG's in UN Agenda 2030 and principles in Rio Declaration 1992. First, UNEP conducts Country Programme Evaluations (CPEs), or upon project as criteria, they carry out project evaluations to determine the relevance, performance and outcomes of that project (UNEPb, 2016, p. 11).

Also, it is essential that UNDP evaluates projects for heavy industry in developing countries. UNDP has Social and Environmental Standards, effective since the beginning of 2021. UNDP has *Social and Environmental Screening Procedure*

(SESP) to assess "potential social and environmental risks and opportunities associated with the project. The SESP screens projects for all environmental and social risks and impacts associated with the SES Programming Principles (i.e. leave no one behind; human rights; gender equality and women's empowerment; sustainability and resilience; and accountability) and Project-level Standards, including direct, indirect, cumulative, transboundary risks and impacts and those related to associated facilities" (UNDP, 2021, p. 63). After screening, proposed projects for addressing such impacts and risks are categorized at low, moderate, substantial and high risk (UNDP, 2021, p. 64-65).

In Serbia, although many scientists and the Serbian Academy of Sciences and Arts have declared that some mining companies may lead to a great ecological risk and irreversible environmental threat due to mines in a populated and agricultural area, but our government supported possible economic interests. After the scientific meeting, the Serbian Academy of Sciences and Arts warned that the exploitation of lithium in Western Serbia would lead to the destruction of the environment and endangering the health of the population. SANU, in the collection of works, scientific research and analysis, which was created through a public debate on the justification of lithium mines in the vicinity of Loznica, stated that there is no justified reason for the exploitation of lithium and boron in the vicinity of Loznica, in the manner envisaged by the company Rio Tinto (SANU, 2024). Beside, a team of scientists from Serbia and abroad published in the journal "Nature" the report, pointing that Rio Tinto has completed the geological exploratory stage of the Jadar project in January 2020, and after field research, they stated that "our initial results of the analyses of selected chemical elements from the Jadar mining zone in local soil and river water indicate that the environmental impact during the exploration phase is evident around the potential Jadar mine area and exceeds the zone of the planned mine. Initial exploratory drillings entailed the claims from the local population regarding the observed significant negative effects of groundwater by-production on soil and water quality" (Đorđević et al., 2024). During the summer, there were protests in more than 50 cities against the exploitation of lithium in Serbia and the announced project "Jadar", which is planned to be launched by the company Rio Tinto, and they were organized by environmental associations. Instead of supporting UN SDG's, especially SDG 6 (ensure availability and sustainable management of water), or SDG 15 (protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests), and SDG 13 for climate action, environmental activists in Serbia were arrested and intimidated (CRTA, 2024). Above all, company Rio Tinto ignores the SANU report, but answers to intellectuals, researchers or activists interviews, directly. It is tragedy for human rights that in 21st century, one huge multinational company is against an individual who is without support of the government or huge organization for environmental protection or human rights, who is just afraid of potential environmental risks of building mine in a populated and agricultural place in the vicinity of Loznica in Serbia. Therefore, UNEP's *Country Programme Evaluations (CPEs)* can provide essential evaluation principles, such as a) independence, b) impartiality, c) transparency, d) credibility, e) utility, etc. (UNEPb, 2016, p. 6–8). Also, it is essential that the United Nations Economic Commission for Europe (UNECE) monitors, assess *the environmental performance indicators (EPI) for heavy industry facilities* in developing countries, because UNECE is already evaluating EPI indicators worldwide.

Conclusion

In this paper we will point out that it is necessary to improve monitoring of environmental standards, especially ISO 14031. Also, Environmental performance evaluation (EPE) standard contributes to the Sustainable Development Goal regarding Climate Action (SDG 13). After Paris Agreement in 2015, states have declared to monitor and improve 17 Sustainable Development Goals (SDGs) which refer to clean water, land, responsible consumption and production, industry and others, and every year UN Secretary General presents countries SDG Progress report.

Environmental performance evaluation - ISO 14031 can be evaluated and implemented according to the Plan-Do-Check-Act (PDCA) model for the collection, analysis, assessment, and reporting of data, and review.

It is necessary to improve monitoring of environmental standards, especially ISO 14031, because many developing countries are facing with severe resource pollution or scarcity, or environmental risks due to mining or other multinational companies. Therefore, in developing countries it is essential to increase the role of the United Nations Economic Commission for Europe (UNECE) to monitors, assess the environmental performance indicators (EPI) for heavy industry facilities. Environmental performance evaluation is an ongoing process, and due to the globalization process, it is impossible to build a heavy industry facility in this part of Europe without implementing environmental performance evaluation - ISO 14031 standard, because any environmental risks will affect whole region.

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Navigating sustainable development: Albania's path to green, circular and blue economies

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Abstract

Albania stands at a pivotal juncture in its socio-economic trajectory, grappling with the complex dynamics of environmental sustainability, economic growth, and legislative frameworks, particularly in the realm of the blue economy. The aim is to provide a comprehensive overview of Albania's efforts in integrating green, circular and blue economy principles into its national development agenda, with a specific focus on the challenges, opportunities, and implications for sustainable growth. The objective of this work is twofold: Firstly, to analyze Albania's transition towards a circular economy, exploring the country's commitment to sustainable economic growth, environmental stewardship, and alignment with regional and EU frameworks. Secondly, to assess the development of Albania's blue economy, examining the legislative framework governing maritime activities and resource management, and highlighting the potential for sustainable development in coastal and marine sectors. Challenges posed by economic growth and environmental degradation necessitate a strategic national approach to the green transition, with regulatory frameworks and action plans guiding the process. Albania's coastal resources hold significant potential for blue economy development, including tourism, fisheries, and maritime transport. Legislative measures governing maritime activities play a crucial role in ensuring ecological sustainability while fostering economic growth. Alignment with EU directives and policies presents both challenges and opportunities for Albania as it progresses towards EU accession. Through continued alignment with EU directives and robust implementation, Albania is poised to realize the full potential of its coastal and marine assets, unlocking economic prosperity while safeguarding environmental integrity. However, addressing key challenges such as waste management, marine pollution, and climate change adaptation remains imperative for Albania's sustainable development journey.

Keywords: sustainable development, legislative frameworks, policy initiatives, economic growth, environmental stewardship, regional integration, governing tourism, fisheries, and maritime transport.

Introduction

Amid global environmental challenges, the green, circular, and blue economies have emerged as pivotal models for sustainable economic development. The green economy focuses on resource efficiency, renewable energy, and ecosystem preservation to decouple economic growth from environmental degradation (European Commission, 2024). In Europe and the Balkans, including Albania, initiatives like the European Green Deal and national strategies prioritize sustainability despite challenges in infrastructure and financing.

The circular economy aims to minimize waste and maximize resource efficiency through recycling and reuse, contrasting with traditional linear models (European Commission, 2023). In the Balkans, including Albania, adoption of circular economy principles offers opportunities in waste management and sustainable practices, though capacity building remains a hurdle.

The blue economy centers on sustainable use of marine resources, promoting sectors like fisheries, tourism, and renewable energy while ensuring ecosystem health (EU Blue Economy Report, 2023). For Albania, with its Adriatic and Ionian coastlines, the blue economy represents significant potential for economic growth and conservation, necessitating integrated coastal management and sustainable practices.

Albania is developing a national Blue Economy Program to harness maritime resources responsibly, aligning with EU accession goals and promoting economic development while safeguarding marine ecosystems (Government of Albania, 2023). These economies collectively aim to integrate environmental stewardship into economic policies, fostering resilience, equity, and prosperity across Europe and the Balkans, including Albania.

Navigating the Green and Blue Economies in the Balkans and Albania: Concepts, Challenges, and Opportunities

In recent years, the concepts of green economy (GE), circular economy (CE), and blue economy (BE) have emerged as pivotal frameworks for promoting sustainable development globally. These paradigms emphasize resource efficiency, waste reduction, and sustainable use of natural resources, aiming to balance economic growth with environmental conservation and social equity.

Green Economy (GE)

Adamowicz, (2022) examines the concept of green economy and related notions, evaluating their relevance for shaping development policies and addressing socio-economic challenges. The green economy in the Balkans, including Albania, focuses on fostering economic growth while minimizing environmental impact through sustainable practices. It champions renewable energy, energy efficiency, sustainable agriculture, and eco-friendly technologies (Georgeson et al., 2017). Albania, endowed with abundant hydropower potential and diverse natural landscapes, stands to benefit significantly from green investments. However, challenges such as inadequate infrastructure and economic constraints hinder its full realization. Albania has a potential for the renewable energy which is a critical component of the green economy.

Table 1. Renewable energy potential in Albania (source: (IRENA, 2020))

Technology	Capacity 2019 (MW)	Economic Potential 2030 (MW)	Technical Potential 2030 (MW)
Hydropower	2105	2150	4813
PV (Photovoltaics)	3	1074	2378
Wind	0	616	7483
Bioenergy	1	86	1832

Hydropower is currently the dominant source of renewable energy in Albania, with a substantial capacity of 2105 MW as of 2019. The economic potential by 2030 is projected to be 2150 MW, indicating a modest increase. The technical potential is significantly higher at 4813 MW, suggesting that there is substantial untapped capacity that could be developed with the right investments and technologies. Hydropower remains a cornerstone of Albania's renewable energy strategy due to its existing infrastructure and high potential for expansion.

PV capacity in 2019 was very low at 3 MW, highlighting that solar energy is an underdeveloped sector in Albania. The economic potential by 2030 is projected to reach 1074 MW, indicating a significant opportunity for growth in the solar sector. The technical potential is even higher at 2378 MW, which suggests that, with proper investments and policy support, solar energy could become a major contributor to Albania's renewable energy mix. The transition to solar energy could help diversify Albania's renewable energy portfolio and reduce its reliance on hydropower. Kapidani and Numani (2024) in their study evaluate the profitability of investing in solar energy for households in Albania through a cost-benefit analysis using capital budgeting methods, considering factors like electricity prices, solar panel productivity, and financial variables over a 30-year period. Their findings indicate that solar energy investment is profitable, with discounted benefits exceeding the initial costs, highlighting the potential for green energy adoption as part of sustainable development efforts. They report that in 2023, the Albanian government introduced a scheme to subsidize 70% of the cost of solar panels for heating water in households, aiming to reduce electricity consumption and CO2 emissions. Albania has several photovoltaic (PV) projects, with the largest ones being the Spitalle Solar Park, Vlora PV Power Plant, and Karavasta Solar Power Plant, each with a capacity of 140 MW. Other notable projects include the 100 MW Akerni PV Plant in Fier, a 1.5 MW floating PV plant at the Banja reservoir, a 1 MW project by Sun Edison Albania in Elbasan, and the 2 MW Fier Solar Park (Qamili and Kapia 2024).

As of 2019, there was no installed wind capacity in Albania, indicating a nascent or non-existent wind energy sector. The economic potential for wind energy by 2030 is 616 MW, showing significant opportunity for development. The technical potential is extraordinarily high at 7483 MW, which is the highest among all renewable energy sources listed. This suggests that Albania has a vast untapped wind resource that could be harnessed with appropriate infrastructure and investments. Wind energy resources present a significant opportunity for power production in Albania; however, the establishment of wind power plants is hindered by the lack of continuous measurements of wind velocity and duration, as noted by the National Agency of Natural Resources (AKBN) (Shira t al., 2021). Developing wind energy could significantly boost Albania's renewable energy capacity and contribute to a more balanced and sustainable energy mix. Albania relies heavily on hydropower for energy production, leading to energy imports due to variability in water availability, despite having the highest share of renewables in the Balkans and to diversify its energy sources, the Albanian government is fostering a supportive legislative environment that has attracted both local and foreign investors to pursue wind energy projects, many of which are currently in the feasibility stage of assessing wind speed (Bebi et al., 2023). In their study Malka et al., (2020) conclude that achieving the Albanian government's target of 42% final energy consumption from renewable energy sources by 2030 requires a substantial increase in wind power capacity to at least 1850 MW, alongside a clear and sustainable national energy model to facilitate large-scale integration of renewable energy.

Bioenergy capacity in 2019 was minimal at 1 MW, indicating very limited development in this area. The economic potential by 2030 is projected at 86 MW, suggesting moderate growth opportunities. The technical potential is considerably higher at 1832

MW, indicating that bioenergy could play a more significant role in the future with the right technological advancements and policy frameworks. Bioenergy offers an alternative renewable energy source that can contribute to energy diversity and waste management solutions. The study by Vito et al. (2024) evaluates Albania's efforts to utilize urban waste for renewable energy, revealing that 79% of waste is still landfilled while only 19% is recycled, with significant underutilization of recycling capacity. It highlights the potential for organic waste to produce energy and calls for improved waste collection and alternative waste-to-energy technologies to enhance sustainability in waste management.

Initiatives like the European Green Deal and Albania's National Strategy for Development and Integration underscore regional commitment to sustainability. These frameworks promote green investments and policies aimed at fostering innovation and creating green jobs.

Circular Economy (CE)

The circular economy aims to minimize waste and enhance resource efficiency by promoting recycling, reuse, and remanufacturing. Unlike the traditional linear economy model, CE seeks to close production and consumption loops, thereby reducing environmental impact and promoting sustainable consumption patterns. Nikolaou & Tsagarakis, (2021) and Yang et al., (2023) review circular economy strategies aimed at mitigating climate change and managing solid waste. They highlight the significant challenges associated with transitioning to a circular economy paradigm, such as the high costs of carbon removal technologies and the necessity for comprehensive life cycle assessments to ensure sustainability.

In Albania, integrating CE principles could address pressing issues like waste management and resource scarcity. By promoting sustainable practices in tourism, manufacturing, and construction, Albania can spur economic growth while mitigating environmental degradation. Challenges include technological dependencies and the high costs of sustainable technologies, necessitating supportive policy frameworks and stakeholder collaboration.

In Albania, the transition to a circular economy is bolstered by efforts to improve waste management and increase recycling rates. Figure 1 presents data from the Eurostat, showing the per capita waste generation rates and treatment percentages for the country in the period 2013-2022.

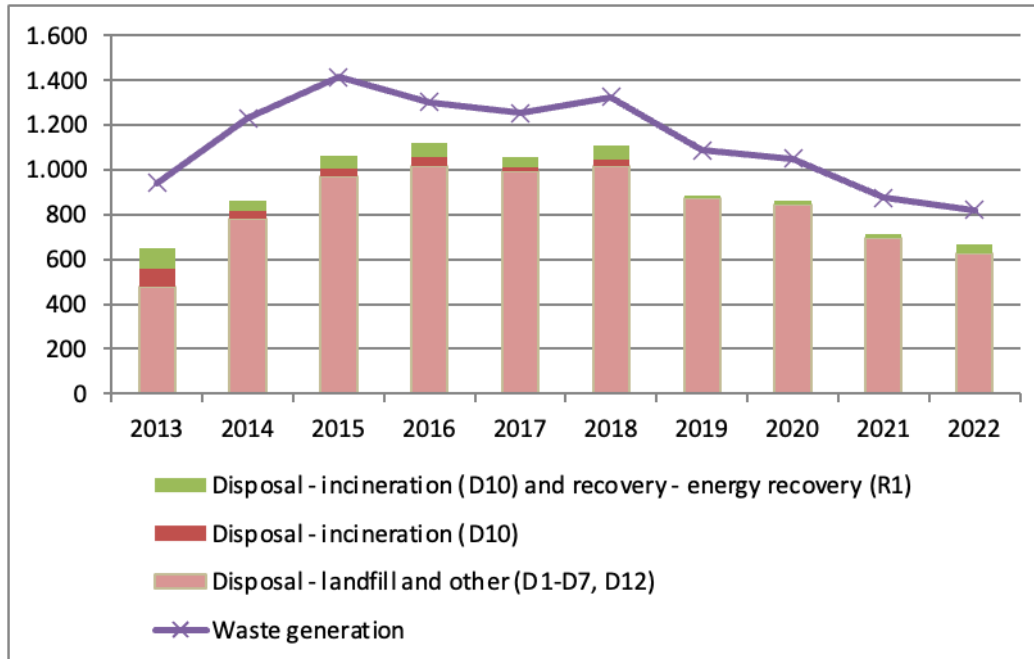


Figure 1. Municipal waste generation and treatment in thousand tonnes in Albania, 2013-2022 (Source Eurostat 2023; calculations by the authors))

Total waste generation shows a general pattern of fluctuation, peaking in 2015 (1,413 units) and gradually declining to 820 units by 2022. Despite fluctuations, there is an overall downward trend in waste generation, suggesting potential improvements in waste management efficiency and recycling efforts.

There is a noticeable decrease in landfill quantities from 2013 to 2022, indicating a trend towards reduced reliance on landfills for waste disposal. The highest landfill usage was in 2015 (970 units), with a steady decline thereafter. By 2022, landfill usage dropped to 629 units, marking a significant reduction over the decade.

Incineration shows fluctuating but generally low usage throughout the years, with a rapid decline after 2018. By 2020 and onward, incineration is negligible (0 units), possibly indicating a shift towards alternative waste management strategies.

Recycling rates have varied over the years, with noticeable increases in 2018 and 2022. The lowest recycling rates were observed in 2019 (12 units), whereas the highest was in 2022 (36 units), indicating efforts to improve recycling practices over time.

The decrease in landfill usage and waste generation suggests efforts towards reducing environmental impact and improving resource efficiency. Fluctuations in recycling and incineration rates may reflect changes in policy, infrastructure development, and public awareness campaigns. Albania's progress in waste management and resource efficiency aligns with broader regional trends in transitioning to a circular economy, though further efforts are needed to achieve sustainable waste management and resource optimization.

Blue Economy (BE)

The blue economy focuses on the sustainable use of marine resources, including fisheries, aquaculture, maritime transport, tourism, and renewable energy from oceans and seas (Smith-Godfrey, 2016). Albania's coastline along the Adriatic and Ionian Seas presents opportunities for economic growth but faces challenges such as overfishing and marine pollution. Sustainable coastal zone management and investments in blue infrastructure are critical for harnessing the full potential of the blue economy.

Challenges include marine pollution, overfishing, and climate change impacts on marine ecosystems. Addressing these requires coordinated efforts between government, private sector, and local communities.

In Albania, significant progress has been made in the development of the blue economy, with the adoption of the National Strategy for Integrated Coastal Zone Management (ICZM) (Government of Albania, 2019). Table 2 highlights key blue economy sectors in Albania, their economic contributions, and sustainability challenges.

Table 2. Key Blue Economy Sectors in Albania

Sector	Economic Contribution	Sustainability Challenges
Fisheries	Employment, food security	Overfishing, habitat destruction
Tourism	Revenue generation, cultural heritage	Coastal pollution, climate change impacts
Maritime Transport	Trade facilitation, connectivity	Pollution, invasive species
Marine Renewable Energy	Clean energy, investment opportunities	Technological barriers, environmental impacts

Fisheries play a vital role in Albania's blue economy, providing employment for coastal communities and food for local population, tourists and export. However, overfishing and habitat destruction pose significant threats to marine biodiversity and the sustainability of fish stocks. Efforts to promote sustainable fishing practices and enhance fisheries management are essential to ensure the long-term viability of this sector.

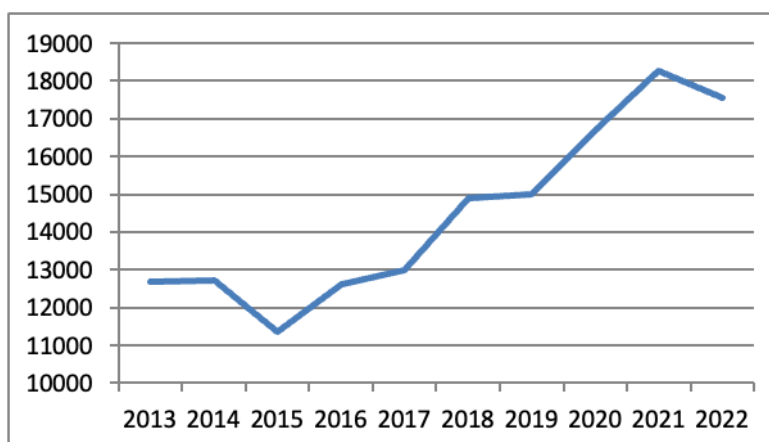


Figure 2. Fishery production in Albania in the period 2013-2022. (Source, (*World Development Indicators* / *DataBank*, n.d.), calculations by the authors)

The fishery production experienced fluctuations between 2013 and 2016, with a significant drop in 2015. From 2016 onwards, there was a steady increase in production, peaking in 2021 at 18,282.50 tons. The only significant decrease observed after 2015 was in 2022, when production decreased by 731.00 tons from the previous year.

Albania's fishery production has shown an overall positive trend from 2013 to 2022, despite some fluctuations. The increase in production over the years indicates potential growth and development within the sector. Continued monitoring and analysis of fishery data will be essential to sustain this growth and address any challenges that may arise.

Albania's Transition to a Circular Economy and the Evolution of Sustainable Economies

Albania is navigating a transition towards a circular economy to foster sustainable economic growth and environmental stewardship, aligning with EU and regional frameworks. Economic growth has escalated consumption and raw material demand, posing sustainability challenges exacerbated by issues like illegal landfills and marine pollution (Club, n.d.).

Critical steps for Albania include a national green transition strategy, focusing on regulatory reforms and renewable energy adoption to ensure sustainable economic development (Ignjatović et al., 2024). Agriculture, pivotal to Albania's economy, faces environmental degradation and social inequities that green economy principles can mitigate, promoting resource efficiency and sustainability (Gavrilovic et al., 2023).

Tracking Albania's progress in green growth involves monitoring environmental productivity and quality of life indicators, while green GDP calculations provide a holistic measure of economic growth considering environmental impacts (Merko et al., 2019; Prendi & Gashi, 2023). Albania's coastal resources present opportunities for blue economy development in tourism, fisheries, and maritime transport, although the increase in tourist numbers and climate change poses risks requiring sustainable management (Mani et al., 2022; Rustja, 2023).

To fully embrace circular economy principles, Albania needs cohesive regulatory frameworks, cross-sectoral governance, and stakeholder engagement. Strengthening institutional capacities and investing in renewable energy and climate resilience are crucial steps towards a sustainable and prosperous future (Club, n.d.; Ignjatović et al., 2024; Rustja, 2023).

Exploring the Dynamics of Green Growth and Blue Economy: A Multidisciplinary Perspective

The concepts of green growth and blue economy have gained significant attention in global discourse on sustainable development. This section provides an overview of their emergence and evolution, highlighting their importance in addressing environmental challenges while promoting economic prosperity (Corson et al., 2015; Dornan et al., 2018; Silver et al., 2015).

In the Pacific region, diverse interpretations of green growth highlight its contested policy space and rapid dissemination, reflecting local perspectives and agendas (Dornan et al., 2018). The blue economy, crucial for sustainable ocean resource management, faces complexity in defining and implementing its principles amidst competing human-ocean relations discourses (Silver et al., 2015).

Despite challenges like environmental degradation, the blue economy offers economic opportunities through improved ocean health, job creation, and sustainable resource utilization (Narwal et al., 2024; Perissi & Bardi, 2021). Efforts to advance the blue economy emphasize integrated risk assessments and sustainable seafood processing to minimize waste and align with sustainable development goals (Hobson & Lynch, 2016; Venugopal, 2022).

Integrated management frameworks are proposed to navigate conflicts and evaluate cumulative impacts, ensuring balanced ecological, economic, and social-cultural outcomes (Stephenson & Hobday, 2024).

Legislative Framework for Albania's Blue Economy

Albania's legislative framework for the blue economy focuses on maritime activities and resource management, ensuring ecological sustainability through directives like the Framework Water Directive and the Maritime Strategy Directive (Mani et al., 2022). Laws governing maritime tourism, water resource management, fishing, and pollution control align with EU directives, supporting sustainable practices and EU integration policies (Kadrini & Gjeta, 2019).

Table 4: Policy Frameworks and Environmental Regulations in Albania

Policy/Regulation	Description	Source
National Strategy for Development and Integration	Outlines goals for sustainable development	Government of Albania
Law on Waste Management	Regulations on waste collection and recycling	Ministry of Environment
EU Integration Policies	Requirements for aligning with EU environmental standards	European Union Commission

Albania's commitment to sustainable development is reflected in its legislative frameworks and environmental regulations. Table 4 outlines key policies such as the National Strategy for Development and Integration and the Law on Waste Management, highlighting efforts to align with EU standards and foster a supportive regulatory environment."

