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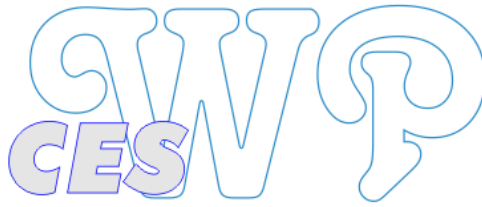
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Social legitimacy-based deterrence: an effective strategy against non-military threats

Fitri Anggraeni Sekar DWIANTI*, Asep Adang SUPRIYADI**

Abstract

Strengthening the civil defense posture is crucial due to the transformation of threats to national security, which are no longer limited to conventional military aggression but also in non-physical forms such as social conflicts, and cyberattacks. This research uses a literature based qualitative descriptive approach, using international scientific journals as data sources and thematic analysis to examine social and civil defense as a non-military deterrence strategy. The deterrence approach based on social legitimacy is considered more relevant in dealing with modern threats. In the European Union, this strategy implies the need for policy integration between civil defense and governance. Modern European Union strategies advocate a whole of society approach involving citizens, civil society, and government actors to enhance preparedness and societal resilience against these threats. By prioritizing a sociological approach and strengthening social legitimacy, the state can create a non-military deterrence system that is effective, and sustainable in accordance with contemporary threat dynamics.

Keywords: civil defense posture, non-military deterrence, social legitimacy, strategy non-military

Introduction

National security is the main foundation for the sustainability of a country. From a strategic perspective, the pillars of national security not only serve to maintain sovereignty, but also ensure political, social, and community stability. So far, the defense paradigm tends to emphasize the military aspect as the main instrument of deterrence. The dynamics of contemporary global and domestic threats show that threats to the state are no longer limited to conventional military aggression, but extend to non-physical forms such as disinformation, radicalism, horizontal conflicts, pandemics, and cyberattacks. This transformation marks a shift from *hard security* to *comprehensive security*, which requires the state to reorganize its defense strategy by including social, psychological,

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and cultural aspects as determining factors. For example, the United Kingdom with its military dominance uses the concept of future warfare to strengthen defense institutions and maintain its country's influence in the field of security (Morgan-Owen and Gould, 2022). Then in India, the dominance of bureaucratic civilian oversight can hinder the effectiveness of the military so that reforms are needed for its civilian and military (Mukherjee, 2022). Indonesia, different from the two cases, places civil defense as an important part of the universal defense system by integrating the Indonesian National Armed Forces, the National Police, and civil society in maintaining national stability. This context confirms that civil defense is not just a backup in emergency situations, but a strategic pillar that determines the sustainability of national security. Threats to state sovereignty are no longer limited to conventional military attacks, but extend to include forms of non-military threats such as natural disasters, cyberattacks, pandemics, disinformation, and horizontal social conflicts. This development reflects a paradigm shift in the national defense sector, where multidimensional threat dynamics are increasingly prominent in the contemporary global context. This situation demands a more comprehensive security approach, involving all elements of the nation, including civil society, and relying on armed forces as an integral part of the defense system. One response to this complexity is to strengthen one of the important pillars of the national security system, namely strengthening civil defense. Civil defense is not just a support system for emergencies, but it is a systematically organized social structure to improve the preparedness, resilience, and response capacity of communities to crises. The lack of attention of the civilian elite to national security policy can weaken political control over the military and hinder effective defense reforms, so structural reforms are needed in the form of strengthening civilian institutions and developing a comprehensive policy framework to balance civil-military relations (Lima, *et al.*, 2020). Strengthening the civilian defense posture through social legitimacy is a strategic way to ensure that the defense system is not only resilient to physical threats, but also able to prevent social disintegration originating from within the country through actions such as building public trust in state institutions, strengthening solidarity between social groups, increasing public security literacy, and creating inclusive dialogue spaces to prevent the emergence of potential social conflict. The role of civil society in the national defense system is to support the country's defense efforts and ensure the readiness of organizations and individuals, so that when needed, they can carry out their duties effectively and optimally (Liwång, 2023). In this case, the civil defense posture has a strategic value that reflects the capacity of the state, through community participation, to respond to crises independently, resiliently, and organized. The posture covers various aspects, ranging from the capacity of human resources, information systems, regulations, institutions, to social structures that support solidarity and public trust. Through a strong defense posture, civil defense is able to reduce risks, minimize impacts, and accelerate recovery from