As Albania progresses towards EU accession, harmonizing its legislative framework with EU directives presents opportunities to unlock the economic potential of its coastal and marine resources. Through these efforts, Albania aims to achieve sustainable blue growth, integrating international standards to drive economic prosperity and environmental stewardship.

Conclusion

Albania's transition to a circular economy marks a pivotal moment, balancing economic growth with environmental sustainability. By leveraging natural assets and aligning with international frameworks, Albania can chart a path towards resilience, inclusivity, and sustainable development in the Balkans and beyond.

Navigating the evolution of green growth policies and understanding the implications of the circular and blue economies are crucial for promoting sustainable development in Albania and the broader Balkans. By addressing infrastructure challenges, mobilizing financial resources, and enhancing policy frameworks, Albania can enhance its environmental resilience, promote economic prosperity, and contribute to global sustainability efforts.

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Reforms undertaken on the implementation of International Auditing Standards for High Audit Institutions as an added value in strengthening the principle of transparency and accountability - Evidence from Albania

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Abstract

In Albania, the creation of the legal framework for public auditing is an extremely important step for the independence and competences of public auditors as persons who carry out the auditing process and for the Supreme State Control as the Supreme Audit Institution, in fulfillment of the principles of the Declaration of Lima, October 1977 Peru, this act that changed the world of the highest state audit; as well as the requirements of the INTOSAI international auditing standards. The main purpose of the paper is to document the current state of development and implementation of auditing standards in Albania, as well as to evaluate the local legal basis and the requirements of integration and globalization in relation to the implementation of auditing standards for the development of the auditing service as an added value in the principle of transparency and accountability.

All public sector units, as administrators and users of public funds, have the obligation to develop their decision-making and implementation activities within a certain legal and regulatory framework. The concept of compliance (compliance) takes on a special importance in conditions where the demand for performance in the public sector is ever increasing, and obtaining security referring to compliance with laws and regulations is considered a vital dimension of accountability in governance. Based on a literature study, an empirical analysis and the collected data, it will be aimed to present an evidence of Albania's journey on the implementation of SNASPs, evidencing the importance of the audit service in the public sector as an instrument of accountability, transparency.

Keywords: Audit, International Audit Standards, public sector, transparency, accountability.

JEL codes; M41.

Introduction

The Supreme Audit Institutions are considered as the most important Institution of a country since it oversees the activity of all state institutions and evaluates their performance, preserving public funds and ensuring sustainable development, all through transparency and integrity. Transparency and accountability are principles that create the administrative and organizational culture of the public institution (Crindell, 1999). In order to increase the trust of citizens, the higher auditing institutions must have a high degree of transparency and accountability, and for this purpose they must strengthen their independence, effectiveness and reliability.

Auditing is a natural concept in public financial administration, as it creates trust in the management of public funds. It is a necessary component of a regulatory system, which aims to detect deviations from accepted standards and violations of the principles of legality, efficiency, effectiveness, economy and financial management. This system would make it possible to take corrective actions in specific cases, increase accountability, obtain compensation, and prevent such violations. Although the word "Standards" is widely used, this word is synonymous with the word "directive", which keeps the authority of compliance (implementation) within the domain of each Supreme Audit Institution. (Omar A. Fakieh, Minister of State-President, General Audit Bureau of Saudi Arabia Chairman, INTOSAI Commission on Auditing Standards Riyadh, March 1989) Adoption of a comprehensive set of international standards for Supreme Audit Institutions (known worldwide by the acronym ISSAI - pronounced by us with SNASP) aimed to provide INTOSAI members with an up-to-date framework of international standards, guidelines and best practices for public sector auditing. The standards are of considerable value to ILA members as well as providing a common reference framework for public sector auditing.

INTOSAI (2022) decided to "provide an updated professional standard framework", so the INTOSAI Professional Standards Committee decided to merge existing and new INTOSAI standards and guidelines into a common framework. The framework includes all documents approved by INCOSAI in order to guide the professional standards used by ILAs. The review at the twenty-fourth Congress of INTOSAI (INCOSAI XXIV) in 2022, in Rio De Janeiro, Brazil focused on the work of Supreme Audit Institutions in the face of public emergencies. The effects of climate change and other emergency situations, such as man-made natural disasters, financial crises and pandemics, challenge SAIs to provide oversight to assist governments and their citizens with emergency preparedness and response, as well as adapt their activity. It is important to note that it was initially operated by

adapting the relevant general audit guidelines for audit types such as financial, performance and compliance audits with the frameworks defined in the SNASP.

The path to the full adoption of SNASPs by ILAs followed a journey of changes, which are briefly reflected in:

- ✓ change of management,
- ✓ the duration of the mandate and the methods of appointment/dismissal,
- ✓ institutional agreements,
- ✓ the audit environment and
- ✓ human resource considerations.

The scope and nature of the implementation of the SNASP may vary from ILA to ILA depending on the mandate of the organization, the legal environment as well as the existing regulatory basis of the ILA.

Even in Albania, the journey of implementing auditing standards in the public sector has been accompanied by a series of reforms, which are presented as follows:

Table 1 "Reforms undertaken for the creation of the regulatory framework for the implementation of international audit standards in KLSH/ALSAI"

Periudha	Përshkrimi
December 1997	The adoption of the new Law no. 8270, dated 23.12.1997, where, among other things, the name of the State Control Service is changed to the High State Control, which also brought changes <i>that were entirely consistent with the principles of international auditing standards.</i> This law transformed the institution into a collegial decision-making body of 8 people (Chairman and two vice-chairmen), who were appointed by the Assembly on the proposal of the President of the Republic. For the first time, Article 2 of Law no. 8270, dated 23.12.1997 sanctioned the mandatory norm that, "The Supreme State Audit, in accordance with the legislation and international audit standards developed by INTOSAI, controls the administration of state property and the implementation of the state budget in the entities defined by this law."
Year 2004	KLSH/ALSAI carries out its activity based on International Auditing Standards
Year 2010	<i>Approval of the framework of SNASP/ISSAI</i> by KLSH/ALSAI. This marked an important step towards increasing the professionalism, independence and effectiveness of the institution in performing its audit functions. The implementation of these SNASP standards has continued gradually, where the first process was marked through the translation of the SNAs into the national language and their publication. (<i>The first complete package was published in 2012</i> and the complete and official reprint of the framework in 2016, incorporating within it the Declaration of Mexico (2007), alongside the two Resolutions A/66/209 and A/69/228 of the Assembly of General of the United Nations on strengthening the role of ILA in promoting accountability, effectiveness and transparency in public administration).
Year 2012	The 2013-2016 <i>Development Strategy was created</i> , which focused on the following directions: <ul style="list-style-type: none"> - Bringing the legal and regulatory basis of the SSC in accordance with international standards; - Improvement of audit capacities, quality and productivity; - Improving the quality and increasing the number of performance audits; - Development and consolidation of IT audit; - Strengthening the anti-corruption role of the SSC; - Development of communication and cooperation with other actors inside and outside the country.
Year 2014	The <i>new Law</i> no. 154/2014 dated 27.11.2014, which aimed at further alignment with international auditing standards and EU best practices. Also, this law aims to strengthen the institutional, organizational and financial independence as well as specifies the rights, duties and powers of the SSC. It was also accompanied by the approval of other regulatory acts such as: <ul style="list-style-type: none"> - Internal Regulation; - Regulation of Audit Procedures; - Code of Ethics. - Compliance Audit Manual, Financial Audit Manual, Performance Audit Manual and IT Audit Manual
2014 ÷ Up to	The following regulatory frameworks have been updated:

now	<ul style="list-style-type: none"> - Internal Regulation on the organization and operation of the Supreme State Audit; - Regulation of Audit Procedures; - Standard Work Documents - Etc.
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The source of data: The authors based on the study of the legal framework in the Republic of Albania over the years.

The implementation of International Standards of Supreme Audit Institutions in the High State Control increased responsibility and accountability by regulating audit processes and methodologies. These standards helped define the role and responsibilities of the institution, making it more aware of its duties; they brought about the regulation of audit processes and the improvement of transparency in financial reporting, as well as through the increase of auditor's responsibilities, they also brought about the improvement of the culture of accountability in the institution.

Literature review

SAI's are part of an overall legal and constitutional system within their respective countries and are accountable to several different actors, including legislative bodies and the public. SAI's are also responsible for planning and carrying out their scope of work and using appropriate methodologies and standards to ensure that they promote accountability and transparency over public activities, fulfill their legal mandate and fulfill their responsibilities in a manner complete and objective.

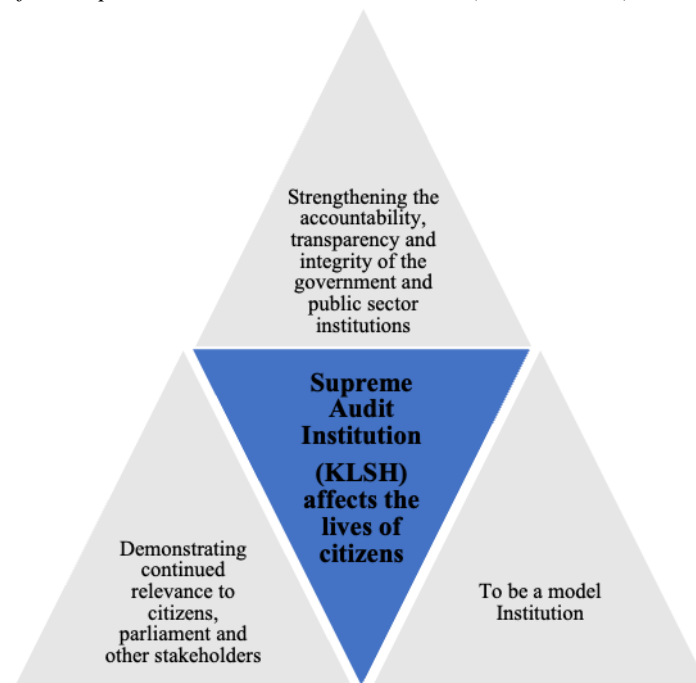
A key challenge facing all SAI's is to promote a better understanding of their roles and duties in society, among the public and the administration. In accordance with their mandates and the governing legal framework, information about SAI's should be easily accessible and relevant to the respective issues. Their work processes, activities and products must be transparent. They should also communicate openly with the media and other stakeholders and make the information visible in the public arena. From the literature study (SAI)¹, the organization of audit institutions can be identified in three basic models as follows:

1. **The Anglo-Saxon model:** Known as the Parliamentary model, (in countries such as the United Kingdom and most Commonwealth countries, some European countries and Latin American countries such as Peru and Chile) the audit of public accounts is carried out by an Office (Institution) National Auditing that performs audits of public accounts of the public sector. It is chaired by an independent Auditor General or equivalent, who submits audit reports to a committee of Parliament.
2. **Judicial Model:** Known as the Napoleonic model, (in countries such as France, many Latin countries in Europe, Turkey, Francophone countries in Africa and Asia, and some Latin American countries including Brazil and Colombia. Here the ILA, often a Court of the Court of Accounts or Cour des Comptes is part of the judicial system and forms judgments on the use of public funds by government officials.
3. **The Board or Collegiate Model,** used by many Asian countries, including Indonesia, Japan and the Republic of Korea, and some European countries, including Germany and the Netherlands. This approach has similarities to the Westminster model, except that an audit board or boards produce audit reports and submit them to Parliament.

It is important to note that the structures and organization of audit institutions can vary greatly between countries and different legal-institutional systems, but the main purpose of these institutions is to conduct independent and objective audits of public accounts and to ensure accountability and transparency. in the public sector. The main impact from the services provided by the SAI's is certainly the citizens, who at the moment when they will look at the Supreme Audit Institutions (the case of Albania KLSH/ALSAI) as reliable, then it can be said that the fulfillment of their functions has been ensured and ensuring their value in the lives of citizens.

¹ <https://sirc.idi.no/about/what-are-sais>

Figure 1. "The influence of the Supreme Audit Institution in Albania (KLSH/ALSAI) on the lives of citizens"



The source of data: INTOSAI-P-12² "The value and benefits of the Supreme Audit Institution / KLSH - the impact on the lives of citizens"

Transparency, in addition to being a legal obligation, should be evaluated as a concrete way through which the institution builds and increases its public profile, the impact of the audit work and therefore its credibility among stakeholders. *It should be noted that, even in Albania, the information made public is updated in accordance with point 2, article 5 of Law no. 119/20124 "On the right to information"*. The rule of law and democracy are the essential foundations for an independent and accountable public audit and serve as the pillars on which the Lima Declaration³ was founded. The independence, accountability and transparency of SAI's are essential prerequisites in a democracy based on the rule of law and enable SAI's to lead by example and enhance their credibility.

The notion of transparency refers to SAI's timely, reliable, clear and relevant public reporting on its status, mandate, strategy, activities, financial management, operations and performance. In addition, it includes the obligation of public reporting on audit findings and conclusions and public access to information about the SAI's.

Transparency and accountability are principles that create the administrative and organizational culture of the public institution (Crandell, 1999)

Accountability and transparency are two important elements of good governance. Transparency is a powerful force that, when applied consistently, can help fight corruption, improve governance and promote accountability. Accountability and transparency are not easily separated, both involve among other things the same concept such as public reporting.

The concept of accountability refers to the legal and reporting framework, organizational structure, strategy, procedures and actions to help ensure that:

- ILAs fulfill their legal obligations regarding their audit mandate and the reporting required within their budget;
- ILAs evaluate and track their performance as well as the impact of their audit;
- ILAs report on the regularity and efficiency of the use of public funds;
- ILAs define the attackers who bear responsibility for their actions.

UNDP and DESA in their cooperation report (2004) highlighted that transparency and accountability are mutual and interrelated concepts, which reinforce each other. Without transparency - *which means unlimited access to information and reliable and at all times on the entity's decisions and performance* - it would be difficult to hold the public sector accountable. However, the centralization of power and barriers to public participation constitute an obstacle to transparency and accountability in both the public and private sectors.

² https://www.intosai.org/fileadmin/downloads/documents/open_access/INT_P_11_to_P_99/INTOSAI_P_12/INTOSAI_P_12_en_2019.pdf

³ ISSAI 12, Vlerat dhe Dobitw e Institucioneve Supreme tw Auditimit- sjellja e ndryshimeve nw jetwn e qytetarwve; www.isai.org

David M. Walker (2004) in their study evidenced that the way the transparency of an SAI can be strengthened and promoted is through the following three elements: due process, disclosure of financial problems and free press.

Montero G.A. (2012) in his study evidence that Supreme Audit Institutions (SAI's) are an integral part of the system of checks and balances and horizontal accountability mechanisms. With sufficient capacity and appropriate governance practices, they can effectively protect integrity, promote honesty and help foster accountability. The study argues that it is important to investigate what type mechanisms of transparency and participation are being implemented by HEIs and what can hinder their impact.

Cornejo C., Guillan A., Lavin R (2013) in their study evidenced that the Transparency, Participation and Accountability initiative requires partnerships between audit institutions and citizens. However, increasing the impact of this cooperation requires cooperation with other actors, making the audit process suitable not only for citizens but also with the development partners of a country.

OECD at the meeting of Latin American countries on the corporate governance of state-owned enterprises (2014) evidences that the quality of transparency relies on the quality of information that governments and state-owned enterprises provide to the public. This in turn depends on the quality of the systems set up in the country to collect and process such information.

Atuilik A. W. and Salia H (2019) in their study found that the implementation of SNASP/ISSAI increases the level of transparency and accountability in the use of government funds. They further find that the "leakage" of revenues and the insufficient disclosure of public expenditures hinders the government's commitment to ensure a transparent and responsible management of public funds in the country.

DESA in working paper no. 157 (2019) evidences that audits provide objective and independent assessments that strengthen transparency and accountability in the implementation of sustainable development objectives. This increases their legitimacy and credibility both nationally and globally.

Diaz G.B, et al (2019) in their study have laid the foundations to develop a communication strategy that will allow Supreme Audit Institutions (SAI's) to increase their transparency and accountability to target groups. The study emphasizes the fact that these organizations must base their strategy on three main pillars: the target audience, the message they want to send and the communication channels. The analysis carried out highlights the need for SAI's to aim their communication strategy at an increasingly wide audience, which, in turn, will receive different messages from both traditional and new media.

ADBInstitute (2020) increasing transparency for state-owned enterprises evidences that the operations of state-owned enterprises have a significant economic impact and standards of accountability and transparency are essential to maintain a favorable climate for international investment and avoid unjustified protectionism.

The World Bank (2022) in the letter referring to the evaluation of its support on the transparency and responsibility of the public sector evidences that the effectiveness of the support of the World Bank will be evaluated through the prism of (i) improving the capacities of the relevant institutions (of each respective country) to perform their functions as a result of World Bank assistance, and (ii) evidence of the actual contribution of these institutions and their role in promoting transparency and accountability in the public sector.

Yemisi J., E. O. Onyeanu (2023) in their study evidenced that there is a significant influence between financial audit and performance audit on the one hand and accountability and transparency on the other.

In conclusion, based on the literature study, it is evident that there are great differences between the SAI's that belong to the INTOSAI "*family*". The way in which an SAI designs its strategy and communication as a means of increasing its transparency and accountability can be influenced by various factors, such as media systems or the types of structure of SAI (Anglo Saxon or Westminster, Napoleonic or judicial, and board or collegial models). But all studies converge in a conclusion that the implementation of ISSAI's have brought about the increase of transparency and accountability.

Discussion and analysis

Based on the reforms undertaken in Albania, as a country that accedes for membership in the EU, we say with conviction that it has walked the path of successful implementation of the ISSAI implementation.

KLSH/ALSAI continuously preserves and develops the true values of professional audit work, independence, objectivity, integrity, responsibility, professionalism, cooperation, serving the public interest; deepens transparency, updating the best and most valuable experience of our auditors with the latest news of modern supreme auditing, under the motto of INTOSAI "*Experientia mutua Omnibus Prodest*" (Leskaj 2015).

Governments must communicate information about public finances in a complete and transparent manner, based on the best international practices, and this communication should be made as simple and understandable as possible for the public. This process, as a key factor of democratic accountability, requires strong engagement of citizens, media and markets, because only in this way can they contribute to rebuild citizens' trust in public finances (Naco M. 2015). From the study carried out in 2015, when there were the first years of the implementation of ISSAI's in Albania, it was found that only 12% of citizens think that the actions of the government in the fight against corruption are effective (this level for a limited cluster) .

The challenge facing the government - especially in a global environment - is the growth or development of new sets of basic capacities, including the creation of institutional mechanisms that facilitate the management of performance more broadly in

national outcomes that affect many areas at once (Dodaro G. 2020). It is important to ensure that performance audit practices are developed in line with the complexity of governance approaches and structures used to address national challenges.

The ex-ante impact of the audit activity of the SSC consists in the fact that the Parliament, through the Committee on Economy and Finance, performs an objective and realistic assessment of the actual budget and that the lessons learned from it are used to guide the draft budget (Milo 2019). The instruments that enable the increase of the impact and the strengthening of the partnership with civil society, the citizen and the general public is not only the reporting of the Chairman of the KLSH/ALSAI to the Parliament, but the transparency and continuous communication of the Albanian Supreme Audit Institution about the main findings of the audits and of reports filed in parliament. Based on the reports of KLSH/ALSAI over the years, we find the following data:

Table 2: Audit opinion/message/conclusion

Year	Type of Opinion		Against	Refusal	Etc.,		Total
	Qualified	Unqualified			Conclusion	Message	
2017	14	15	1				30
2018	22	6	14				42
2019	46	4	15				65
2020	15	8	6	1			29
2021	87	20	43	1			150
2022	54	15	10			1	79
2023	153	28			26	16	223
Total	391	96	89	2	26	17	618

Source of data: Authors based on KLSH reports

As has been established over the years, there has been an increase in the type of opinions and the total number of opinions.

From the review of the measures over the years, the following is found:

Table no. 3 Acceptability of measures by type (acceptability/measures)

Year	2017	2018	2019	2020	2021	2022	2023
Type of finding							
Organizational	2942/1099	2942	2628/1134	1107/1009	124/102	2798/2699	3279 / 3293
Legal improvements	118/28	118	100/23	29/18	9/8	39/36	42/42
Damage award						2,087,4421 mijë lekë/2,072,515 mijë lekë	263/ 267
Ineffective management						437/413	641 / 641
Disciplinary	861/578	861	587/353	230/209	30/18	830/828	
Administrative	311/252	311	126/114	55/50	6/6	97/83	3279 / 3293

Source of data: Authors based on KLSH reports

So, over the years it turns out that the acceptability of the recommendations of the State Audit Office has increased from 90% to 100%, and specifically only for the year 2023, the Supreme State Audit has recommended 4291 measures in total, of which 4273 measures have been accepted or about 99.6% of the recommended measures and 18 measures or 0.4% of the recommended measures were not accepted. Specifically:

- out of 3293 organizational measures, 3279 measures or 99.6% of the recommended measures were accepted and 14 measures were not accepted or 0.4%;
- out of 42 measures for legal changes or legal improvements, 42 measures or 100% of the recommended measures were accepted;
- out of 267 compensation measures, 263 measures or 98% of the recommended measures were accepted and 4 measures were not accepted or 2%;
- out of 641 measures 3-E, negative effects due to irregularities, 641 measures or 100% of the recommended measures were accepted;

- out of 48 deficiency measures in the tax control activity with a negative impact on the performance of tax and customs revenue administration, 48 measures or 100% were accepted.

Also, the High State Control continues to examine correctly and professionally all complaints, denunciations and requests for information received from citizens and various media, specifically, during the period January - December 2023, it has administered 368 letters from citizens and various parties of interest in the form of complaints or denunciations, indicators that emphasize the role and importance of citizens in the realization of the mission of the KLSH/ALSAI.

Conclusion

Albania, as a country that accedes for membership in the EU, through the reforms undertaken over the years, has been on the path to the successful implementation of the ISSAI implementation. KLSH /ALSAI continuously preserves and develops the true values of professional audit work, independence, objectivity, integrity, responsibility, professionalism, cooperation, serving the public interest. During the realization of his mission, an increase in the type of opinions and the total number of votes is found, as well as he examines correctly and professionally all complaints, denunciations and requests for information received from citizens and various media. The implementation of international auditing standards in the public sector has influenced the increase in professionalism as well as the successful implementation of the mission of the KLSH/ALSAI.

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Disinformation and the role of the media

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Abstract

Disinformation refers to perceived and deliberate distortions of news in order to affect the political landscape and exacerbate divisions in society. The first occurrence of fake news was reported in the 16th century. Disinformation, misinformation, and malinformation pollute the information space worldwide and the trend of manipulating facts continues to disrupt public communication and, consequently, democratic processes in societies. Disinformation is false information deliberately fabricated to harm a person, a social group, an organization or a state. The fight against the spread of fake news by the media should involve regulatory and self-regulatory bodies and civil society actors, who should work together to prevent such wrongdoing of the media. Social media is the main source of spreading disinformation. Fact-checking is a method for bringing true information to the public. No strategy or regulation to prevent fake news should be implemented at the expense of restricting freedom of speech in any society or country. Global strategies to prevent and fight the spread of fake news should be established to prevent political leaders in non-democratic societies from using the fight against fake news as a reason or justification to restrict freedom of speech in their societies.

Keywords: Disinformation, misinformation, fact-checking, democracy, strategy, control

1.Introducton

The importance of the work. In today's time, the whole world is dealing with false information created on purpose to harm an individual, an organization, a country. Social media are the main source of the spread of fake news. Verification of facts by the media is a primary task. Taking national and international measures to find ways to prevent them is very important. This article will serve media journalists, society, law professionals

The problem. Have measures been taken to prevent fake news at the national and international level? Fake news, its spread in society is damaging the image of the individuals who are in their focus. They pollute the information space all over the world. The fight against the spread of fake news by the media should involve regulatory and self-regulatory bodies and civil society actors, who should work together to prevent such media wrongdoing. Disinformation erodes trust in institutions, government and the media. These fake news attacks are designed to sow division and confusion, stigmatize civil society, discredit individuals, targeted organizations and their leaders, and promote inaccurate views of the communities they support.