crises to increase national stability. The importance of the study of civil defense posture from a sociological perspective to develop a more comprehensive, adaptive, and sustainable concept of national defense. However, the effectiveness of this posture is highly dependent on the state's ability to build legitimacy, foster public trust, and encourage the active participation of citizens in maintaining national stability.

1. Theoretical framework

The sociological approach provides a new lens for understanding and strengthening the posture of civil defense. Classic sociological theorists provide a conceptual foundation for examining the role of social structures in sustaining national security. Durkheim emphasized the importance of social solidarity as the basis of order, while Weber highlighted legitimacy as a legitimate source of authority (Isdiyanto, 2025). In the context of defense, these two theories explain why public trust and social cohesion can be a more sustainable deterrent than coercive force. Security can no longer be seen only as a product of military institutions, but also as the result of social processes that involve collective awareness, belonging, and active participation of citizens. A sociological approach to civil defense posture not only strengthens the foundations of national defense, but also ensures its sustainability and adaptability in the midst of increasingly complex global challenges (Bengtsson and Brommesson, 2024). The civil defense posture plays a strategic role as the main foundation in creating a more inclusive and participatory national security system. National security is the main foundation for the solidity of a country and the survival of its nation. National security not only defends the territory from military attacks, but also includes various aspects that affect the overall stability of the country. The pillars of national security, which include military defense, political stability, economic, socio-cultural, information technology, and environmental and natural resource sustainability, need to be designed integratively to protect all vital aspects of the life of the nation and state, as well as become a strategic foundation for the formulation of defense and security policies that are responsive to the challenges of the global era. A deep understanding of civil society and state relations in the context of national security is an important perspective in shaping the civil defense posture as a key pillar of national security. Solid cooperation between states and societies is becoming increasingly important as the source of threats no longer comes only from external physical attacks, but also from within, such as social polarization, the spread of disinformation, and declining public trust in institutions. The transformation of the threat character, which now tends to be hidden, fragmented, and operates in a hybrid manner, makes the non-military deterrence approach increasingly significant in maintaining national stability. According to Sörenso (2024), deterrence strategies can be understood

in different ways. This approach is important so that non-military deterrence strategies are not *top-down*, but develop from the ground up through active support and public awareness so that countries can design non-military deterrence strategies more effectively and relevant to the challenges of the times.

Deterrence or in the sense of prevention is often associated with military force that focuses on prevention efforts that do not rely on the power of weapons but through social, economic, cultural, and political forces. Legitimacy and public trust play a more dominant role than threats of violence such as threats that are asymmetrical or originating from within the country such as radicalism, social conflicts, or hoaxes. The classic paradigm of deterrence by punishment has long dominated in dealing with offenses and crimes (Nagin, 2013), relying on the threat of punishment as the primary means of preventing acts of offense. This approach assumes that individuals will avoid unlawful behavior if they believe the risk of being caught and punished is high enough. In line with the times and the increasingly complex social dynamics, the effectiveness of punishment-based deterrence is increasingly questionable. As an alternative to these limitations, a more sustainable and trust-oriented approach is offered by a deterrence model based on social legitimacy. However, compliance with the law is not solely driven by fear of punishment, but also by people's perceptions of the legitimacy of the law, norms, and enforcement authorities. The government is considered to have legitimacy if the community believes that the rules set are appropriate and in accordance with the standards of community behavior (Debbaut and De Kimpe, 2023). An approach that relies solely on punishment tends to fail to produce genuine compliance, and can even trigger resistance if the public considers the policy to be unfair. Law enforcers who uphold procedural justice, namely providing equal treatment, listening to the voice of the community, and being neutral, will more easily gain public trust. Community involvement in the civil defense system has proven crucial in a variety of global cases. New Zealand, for example, relies on social legitimacy and public trust in the face of the COVID-19 pandemic, so the level of community compliance is relatively high without relying on coercive controls (Rod and Miron, 2023). On the other hand, the British, which tends to prioritize a coercive approach, experiences greater social resistance. This example shows that *deterrence by punishment* has limitations in the context of modern threats, while deterrence by legitimacy actually increases social resilience organically. In this context, the active and voluntary participation of citizens is the main key, which is reinforced through involvement in the policy process. Practices such as crisis simulations, anti-hoax campaigns, and the involvement of community leaders in building a national narrative reflect a sociological-based non-military deterrence approach.