2. Methodology. During the research I used the qualitative method as one of the basic methods for addressing ethical issues in audiovisual and social media and print media. The research was based on national and international literature, scientific articles, laws, Conventions and Code of Ethics. To answer all the problems related to disinformation, the problems they bring to human society. The way the media should act in accordance with the Code of Ethics and laws, Conventions, I have conducted research at the national and international level, bringing cases of disinformation in different countries of the world. Bringing out the work of the International Fact-Checking Network and the Network of Ethical Journalism and the great role they have in the media.

Objectives: 1- To reflect information disorders, disinformation, misinformation. 2- Actors of spreading false information. 3. The influence he has on the country's democracy. 4. To present the importance of verifying the facts by the media. 5. To reflect the measures that should be taken at the global level for the prevention of this phenomenon. Information corruption has now become a worldwide issue, leading to political, economic and global unrest.

Research questions: What effects do disinformation and misinformation produce in society?

How can it be prevented?

In which media is disinformation spread?

What are the factors in the spread of fake news?

Who are the actors in the spread of fake news?

What is the importance of news checking?

What steps should be taken?

3. History and meaning of information distortion

3.1. Disinformation. Deliberately fabricated or manipulated audio/visual content, conspiracy theories or rumors. (Media Education IREX).

They all refer to perceived and deliberate distortions of news with the intention to affect the political landscape and to exacerbate divisions in society. People are worried about fake news. (Aguiar.L Gomez.E Muller.F2018) In fact, fake news is not a new phenomenon at all; it is as old as the newspaper industry. The first occurrence of fake news was reported in the 16th century. It is only recently however that it has surged back onto our radar screens, in the wake of the digital transformation of news from offline to online distribution and the rise of social media as a news distribution channel. Wardle & Derakshan (2017) distinguish between three dimensions of harm and falseness: (1) misinformation when false information is shared, but no harm is meant, (2) disinformation when false information is knowingly shared to cause harm and (3) malinformation when genuine information is shared to cause harm, often by moving information designed to stay private into the public sphere (Aguiar.L Gomez.E Muller.F2018)

3.2. Malicious information, deliberate misuse of private information with the intent to hurt or frighten someone. For example, while not fake information, sharing someone's personal email address online is done with malicious intent. (idem)

Disinformation, misinformation, and malinformation pollute the information space worldwide and the trend of manipulating facts continues to disrupt public communication and, consequently, democratic processes in societies⁴.(TURCILO.L OBRENOVIC.M2020)

The concept of fake news is not a novelty of the media landscape of the 21st century, but rather emerged with the appearance of the first newspapers, initially serving to entertain and/or perhaps help sell more copies.(TURCILO.L OBRENOVIC.M2020)

. The deliberate spread of false or misleading information can have serious and far-reaching consequences. Disinformation erodes trust in institutions, government, and the media..(Francis Beland2023)

However, decreasing trust in the institutions and public health or political figures that typically deliver and produce health information coupled with the increasing availability of social media outlets have provided fertile ground for misinformation to develop. (Angel N Desai.A, Ruidera.D Granwehr.B,2022) There were no evil intentions, and journalists or editors made sure that the reader was aware that the information presented was not true. (TURCILO.L OBRENOVIC.M 2020) Over the years, politicians and businesspeople realized the potential of fake news and started to use it for manipulation – politicians with the intention to reach a certain position in society, and businesspeople to gain profit. The trend of not marking fake news as such continues to this date, and it has become exceedingly difficult to recognize such news. This came to prominence particularly during World War I, when the warring sides, especially the UK, the USA, and later Germany, realized that armies and soldiers were not enough so they began using various manipulative techniques to influence the public and even their own soldiers. One soldier on the losing side, Adolf Hitler, directed all his power in the rise of Nazism to propaganda, with the help of Joseph Goebbels. Both the media and propaganda were also needed for the rise of the Soviet totalitarian system. When they were not enough, the idea was “spread” by force. Allegedly, the Soviet Union used that term to describe “political propaganda of Nazi Germany”. (TURCILO.L OBRENOVIC.M 2020)

Dis-information. Information that is false and deliberately created to harm a person, social group, organization or country.

Mis-information. Information that is false, but not created with the intention of causing harm.

Mal-information. Information that is based on reality, used to inflict harm on a person, organization or country (TURCILO.L OBRENOVIC.M 2020)

Disinformation is content that is deliberately false and fabricated to cause harm. It is motivated by three distinct factors: the financial motive; political motive, whether foreign or domestic; or intention to cause trouble. (Rizanaj .F 2023)

Disinformation is deliberate and includes malicious content, such as hoaxes and phishing. (UNHCR guidelines) It disseminates fear and doubt in the population. Types of disinformation: 1. Fabricated content: Completely false content; 2. Manipulated content: False information or images that have been distorted, e.g. or sensational headline or populist 'click bait'; 3. Fraudulent content: Imitation of genuine sources, e.g. using the brand of an agency founder; 4. Deceptive content: Misleading information, e.g. comment presented as fact; 5. False context: Factually correct content combined with false information. The mass media have become an important source of information about the world: Whatever we know, we know through the mass media! (1 BARDHYL MUSAI.B GODOLE.JABDURRAHMANI.T2011)

4- Democracy at risk in the post-truth society

How disinformation and misinformation destroy the democratic values of a country.

The distortion of truth, the disorder of information, and the manipulation of consent are direct ways in which political elites put democratic values at risk in their societies. (TURCILO .L OBRENOVIC.M2020) Therefore, citizens participate in various ways in making informed voting decisions. However, political representatives also need to be well informed (mostly about the needs of their communities and their citizens) and politically responsible in order to meet these needs in a way that is in the best interest of society. Since the discovery of social media manipulation by nefarious actors in the 2016 campaign, governments and social media platforms have made few public attempts to disrupt the systems that enable the spread of disinformation. (Kaplan.L2019)

The evil society and global war with disinformation, malinformation, and actors, who spread them, also have the power to promote negative narratives about civil society and to discredit the work of NGOs. Around the world, there is a growing concern that international NGOs and civil society organizations are vulnerable to online attacks and campaigns that spread false information. These attacks are designed to sow division and confusion, stigmatize civil society, disparage targeted organizations and their leaders, and promote inaccurate views about the communities they support. In general, the aim, in non-democratic societies and authoritarian regimes, is to silence any dissonant voices.

Overall, these deceptive tactics range from the creation of entirely false outlets and actors, such as establishing false news websites and fake personas, to the inclusion of some elements of authenticity to then distort them: corrupting real journalists, stealing their identity, or pushing authentic sources to amplify deceptive contents. According to Stewart, (2021), in most cases the damage of misinformation can be irreparable. Misinformation can affect all aspects of life. Misinformation from the media, especially through social media is a potential threat to democracy and broader society. (Kwapsoni. P KAIGAMA. T2024)

5- Who are the key actors in the spread of fake news? The five main actors are the states themselves (as a form of propaganda and information warfare aimed at interfering in other states' internal issues and politics;

1-Russian interference in Brexit and the US presidential election are the most recent examples); (LEJLA TURCILO.L OBRENOVIC.M2020)

2-politicians and governments (**using fake news as an internal propaganda device to keep citizens quiet and to guarantee their hold on power**);

3-the media (closely affiliated with or owned by political or business elites, using fake news to manipulate the public and create a public opinion which is not based on facts and a true picture of society);

4-social movements, such as the extreme right and anti-LGBTI, anti-feminist, and anti-migrant movements (spreading fake news mainly to discredit and dehumanize members of specific groups they oppose);

4-and ordinary people (spreading fake news mainly due to a low level of media literacy and not being able to recognize manipulation and propaganda).⁵ (LEJLA TURCILO.L OBRENOVIC.M2020) Fake news doesn't spare the famous. This year, ExpressVPN's 2023 Misinformation Index reveals a surprising lineup of celebrities, from BTS and Taylor Swift to Lionel Messi, caught in the crossfire of fabricated stories. Our analysis, powered by Buzzsumo's social media insights, uncovers how these high-profile individuals become the unintended faces of false narratives. (2023 Misinformation Index) Mass media plays a very significant role in reporting conflict. Many scholars like Weimann (2012) and Nacos (2016) believe that "the media are major contributing factors to violence" and think of media as the perpetrators of conflict hence they "effectively serve as publicity and propaganda platform for terrorists and their narratives, their causes, their goals". (1 Kwapsoni P KAIGAMA. T 2024)

5-Steps to prevent and combat disinformation and misinformation

One step to prevent disinformation is fact-checking. "What is fact-checking and why is it important?"

The Oxford Dictionary describes fact-checking as a process seeking to "investigate (an issue) in order to verify the facts". (Allan LEONARD, Alan MEBAN 2023) However, while instructive, this necessarily concise definition is limited in its understanding of the practical outworking of what constitutes fact-checking, the variation and scope of its practices, as well as the factors and social, political and cultural contexts in which fact-checking has become an established practice. Simply put, fact-checking is a form of critical, investigative inquiry. It includes a wide range of approaches and practices. But there is a history behind fact-checking. The spread of misinformation is inherently human. (Allan LEONARD, Alan MEBAN 2023) Daniel Kahneman, a psychologist who won the Nobel Prize in economic sciences, introduced the concept of "WYSIATI" (What you see is all there is), meaning that we tend not to look for what we do not see. We rather rely on the information that is directly available to us, without being fully aware of what we do not know. Fact-checking emphasizes that we should remain skeptical for our own survival. (Allan LEONARD, Alan MEBAN 2023) Journalists should follow the rule of two sources. Verify everything from at least two sources. It would be ideal if everything was recorded. (FACT Checking GUIDE FOR JOURNALISTS 2018)

6-The International Network of Fact-Checking collects and checks facts worldwide. It was established on September 2015. (Fact checking) It monitors trends, formats and policy development for fact-checking worldwide and regularly publishes articles on the subject; promotes basic standards, the code of principles of fact-checking and projects aimed at the development of fact-checking ((FACT Checking GUIDE FOR JOURNALISTS 2018)

); offers annual scholarships, innovation grants and programs on this issue; invites journalists to annual conferences (Global Fact) and promotes joint fact-checking efforts at international level; conducts online training on current fact-checking issues.

Another step to prevent disinformation is media literacy as a mechanism to contribute not only to an individual's life quality, but also to society and the community.

In addition, the goal of media literacy is to achieve community wisdom, which would lead to a "responsible community" or "democratic society", in the ideal-typical sense of the word. (7 Steps to Combat Disinformation) A responsible community would be one governed by those who know best and elected by citizens who have made an "informed choice" (based on a sufficient amount of validated, objective, reliable, quality information). Thus, media literacy is understood as a prerequisite for the ability to participate in public life, and as such, it includes more than the interpretation and creation of media content. Its expanded definition includes critical thinking, global citizenship, communication, collaboration and leadership, and creativity and entrepreneurship. (7 Steps to Combat Disinformation). Understanding and assessing potential vulnerabilities within your organization and the communities you work with is an essential first step in combating disinformation.

7-Harms caused by disinformation

Disinformation, misinformation and malinformation have become a major obstacle to contemporary societies and a major threat to those democratic values in those societies. A global, regional and local exit strategy? (LEJLA TURCILO.L OBRENOVIC.M 2020) Globally, regionally and locally, they cause conflicts, harm citizens and disorient decision-making processes. Massive digital misinformation is becoming pervasive in online social media to the extent that it has been listed by the World Economic Forum (WEF) as one of the main threats to our society. (2017) Information disorder results in societal disorder, and the rise of fake news and manipulation through alternative facts results in a rise of populism worldwide and vice versa. Since this infodemia²³ is global, reaction to it has to be global as well. Media literate citizens, responsible media outlets (responsible to the public and truth) that do pre-publishing fact-checking, NGOs that do post-publishing fact-checking, and political leaders that provide a democratic environment for public debate based on facts would, indeed, create the perfect society, which we could call a true democracy. However, this is, at this very moment, a pure utopia. ([Del Vicario.M](#), [Bessi.A](#) [Fabiana Zollo.F](#))

8.Argumentative part: Disinformation has a negative impact on the society and democracy of a country. Disinformation should not be spread by journalists, the media. Journalists must act in accordance with the Code of Ethics and the Code of Media Broadcasting. They must act in accordance with the European Convention on Human Rights and Fundamental Freedoms (of 1998), the UN Convention on the rights of the child, and laws. Professional journalism refuses disinformation and fake news, it verifies the facts, and this is what constitutes quality journalism. Disinformation affects people by discrediting those who are the subject of disinformation. The foundation of sound journalism is fact-checking in several sources, in order to avoid fake news and disinformation. Steps should be taken by international organizations to issue acts that punish the spread of disinformation on social networks. The main source of disinformation is social networks. Individuals of a society must first verify the information and then spread it. With one click on the internet, individuals, organizations, states are being discriminated against and this is unacceptable in a democratic society. Steps should be taken for media literacy so that individuals understand the eventual harm caused by the spread of disinformation. The whole society must be aware of the combat against disinformation that only misleads the public and harms the reputation of targeted individuals.

9.Conclusions

Disinformation refers to perceived and deliberate distortions of news in order to affect the political landscape and exacerbate divisions in society. Disinformation is content that is deliberately false and fabricated to cause harm. It is motivated by three distinct factors: the financial motive; political motive, whether foreign or domestic; or intention to cause trouble

The five main actors for the spread of disinformation are states, politicians and governments, the media, social movements, such as the extreme right and anti-LGBTI, anti-feminist, and anti-migrant movements (spreading fake news mainly to discredit and dehumanize members of specific groups they oppose) and ordinary people.

Fake news threatens democracies, civic participation and efficient governance. It jeopardizes the public's right to be well informed and to discuss social issues based on reliable, quality, accurate information to the public interest. Media education and media literacy for journalists and the public has another dimension, equally important, related to the use of media for the purpose of intercultural dialogue and participation, the goal of media education is to achieve community wisdom, which will led to a "responsible community" or "democratic society", in the ideal-typical sense of the word.

Fact-checking is a form of critical and investigative inquiry. Fact-checking assumes a fundamental relevance, not only for journalists and the media, but also for society and individuals. Fact-checking helps the public better understand not only the factual accuracy of published information, but also the context, framework, and reasons why information is presented in certain ways.

Ethical Journalism Network (EJN), which identifies itself as “an international network of media outlets created to advance education, especially education in ethics and respect for human rights”.

International Fact-Checking Network brings together fact-checkers around the world. It was created in September 2015. It has a big role in verifying facts worldwide.

In order to prevent regional and global information warfare, strategies must be developed and international stakeholders engaged (such as UN and EU bodies). When it comes to politicians and state leaders who use fake news, civil society actors must become "allies" with citizens in the fight against their practices and, indeed, the fight for democracy (which may be done through fact-checking and campaigns), the fight against the spread of fake news by the media should involve regulatory and self-regulatory bodies and civil society actors, who should work together to prevent such media wrongdoing.

Rules and regulations, as well as strategies, should be adopted globally; however, they should be adapted to the regional and local context.

Awareness-raising campaigns should be conducted both globally and locally to make people more aware of manipulation.

The fight against the spread of fake news by the media should involve regulatory and self-regulatory bodies and civil society actors, who should work together to prevent such media wrongdoing.

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Practicing ESP reading skills in the academic environment: A case study at Ovidius University of Constanta - students' perspective

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Abstract

English for Civil and Mechanical Engineering is a rather understudied and less explored facet of English for Specific/Academic Purposes, yet one that is still in emergence. When it comes to English for Specific Purposes, one of the most crucial skills is the ability to read professionally-oriented materials. This paper attempts to provide an overview of why reading, among all the skills, is so important when teaching ESP. Forasmuch as reading is unanimously considered a cognitive process focusing on language acquisition, communication, and exchanging information and ideas, ESP teachers now have a distinctive viewpoint on the importance of reading in the language classroom and the types of texts that can be used in instruction. Since language education and ESP, in particular, adopt a communicative approach, we think that our recommendations could be useful, flexible enough to fit into, or even modified for different purposes. A case study focusing on the observation and evaluation of student's academic performance was part of the research method. Students were questioned concerning their educational backgrounds, reading comprehension skills, and reading motivation. To create a well-designed curriculum, we started by assessing our students' needs, wants, and lacks through a questionnaire and by attempting to manage the intricacy of civil and mechanical engineering sciences to gather data that might aid in the creation of a powerful, meaningful ESP course.

Keywords: reading skills, needs analysis, English for Specific Purposes, Theme and Tasked-based learning, computer-networked instruction, present situation analysis, target situation analysis.

1. Introduction

Noteworthy is the fact that the quickening of cultural globalization processes entails teaching ESP students how to communicate internationally and get engaged in intercultural activities. Therefore, having a high degree of fluency in a foreign language increases one's competitiveness in the job market in any given career. The blossoming of a well-balanced set of professional and linguistic skills is a vital component in the training of a professional expert in Civil and Mechanical Engineering. One noteworthy point about teaching ESP to civil and mechanical engineering students is that the development of linguistic skills and competencies in professional communication is a priority. This is because it helps future engineers digest knowledge more deeply and enlarge their general, professional, and academic attainment.

ESP is extensively defined as the field of study and practice concerned with creating language programs for individuals who require language instruction to fulfill a predicted range of communicative requirements (see Swales, J., 1992). Teaching ESP is an elaborate and challenging assignment since the educational procedure requires "teacher training with a specific focus on multi-disciplinary knowledge development, a wide array of content material that is related to the learners' professional fields and rigorous ways of evaluating material and assessing learners' performances" (Hashmi & et al., 2019, p.4). Moreover, Upton (2013) states that the major noteworthy trademark of an ESP course is that the content taught in the course and the teaching method employed stem from the specific needs of the learners of the particular context in which they are learning.

On the other hand, when conducting a needs analysis course designers and teachers should cluster together data on students' needs, choices, and priorities, examine the information, and afterward ground course design resolutions on these interpretations (Graves, 2004). Gao (2007, 98) claims that to carry out a well-grounded, authentic needs analysis, "a triangulation of questionnaires, informal discussions with learners and other lecturers, interviews with ex-students and lecturers, and observation of former students' actual workplace experiences" should be organized.

Broadly speaking, helping students strengthen their reading comprehension abilities of professionally focused materials or texts is one of the most significant scholarly objectives when teaching English for specific purposes (ESP). Therefore, we are not wrong if we state out loud from the very beginning that we agree with Mikulecky's hypothesis (2008, p. 12) which states that "reading is the basis of instruction in all aspects of language learning: using textbooks for language courses, writing, revising, developing vocabulary, acquiring grammar, editing, and using computer-assisted language learning programs".

2. Literature review

Numerous studies contend that reading comprehension is so important, that teaching it is not such an easy process. The present burst of research in second-language reading has started to focus on the reader's methods, tactics, and strategies that help them with gathering, storing, and retrieving information.

As Harmer (2001) previously stated long-established and deep-rooted reading instruction methods have centered around teaching reading-related sub-skills which were mainly used to help students break down texts into smaller chunks, look for noteworthy pieces of information or details, and then piece the broader, overall meaning back together. Sub-skills and techniques such as skimming and scanning are targeted. Scholars like Matthews, Spratt & Dangerfield (1990) support the hypothesis that students ought to be instructed in skimming through a text to identify the main ideas or the key points or what is known as reading for gist and in scanning for relevant, precise information or details, most frequently as dates, proper nouns, locations, names, and numbers. Differently stated, skimming and scanning are helpful, constructive reading techniques that help students cope with the initial level of meaning interpretation or informational reading which means they will be able to understand the topic or what the text is about and the arguments exhibited in the text.

According to Carrell (1998, 4) reading techniques are thought-provoking because they shed light on how readers control their interactions with written material and how text comprehension is connected to these strategies.

First and foremost, in post-industrial, modern civilizations, reading comprehension plays an essential role. Students today need to improve their abilities, techniques, and approaches because of the digital age (see Warschauer & Matuchniak, 2010, pp. 179-225). Furthermore, students are confronted with a wide range of materials as "electronic" texts are becoming commonplace in addition to traditional, "paper" texts. The way we teach reading comprehension should be adjusted and modified since different texts require different reading strategies. Because they must handle and cover a variety of styles, forms, and genres, teachers and students in the civil and mechanical engineering fields will have to tackle several additional challenges while teaching academic reading.

Furthermore, Amirian (2013, 25) argues that the training in various reading strategies helps our learners become autonomous language learners which is regarded as the paramount objective of language acquisition. By learning how to employ the reading strategies constructively, the readers will no longer need to rely on their teacher to supply them with the proper response and solution or clarify new, unfamiliar words for them at all times. Differently stated, this signifies that ESP students become self-sufficient language learners who are capable of managing their reading assignments and extracting the most meaning from the written material.

Several researchers such as Abanomey (2013) or Levine et al., (2013) investigate how different approaches, such as computer-networked instruction, are used to boost the reading comprehension abilities and skills of ESP-struggling readers. Differently stated, "the appearance of new technologies through which readers can access huge amounts of information represents a new variable that should be thoroughly examined and taken into consideration in reading comprehension research" (Abanomey, 2013, 3).

Additional strategies or techniques must be employed for readers to engage with the text more deeply and disclose deeper layers of meaning. There are plenty of methods of teaching reading to ESP students such as Naiditch's (2010) problem-solving approach according to which "in a critical reading class, it is essential that teachers encourage learners to question what they read by brainstorming possible ways of interpreting a text. The process of questioning an author's voice can help students to find their own voices" (2010, 99). Moreover, this approach which fosters inquiry-based student-centered learning and focuses on developing critical thinking skills supports interdisciplinary collaboration among educators and encourages students to "create connections and analyze a topic from different disciplinary points of view" or "distinguish between fact and opinion and identify different text genres" (Naiditch, 2010, 105).

When dealing with teaching ESP and when it comes to developing comprehension skills, Romero (2017, 10), however, supports the theme and task-based learning model in which "the content-centered instruction allows to focus on interesting themes for learners and it offers the development of challenging cognitive actions which become essential for any reading comprehension activity. On the other hand, the tasks let establish meaningful activities where the learners undertake the texts as meaningful sources of negotiating sense".

Nevertheless, it could be extremely challenging to establish which method could be more useful and efficient to improve ESP reading skills given the difficulties faced by the knowledge-based society and the striking impact of the contemporary, international communication environment—particularly the growing influence and function of internet communication—on all parties involved in the learning/teaching process. Because it encourages and stimulates motivation, innovation, and creative skills in learners, computer-based learning can be highly promising, productive, and rewarding for the promotion of reading abilities in the ESP context. The advantages of employing computer-mediated and information technology strategies to ESP are conspicuous since students' reading habits are highly governed and affected by various networked telecommunication or computer-assisted communication systems, such as voice and instant messaging, audio and video conferencing, web applications, and so on. As expected, our students' linguistic and comprehensive skills are influenced by emerging societal and lifestyle norms and Internet communication advancements.

We can conclude, based on the aforementioned studies and in line with Maximova's hypothesis (2011), that scholars acknowledge the fact that up-to-date cognitive and communicative abilities expansion is facilitated by students embracing a 21st-century digital mindset known as "clicking people".

3. Method

In this paper, the needs analysis approach comprises surveys, interviews, discussions, observations as well as materials collection and classification. The survey highlighted the language-related tasks, activities, and skills that the learners were more or less able to perform and accomplish, or should preferably be able to carry out in the study situation they seek to engage in. Thus, the purpose of the questionnaire completed by 105 first-year Civil and Mechanical Engineering students was to assess and boost the students' technical English language proficiency while reading, speaking, listening, and writing, and to strengthen the promotion of the language skills indispensable for the understanding and producing of technical academic texts, more precisely reading comprehension skills. The same topics were covered in the interview: general information about the respondent's age, gender, and subjects taught; their viewpoints on the significance of ESP in education; the most indispensable skills that students need to accomplish a task or complete their studies; their perceptions on the teaching of specialized vocabulary/ jargon; and, finally, a few suggestions to enhance and refine the quality of the ESP course content. Consequently, we have used various methodologies that allowed us to cross-examine the issue from many perspectives and gain more complete and comprehensive information.

4. Findings and results

Our questionnaire consisted of 33 questions focusing on students' plans and objectives, their self-assessed English skills, the estimated connection between using English in a professional environment and their subsequent jobs, and their perspectives toward the teaching process and materials. Only the 1st year students were involved in this survey performed during the 2023 – 2024 academic year; 47.1% of the respondents are female and 52.9 % are male; 8.7 % confessed that they worked in the same field as their field of studies, whereas 15.3 % said they worked in a different field during college, and 8.7% stated that they had attended a different faculty.

When questioned about the reasons for choosing the civil and mechanical engineering faculties, there is an astonishing difference between a large number of students, namely 76% who liked the field, and the rest of the respondents (24%) who chose it for the well-paid profession. However, in terms of their career prospects 43% are planning on getting a job in a public institution, 35% are thinking of becoming a researcher in a public institution or university or leaving the country after graduation, whereas 19% have no idea or have not decided upon the future.

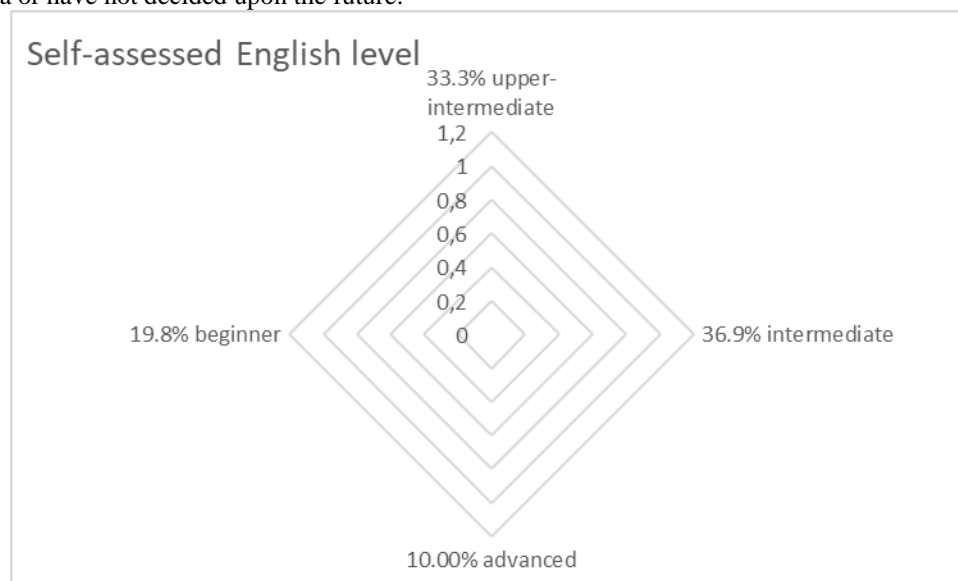


Figure 1. Self-assessment of English language level (source: survey answers processed by the author)

According to the graph above, students identified their English level as "intermediate", "upper-intermediate", "advanced", or "beginner". The results show that more than 70% have assessed their English level as average, meaning the course will likely employ an intermediate level focusing on boosting their fluency and enhancing their future academic and practical English abilities. However, due to the high percentage of beginners, students might find learning English a bit challenging, thus the teaching materials used should be suitable and meet their needs, demands, and abilities/ proficiency, and the teaching method should be pleasant and enjoyable. Moreover, these data reveal that the ESP course may, one way or another, prove troublesome for some students, hence the need for an innovative, engaging teacher to facilitate the learning process.

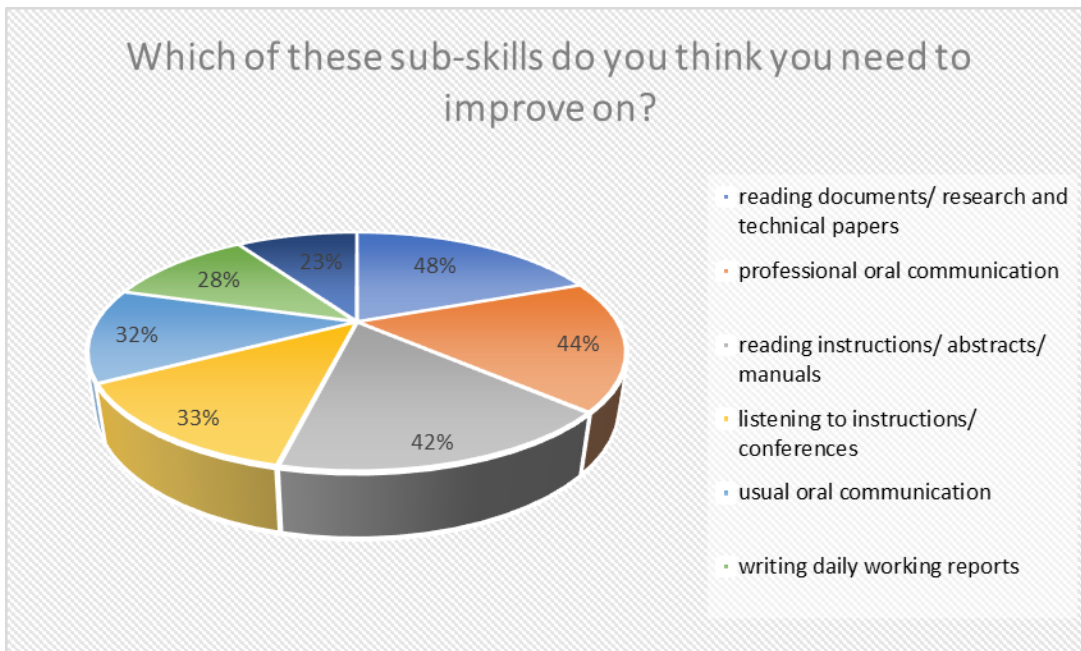


Figure 2. Ranking of English sub-skills that require improvement (source: survey answers processed by the author)

Looking at the top three most important sub-skills in Figure 2, one can conclude that reading either documents/ research and technical papers or instructions/ abstracts/ manuals, and professional oral communication are essential abilities civil and mechanical engineering students must possess for highly efficient intellectual performance. Moreover, the teaching staff supports Hasmi et al. (2019, p. 9) who consider that “it is vital to give students adequate training and exposure to reading and speaking on scientific research ... and enable them to be proficient professionals”. Therefore, students should focus on refining and mastering their reading and speaking skills to absorb better and understand written and spoken academic materials. Additionally, various recommendations and comments were made regarding the content of the ESP course which should pay particular attention to teaching students to employ reading, speaking, and listening strategies that allow them to deal with any technical texts.

To improve their reading skills students were asked to select more than one activity.

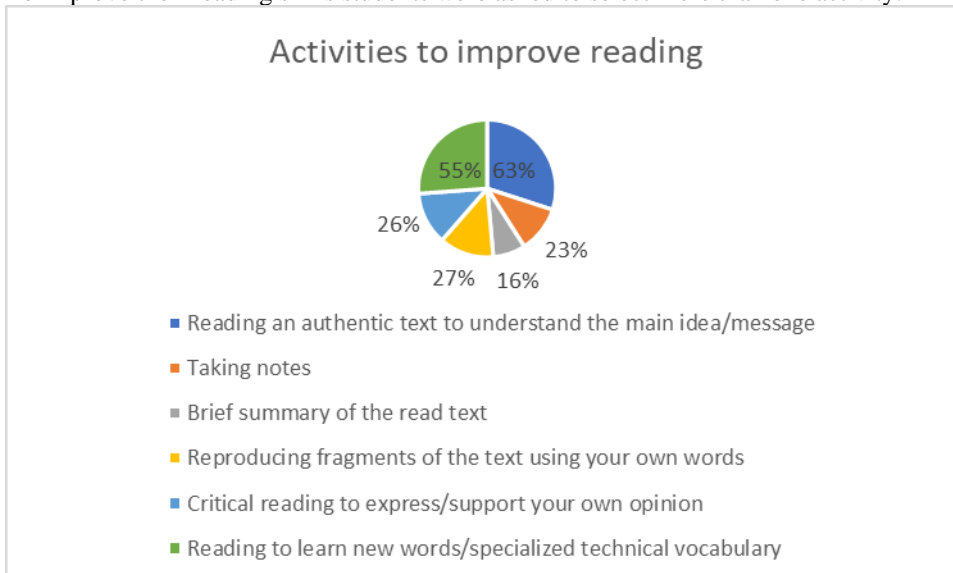


Figure 3. Activities to improve reading (source: survey answers processed by the author)

At a closer look at the diagram above, one can notice that the top two most selected reading activities are reading an authentic text to understand the main idea/ message or reading for gist (63%) and reading to learn new words, specialized technical vocabulary (55%), or jargon. This was to be expected, given that first- and second-year students frequently struggle with specialized knowledge acquisition in their respective professions, which requires a specific language. Moreover, teaching ESP to civil and mechanical engineering students by focusing on exploiting reading comprehension activities will not only boost their professional abilities but also encourage and stimulate their critical thinking, as well as keep their minds active and engaged.

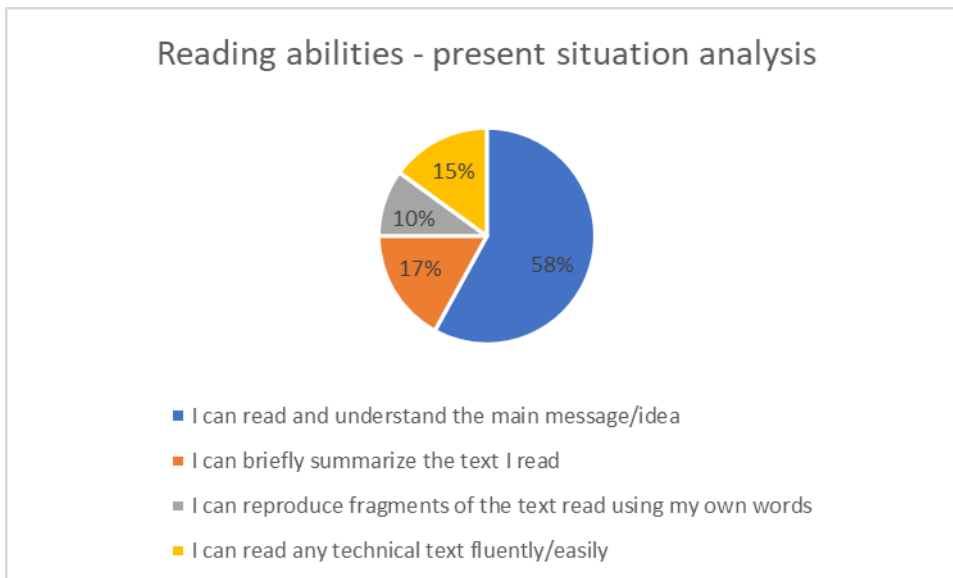


Figure 4. Self-assessed reading abilities (source: survey answers processed by the author)

To assess their reading abilities we have drawn a clear-cut distinction between the present situation which includes what the students know or are able to do in terms of reading, and at the same time the learner factor analysis or target situation analysis which refers to their motivation and individual perception of needs (see Basturkmen 2010, 19).

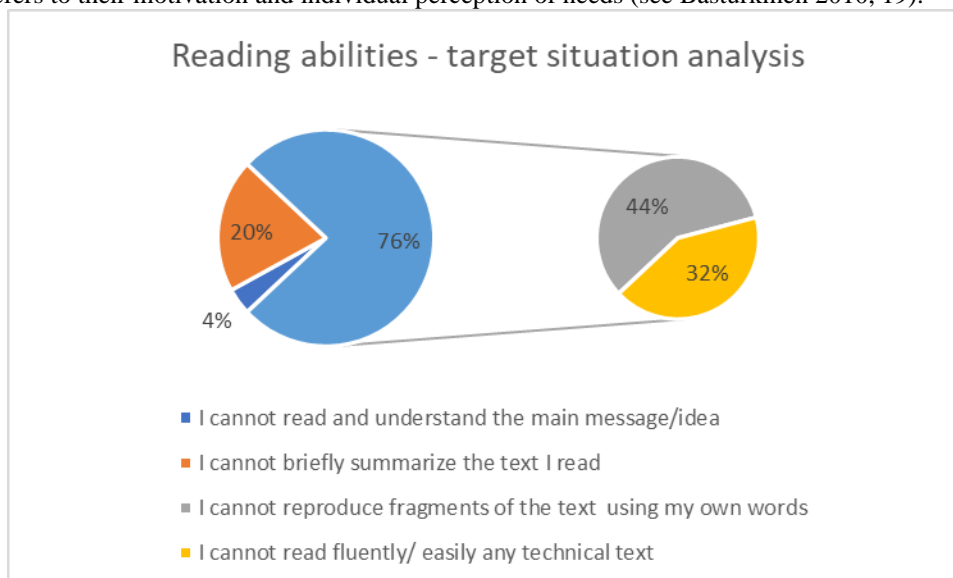


Figure 5. Self-assessed reading abilities (source: survey answers processed by the author)

Moreover, if we compare the last two diagrams we can support the same hypothesis as Afzali and Fakharzadeh (2009) who showed that ESP/EAP courses should supply learners with a certain degree of English proficiency for contexts in which language will be used such as target situations and present situations. However, since a high percentage of students, namely, 76% are unable to read fluently or reproduce technical texts by using their own words, it is crucial to meditate on the needs analysis findings, hand in hand with course goals and objectives, design the most helpful and compelling material for civil and mechanical engineering students. We strongly believe that reading comprehension plays a vital role in the ESP teaching/ learning process for these precise reasons: raising our students' motivation and interest, stimulating their brains by engaging their memory, attention, critical thinking, and problem-solving abilities, and developing intercultural competence. Gardner (1985) previously supported the hypothesis that integrative and instrumental motivation was crucial in promoting ESP students' English language learning (also see Gardner and Lambert, 1972). Whether integrative or functional, the practical reasons for learning to read range from accessing scientific and technical information, comprehending different academic genres and discourses to increasing occupational or business opportunities, applying for a rewarding job, or achieving higher social status, etc (see Mun, 2011; Al-Ta'ani, 2018; Hashemi & Hadavi, 2014; Setiyadi & Wicaksono, 2019).

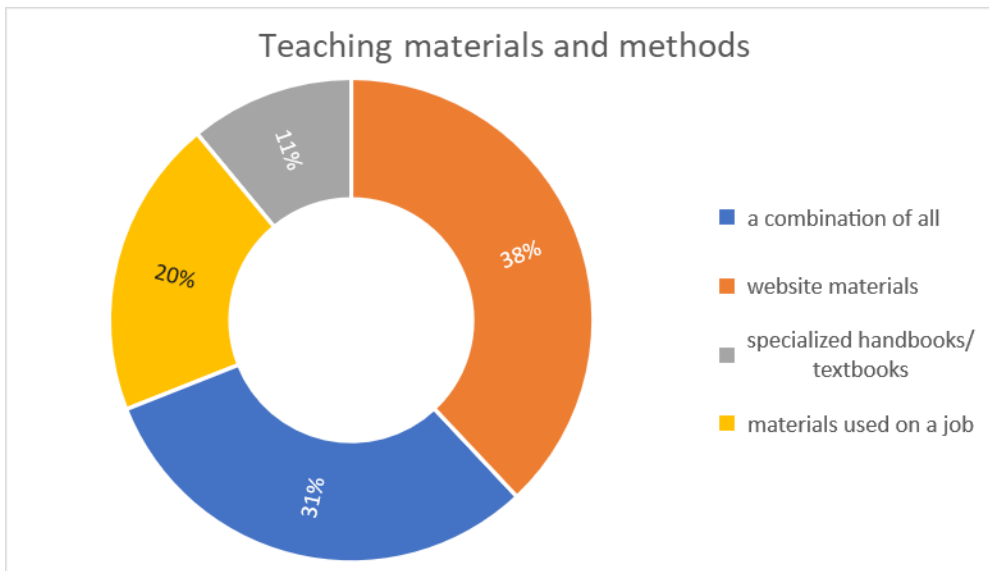


Figure 6. Teaching materials and methods (source: survey answers processed by the author)

Reading assignments that are meaningful and related to their professional field boosts their engagement and performance and improves their interest and motivation the moment they understand how important and relevant the reading task is for them. Differently stated, reading and comprehending professionally oriented texts in a world dominated by knowledge and technology ensures their success in their forthcoming career. Using the internet and technology during ESP lectures gives civil and mechanical engineering students access to real, authentic materials, research papers, and industry-specific knowledge. This exposure helps students understand concepts better and keeps them up to date on current trends, developments, and advances. Additionally, reading exposes students to new ideas, perspectives, and ways of thinking which enhances their intercultural competence. As can be noticed from the diagram above, the prevalence of website materials and technology, particularly among younger generations, demands their inclusion into language instruction methods.

5. Discussion

6. Conclusion

Apart from the contextual academic needs, we should focus on highly exposing students to a wide selection of materials as content conveyors for engineering English, since students' linguistic needs range from mastering reading techniques such as skimming, scanning, and summarizing to practicing linguistic cues associated with the proper lexicon, word order, text structure. By the end of the ESP course students will be able to apply reading strategies to decipher, synthesize, sort out, classify, and link massive volumes of information when tackling long, extensive technical engineering texts and to exercise critical thinking skills to either apprehend technical English vocabulary or to develop and produce academic sentences or responses that explicitly cover civil and mechanical engineering English vocabulary. Suffice it to say that matching syllabus content, resources, and teaching methods to learners' requirements improves motivation and accomplishment.

This research paper outlines the importance of acquiring reading skills in the context of civil and mechanical engineering education. It also highlights the role that new forms of technological development can have in language education. Internet-based technologies are progressively being incorporated into daily life, with new web-based goods, tactics, and theories being produced regularly, making it a beneficial instructional tool in language teaching classrooms, as evidenced by the current study's findings. However, because this study primarily relied on the results of the self-perception survey in assessing students' language ability performance, the results and findings should be prudently and wisely utilized.

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The potential for development of green information and communication channels

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Abstract

This paper analyzes the application of the Internet of Things (IoT) in education, the public sector, and the economy. IoT enables inter-device communication and data collection, offering numerous benefits, including improved education, sustainability, and economic advantages. Models of IoT platforms have been considered for implementation in medical education and other fields. Education is crucial for the development of sustainable practices, and IoT stands out as a tool that can assist in environmental education. Gamified learning, digital content, and remote access are components of modern education supported by IoT. IoT also provides benefits for the public sector and the economy, enabling more efficient decision-making and data monitoring.

Keywords: IoT, green ICT, education for the environment.

1. Introduction

Strategies of digital transformations encompass organizational, production, and process transformations (Matt et al., 2015). What distinguishes the implementation of new technologies are radical transformations that provide new values and functions (Feroz et al., 2021).

The Internet of Things (IoT) enables inter-object communication and data collection (Raiwani, 2013). The specific significance of IoT lies in its industry-oriented approach to end-users, allowing rapid interaction through networks that have a significant impact on individuals, consumers, or participants in a particular business process (Raiwani, 2013). The application of digital transformations extends to industry, data analytics, cloud computing, IoT, and other stimuli for digital advancement (Feroz et al., 2021).

The future development of IoT should contribute to the optimization of information that is beneficial for society or is part of societal and business entities (Raiwani, 2013). IoT can make a significant contribution to consumers, producers, entrepreneurs, governments, and nations (Tu et al., 2017). It is crucial to find the right approach and create a usable model of education and open communication. One of the advantages provided by IoT is the transparency of sought information, communication, as well as comparative access to data (Raiwani, 2013).

Improving business operations and creating new business opportunities are noticeable in the industry, while digital transformations call for a new decision-making and management system (Feroz et al., 2021). The Internet of Things (IoT) enables access to various dimensions of the physical world, data, characteristics, and environmental content, integrating them all into a knowledge base (Piccolo et al., 2022). Others (2017) have also highlighted its potential application in other areas, such as education. However, IoT can enhance the quality of business when it comes to industry workers, business owners, and the overall quality of an individual's life (Raiwani, 2013).

Education on environmental improvement and protection is recognized as a crucial global issue, with IoT standing out as a quality communication method that can help address this matter (Tu et al., 2017). Flexible curriculum plans and programs implemented through digital content, and learning through courses specifically designed for each group, are aspects that higher education institutions should focus on (Benavides et al., 2020). The use of game-based learning is on the rise, with enthusiastic support for its application in higher education shown by Subhash and Cudney (2018).

Subhash and Cudney (2018) observe that Spain is a leading country in the development of gamified learning in scientific research. Platforms designed in this form represent a form of machine learning and the Internet of Things. Ramlowat and Pattanayak (2019) highlight that with the advent of IoT, communication is facilitated in interpersonal relations between people, machines, and the interaction between humans and machines. Data analysis, the development of computer technology, especially distance learning platforms representing interactive and modern classrooms for students, have been made possible thanks to the Internet of Intelligent Devices (Maksimovic, 2017).

Authors Ramlowat and Pattanayak (2019) emphasized the significance of implementing IoT in various education models. Tu and colleagues (2017), through data analysis in their research, concluded that IoT is a crucial tool for green education, educating users about consumption. The future of information and communication technologies in education is G-IoT (Green Internet of Things)

(Maksimovic, 2017). Information technologies provide efficiency and quality in education, speeding up communication, and saving costs. Maksimovic (2017) notes that specific savings, such as reductions in paper used for textbooks, can reach up to 91 million tons, and fuel savings for transportation to educational institutions can be as high as 5 billion liters.

2. IoT in education

As a notable example of implementation in education, Ali et al. (2017) presented a model of an IoT platform that can be utilized for medical education. They named the platform model "IoT-based Flipped Learning Platform (IoTFLiP)." Although designed for medical student education, the model indicates the credibility of its application in the education of green transformations. The functional layers of this model can serve as an example for other models of green information and communication channels. Some of the educational models analyzed by the authors include medical education, green consumer education, computer science education, distance education, etc. Additionally, Ali et al. (2017) emphasized the effectiveness of such learning for both students and other stakeholders.

According to Ali et al. (2017), the IoT platform model suitable for education consists of eight layers divided into two blocks: local and cloud data processing blocks. This initial division is based on communication and resources.

In the first block, comprising four layers, the following elements are included: data perception, data aggregation and pre-processing, local security, and access technologies. Local management controls communication and resources. The application of IoT in medical education, as previously presented, offers specific scenarios derived from case studies. Such a platform model and scenarios can be applied in the case of environmental education and user interaction with the platform. In the second block for cloud data processing, the following layers are present: cloud security, presentation, application and services, and business.

IoT enables the networking of multiple devices and users, sharing content and data with necessary protections, and user communication. There is also a development in green information and communication activities. These models are referred to as G-IoT/Green IoT (Maksimovic, 2017).

When it comes to maps of green information and communication activities, three segments can be identified: computer operations, infrastructure, and production. The activities contained in these segments or layers are interconnected and form three cohesive units. These units and activities (operations) are in coherence (Maksimovic, 2017):

- Green design software,
- Ecological monitoring software,
- Energy monitoring systems,
- Smart grids,
- Supply chain management,
- Full life cycle analysis,
- System design,
- Greener ICT production,
- Green ICT devices,
- E-waste.

3. Advantages of implementing IoT in education, public sector, and economy

The advantages provided by IoT in education lead to a higher quality future for social, economic, and environmental components (Maksimovic, 2017). A study conducted by Feroz et al. (2021) can assist decision-makers in all sectors, particularly in the public sector. Some recommendations provided by Bashir et al. (2019) for the specific application of the Arduino platform include:

- Integrating it into educational courses,
- Enhancing users' understanding of the interface and skills,
- Course mapping (curricula or project tasks),
- For university students, fostering critical thinking, group learning, collaborative problem-solving,
- A solid foundation for developing and reviewing project activities,
- Learning pathways and solution creation supporting education,
- Accessibility, overview, monitoring, functionality,
- Independent work, etc.

Some of the benefits of IoT in education presented by Maksimovic (2017) include:

- Influence on quality and modern education.
- Smart and interactive education.
- Shift from traditional to interactive classrooms.
- Implementation of Green IoT (G-IoT) influences the transformation of teaching for students, aiding in their learning.