In the framework of deterrence based on social legitimacy, collective awareness and a sense of shared responsibility in maintaining social order are the main foothold to prevent violations. Citizen

compliance is born from the desire to support the sustainability of common norms that are considered legitimate and benefit all citizens. Not only can the use of coercive force be expensive and potentially trigger conflict can be minimized, but also social cohesion is further strengthened. To implement deterrence that focuses on social legitimacy, fundamental changes are needed in the relationship between society and law enforcement officials. For example in the French State, the results of research conducted by (Maire and Schmitt, 2022), show that civilian control over the military in France does not only depend on official rules, but is also influenced by personal relationships and trust in leaders. Various factors make the balance of power between civilian and military actors fluctuate and changeable, depending on the political situation and the character of the leader in power. Officials need to be equipped with training to prioritize transparency, build healthy, humane communication, and respect each other with the community. In addition, the state must ensure the existence of efficient oversight mechanisms to prevent abuse of authority, considering that this kind of practice is one of the main causes of loss of legitimacy and declining levels. A non-military deterrence approach with a sociological perspective offers a paradigm renewal, emphasizing the importance of social resilience, community cohesion, and the credibility of state institutions. Based on research by Gearhart and Joseph, 2022, show that strengthening social cohesion and increasing the collective capacity of citizens to support each other is a key focus in community based on crime prevention strategies. that This strategy is no longer seen as a mere domestic issue, but has become a crucial component of the global cooperation framework, given that various forms of transnational threats such as disinformation, digital-based radicalism, and terrorism require a collective and integrated response between countries. Collaboration between countries in building joint social resilience is key to creating a more effective and adaptive prevention system against new forms of threats.

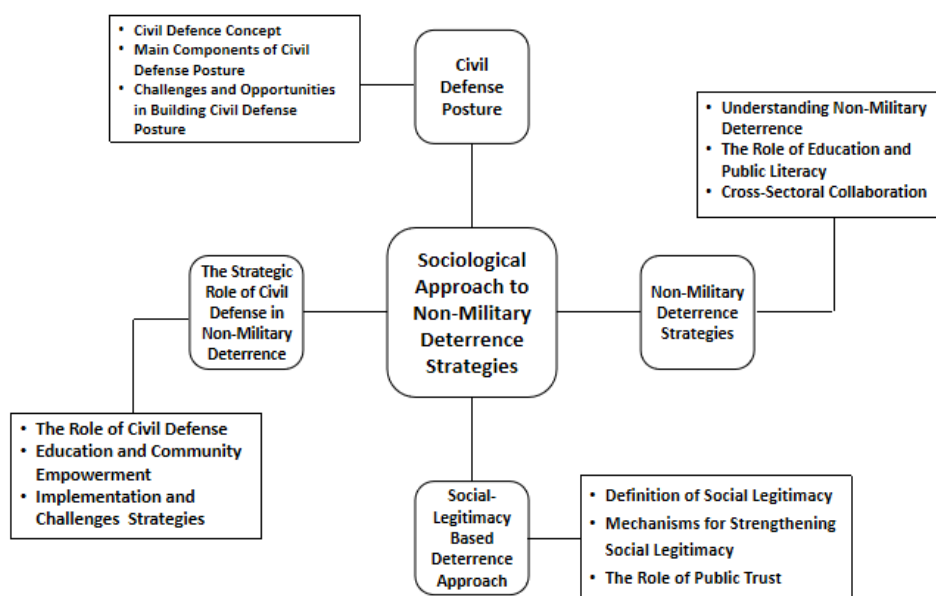
The sociological approach in non-military deterrence strategies encourages the formation of a network of cross-border cooperation based on shared values, such as social justice, inclusivity, and respect for human rights. Knopf (2010) argues that deterrence no longer depends only on the threat of physical force, but also on the ability of states or societies to manage information, build narratives, and strengthen social solidarity. The exchange of knowledge and experience between countries is an important asset. Countries with a high level of social cohesion can be a reference for other countries in formulating policies that are able to strengthen people's resilience to provocations or non-physical attacks that threaten national and regional stability. This collaboration allows for the realization of a collective early detection mechanism against emerging social threats. For example, countries can exchange data and information related to the pattern of spreading hoaxes or cross-border propaganda that have the potential to threaten the unity of society. Thus, prevention efforts are not only reactive