- Possibility of remote access with control of laboratory equipment.
- Development of online collaboration and user games that serve as models for acquiring new knowledge.
- Adaptation of teachers to new models, contributing to the improvement and modernization of curricula.
- Accessibility to higher education for everyone, from any distance or technological device (mobile phone, tablet, laptop, etc.).
- Flexibility in organizing teaching practices, contributing to their quality.
- Education takes on the form of economic, ecological, and social sustainability, for which G-IoT provides primary and solid support.

The Internet of Intelligent Devices (IoT) motivates students to take active roles in problem-solving and class participation. It allows easy access to courses and lecture materials, granting the freedom to engage from any location. Students can independently organize their time, manipulate content and data at their discretion, and participate in various activities (Maksimovic, 2017). The IoT in education, as a modern model, provides students with a form of freedom crucial for creating solutions, fostering mental abilities, and creativity, and supporting self-organization and self-discipline.

The purpose of student education is to cultivate a skilled workforce capable of applying practical knowledge to national and private business engagements. Ecologically sustainable practices, stabilized and developed through IoT and artificial intelligence, can be integrated into business models to address pollution and resource degradation on both national and private business levels (Demartini et al., 2019). Recognizing the need to incorporate environmentally sustainable practices into digital transformation systems, these initiatives catalyze progress, improvement, and development.

According to Feroz et al. (2021), attention should be paid to the quality of the workforce engaging in the education of others. This process is continuous and requires consistency in implementation. Improvement processes should be focused on sustainable practices, created through strategic processes and digital transformations, ensuring that all points are oriented towards environmental sustainability (Feroz et al., 2021). Such an orientation in practices precisely contributes to the development of green information and communication channels.

Discussion

Despite various theories and positive integrative comments, artificial intelligence (AI) brings significant benefits to society, industry, and public administration, providing databases and analyses, as well as mobile technologies (Vial, 2019). The application of IoT is particularly effective in Industry 4.0 (Rodríguez-Calderón & Belmonte-Izquierdo, 2021).

Piccolo et al. (2022) highlight key features of Education for Sustainable Development (ESD), such as problem orientation, collaboration, and interdisciplinary approaches. ESD aims to equip students with the necessary knowledge to be informed and take action for a sustainable society, shifting the focus from traditional "teaching" models to concrete learning. Importantly, ESD serves as a bridge between informal and formal learning, as emphasized by Piccolo et al. (2022), aligning with the discussed education models.

The implementation of the Internet of Things (IoT) is realistic for measuring various factors in smart city systems, including the content and quality of air, water, and soil. This can be significant for relevant institutions, scientific establishments, and the education of specialized professionals (Dutta et al., 2017; Stojkoska & Trivodaliev, 2017; Piccolo et al., 2022; Shah & Mishra, 2016; Silva et al., 2013).

The digitalization of workplaces itself contributes to environmental protection and sustainability (Song et al., 2018). To ensure the proper implementation of these points, it is necessary to have answers to the following questions when connecting them and creating final solutions: What digital business strategies needed by an organization should be included in environmentally sustainable digital transformations? How can environmentally sustainable practices be implemented in them? What are the driving forces for sustainable digital transformation? (Feroz et al., 2021).

Feroz et al. (2021) have identified a model that helps decision-makers in both public and private enterprises, as well as other stakeholders, to create sustainability and environmental impact strategies. In the learning model using IoT, shortcomings were observed in the areas of security, data protection, and the need for coordinated legislation and necessary standards to regulate these systems (Maksimovic, 2017). They are used for domains of ecological sustainability in both companies and general contexts. However, according to Feroz et al. (2021), a lack of studies related to mapping in general ecological sustainability was identified. These findings suggest networking project solutions designed on a digital platform model with relevant institutions through Chat GPT. The Internet of Things (IoT) can connect all aspects of an individual's life, such as protection, healthcare, safety, as well as recycling and processes in the environment (Ramlowat and Pattanayak, 2019). The recommendation is for management systems to focus on digital changes, board discussions, and process improvement, bringing numerous benefits for managerial responsibilities and decision-making (Feroz et al., 2021).

5. Conclusion

Data collection spans various fields, project solutions, and businesses. However, it can also be utilized for private communication. Therefore, IoT can be employed for the education of stakeholders, and educating students in educational fields. In the context of environmental concerns, it can offer a much broader scope in terms of quality and application for green transformations. The knowledge base created with the help of IoT serves as a solid foundation for further development or access by other professionals, or if the educational boundaries of students have been reached. Professionals gain processed and ready-to-use data, and project solutions that can be applied to various projects, national, scientific, or other issues depending on the scope. IoT also enables the dissemination of necessary information, education, and advertising on important topics.

The flexible educational plans facilitated by the implementation of IoT can enhance the productivity of the educated group by unlocking mental potentials that were not previously stimulated through traditional learning models or curricula based on theoretical foundations. Considering that gamified learning has proven possible in various formats already designed, the use of IoT can increase group productivity in education.

The emergence of IoT makes a significant contribution in the areas of decision-making for green transformations. The globally prevalent issue of environmental degradation cannot be postponed, and swift and concrete action on the problem is essential. Due to the limited time available, education and communication must be rapid and efficient. Models like IoT precisely provide the opportunity to act on two levels: education and the speed of taking action to address the problem. All of this is based on information communications, serving as a contribution to green transformations.

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The Managerial Role of Pharmacist in the Contemporary Business Environment

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Abstract

In today's swiftly changing healthcare area, pharmacists assume a pivotal managerial role within the business area of pharmacy practice. The trend of pharmacies being owned by multiple contractors has been consistently growing for more than a decade. Consequently, many pharmacies are managed by pharmacists who are employed as managers, a role that has become well-established within the industry. The research aims to point out important roles for managers in pharmaceutical organizations. Namely, pharmacists have responsibilities of pharmacists as managers, encompassing areas such as financial management, human resources, inventory control, and strategic planning.

Keywords: manager, pharmacy, roles, competencies

1. Introduction

Managerial professional competencies are directly related to the external environment (Nikitina & Lapiņa, 2017) and are traditionally considered as a set of knowledge, skills and abilities of an individual applied in practice (Spencer & Spencer, 1993). The Oxford English Dictionary describes a manager as a "person responsible for controlling or administering an organization or group of staff" or "a person who manages (a department of) a business, organization, institution, etc (OED). At the same time, the concept of individual competencies is linked to the idea of organizational competencies (Nikitina & Lapiņa, 2019). Managers' personal and professional goals, as well as their methods of time management and stress coping, significantly impact the management of their departments (White, 1984). In the organizational structure of the pharmacy department, it is common for the nonpharmacist business manager to have a direct reporting relationship with a higher-level pharmacist manager, such as an assistant director or director of pharmacy (Granko et al., 2011).

The landscape of pharmacy management is undergoing rapid transformation. In response to these changes, "Managing Pharmacy Practice: Principles, Strategies, and Systems" adopts a fresh approach to pharmacy management (Peterson, 2004).

Indeed, the terminology used in pharmacy practice can vary depending on the context, and no single term encompasses the entire scope of services provided by community pharmacies. Professional pharmacy service is characterized as an intervention or series of interventions carried out within or facilitated by a pharmacy setting, conducted by a pharmacist or another qualified healthcare professional. This professional applies their specialized knowledge in health directly or indirectly, engaging with patients/clients, populations, or fellow healthcare providers. The primary goal of these services is to enhance the quality of care, striving to improve health outcomes and the overall value of healthcare delivery (Molullin et al., 2013). Pharmacy managers must address the human aspects, to secure resources such as pharmacists' time, space, reference materials, and support systems (Smith, 1988).

Leadership and management are complementary (Chisholm-Burns et al., 2013). Understanding the relationship between vision and leadership in pharmacy are two closely related concepts. What is the point of leadership if it is not directed towards some foreseen, socially desirable, changes? (Zellmer, 2008). Leadership in pharmaceutical practice is about the ability to create a vision for the future of pharmacy and mentor future managers to establish an innovative environment. Effective leaders set strategies and motivate staff to create a clear vision for the future and new cultures by getting people to do the right thing by being motivated (De Silva, 2013, p. 183). Hospital pharmacy directors are required to implement efficient human resources management strategies to attract and retain a highly motivated pharmacist team (Weber, 2006). Many countries are experiencing a significant shortage of adequately trained pharmacists and pharmaceutical personnel (Anderson et al., 2010).

There remains a significant ongoing discussion in both academic circles and policy literature regarding the distinctive role of pharmacists and their contributions to healthcare (Elvey et al., 2013). Pharmacy is a health profession that connects the health sciences with the basic sciences, focused on ensuring the safe and effective use of medicines (Hadzovic, 1997). The pharmacy profession has evolved significantly, transitioning from a focus solely on product dispensing and tasks to prioritizing patient-centred care, advice, and counselling (George et al., 2010). The scope of professional services provided by the pharmacy profession has expanded significantly. In contrast to developed countries, where pharmacists are valued members of multidisciplinary healthcare teams, those in developing countries are often underutilized and their significance as healthcare professionals is not fully acknowledged by either the community or other healthcare providers, despite the significant expansion of professional services within the pharmacy profession (Azhar et al., 2019).

The introduction of a departmental performance evaluation system offers a method for assessing service quality, pinpointing areas of improvement, monitoring performance trends, and reducing costs. Through the establishment of specific objectives, this system enhances awareness and fosters collaboration among department personnel. This requires providing an adequate information platform for key departments in pharmacy.

2. The role of pharmacists over time

Pharmacy is a profession with a long history that has undergone significant transformations over time. Throughout history, the roles of pharmacists have evolved significantly. Before the 18th century, pharmacists were primarily responsible for treating diseases and prescribing therapies, as well as producing medicines. However, the development of the pharmaceutical profession began in earnest in the early 18th century, leading to the emergence of many roles that modern pharmacists still fulfil today. Pharmacy is among the professions with the highest level of regulation in the country and at the same time it is one of the professions with the greatest ethical challenges (Pfizer, 2001).

Pharmacist managers have increasingly expanded their roles beyond traditional pharmacies, with additional education and certification. Advances in technology have changed the way they perform their duties. They have become key members of interdisciplinary healthcare teams. With the growing complexity of the healthcare system and the increased use of medicines, pharmacist managers are increasingly engaged in risk management and ensuring patient safety. Pharmacy benefit managers (PBMs) contribute value by facilitating appropriate therapeutic interchange, which involves switching to a less expensive yet equally or more effective medication for a given condition. This practice helps optimize medication costs while maintaining or even improving patient outcomes.

In today's rapidly evolving healthcare landscape, pharmacists play a crucial managerial role within the business environment of pharmacy practice. Pharmacists are facing growing demands to manoeuvre through intricate regulatory systems, streamline operational processes for efficiency, and elevate patient care outcomes by implementing strategic management approaches.

Al-Arifi highlights several essential roles of pharmacists as managers:

- 1) human resource management,
- 2) financial management,
- 3) space management of the pharmacy,
- 4) marketing management,
- 5) inventory management,
- 6) information resource management.

The human resources department of an organization is tasked with various functions, including policy development and implementation, as well as recruitment and selection (Reddy, 2015). Inadequate management of human resources can have repercussions on the operations, quality, and finances of the pharmacy. High employee turnover leads to disruptions in service continuity and escalates the expenses associated with training replacements. Moreover, new employees typically need extra time to establish workplace relationships and integrate into the team (Weber, 2006). In pharmacy practice, human resources encompass the management of staff within the pharmacy, which includes the processes of recruitment, training and maintaining satisfactory working relationships. They are key to ensuring the competitiveness and successful operation of the pharmacy because they focus on hiring professional and motivated staff who will effectively meet the needs of customers. Proper management of human resources brings significant benefits, while insufficient attention or bad management of this area can harm a pharmaceutical or any other organization.

Financial management traditionally consists of two key functions: financing and investing. Financing, or the decision to obtain funds, involves generating funds from internal or external sources at the lowest possible long-term costs. On the other hand, investment decisions refer to the allocation of assets over time to maximize shareholder wealth. Managing financial assets requires a precise, reliable and efficient system of recording and reporting financial transactions. Managers and owners of pharmacies use various financial ratios such as current ratio, quick ratio, and return on sales, to measure liquidity, solvency, financial position and profitability.

For the analysis of the pharmacy's liquidity, it is important to look at working capital and cash flows. Horizontal and vertical analysis as financial analysis techniques are also useful strategies for tracking changes in a pharmacy's financial statement over specific periods, as shown in Tables 1 and 2. The data collected from these financial statements and tools can provide useful framework information for making decisions about the current financial position, as well as for monitoring financial performance. However, it is necessary to use ratio analysis for insight and projection of the financial position and success of the pharmacy.

The main advantage of showing the structure of the balance sheet and income statement in relative terms (in %) is that it simplifies (facilitates) the comparison of the company with the industry average, companies of different sizes and historical data. With vertical analysis, the participation of individual parts of assets in the total assets (financing sources) is considered, and for the income statement, the participation of individual items of the income statement in business income is considered.

Horizontal analysis means monitoring the movement of individual items on the balance sheet during the observed period 2016-2018. (Knežević et al., 2019). In the horizontal analysis (Table 3), the amount of change for the items of sales and net income for the periods between 2001 and 2002 can be calculated as follows:

Table 1. Vertical analysis of an income statement (EUR)

Items	2023	Vertical analysis (%)	2022	Vertical analysis (%)
Net sales	900,000.00	100.00%	800,000.00	100.00%
COGS	610,000.00	67.70%	480,000.00	60.00%
Gros margin	290,000.00	32.30%	320,000.00	40.00%
Operating expenses	248,000.00	27.60%	280,000.00	35.00%
Income before tax	42,000.00	4.70%	40,000.00	5.00%
Tax	17,000.00	1.90%	18,000.00	2.30%
Net income	25,000.00	2.80%	22,000.00	2.70%

*The vertical analysis refers to any account of current assets and fixed assets divided by the total assets (e.g. cash account/total assets).

Tabela 2. Horizontal analysis (EUR)

Items	2023.	2022.	Horizontal analysis (%)
Net sales	900.000.00	800.000.00	12.5%
COGS	610.000.00	480.000.00	27.1%
Gros margin	290.000.00	320.000.00	-9.4%
Operating expenses	248.000.00	280.000.00	-11.4%
Income before tax	42.000.00	40.000.00	5.0%
Tax	17.000.00	18.000.00	-5.6%
Net income	25.000.00	22.000.00	13.6%

Establishing connections among financial statement items forms the foundation of ratio analysis. In this analytical method, it's crucial for evaluators, whether they are creditors or management, to choose the ratio that addresses their specific area of focus. Accounting statements and tools, such as ratio analysis, enhance the availability of current financial information and facilitate more effective business decisions, especially in environments characterized by uncertainty and constant change. While accounting data does not directly resolve issues, it serves as a warning signal to pharmaceutical professionals about existing problems within a company. By engaging in the accounting process and utilizing statements and tools, pharmaceutical professionals can develop the financial acumen necessary for making informed decisions. However, it's important to recognize that accounting data does not predict the future with certainty.

Therefore, a fundamental understanding of accounting concepts is vital for the functioning of all pharmaceutical organizations, ranging from local pharmacies to international corporations. Accounting skills and knowledge are not only valuable for pharmacy management but also contribute significantly to the overall success of pharmaceutical business endeavors.

Space management in a pharmacy includes planning and designing the physical environment in which various activities are performed. The emphasis is on the efficient arrangement of workstations, counters and general rooms, while at the same time paying attention to the aesthetics and functionality of both the internal and external space of the pharmacy. This includes detailed consideration of factors such as lighting, air conditioning, entrance decor and colours. Insufficiently developed workflows and inappropriate room layouts can result in reduced productivity. It is therefore crucial to plan carefully to ensure the efficient movement of staff and clients within the pharmacy. Furthermore, the aesthetic elements and comfort of the space also have a significant impact on the user experience, which can further affect their loyalty and satisfaction with the service.

Marketing is a management process that involves anticipating, identifying and satisfying consumer demands profitably. In addition, this process includes researching customer needs and wants, developing strategies, managing the product life cycle, pricing, financing the promotion and distribution of goods, maintaining customer records, delivering products and services, and monitoring customer satisfaction. In other words, marketing is considered an activity that connects business with the environment. The environment includes all elements beyond the boundaries of the pharmacy, such as consumers, patients, doctors and other groups in the community. Marketing success is measured by a manager's ability to attract new customers and expand and maintain relationships with loyal customers in a way that will achieve the pharmacy's goals. This includes targeting strategies to meet specific needs and continuously evaluating their effectiveness.

Pharmacy managers involved in marketing management should acquire knowledge about:

- 1) „Understanding the economic structure of his/her job.
- 2) Identifying the marketing strategy that best suits his/her business.
- 3) identification of your target market.
- 4) Understanding your competitors and their products.
- 5) establishing mechanisms for scanning the environment to detect opportunities and threats facing his/her business.
- 6) Developing marketing strategies taking into account the marketing elements of price, product, distribution and promotion.
- 7) Creation of a sustainable competitive advantage.
- 8) Understanding his/her business strengths and weaknesses” (Peterson & Kelly, 2004).

Inventory management involves strategically planning, organizing, and overseeing inventory to minimize investment in inventories while ensuring a balance between supply and demand. drug inventory management can be seen as an integral component of the purchasing process. In pharmacy operations, inventory refers to the collection of pharmaceutical products kept on hand to meet upcoming demand. Efficient inventory management is crucial in pharmacy practice from both financial and operational standpoints. Its objective is to minimize procurement and carrying expenses while ensuring an adequate supply of products to fulfil customer and prescriber needs (Ali, 2011). There is a fine line between keeping too much and too little stock in the warehouse. Lack of inventory can result in missed sales or delayed sales with high follow-up costs. On the other hand, too much inventory can require more space, increase financial and insurance costs, and can lead to inventory obsolescence. Since drug inventory represents a significant investment for any pharmacy, the goal of inventory management is to maintain the minimum amount of inventory necessary to control drug costs and to have a sufficient supply of products for good customer service. Lack of proper inventory purchase planning can result in reduced productivity. There are several methods for inventory management, from visual (direct) inspection of inventory to using computer systems to track items entering and exiting inventory during storage and purchasing. One of the key measures of inventory control (an indicator of inventory management efficiency) is the inventory turnover ratio. This financial indicator provides information on the speed at which pharmacy supplies are sold and repurchased for storage. This indicator should be monitored in parallel with the movement of cash (inflow and outflow of money), that is, the pharmacy's liquidity and special attention should be paid to the duration of the operating cycle. Management of the working capital of the pharmacy is the subject of special attention of managers.

Information resource management is a system that collects, processes and provides information to managers at all levels in the pharmacy to help them make quality business decisions, and plan the implementation of programs and control. This system consists of components that collect, process and distribute information, including hardware, software, communication systems such as telephone lines and fax machines, as well as data itself. The pharmacy manager is expected to provide such logistics that will result in having available sources of information to be used by staff. In this segment, it is particularly important to highlight the importance of monitoring information on pharmaceutical innovations.

3. Trends in the development of pharmacy manager skills

Differences in the skills of pharmacy managers may be due to the lack of formalized management training programs. To overcome this gap in management education, pharmacists should be encouraged to shift their career goals from professional to pharmacy management. In addition, expanding pharmacy management curricula to include top management skills is challenging. Formalized management training programs for those involved in community pharmacy practice are also warranted. Special emphasis is placed on the importance of improving the financial literacy of managers in pharmaceutical organizations, for more efficient management of their resources (Gačić et al., 2023) and ensuring a long-term sustainable business.

Pharmacy business in a dynamic environment requires quick response to changes and flexibility. For this, managers need to have the appropriate skills. Communication emerged as the most prominent skill identified, followed by decision-making and business knowledge. These competencies should be integrated into pharmacy curricula. Further, according to Augustine et al. (2018), the foremost skill identified was communication, followed by decision-making and business acumen. In this framework, it can be pointed out that pharmacy curricula must incorporate training in these areas.

Training in leadership and management is essential for equipping pharmacists with the necessary skills to expand clinical services and enhance patient outcomes. The future trajectory of pharmacy relies heavily on the emergence of pharmacist leaders. Therefore, nurturing and developing successful leaders within the profession is paramount for its continued advancement and success (Frederick et al., 2021).

In the swiftly evolving landscape of healthcare, frontline pharmacists can greatly benefit from formal education in leadership and management. Such training can equip them with the essential skills needed to innovate and expand clinical care services, ultimately leading to enhanced quality of patient outcomes (Mospan et al., 2017).

Managerial skills are crucial for aspiring pharmacy managers. Given that new graduates will eventually transition into management roles, they must acquire knowledge and practical experience in managerial skills before assuming such positions (Augustine et al., 2018).

4. Conclusions

The pharmacy profession is highly diverse, with pharmacists working across a wide spectrum of healthcare practices. They often balance historic roles with contemporary responsibilities, seamlessly integrating traditional practices with modern approaches to meet the evolving needs of patients and the healthcare system.

To fully realize the pharmacy profession's potential, it is essential to recognize and leverage the unique strengths that individual pharmacists bring to their practice settings. By identifying, understanding, and applying these strengths, we can boost professional satisfaction, foster effective leadership, and drive transformative change towards patient-centred care.

Pharmacists as managers should deal with different areas within the framework of the pharmaceutical institution, for which they need to master different skills. The pharmacy manager will be expected to resolve a range of legal, ethical, operational, human resource, and financial issues that affect the organization. Efficient inventory management plays a significant role in pharmacy practice from both financial and operational perspectives.

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The Role of Financial Analysis in Business Decision-Making

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Abstract

Financial analysis is a key tool in the process of making business and financial decisions. This paper explores how financial analysis provides the foundation for informed decisions that lead to long-term business success and financial sustainability. It identifies how financial analysis is used to assess a company's financial health, identify trends, predict future performance and assess risk. Well-informed decisions based on financial analysis can contribute to a company's competitiveness and long-term success in a dynamic business environment.

Keywords: information, financial analysis, decision making.

1. Introduction

One of the fundamental aspects of running a business is decision-making. This encompasses determining which goods or services to offer, pricing strategies, distribution channels, and marketing approaches. The ability to make sound decisions can significantly impact a business's success or failure. The evaluation of financial statements is the process of evaluating the financial position and performance of a company. In particular, financial performance testifies to its success or risk of bankruptcy. For different users, in terms of the scope of implementation, the analysis of financial statements depends on the specific objective. The interpretation of financial information essentially boils down to financial statements and other financial data about an enterprise to evaluate and project its performance and value.

In the modern business environment, financial reports are the most complete, objective and reliable database, based on which an opinion can be formed about the property, financial and financial position of the company. Accounting financial reports are an open source of information used by various interest groups for business and financial decision-making. Therefore, it is necessary to develop standard methods for reading and analysis. Effective interpretation of financial information requires financial literacy and understanding of accounting principles. Stakeholders should be able to analyze financial statements and derive meaningful insights to support decision-making processes.

Ensuring the accuracy and reliability of financial information is crucial for fostering trust among its users. This entails adhering to established accounting standards, implementing robust internal controls, and conducting independent audits. These measures are essential safeguards to uphold the integrity and credibility of financial reporting. Financial information serves as a fundamental source of data regarding a company's financial status, performance, and operational endeavours. It offers valuable insights into various facets of the organization's financial activities, encompassing revenues, expenses, profitability, liquidity, solvency, and other pertinent metrics. Companies that rarely prepare financial statements tend to have a limited understanding of the importance of those statements for decision-making (Cassar, 2009). A primary source of data is a company's annual report, including the financial statements notes, and management commentary. The reduction of uncertainty, especially in competitive environments, is directly related to the frequency of preparation of financial statements. Smaller businesses that prepare their financial statements infrequently likely do not recognize the benefits of timely financial information and are less inclined to use available information to improve their operations (Carragher & Van Auken, 2013).

Assessing the performance, stability, and viability of a business entity relies heavily on financial analysis. This process entails scrutinizing financial statements, key performance indicators, and other pertinent financial data to extract valuable insights into the organization's financial well-being. Financial analysis stands as a cornerstone in guiding both business and financial decision-making processes. This study delves into the pivotal role of financial analysis in laying the groundwork for informed decisions that pave the path towards sustained business success and financial stability. It elucidates the various ways in which financial analysis serves to evaluate a company's financial well-being, detect patterns, forecast future performance, and gauge risk. By leveraging insights gleaned from financial analysis, organizations can make astute decisions that enhance their competitiveness and fortify their position for long-term success amidst the ever-evolving business landscape.

Essentially, analysts transform data into financial metrics to facilitate decision-making. They aim to address questions like: How effectively has the company performed compared to its historical performance and its competitors? What is the company's future performance outlook? Based on projections of future performance, what is the company's or its securities' value?

In the first part of the paper, the importance of reporting for business decision-making was pointed out. The second part deals with examining the capacity of financial analysis to support the business-financial decision-making process. This is followed by concluding remarks and a review of the literature used.

2. Reporting for business decision making

The company's management uses reporting as a basis for making managerial decisions. Its data are necessary for the analysis of the organization's activities. Financial (accounting) data, obtained in the annual report, provide information that is necessary for top managers to finance investment projects. The essence of the analysis of financial statements from the user's position is the review and evaluation of information in the reports to obtain reliable conclusions about the past state of the organization to predict its functioning in the future. Further, the speed of decision-making has long been acknowledged as a crucial factor influencing the performance of a company, especially in rapidly changing environments (Kownatzki et al., 2013).

The evaluation of financial statements is the process of evaluating the financial position and performance of a company. In particular, financial performance testifies to its success or risk of bankruptcy. For different users, in terms of the scope of implementation, the analysis of financial statements depends on the specific objective. The interpretation of financial information essentially boils down to financial statements and other financial data about an enterprise to evaluate and project its performance and value.

Financial analysis of a company serves various purposes, including valuing equity securities, evaluating credit risk, conducting due diligence for acquisitions, or assessing subsidiary performance. "Because of the variety of reasons for performing financial analysis, the numerous available techniques, and the often substantial amount of data, it is important that the analytical approach be tailored to the specific situation" (Henry et al., 2012).

Assessments inherently involve comparisons. Without specifying the basis for comparison, it's challenging to determine whether a company's financial performance was deemed "good." When evaluating a company's capacity to generate and augment earnings and cash flow, as well as the associated risks, analysts juxtapose its performance against other companies (cross-sectional analysis) and track changes over time (trend or time-series analysis) (Henry et al., 2012).

Decision-makers must have an understanding of various organizational risks to minimize mistakes and investments that can result in significant costs for the organization. Managers need effective risk reporting systems to integrate risk assessment into (a) their operating and capital investment decisions, (b) performance evaluation, and (c) compensation decisions. Advanced organizational risk assessment and internal risk reporting are critical for both senior management and boards of directors, who are responsible for carefully establishing and reviewing corporate processes to identify, assess and manage risk (Epstein & Reic, 2006).

Reviewing recent literature suggests that both management decision-making, encompassing problem-solving and scorekeeping, and a critical approach, involving awareness-raising, play roles in advancing sustainability accounting and reporting. Nevertheless, the focus of sustainability accounting and reporting should lean towards enhancing management decision-making (Burritt & Schaltegger, 2010).

3. Financial analysis as a tool for decision-makers

Financial statements are prepared based on financial accounting data by established forms for a specific reporting date. Namely, these data that are reflected in the financial statements essentially represent a special type of account that is extracted from current accounting, more precisely, summary data on the state and operations of the company for a certain period. The system of accounting data (indicators) that make up the financial statements should derive directly from the master accounts - the most important register of the accounting system. The total number of accounting indicators from financial accounting is formed directly or indirectly from the accounts of the general ledger. Therefore, the reporting data grouped in the accounting registers cannot reflect the economic turnover, which is not shown in the current accounts.

Managers or analysts who perform various types of financial/economic analysis usually do so with a specific purpose in mind. During the analysis process, financial statements, special analyses, databases and other sources of information are used to make reasonable judgments about the past, present and future conditions of the business and the effectiveness of its management. Financial statements are not right or wrong in an absolute sense, but information may need to be adjusted in some cases, or discarded in others, to suit the purpose of the analysis. Fundamental analysis asserts that the value of firms is reflected in the information presented in financial statements. Nevertheless, the precise methods for extracting these values from financial statements remain ambiguous.

Analyzing financial ratios is indeed one of the most effective methods for assessing a firm's financial condition. Financial ratios provide a systematic way to evaluate various aspects of a company's performance and financial health by comparing different variables from its financial statements. Financial ratios are used for all kinds of purposes. This includes an assessment of the firm's ability to pay its debts, an assessment of business and managerial success, and even the legal regulation of the firm's operations. Not surprisingly, they become the norm and affect performance. Traditional financial analysis textbooks also emphasize the need for a firm to use industry-wide averages as targets, and there is evidence that firms adjust their financial ratios to such targets

(Barnes, 1987). Financial indicators play an important role in revealing the financial stability of the company, a role that helps maintain the competitive position of the company, while achieving stable development, contributing to the elimination of potential financial risks (Kliestik et al., 2020).

Successful business management requires an understanding of the systematic relationships among key elements in the areas of investment, operations, and financing, as well as the impact of decisions on these relationships. Total systems thinking is a critical requirement both in setting strategies and executing them. When considering performance, one often initially considers common financial metrics related to growth in sales and revenue. Various financial measures and ratios have been devised, with return on sales, return on equity, and return on income being among the most prevalent (Busenitz, 2007). The absolute amount of profit a company makes gives a general overview of its activity but does not provide detailed information about how the company manages dividends, debt, liabilities or other key indicators. Cash flow is the ultimate driver of business performance and value, but its use in internal and external analysis generally requires considerable care in selecting data, constructing appropriate analytical frameworks, and interpreting results. Shareholders' expectations of future cash flows are the basis for deriving shareholder value. Creating value for shareholders is a key responsibility of corporate management. Among other things, this requires an understanding of the cash flow implications of the decision and an organizational climate and incentives that will encourage such consistency in strategies, and policies and in making and implementing management decisions. Several researchers have supported the adoption of CFSs due to inherent limitations within the accrual accounting system, particularly concerning the conventional performance metric of operating profit (Jones et al., 1995, Lee, 1986).

Financial indicators play an important role in the evaluation and analysis of the company's performance because these indicators predict the financial situation and performance of the company. Financial ratios could be useful for investors to observe whether the firm is worth enough to invest in and what the trend is in the future. Therefore, the analysis of financial indicators can help investors in making investment decisions and predicting the future performance of the firm. The analysis could give an early warning if the company's financial conditions are slowing down. The analysis is important for the managers of the firm for remuneration. Analysis of financial indicators is useful for economists and researchers to predict potential future financial conditions. Financial ratio analysis is also useful for stakeholders in making funding decisions.

Analysis of financial statements is used to assess the likelihood of a company's financial distress - the likelihood that it will be unable to pay its debts. Today, financial statement analysis is ubiquitous and involves a wide range of metrics and a wide range of users, including suppliers, banks, credit rating agencies, investors and management, among others. Financial distress refers to a company's inability to pay its financial obligations as they fall due (Beaver et al., 2011). Financial problems begin with a fundamental drop from positive to negative cash flow.

While published financial statements are the most widely available source for financial analysis, the limitations inherent in their preparation (based on generally accepted accounting principles) require a basic understanding by the user of how performance and valuation analytical results may be skewed and whether adjustments may be required. The context of any analytical effort is critical to successfully addressing the question or problem to be addressed by the analysis. Much of the process underlying the analysis should be focused on ensuring consistency between the objectives and the data sources and processes used.

Although financial information holds significant importance, non-financial data also offers valuable insights into a company's operations, strategic direction, and risk assessment. This encompasses various aspects such as corporate governance practices, environmental impact, social responsibility efforts, and innovation initiatives.

4. Conclusions

Financial statements offer crucial information that ought to inform decision-making processes. Financial statements serve as vital resources for stakeholders involved in assessing financial performance and making business decisions. The prevalent adoption of financial ratios by professionals and scholars often appears driven by convention and utility rather than rooted in theoretical deliberations or exhaustive statistical examination. Financial ratios empower managers, investors, and policymakers to categorize and forecast forthcoming revenues and expenses, rendering them an apt instrument for evaluating company performance. They play a pivotal role in evaluating both the operational effectiveness and financial robustness of a firm. Numerous authors underscore the significance of financial indicators in scrutinizing company performance, given their extensive practical utility.

Financial statement analysis identifies the pertinent aspects of financial statements crucial for investment decisions. One of its primary objectives is to evaluate the firm's value based on the information obtained from these statements. Financial analysis is pivotal in predicting future financial performance and determining the value of a company. Through the utilization of historical data, industry trends, and financial models, analysts can generate well-informed forecasts regarding the company's upcoming earnings, cash flows, and valuation metrics. These insights empower investors and stakeholders to make informed decisions. Ultimately, financial analysis offers valuable perspectives on a company's financial performance, risk exposure, and growth opportunities, serving as a fundamental tool for decision-making across various stakeholders, including investors, lenders, and management.

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The Experience of Corporal Punishment in Schools

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Abstract

The use of corporal punishment in schools is a serious pedagogical issue. Many studies worldwide have highlighted the negative consequences of corporal punishment and its harmful effects on children. The present study aims to explore the experience with corporal punishment in schools within the context of the Czech Republic. Despite international obligations to protect children from physical and mental violence, some Czech teachers may still use corporal punishment due to legal ambiguities and wide societal acceptance especially in child rearing by parents. The study's findings indicated that over one-third of participants had personally experienced corporal punishment at school, and more than two-thirds had witnessed it occurring. The study also revealed the emotional responses to these experiences, which were predominantly negative, and provided insights into the respondents' contemporary opinions on the use of corporal punishment in educational settings. The findings underscore the need for clearer legal frameworks and increased awareness to protect children from corporal punishment in schools.

Keywords: corporal punishment; educational settings; the Czech Republic; personal experience; emotional responses

1. Introduction

In the 21st century, students globally experience physical punishment in schools even in countries where it is legally banned. According to the Global Initiative to End All Corporal Punishment of Children (2011), in some countries, over 80 percent of students face corporal punishment in school. In 20 states within the United States, children are regularly struck on the buttocks with a wooden paddle or rulers (Human Rights Watch, 2009). Other studies have also confirmed the presence of corporal punishment in schools worldwide (Covell and Becker, 2011; Heekes et al., 2020). Thus, the topic of corporal punishment in schools is a critical issue that necessitates attention and action from educators and policymakers.

Corporal punishment involves the intentional use of physical force to inflict pain or discomfort, regardless of its severity, to correct behavior deemed inappropriate or unacceptable (Epoch Worldwide, 1992; United Nations, 2007; Heekes et al., 2020). Research on corporal punishment describes various techniques employed by adults to discipline children, including smacking, spanking, slapping, shaking, or forcing them to stay in painful and uncomfortable body postures (Epoch Worldwide, 1992; Paolucci and Violato, 2004; United Nations, 2007). In some cases, pinching, throwing to the floor, or restraining in ways that are violent enough to cause bruising have been reported (Human Rights Watch, 2009). Additionally, research indicates that corporal punishment is not limited to direct physical contact but also involves the use of objects (Gershoff et al., 2015; Beazley et al., 2006). Students from elementary through high school are often struck on their hands, arms, head, back, thighs, and buttocks with rulers, sticks, belts, or canes. Moreover, they may face excessive exercise drills, washing their mouths out with soap, restrictions on using the restroom, or have objects like key bundles, chalk, or pens thrown at them by teachers (Gershoff et al., 2019; Heekes et al., 2020; Greydanus et al., 2023).

The use of physical punishment in schools is considered a form of teacher misconduct, sometimes referred to as didactogeny, and in some states, it is illegal (Kearney et al., 1991; Goodboy and Bolkan, 2009; Lewis and Riley, 2009; Mareš, 2013; Li-I Hsu, 2014). However, in the Czech Republic, the law surrounding corporal punishment in schools is somewhat ambiguous. Although the existing School Act (2004) does not specify any type of punishment, which suggests an expectation against using corporal punishment by teachers, it lacks a clear, explicit prohibition, resulting in uncertainty. Contrastingly, international agreements and standards (United Nations, 1989; Council of Europe, 1996, 2004; Pinheiro, 2006) mandate that member states protect children from all forms of physical and mental violence and degrading punishment. The Czech government has added to this by stating that corporal punishment should not be part of the education of children in the country, claiming that "physical violence does not belong in any developed society" (Vláda ČR, 2013). Nevertheless, there are currently no current surveys or studies on the use of corporal punishment in schools in the Czech Republic. However, the ambiguity of Czech laws may suggest that some teachers in Czech schools may still use corporal punishment, even though scientific evidence points to its negative effects.

Various research studies have investigated the impacts of corporal punishment in schools and have identified numerous negative effects. Many researchers argue that physical disciplinary practices can harm children, leading to immediate and long-term

negative emotional, mental, moral, and social consequences (Turner and Finkelhor, 1996; Gershoff, 2002; Lovasová and Schmidová, 2006; Aucoin et al., 2006; Matějček, 2007; Kopřiva et al., 2007; Gordon, 2012; Mertin, 2013; Le and Nguyen, 2019; Cuartas, 2021). Furthermore, experiencing corporal punishment is associated with heightened depressive symptoms, student aggression and an increased probability of administering corporal punishment to one's own children in the future (Mayisela, 2020; Gershoff et al., 2019; Heekes et al., 2020). Although the impact of corporal punishment varies widely among individuals, growing research emphasizes the harmful effects of corporal punishment on children's healthy development.

Hence, corporal punishment in schools is a significant issue that necessitates investigating its occurrence and the possible impacts on those who have encountered it in educational settings.

2. Methods

The present study aimed to explore the experience of corporal punishment in schools within the context of the Czech Republic. The research sought to determine whether students in Czech primary, lower-secondary, and upper-secondary schools encounter corporal punishment administered by teachers. Accordingly, the following research questions were formulated:

1. Did the students entering primary school in the 21st century encounter corporal punishment in schools?
2. What types of physical punishment did the students experience firsthand in schools?
3. What types of corporal punishment did the students witness in schools?
4. What feelings did those who encountered corporal punishment in schools experience?
5. What is the current opinion of those who encountered corporal punishment in schools on its use?
6. What implications can the experience of corporal punishment from school have for current and future life?

To answer the research questions, a questionnaire was used as a methodological tool. It comprised a series of both closed and open-ended questions, allowing respondents to reflect on their experiences with corporal punishment in primary, lower-secondary, and upper-secondary schools. Closed questions aimed to determine the actual occurrence of corporal punishment in schools, while open-ended questions were designed to explore the types of corporal punishment the respondents encountered in schools as well as their feelings and opinions. This approach encourages respondents to freely express their ideas in their own words (Züll, 2016). The questionnaire did not include questions regarding the respondents' age, sex, or gender, as these factors were not considered relevant to the study.

Survey respondents were those who entered primary school in the new millennium, starting in 2001. Data collection took place in 2022 and 2023 using network sampling with a chain effect (Heckathorn and Cameron, 2017). Social media platforms were utilized to distribute the questionnaire, with an invitation to participate posted and shared across various Facebook groups and pages. Consequently, the questionnaire spread uncontrollably on social media as people shared it among themselves. Despite the subjective nature of questionnaire responses and the inability to ask follow-up questions, this research tool effectively addresses a large number of respondents and gathers substantial data in a short period of time (Chráska, 2016).

A mixed research design was employed to investigate the issue of corporal punishment in Czech schools. First, responses to closed-ended questions were quantitatively analyzed to address the first research question. Then, data regarding the types of corporal punishment the respondents experienced firsthand (on themselves) or witnessed at school were also quantified, as the nature of this data does not require detailed qualitative analysis. Finally, an in-depth qualitative analysis was conducted to gain insight into respondents' feelings when encountering corporal punishment in school, and their current opinions on its use in schools. Constant comparative analysis based on the principle of repeated comparison (Švaříček et al., 2007; Corbin and Strauss, 2014) was used to identify similarities and differences in the data obtained from the open-ended questions dealing with respondents' feelings and opinions. Through open coding, responses were systematically analyzed, revealing thematic similarities across respondents' answers, and then grouped into corresponding categories.

3. Findings and Discussion

In this section, the findings of the research will be presented and discussed. Firstly, the outcomes of quantitative analysis will be introduced. Subsequently, the findings of the qualitative analysis will be presented and interpreted, accompanied by selected authentic excerpts from the respondents' statements for individual categories. These will be quoted in italics. Since the essence of the qualitative analysis was primarily an inductive procedure, i.e., a method of inference, the conclusions drawn in the discussion may also extend beyond the explicit data provided in the respondents' texts. For brevity and clarity, the abbreviation 'CP' will be used to refer to corporal punishment.

3.1 Occurrence and types of corporal punishments encountered in schools

The findings indicate that students in primary, lower-secondary and upper-secondary Czech schools experienced corporal punishment (CP) between the years 2001 and 2022/3. Out of the total number of all respondents (N=514), 148 (nearly 30%)

experienced CP on themselves in primary and lower-secondary school, 24 (5%) respondents in upper-secondary school, 276 (nearly 55%) reported witnessing CP in primary and lower-secondary school, and 77 (15%) witnessed CP in upper-secondary school. The data revealed that a substantial number of students either experienced or witnessed corporal punishment at school. Specifically, a higher incidence of both personal experience and witnessing CP was reported in primary and lower-secondary schools compared to upper-secondary schools. This suggests that corporal punishment may be more prevalent in the earlier stages of education.

The most common types of CP (experienced firsthand or witnessed) in primary and lower-secondary schools were slapping on the head or a 'nape scrape'¹ (161 cases), pulling hair or ears (156 cases), throwing an object (keys, marker, chalk) at a student (146 cases), slapping in the face (92 cases), and body manipulation in the form of shaking, squeezing, or pulling body parts (54 cases). Moreover, hitting over the hand with a ruler or a wooden pointer occurred in 50 cases, and hitting over the head with a book occurred in 27 cases. Other less common types of CP reported by the respondents included hitting over the buttocks or back with a hand or an object such as a wooden pointer or ruler, kicking, hitting the head on the desk, grabbing by the neck, sticking chewing gum in hair, poking with a pencil, pinching, forcing the student to kneel, do squats and push-ups, and rewrite texts. Sometimes respondents reported being given the option to choose between corporal punishment and a note to their parents. All respondents chose corporal punishment, as illustrated in those authentic excerpts: (1) *I chose a spank on the ass over a note.* (2) *Most of the time we had a choice - a slap or a note. I opted for slapping, afraid of what would happen at home. My parents still do not know about it.* The option given to students to choose between CP and a note to their parents reflects a coercive environment where children are forced to accept physical punishment to avoid other consequences. This emphasizes the problematic nature of CP as a disciplinary method.

The most common types of CP (experienced firsthand or witnessed) in upper-secondary school included throwing an object (keys, marker, chalk) at a student (62 cases), slapping on the head (45 cases), body manipulation (21 cases), and slapping in the face (14 cases). Other types of punishments reported by respondents were pulling hair or ears, hitting over the fingers, buttocks or back with a ruler or a wooden pointer, hitting over the head with a textbook, and forcing students to stand, do push-ups and squats.

To conclude, the data from this study reveal that nearly 30% of respondents reported personal experiences with corporal punishment (CP), and over 50% witnessed such incidents in their early school years, i.e. in primary and lower-secondary school. While the incidence of CP decreases in upper-secondary schools, with 5% experienced and 15% witnessed, it remains present, albeit to a lesser extent. The types of CP reported by respondents, such as slapping, pulling hair or ears, body manipulation, throwing objects at students, are consistent with the global practices of corporal punishment, as documented in research (Epoch Worldwide, 1992; Paolucci and Violato, 2004; Beazley et al., 2006; United Nations, 2007; Gershoff et al., 2015). Also, other specific acts of CP identified in the data, such as hitting over the hand with a ruler or a wooden pointer, and hitting over the head with a book, parallel documented practices where students are struck with wooden paddles, rulers, or similar objects (Gershoff et al., 2019; Heels et al., 2020; Greydanus et al., 2023).

3.2 Emotional and psychological responses triggered by the use of corporal punishment in schools

Many respondents expressed anger towards teachers for their actions. Moreover, feelings of humiliation were common, often stemming from physical touch or embarrassment in front of peers, coupled with a sense of helplessness. Fear and anxiety pervaded the experiences, leading to reluctance in speaking out or participating in class. Respondents also felt punishments were undeserved and unfair, causing confusion and frustration. After initial reactions, some developed feelings of hatred and a desire for revenge against the teachers. Witnessing CP invoked compassion, especially when classmates were unjustly punished or harmed. In some cases, CP was perceived as deserved or even humorous, particularly where lighter disciplinary actions were viewed as playful. Some respondents also experienced conflicting emotions, such as embarrassment, defiance, compassion, annoyance, and anxiety.

Most of the reported feelings may be classified as negative (196 cases - anger, humiliation and helplessness, fear, injustice, hatred and revenge, compassion), some respondents described their feelings as normal and neutral with no special emotional charge (32 cases), some may be interpreted as positive (18 cases - consent and fun), and sometimes the respondents described their confusion in feelings (8 cases - conflicting feelings). All the emotional and psychological responses were categorized into four categories: Emotional impact, Normalization and justification, Impact on relationship to school and education, and Reduced self-esteem and self-confidence.

- Emotional impact

The respondents' statements revealed a variety of feelings and emotions they encountered both through their direct experience and when witnessing CP in schools. The emotions are listed according to the frequency with which they appeared in respondents' statements and are accompanied by relevant statements from the respondents:

¹ a sharp painful swipe of the thumbnail on the back of the neck from bottom to top

anger: (3) *It annoyed me so much, I was so angry at the teacher for doing such a thing.*

humiliation and helplessness: (4) *I felt humiliated by being touched by a teacher and knowing that he could do anything to me, but I couldn't do anything to him.* (5) *I felt ashamed for not knowing the subject matter and for my classmates seeing it. I felt humiliated in front of my classmates, who were subsequently slapped for laughing.*

fear: (6) *I was afraid to say anything. Even if I knew the answer to a question, I would rather keep quiet or say I didn't know than risk saying the wrong thing.* (7) *I felt fear and anxiety in that teacher's class. I was afraid that if he didn't like something or if I messed up, there would be punishment.* (8) *I didn't understand how someone could be capable of throwing such a sharp object like keys at someone, and I was really worried about my classmate. I was afraid he would do the same to me if I said or did something wrong.*

injustice: (9) *It was for something I didn't do, but the teacher didn't believe me.* (10) *When the teacher slapped me in the face, I felt it wasn't fair and that I didn't deserve it.* (11) *I don't know exactly where the fault was or why it was happening. My classmate hadn't done anything so terrible.*

hatred and revenge: (12) *After recovering from my initial feelings, I felt hatred for the teacher.* (13) *I felt resentment and distrust towards the teacher. I just wanted to get back at him.* (14)

compassion (applies only to witnessing CP): (15) *I felt sorry for those punished unjustly.* (16) *When a teacher hit a classmate with a pointer, it wasn't nice. The girl cried, and I felt sorry for her.* (17) *It was not nice, especially when I saw the blood start to flow after the keys were thrown. I felt sorry for the classmate.*

consent and fun (applies only to witnessing CP): (18) *I thought it was right and deserved. The classmates really did not behave well.* (19) *We thought it was 'fun' in primary school. Mostly, we laughed because the principal would yell and tug on our ears, but he didn't use force; he did it just for fun.* (20) *At first, it seemed like a joke, but we didn't expect him to slap him so hard. Then came the initial shock and fear.*

conflicting feelings: (21) *Embarrassment, deepening feelings of defiance towards authority, compassion for classmates, at the same time compassion for the teacher and annoyance at the behavior of classmates, anxiety about conflicting feelings and powerlessness in the situation.*

To conclude, respondents often experienced a mix of emotions, highlighting the complexity of their reactions to corporal punishment (CP) in schools. This aligns with the concept of didactogeny, where teacher misconduct, including CP, creates a complex emotional landscape for students (Kearney et al., 1991; Goodboy and Bolkan, 2009; Lewis and Riley, 2009). The majority of respondents (196 cases) reported negative emotions such as anger, humiliation, helplessness, fear, injustice, hatred, and a desire for revenge. This indicates that CP in schools is largely experienced as a harmful and distressing practice by students. These findings are consistent with existing research that highlights the immediate and long-term negative emotional, mental, moral, and social consequences of CP (Turner and Finkelhor, 1996; Gershoff, 2002; Aucoin et al., 2006; Matějček, 2007; Cuartas, 2021). A small number of respondents (18 cases) even described positive feelings, such as consent and fun. This suggests the involvement of defense mechanisms where students either trivialize the punishment or align their attitudes with those of authority figures to cope with their experiences. Feelings of compassion, although categorized as negative, indicate empathy towards peers who suffered from CP, suggesting a shared sense of injustice and helplessness within the student community. Moreover, the conflicting feelings reported by some respondents highlight the nuanced and multifaceted impact of CP, reinforcing the idea that its effects are not uniform across all individuals.

- Normalization and justification

Some respondents viewed CP as a regular aspect of child-rearing, believing it to be justified and appropriate, possibly influenced by their own experiences of physical discipline from their parents at home. Although some felt a little embarrassment or the oddness of the situation, most accepted punishment as justified and did not see it as overstepping boundaries, but as a normal and necessary part of upbringing, as illustrated in the following quotes: (22) *Because I was only punished once and justly, I didn't feel wronged, though I was a bit embarrassed. Since I was also physically punished at home, it seemed like a perfectly normal way of education and a deserved punishment.* (23) *It was deserved. I should have paid attention and not interrupted the teacher.* (24) *Sometimes it was appropriate, and I wasn't surprised by how the teacher acted. Although I thought it was strange and probably shouldn't be done, ... but I had also been beaten at home, so I didn't dwell on it too much.* (25) *I think the classmate deserved it; even the mother herself came to thank the teacher for waking her son up.* Describing feelings as normal and neutral may be either

another example of the involvement of defense mechanisms to cope with the negative experience, or the result of societal or cultural acceptance of CP as a disciplinary method.

- Impact on a relationship to school and education

Respondents mentioned that encountering CP at school caused them to develop negative attitudes towards the teachers who used it, some also felt resentment towards the subjects these teachers taught: (26) It left me with very negative memories of the subject. (27) I was afraid of German and developed an aversion to it. For some, this distrust extended to the entire education system and compulsory education. Additionally, CP led to anxiety, nausea, and a reluctance to go to school. Due to fear of making mistakes and subsequent punishment, students were afraid to answer questions, which led to passivity during classes, reduced motivation and, consequently, poorer academic performance: (28) *I experienced anxiety, fear of going to school, and morning sickness. We were forbidden to make mistakes in class, but you can't learn without making mistakes. Now, our class looks like this: the teacher asks a question, and then there is grave silence. This is due to the humiliation from the teachers towards the students.* (29) *I also experienced an inability to concentrate out of fear of not completing tasks on time, leading to a deterioration in my academic performance.*

Overall, the reported feelings highlight how CP negatively affects students' relationships with their school and education. Negative emotions can lead to disengagement, distrust, and resentment towards the school system, which can hinder academic performance and overall school experience. These impacts are echoed in research findings that associate CP with long-term behavioral issues (Turner and Finkelhor, 1996; Gershoff et al., 2019; Heekes et al., 2020).

- Reduced self-esteem and self-confidence

Negative experiences of corporal punishment (CP) at school can have serious and long-lasting effects on a person's self-confidence, self-esteem, and mental health, also influencing their behavior. In some cases, the experience of CP has led to feelings of inferiority and fear of making mistakes. Respondents described how the experience made them afraid to speak up or participate in school activities, leading to passivity and isolation. Some also suffered from physical symptoms such as nausea and vomiting and were under the care of psychologists. As respondents' statements suggest, persistent fear and distrust of authority may continue to manifest in adulthood, both in academic and work settings. The following quotes illustrate all the impacts mentioned: (30) *I underestimated myself; I thought I was stupid, completely useless, and couldn't do anything.* (31) *I was very quiet and hesitant; I was afraid to say anything that might displease the teacher. For a while, I refused to go to school on Mondays, I threw up from fear, and eventually ended up seeing a child psychologist. I didn't start to gain confidence until high school, long after this one teacher taught me.* (32) *I was afraid to speak up, afraid of doing anything wrong, giving the wrong answer, forgetting my textbook, etc., and being physically punished for it, even though it never happened to me. So, I kept quiet a lot, was passive, and preferred not to get involved. Even in college, I'm afraid to speak up in case I say something wrong.* (33) *I feel like I'm afraid at work that something similar will happen if I express my disagreement with my boss.* To conclude, exposure to CP can make students feel powerless and devalued, leading to lasting effects on their personal development, such as fear of making mistakes or difficulty in expressing and asserting themselves. This reduction in self-esteem is corroborated by studies linking CP to various negative developmental outcomes (Turner and Finkelhor, 1996; Gershoff, 2002; Lovasová and Schmidová, 2006; Goodboy and Bolkan, 2009; Cuartas, 2021).

3.3 Retrospective view

In retrospect, many respondents have acknowledged a shift in their views on CP. Initially, they viewed CP as normal and necessary, often reflecting the upbringing they had at home. Some even considered physical punishment justified and natural, likely influenced by its use by authority figures. However, over time, they have come to see CP as inappropriate, recognizing that causing pain to children is unacceptable and viewing it as an improper method of enforcing authority. Presently, respondents recognize the negative impacts of CP on various aspects of their lives, particularly in relationships where they may fear conflict and prioritize pleasing others over their own needs. Despite these reflections, some respondents maintain their belief that light physical punishment, conducted in a humorous manner, can be an effective educational tool. Three subcategories were identified from the statements of respondents regarding the retrospective view of CP:

Change of attitude: (34) *It seemed normal and necessary at the time. In retrospect, I think how perverse it is for a teacher to inflict pain on children and assert authority.* (35) *I suppose it was the upbringing. It was natural to be hit for misbehaving, so we didn't find it strange, even when it came from teachers, unfortunately.* (36) *At the time, I probably took it as: 'they did something wrong, so they deserved it.' It wasn't until the memory resurfaced recently, many years later, that it deeply affected me.* (37) *Because punishments were enforced by authority figures, one could get the impression that it was acceptable. Over time, I have come to realize that it is not and never has been acceptable, and now I am adjusting my perspective.*

Influence on relationships: (38) *I struggle with concerns about what others think and feel the urge to do things that please them, regardless of whether it pleases me. (39) I'm afraid to argue with others to avoid starting a fight. (40) I probably don't understand the whole concept of authority. I am afraid of those in authority, and I can't establish friendly relationships with superiors.*

Same attitude now and then: (41) *In hindsight, I can say that corporal punishment was appropriate in the context of my and my classmates' behavior. It had exactly the effect it should have had, in my opinion. Light physical punishment (a slap) was always carried out in a 'humorous' spirit. The teacher was our class teacher; he knew what he could do and also aimed to instill the best values in us, in short to make something out of us and educate us.*

The retrospective views of respondents on CP vary. Firstly, some reflect a significant shift from acceptance to recognition of its harm. Initially, many respondents viewed CP as normal and necessary, reflecting their upbringing and societal norms. This initial acceptance of CP can align with how the use of CP by authority figures, such as parents and teachers, have been historically justified. This change in attitude aligns with the opinion of experts and researchers that highlight the long-term detrimental effects of CP on children's emotional, mental, moral, and social development (Turner and Finkelhor, 1996; Gershoff, 2002; Kopřiva et al., 2007; Gordon, 2012; Mertin, 2013). Then, some respondents acknowledge that CP has negatively affected their relationships, making them more likely to fear conflict and prioritize pleasing others over their own needs. This suggests that CP can instill a lasting sense of fear and submissiveness, hindering healthy relationship dynamics. These reflections are consistent with the research documenting the adverse effects of CP, including long-term emotional and psychological damage, reduced self-esteem, and impaired social interactions (Gershoff, 2002; Heekes et al., 2020; Cuartas, 2021). Finally, some respondents still normalize and justify the use of CP. This suggests that deeply ingrained beliefs and cultural norms can be resistant to change. The persistence of normalization is reflected in studies showing how societal and cultural acceptance of CP can perpetuate its use across generations, despite its harmful effects (Heekes et al., 2020). The continuity of such attitudes highlights the challenge of eradicating CP and underscores the importance of educational campaigns and policy reforms to shift public perceptions and practices.

3.4 Current attitude on the use of corporal punishment in schools

The majority of respondents clearly oppose CP, disapprove of violence against children, and reject any form of physical violence. However, some respondents believe that 'light' CP, such as slapping, hair pulling, or hand pulling, can be beneficial and consider it an appropriate educational tool in schools. They add that it is important for the use of physical reprimands to be appropriate and well-controlled, and for the teacher to know how much force is acceptable to use. Three categories were elicited out of the respondents' statements: For corporal punishment under certain conditions, Against corporal punishment but with understanding for its use in some situations, and Strongly against corporal punishment.

- For corporal punishment under certain conditions

The following statements show that some respondents approve of the use of CP in schools under certain conditions. They consider it an acceptable and beneficial educational method as long as it is reasonable, does not cause pain or is approved by a parent. Specifically, slapping on the head or pulling hair is perceived as harmless and justified when used in response to a student's behavior that exceeds certain limits. However, respondents oppose the use of harsher corporal punishment, such as the use of the cane:

(42) *Use them, but reasonably and appropriately. I think it's good to slap someone sometimes; it can be a lesson for life. However, it should not be done with the intent to hurt, and the teacher must know the appropriate amount of force to use. Of course, I don't approve of violence against children or hitting someone with a cane.*

(43) *I don't think an educationally appropriate slap would hurt someone. If a student's behavior is really out of line, that's fine.*

(44) *Sometimes it is needed. I would use it. If a student deserves it for their behavior, I have no problem with it. I don't support using canes in classrooms, but a little slapping probably doesn't hurt sometimes.*

(45) *I don't see anything wrong with it as long as the parent agrees, and the teacher isn't outright hurting the kids or causing them any trauma.*

- Against corporal punishment but with understanding for its use in some situations

Some respondents are opposed to CP in principle, however, they acknowledge that in extreme situations, teacher failure and impulsive actions in the form of CP can occur. They understand the frustration of teachers and believe that the use of CP can be understandable in the case of demanding and troublesome situations:

(46) I'm definitely against it. But we're only humans, and I believe that in a very tense situation, it can happen to someone. In such cases, it's important for the teacher to acknowledge their failure and apologize. All of us who have gone through that kind of upbringing at school or at home still have it in us, and it can be hard to control ourselves sometimes. The important thing is to acknowledge it and work on it.

(47) I don't think corporal punishment is a good idea. But I think some kids are unmanageable even at home, let alone at school. How else is the teacher supposed to intervene after that? So, I'm not surprised that sometimes the nerves get the better of them.

- Strongly against corporal punishment

The majority of respondents opposed CP and disapproved of its use. Based on the reasons for rejecting CP in schools, the following subcategories were identified:

Negative impact on child development and teacher-student relationship: Some respondents considered CP inappropriate because it can be harmful to children as well as teacher-student relationships. They believed that CP could lead to negative emotional reactions in children and could have long-term detrimental effects, such as reduced trust in the teacher and negative impacts on children's mental health. Respondents were also concerned that children who experience corporal punishment might internalize this form of discipline and perceive it as normal and acceptable in adulthood: *(48) I think that physical punishment definitely does not belong in school. No one can imagine the feelings a child must experience and then carry with them throughout their lives. It is possible that in adulthood they will then think corporal punishment is acceptable. (49) They only lead to negative feelings towards school. Children learn nothing from corporal punishment; at most, they are afraid to try to answer next time. (50) I think corporal punishment should not be used in schools. It reduces the mutual trust between teacher and students and has a negative impact on the child's psyche.*

Professional failure of the teacher: It was clear from the statements of some respondents that they considered the use of CP a professional failure on the part of the teacher. They perceived CP as a sign of the teacher's inability to communicate effectively with children and earn their respect without the use of CP. At the same time, they emphasized that teachers, as professionals, should be capable of managing their emotions and have sufficient skills and tools to resolve conflicts and handle problem situations with students without resorting to CP: *(51) It is an unforgivable failure of a teacher. I am totally against it. The corporal punishment I saw was only because the teacher ran out of patience. (52) I am absolutely against it. I see it as a failure of the teacher not to know how to approach the children and how to be heard and respected without using physical punishment. A teacher is a professional who has gone through years of study and should not take the shortest route by resorting to physical punishment. (53) It's terribly unprofessional and pathetic. If a teacher has to earn authority through physical punishment, they shouldn't be teaching. Teachers need to be able to control their anger and resolve situations without resorting to violence.*

Against modern society values: Some respondents justified the unacceptability of CP on the grounds of violations of children's human rights. They stressed that nowadays schools should provide a safe environment conducive to education, inspiration, and the overall development of children, rather than infringing upon their rights and causing harm. Additionally, concerns were raised that CP and violence against children in schools may be perceived as normal and acceptable behavior, which in their view is not good for the development of individuals or society as a whole: *(54) I absolutely do not understand how something like this can still occur and be tolerated in the 21st century. Many of us have experienced or witnessed corporal punishment and have felt fear, humiliation, and similar emotions. A teacher simply has no right to do this; it is unacceptable. The school is there to teach the child, not to induce fear or hurt them. Teachers are role models for children, and a role model should not use violence. (55) I do not wish for children to be physically punished in any way in schools. Showing a child that physical assault is acceptable undermines what we as parents, educators, and members of society strive for. (56) I hate corporal punishment anywhere and in any form! I don't understand how 'spanking' can be tolerated in our society as something normal and educational. I feel terribly sorry that children experience this and that when it happens in school, the teacher's own parents sometimes even support it. I think people should really go to jail for this. (57) I totally reject them. I find it ridiculous that anyone these days thinks they have the right to do something like this, to stoop to a level where they would hurt a defenseless child who should see them as an authority figure and look to them for inspiration and understanding. After all, it is a violation of human rights.*

As for the current attitude of the respondents on the use of corporal punishment in schools, several conclusions were drawn. Firstly, some respondents approve of CP under specific conditions, considering it an acceptable educational method if it is reasonable, painless, or approved by a parent. This conditional acceptance contrasts with extensive research showing that even

minor forms of CP can have negative impacts on children's emotional and psychological well-being (Lovasová and Schmidová, 2006; Aucoin et al., 2006). Moreover, it is impossible for the person administering CP to accurately determine the appropriate level of force and ensure that the punishment does not cause pain. The Czech government's stance, stating that physical violence does not belong in any developed society, further opposes any form of CP in education (Vláda ČR, 2013). Secondly, while some respondents disagree in principle with CP, they also express sympathy for teachers' impulsive actions in challenging circumstances. This understanding highlights the need for better support and training for teachers in effective communication and conflict resolution skills, which are essential for maintaining discipline without physical punishment, as suggested by some authors (Kopřiva et al., 2007; Gordon, 2012; Mertin, 2013). Finally, some respondents viewed CP as a professional failure. This perception aligns with the concept of didactogeny, where CP is considered a form of teacher misconduct (Kearney et al., 1991; Goodboy and Bolkan, 2009; Lewis and Riley, 2009; Li-I Hsu, 2014). In addition, some respondents justified the unacceptability of CP based on the violation of children's human rights. They stressed that schools should provide a safe environment conducive to education and overall development, rather than infringing on rights and causing harm. This view aligns with international agreements and standards that mandate the protection of children from all forms of violence (United Nations, 1989; Council of Europe, 1996, 2004; Pinheiro, 2006).

3.5 Implications for current and future life

Based on their negative experience, some respondents emphasize their opposing stance against CP, and advocate for respectful approaches to education. They stress the role of empathy and supportive and respectful educational practices that prioritize children's well-being and healthy development, both academically and emotionally:

(58) *As a future teacher, I know that I will not use corporal punishment and will be prepared to take action against those who do.*

(59) *As a kindergarten teacher, I've sometimes heard from parents of children: 'So spank him or slap him, you have my permission.' But I refuse to do it that way.*

(60) *I will teach my son that it is not okay for someone to do something he does not like. Just as I will teach him to respect others.*

(61) *I had to take antidepressants from eighth grade on, and I ended up hospitalized in high school after a suicide attempt. I have distrust of teachers and the school system. As a parent, I started a community school, and will never put my children in a public school.*

Respondents' emphasis on the need for respectful educational practices for children's well-being is supported by extensive research. Studies suggest that physical discipline can have both immediate and long-term negative effects on children, harming their emotional and psychological well-being and contributing to issues such as increased depressive symptoms (Lovas & Schmid, 2006; Aucoin et al., 2006; Gershoff et al., 2019; Heekes et al., 2020).

4. Conclusion

The findings from this study reveal that at least one-third of the respondents – Czech students entering primary school in the 21st century – encountered corporal punishment in school. The punishment mainly took the form of slapping on the head or a 'nape scrape,' throwing objects (keys, markers, chalk) at students, pulling hair or ears, slapping in the face, hitting over the hand with a ruler or a wooden pointer, and body manipulation such as shaking, squeezing, or pulling body parts. The range of emotions reported underscores the complexity of students' experiences with corporal punishment, suggesting that individual differences can play an important role in how students process and respond to it.

The prevalence of negative emotional responses and the associated psychological impacts mentioned by the respondents highlight the need to eliminate corporal punishment from schools. This can be achieved by enforcing strict regulations against its use and implementing potential policy interventions. Moreover, the outcomes may have implications for teacher training, specifically in terms of increasing awareness about the harms of corporal punishment, creating a safe and supportive school environment, and adopting more respectful approaches to classroom management.

Naturally, when interpreting the findings and drawing conclusions, certain limitations must be acknowledged. For example, there is always a risk of inaccurate information provided by respondents, who may give false information or exaggerate their views and experiences. Since corporal punishment is a sensitive topic, it is important to recognize that for some individuals it may be associated with negative emotions, which increases the likelihood of biased responses. Thus, although the findings cannot be generalized, they provide valuable insights into the nature and prevalence of corporal punishment in Czech schools, reinforcing the call for further investigation and eradicating this harmful practice from educational settings.

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Measuring Hospital Efficiency: Evidence from European Union Countries

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Abstract

This research uses a specific set of inputs and outputs that are directly tied to the hospital system. Its objective is to assess the hospitals' efficiency in the member states of the European Union. The non-parametric DEA input-oriented (Data Envelopment Analysis) method of calculation was employed to realize the study's initial purpose, utilizing data from the EUROSTAT database and from the national healthcare databases for 22 European Union countries for the period 2013–2021.

Furthermore, this research considers some exogenous factors related to the efficiency level under examination, which are unique to the nations in question and may influence the technical efficiency examined through the use of censored Tobit regression.

The results of the Tobit analysis indicate that the population served by the medical service, gross domestic product, utilization of hospital capacities, and hospital ownership (public or non-public) have a significant impact on hospital production efficiency.

In conclusion, it can be stated that hospitals remain a highly complex system that is sensitive to social, economic, or even epidemiological crises (e.g. the COVID-19 pandemic). In light of the mounting challenges and pressure on the hospital systems of various countries within the European Union, it is of paramount importance to ensure the optimal utilization of available resources and to study the most effective country models to provide an appropriate service to the population (potential patients).

Keywords: Hospital Efficiency, DEA Model, Tobit Regression, European Union.

1. Introduction

Since its inception, the EU has expanded through several rounds of enlargement, gradually increasing its membership from the original six founding states to its current 27 member states (Croatia became the newest member in 2013). The enlargement of the EU has brought various benefits and challenges: it has opened new markets and increased trade opportunities for existing and new member states. However, it has also posed challenges in terms of economic convergence, as some of the new member states have struggled to catch up with the more developed economies of Western Europe. Consequently, the European Union is currently comprised of several nations, each exhibiting distinctive institutional, historical, social, and cultural characteristics. These attributes also exert an influence on the performance of different economic sectors, including the health sector, in terms of the provision of goods and services.

The healthcare systems of the European Union are currently distinguished in three dimensions: (1) the applied healthcare model, (2) co-payments of patients, and (3) remuneration of physicians. (Jakubowski and Busse, 1998; Kaminska, 2022; MSSSI, 2020)

In terms of healthcare organization and financing, there are two representative models: a. The Beveridge model and b. Bismarck model, each named after the architects of their respective systems, William Beveridge and Otto von Bismarck. The Beveridge Model aims to provide universal healthcare coverage to all residents, regardless of their ability to pay. It is often associated with publicly funded healthcare systems, where the government is the primary provider of healthcare services.

In the Beveridge model (Spain, Portugal, Italy, Finland, Sweden, Denmark, Ireland, Latvia, Cyprus, Malta) healthcare services are typically organized and managed by the government or a central authority. This centralized approach allows for greater coordination and control over healthcare delivery and resource allocation. Financing for healthcare in the Beveridge model is primarily through general taxation. While some Beveridge model systems may allow for supplementary private insurance or out-of-pocket payments for certain services, the primary mechanism for financing healthcare is through taxation, with the goal of ensuring equitable access for all citizens.

In the Beveridge model, which is often associated with publicly funded healthcare systems like the National Health Service (NHS) in the UK, patient co-payments are generally minimal. The principle of universal access to healthcare regardless of ability to pay is a cornerstone of the Beveridge model. Therefore, most healthcare services are funded through general taxation, and patients typically do not face significant out-of-pocket expenses when accessing care within the public system. However, there may be some exceptions where co-payments are applied for certain services, such as prescription medications, dental care, or optometry services. These co-payments are usually modest and may be waived for certain groups, such as children, the elderly, or low-income individuals.

Physicians in Beveridge model systems generally receive a fixed salary, regardless of the number of patients they see or the services they provide. This salary-based remuneration model aims to ensure equitable access to healthcare services and prevent financial incentives that may influence medical decision-making. However, there may be additional performance-based incentives or bonuses tied to factors such as patient satisfaction, quality of care, or meeting certain clinical targets. These incentives are designed to promote high-quality care and efficiency within the healthcare system.

The Bismarck model (Germany, France, Belgium, Netherlands, Luxembourg, Austria, Croatia, Slovenia, Slovakia, Czech Republic, Hungary, Bulgaria, Romania, Poland, Estonia, Lithuania, Greece) is based on social insurance principles, where healthcare coverage is linked to employment and contributions to a social insurance fund. It is often associated with compulsory social health insurance systems. Funding for healthcare in the Bismarck model comes primarily from contributions by employers and employees, typically as a percentage of wages. These contributions are pooled into a fund that finances healthcare services for insured individuals. While the Bismarck model emphasizes social insurance and employer-based coverage, healthcare services may be provided by a mix of public and private providers. This pluralistic approach allows for competition and choice in healthcare delivery. In addition to social health insurance, individuals in Bismarck model systems may have the option to purchase supplementary private insurance to cover additional services or to access care more quickly. The healthcare systems in Germany, and France, are often cited as examples of the Bismarck model, where social health insurance plays a central role in financing healthcare, and healthcare delivery is provided by a mix of public and private providers.

In the Bismarck model, patient co-payments are more common than in the Beveridge model. Under social health insurance systems like those found in Germany or France, patients typically contribute to the cost of healthcare through co-payments or coinsurance. Co-payments in the Bismarck model may vary depending on the type of service and the specific insurance plan. For example, patients may be required to pay a fixed amount or a percentage of the cost for doctor's visits, hospital stays, or prescription medications. Additionally, there may be annual caps or exemptions for certain groups to protect individuals from excessive financial burden. The level of patient co-payments and the extent of coverage can vary significantly between countries with Bismarck model systems. Some countries may have supplementary private insurance options to cover co-payments or provide additional benefits beyond the basic social health insurance coverage. Overall, while patient co-payments are generally minimal in Beveridge model systems, they are more common and may be more substantial in Bismarck model systems, where social health insurance plays a central role in financing healthcare.

In the Bismarck model¹, which is based on social health insurance principles and employer-based coverage, physicians may be remunerated through various mechanisms, including fee-for-service, capitation, or salary arrangements. Under fee-for-service arrangements, physicians are paid a predetermined fee for each service or procedure they provide. This payment model incentivizes high patient volume and may lead to concerns about overutilization of services. In capitation models, physicians receive a fixed payment per patient enrolled in their practice or healthcare organization, regardless of the services provided. This payment model encourages physicians to focus on preventive care and managing the overall health of their patient population. Some physicians in Bismarck model systems may be employed by public healthcare institutions or receive salaries from social health insurance funds. Similar to the Beveridge model, salary-based remuneration aims to align incentives with patient care and quality outcomes rather than service volume. In addition to these primary remuneration models, there may be performance-based incentives or bonuses available to physicians in Bismarck model systems, similar to those found in Beveridge model systems. It can be argued that, despite the complexity and diversity of perspectives and traits among the 27 European Union member states' health systems, the goal of all of them is to increase the efficiency and efficacy of the health services they provide. This study focuses on hospital productivity efficiency in the European Union countries. Increasing hospital efficiency within the European Union is essential to improving healthcare delivery, guaranteeing sustainability, and getting the most out of healthcare spending. The issue of hospital efficiency remains a challenge and a crucial objective in achieving the ultimate goal of any health system. This is because it contributes, together with other factors, to a reduction in mortality and morbidity and an improvement in patients' quality of life (Kaveri, 2022; Wilson, 2016; ISSA, 2024).

The research comprises five sections. Section 2 presents the theoretical and empirical contributions to the definition and calculation of the hospital efficiency. Section 3 outlines the data and methodology employed. Section 4 presents the results and discussion of the empirical research. Finally, Section 5 presents the research conclusions.

2. Literature Review

For many academics, evaluating organisational structures in light of their performance, whether absolute or relative, represents both an interest and a difficulty. This assessment's fundamental tenet is the productivity of inputs, which are combined to produce

¹ “After World War II, Soviet domination entailed the introduction of a Soviet model of medical provision, the so-called Semashko system, in all countries of the region ... [Central and Eastern Europe Countries] — with the exception of the Socialist Federal Republic of Yugoslavia, which maintained its SHI (Social Health Insurance) - based healthcare system. In the 1990s, Central and Eastern Europe (CEE) countries (except for Latvia) moved away from tax-based financing of healthcare in favour of social health insurance (SHI)... rather than strictly following the Bismarckian blueprint, CEE healthcare systems have developed into hybrids, combining Bismarckian, Beveridgean and private healthcare elements, thus diverging from Western European points of reference as well as among each other” in Kaminska, M.(2020).

an output, which is a service or good. An essential measure of the economic activity of that structure is the production unit's high productivity, which is related to the industry of which it is a part.

This is particularly true of hospital structures, which are characterised by aspects that differentiate them from many other organisational structures. Consequently, the evaluation of their performance is more complex, as the quantitative evaluation is often mixed with qualitative evaluations that are partly outside the context of the economic evaluation (such as ethical aspects).

Notwithstanding the aforementioned considerations, hospital systems represent a crucial organisational structure within the social and economic context of a nation. Consequently, it is imperative that they be managed in an efficient and economically sustainable manner. The performance of hospital structures can be analysed in two distinct ways: efficacy analysis and efficiency analysis. The distinction between these two analytical models hinges upon the outputs considered. In efficacy analysis, outputs that are most closely related to the health situation of the population in general (life expectancy of the population, mortality of the population) are analysed (Kozun-Cieślak and Zdražil, 2021; Medeiros and Schwierz, 2015; Dincă et al., 2020; Asandului et al., 2014). In contrast, in efficiency analysis, outputs that are directly related to hospital activity (in-patient, out-patient, average length of stay, occupancy rate, etc.) are considered (Mateus et al., 2015; Jung et al., 2023). This study employs an efficiency analysis, which allows for the verification of the impact of production factors on a service or product. Unlike the efficacy analysis, which considers indicators that depend on other factors, such as genetics, the environment, nutrition, etc., the efficiency analysis is based on the direct impact of production factors on the service or final product.

With regard to the factors that can influence the productive efficiency of an organisational structure in the healthcare market, there is considerable overlap with the factors identified in economic theory. These include consumer (patient) satisfaction, the utilisation of technology, the availability of quality human resources, the allocation of inputs, the optimisation of production processes, the relationship with suppliers and distributors, the potential for economies of scale (business size), the manner of organisation by the central government, competition and demand, research, and innovation (Thuy et al., 2023; Tuan and Nguyen; Makrikadis, 1996; Pham and Vu, 2019).

The assessment of hospital efficiency employs a range of methodologies, including production theory-based frontier methods and ratio analysis. However, ratios are a disjointed approach to quantifying unit costs and capacity utilisation, as they do not adequately consider the diverse inputs and outputs produced by hospitals. One potential solution to this limitation of ratio techniques is the utilisation of frontier methods. The two most popular types are parametric stochastic frontier approaches, which employ econometric methods and incorporate production and cost functions, and data envelopment analysis (DEA), which is a non-parametric, data-driven methodology that involves mathematical programming. Many studies employ a two-stage technique to measure efficiency determinants. To determine their impact on efficiency, they first compute efficiency scores and then regress them against proposed explanatory factors (Asbu et al, 2020).

In their study, Mateus et al. (2015) employed both cross-sectional and panel data for hospital discharges from England (2005–2008), Portugal (2002–2009), Spain (2003–2009), and Slovenia (2005–2009). They then proceeded to evaluate and compare hospital efficiency levels within and between countries using stochastic frontier analysis. The weighted number of hospital discharges was considered an output, while the number of beds, physicians, nurses, and employees were chosen as inputs for the production function. The findings indicate that beds and labour are important inputs for the production process in all countries except Slovenia. Jeremic et al (2012) analysed the health status of the 27 countries belonging to the European Union by employing a statistical Ivanovic-Jeremic Distance Based Analysis (DBA) on various health indicators. The subsequent outcome of the Distance Based Analysis has shown that Cyprus and Ireland have a most efficient health system sectors. Greece also has exceptional indicators of health service. In their research, Babalola et al. (2022) investigated the impact of various variables on the technical efficiency of 38 public district hospitals in KwaZulu-Natal province (South Africa) between 2014–15 and 2016–17 using data envelopment analysis (DEA). The results indicated that several district hospitals exhibited a lack of technical efficiency when the Tobit regression model was employed to identify the parameters associated with the technical efficiency of the hospitals. The findings of the Tobit regression model indicate that improvements in health-seeking behaviour and the efficiency of the referral system can both enhance the technical efficacy of district hospitals. Alawi et al. (2020) investigated the effect of environmental and institutional factors on the efficiency of public hospitals in the Kingdom of Saudi Arabia (KSA) estimating the demographic and socioeconomic characteristics of catchment populations that explain the demand for health services using the DEA method and in a second stage the Tobit regression analysis concluding that environmental and institutional factors have a crucial effect on efficiency and performance in public hospitals. In the same manner, Al Subhi (2022) assessed the technical efficiency, and determinants of technical inefficiency of 29 local hospitals in Oman using an Input-oriented Data Envelopment Analysis (DEA) approach. The results suggested that one-quarter of local hospitals in Oman were technically inefficient Tobit's model suggested that the number of physicians and pharmacists is negatively and significantly correlated with the efficiency score. Furthermore, the analysis suggested that the number of outpatient visits is positively correlated with the efficiency score and local hospitals showed a productivity growth of 18.1% during 2015-2018, mainly attributed to the increase in technological change. In their study, Eke and Oburota (2019) examined the impact of hospital size on technical efficiency in Nigeria. They found that while medium-sized hospitals exhibited greater scale inefficiency than small hospitals, private hospitals were more inefficient than public

hospitals. The number of beds and the number of patients seen (NPS) were the primary determinants of hospital efficiency, with both factors exerting a favorable and substantial influence. The report proposed the reduction of health and safety programmes and user fees, which might facilitate hospital growth and enhance the overall effectiveness of hospitals. Wang et al. (2018) used data from the 2012–2013 fiscal year to assess the technical efficiency of acute inpatient treatment at the pan-Canadian level and investigate the factors linked to inefficiency. The authors divided hospitals into three peer groups—teaching, big, and medium—and subjected them to data envelopment analysis, with an emphasis on their acute inpatient treatment. In the regression analysis, the double bootstrap approach was used. By addressing inefficiencies, acute hospitals in Canada may potentially improve their level of outcomes (quantity and quality). In order to achieve efficiency gains, teaching, big, and medium-sized hospitals should consider distinct policy and management implications for the primary drivers of acute inpatient care, which differ within hospital peer groups.

Concerning the European Union as a whole, empirical studies concerning the efficiency of hospital systems are scarce and are predominantly related to efficacy analysis (Kosun-Cieślak and Zdrzil, 2018; Medeiros and Schwierz, 2015; Dincă et al., 2020; Asandului et al., 2014). The studies related to specific countries, members of the European Union, are more numerous, although compared to other countries of the world, they are in small numbers (Jung et al., 2023). Vrabková and Lee (2023) evaluated the technical efficiencies of all general hospitals in the 16 federal states of Germany for the period from 2015 to 2020. The study employed a two-step approach, combining an input-oriented DEA with a Tobit regression. Although the average technical efficiency level was approximately 90%, total technical efficiency declined gradually from 2015 to 2020. The lowest point was observed in 2020, with an efficiency score of approximately 78%. Based on the Tobit regression analysis, it can be concluded that the change in the efficiency score can be explained only partially by the influence of exogenous factors. In their study, Diaz et al. (2020) employed the DEA model in conjunction with a GLMM to analyse the factors associated with hospital efficiency. They evaluated the relationship between hospital ownership structure and efficiency during the economic crisis period of 2010–2012 in Spain. Their findings indicated that PPP (public-private partnership) formulas were associated with enhanced hospital efficiency during the most acute period of recession in the Spanish economy. The efficiency of a hospital was found to be correlated with the socio-economic status of the surrounding area.

3. Data and Methodology

Following previous research, this study utilised data from curative hospitals and five variables (two outputs and three inputs) to implement the DEA technique, as described in the study by Charnes et al. (1978). The data was sourced from EUROSTAT and gathered for 22 countries between 2013 and 2021. Bulgaria, Luxembourg, Greece, Latvia, and Slovakia were excluded from the analysis due to the lack of data.

Table 2. Descriptive Statistics (DEA Variables)

Year	Statistics	In-patients	Surgical procedures	Hospital beds	Physicians	Expenditure
		OUTPUTS		INPUTS		
2013	Average	1902	16803	520	179	848
	St.dev	492	5502	167	50	582
	Max	3055	29965	828	303	2195
	Min	993	7760	256	117	136
2014	Average	1953	16819	514	184	862
	St.dev	479	5650	170	60	588
	Max	3100	31545	823	379	2238
	Min	1305	7787	254	90	145
2015	Average	1939	16653	510	187	893
	St.dev	477	5655	169	60	597
	Max	3072	31474	813	381	2287
	Min	1331	6918	244	95	153
2016	Average	1959	16726	506	191	916
	St.dev	512	5549	168	61	604
	Max	3093	31063	806	391	2323
	Min	1327	7607	234	104	172
2017	Average	1946	16593	501	196	948
	St.dev	515	5675	170	62	612
	Max	3073	32342	800	394	2366
	Min	1277	7700	221	106	205
2018	Average	1929	16491	496	199	991
	St.dev	522	5805	171	65	615

	Max	3056	33604	798	412	2397
	Min	1254	7604	213	108	226
2019	Average	1910	16396	490	205	1045
	St.dev	519	5824	173	64	633
	Max	3076	33993	791	401	2454
	Min	1311	7878	207	108	234
2020	Average	1613	13310	485	209	1125
	St.dev	438	4664	173	64	668
	Max	2781	26928	782	401	2613
	Min	997	5465	205	117	300
2021	Average	1741	13704	482	214	1209
	St.dev	469	4371	175	66	678
	Max	2785	26295	792	412	2680
	Min	1010	6743	200	128	341

- **In - patients** (100000 pop.) are patients who are formally admitted (or 'hospitalised') to an institution for treatment and/or care and stay for a minimum of one night or more than 24 hours in the hospital (100000 pop.)

- **Surgical procedures** (100000 pop) are medical interventions involving an incision with instruments usually in an operating theatre and normally involving anesthesia and/or respiratory assistance.

- **Hospital Beds** (100000 pop.) cover beds accommodating patients who are formally admitted (or hospitalised) to an institution for treatment and/or care and who stay for a minimum of one night.

- **Physicians** (100000 pop.): Number of physician specialists that focus on a specific area of medicine or a group of patients to diagnose, manage, prevent, or treat certain types of symptoms and conditions.

- **Expenditure** (Euro per inhabitant): Hospitals health care expenditure.

Source: of Author

The following variables have been included in the Tobit model (Amore and Murtinu, 2021) to explain the observed inefficiencies, following pertinent literature: bed occupancy rate, hospital ownership (public or private), year, health care system (Bismarck or Beveridge), country size (people), and GDP (million euros).

The analysis of technical efficiency is conducted in two stages. Initially, the input-oriented Data Envelopment Analysis (DEA) Model, the most prevalent model due to the greater influence of hospital systems on reducing costs than on increasing hospital income, was employed to calculate the relative technical efficiency in this research utilising its fundamental framework (Vrabková and Lee, 2023). To perform this evaluation, it was first essential to establish the minimum number of countries (also known as Decision-Making Units or DMUs). Depending on various factors, this number often ranges from 15 to 20 (Boussofiane et al., 1991; Golany and Roll, 1989). Once there are 22 DMUs with normalized and standardized datasets, the next phase can be initiated. In the second stage, a regression analysis is performed to relate efficiency scores to factors for investigating their influence on the relative efficiency in the provision of health care services (surgical procedures and number of in-patients). As technical efficiency scores fall within the interval [0–1], this study employed Tobit regression, a more popular model than OLS regression, to estimate linear relationships between variables when the dependent variable has either left- or right-censoring (Amore and Murtinu, 2021):

$$\text{CountryEffnt} = \beta_0 + \beta_1\text{HCSnt} + \beta_2\text{GDPnt} + \beta_3\text{ORnt} + \beta_4\text{HOnt} + \beta_5\text{CSnt} + \beta_6\text{YEARnt} + \text{ent} \quad (1)$$

where, CountryEffnt = Efficiency of nth country at time t; β_0 = constant; CSnt = Country Size of nth country at time t; GDPnt = Gross Domestic Product of nth country at time t; HCSnt = Health Care System adopted by nth country at time t; ORnt = Bed Occupancy Rate of nth country at time t; HOnt = Hospital Ownership of nth country at time t; YEARnt = Tecnichal efficiency position of nth country at time t; ent = error term of nth country at time t; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Tobit regression coefficients.

Tobit analysis can be explained with the following model:

$$Y_{nt}^* = \beta X_{nt} + \mu_{nt}, Y_{nt} = 0 \text{ if } Y_{nt}^* \leq 0 \text{ and } Y_{nt} = 1 \text{ if } Y_{nt}^* \geq 0, \quad (2)$$

where Y_{nt} is the dependent variable measured by Y_{nt}^* as the latent dependent variable of the efficiency. Error is shown by μ_{nt} . β is the set of measured parameters in (1).

4. Results

Figure 1 indicates the results obtained from the input-oriented DEA model with a constant return to scale. The average efficiency for the period is 94% (St. dev. = 1%; min. = 61%; max. = 100%). The efficiency level represents fluctuations for all countries, except for Ireland, Sweden, Belgium, and Lithuania, where the efficiency level consistently maintains a 100% score.

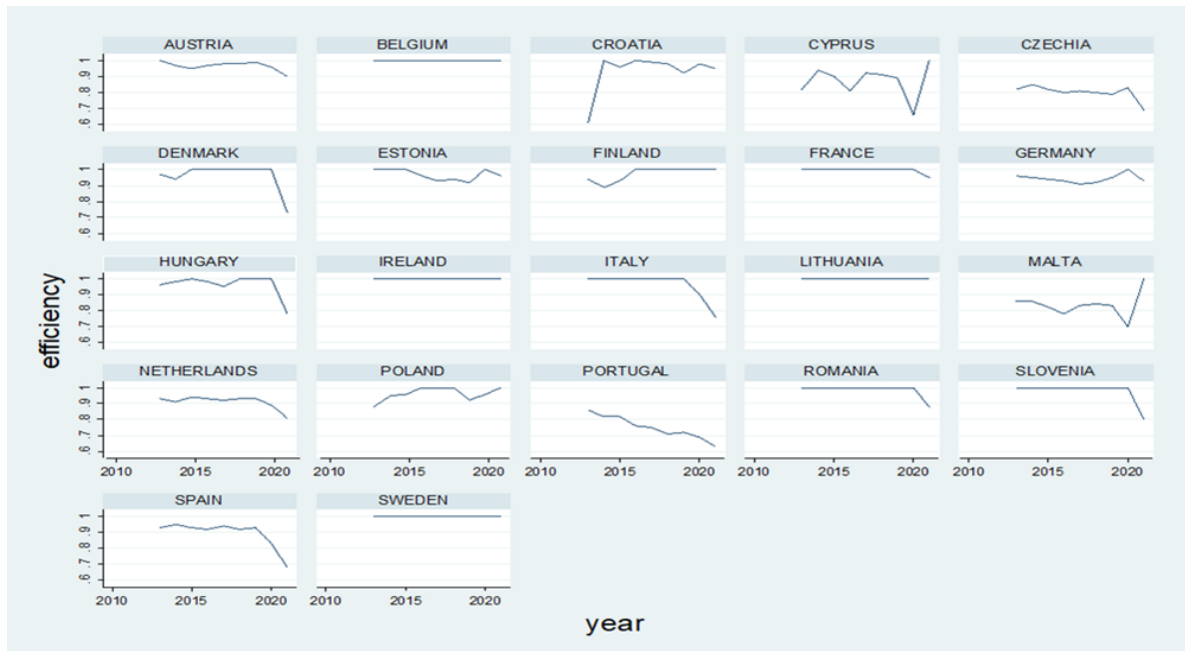


Figure 1. Hospital efficiency score trend, by country (2013 – 2021), Source: of Author

It can be observed that most countries have demonstrated a decline in efficiency scores, particularly during the period 2020-2021. This coincides with the global pandemic of COVID-19. As evidenced by numerous studies, management efficiency has decreased in recent years, not only due to epidemic-related factors but also due to managerial considerations (Lupu and Tiganasu, 2022; Vrabková and Lee, 2023). The results of the analysis of this study demonstrate that in terms of inputs, the average quantity of beds is satisfactory. However, inefficiencies remain with hospital spending and the number of doctors. Therefore, it is necessary to reduce hospital spending and the number of specialist doctors relative to the most efficient countries. It is also widely acknowledged that reductions in the number of personnel employed in essential roles may have a detrimental impact on the quality of services provided, particularly if the hospital budget is under pressure (Vankova and Vavrek, 2020; Harris et al. 2007). Figure 2 presents the average production efficiency of all 22 nations examined in each reference year. The data indicates a declining trend in the level of production efficiency between 2013 and 2021.

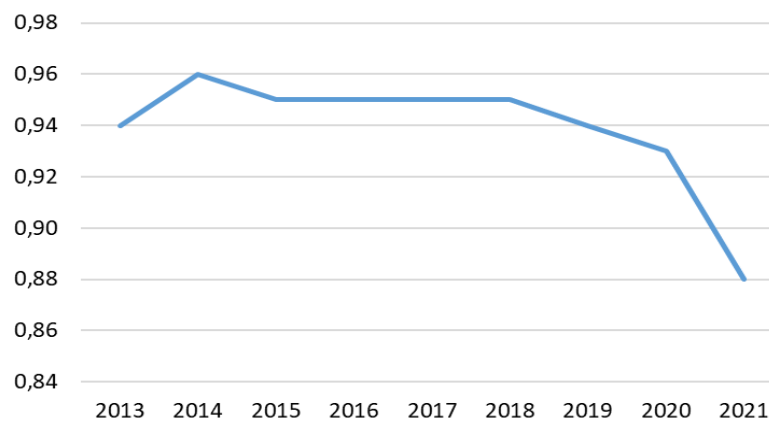


Figure 2. Average productive efficiency EU countries (2013 – 2021), Source: of Author

To verify the significance of this trend over time, this study also included the time variable (year). After detecting the variable absence of multicollinearity and first-order autocorrelation $F(8, 188 = 14.81, Prob > F = 0.000)$, it can proceed with the pooled

Tobit regression analysis. The regression results indicate that there is a significant negative trend in hospital efficiency levels. Furthermore, the size of the population served by the hospital service has a significant influence on hospital efficiency (Table 2).

Table 2. Tobit Regression Results

Random-effects Tobit regression		Number of observations	=	197
		Number of groups	=	22
Log likelihood = 38.997		Wald chi2(9)	=	44.47
		Prob > chi2	=	0.0000
Efficiency	Coef.	Std. Err.	z	P > [z]
HCS	0.014	0.055	0.26	0.769
GDP	0.098**	0.046	2.12	0.034
OR	- 0.002*	0.001	-1.79	0.074
HO	0.001**	0.000	2.06	0.039
CS (population)				
5.000.000 – 10.000.000	- 0.113	0.126	-0.90	0.368
10.000.000 – 20.000.000	- 0.224*	0.131	-1.72	0.086
20.000.000 +	-0.337*	0.197	-1.71	0.087
year	-0.016***	0.004	-3.85	0.000
cons	31.588	7.999	3.95	0.000
sigma u	0.110	0.023	4.89	0.000
sigma e	0.088	0.007	12.84	0.000
Rho	0.612	0.09		
Likelihood-ratio test of sigma_u =0: chibar2(01) = 81.86 Prob >= chibar2 = 0.000				

Source: of Author

In comparison to states with larger populations, states with smaller populations tend to be more efficient. This study has not corroborated the aforementioned result in other empirical findings that demonstrate the productive efficiency of the hospital system of small countries in comparison to large countries. However, if we consider the economic theory on productivity, it appears that the result is contradictory because economies of scale are more effective in large countries than in small countries. However, when regional integration is strong and the service or good offered is a mixed good, the advantages of country size (usually measured by population) appear less clear. This is the case of the countries of the European Union, where supranational integration is large and the hospital and sanitary service is a mixed good (Alouini and Hubert, 2019; König, 2015; Casella, 1996). The research results indicate that the influence of the nation's socioeconomic circumstances is the most important factor in impacting the hospital efficiency score. Richer countries have higher production efficiency than other countries. Such a result finds a wide consensus, either in the theoretical aspect or in empirical research. Conversely, hospital efficiency is not significantly impacted by the organization of the health care system, whether Beveridge or Bismarck. Indeed, numerous empirical studies have not reached a definitive conclusion regarding the systemic nature of the organisation itself. In certain instances, one system may be more successful than the other, or there may be no discernible difference between the two systems (Shufani, 2023; Kozuń-Cieślak and Zdrzil, 2021; Moisiou, 2022). Despite the significant impact of hospital ownership and occupancy rates on hospital efficiency in this study, there is no evidence that these factors have an important effect on hospital efficiency. Empirical research provides evidence that the aforementioned metrics have an unclear impact on hospitals' efficiency, due to different reasons (Tiemann et al., 2012; Keegan, 2010; Bosque-Mercader and Siciliani, 2022).

5. Conclusions

This study analysed the production efficiency of the curative hospitals of the countries in the European Union and the factors that eventually affect the efficiency score. The results of this research demonstrate that, under the non-parametric DEA model and the variables considered, the countries of the European Union perform well. Nevertheless, when countries are compared with each other in a benchmarking context, it becomes evident that there is scope for improvement, particularly concerning hospital expenditure. While the situation about the number of beds is favorable, as almost all countries in the European Union have implemented reforms to reduce the number of beds in hospitals. Conversely, the revision of the numbers of specialised doctors is more challenging, as the movement of this number would affect not only the number of services but also their quality (given that specialist doctors have a key role in hospitals).

Regarding the factors that affect the productive efficiency of hospitals, it can be stated that the most significant and influential role in the productive efficiency of the hospital system is played by the social and economic situation of a country. This implies

that the economic development of a country continues to exert a significant influence, even in regions where converging economic, social, and political policies have been implemented for decades.

The findings of this study indicate that policymakers should be more attentive to critical situations, whether of a sanitary, social, or economic nature. The observed decrease in efficiency over recent years is evident throughout the period but is particularly pronounced in the last two years, which were characterised by the presence of the COVID-19 epidemic. Furthermore, the intensified pressures on the health system, as a consequence of demographic shifts (principally the aging of the population), and the challenges encountered by some developed countries with decreased numbers of doctors, indicate the necessity for the implementation of strategies to ensure the continued maintenance of hospital productivity, which at the regional level exhibits relatively high figures.

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