after the emergence of threats, countries can carry out early detection collectively and carry out prevention proactively, thus creating a common social fortress that strengthens national, regional, and global stability.

2. Methodology

The writing of this paper uses a descriptive qualitative approach based on literature studies sourced from reputable scientific journal articles (Scopus Q1 and Q2), strategic study reports, as well as sociological and defense theories. This approach was chosen to describe and analyze the strategic function of the civil defense posture in building a country's non-military deterrent, especially in the context of Indonesia's national security. The analysis was carried out with a conceptual framework that integrates social legitimacy theory, deterrence strategies, and sociological approaches to security. This method aims to develop normative and strategic arguments regarding the importance of strengthening civil defense as a non-military deterrence tool capable of adapting to a variety of complex security challenges. See the research framework in Figure 1.

Figure. 1. Research framework



Source: Processed from Author Representation

3. Results and discussion

The results of this study highlight the centrality of a sociological approach in understanding the dynamics of non-military deterrence strategies, particularly through the integration of civil defense

posture, social legitimacy, and community-based deterrence mechanisms. Each component in the framework, civil defense posture, non-military deterrence strategies, and legitimacy-based deterrence, demonstrates how societal structures, public trust, and cross-sectoral collaboration collectively shape a nation's capacity to respond to hybrid and non-physical threats. The findings show that civil defense does merely serve as an auxiliary security element; but functions as a strategic component that strengthens preparedness, enhances community resilience, and supports the broader architecture of national security. This reinforces the argument that non-military deterrence is most effective when it is rooted in the social fabric and collective consciousness of society.

3.1. Civil defense posture

Civil defense is one of the important components of the national defense system that places the community as the main element in maintaining national security, order and resilience. The structure, preparedness, and capacity of the community to deal with various types of non-military threats in a planned and integrated manner are at the core of the concept of civil defense. The involvement of the military in non-conventional tasks such as disaster response and social development requires effective coordination between civilian and military institutions in order for the military's role to remain in line with democratic principles (Solar, 2017). This concept not only includes response to disasters, but also involves mitigation, preparedness, and recovery processes with social, psychological, and cultural approaches. According to Bernardini *et al.* (2019), education and training in disaster evacuation are also needed to increase the resilience and safety of the community in dealing with disasters. In contrast to military defense that relies on coercive force, civil defense prioritizes social resilience, solidarity, and citizen participation. People who have a high level of concern for their environment will be more responsive in detecting threats, both physical such as natural disasters and non-physical ones such as disinformation, radicalism, and terrorism. Today's threats are no longer limited to traditional military attacks, but also include cyberattacks, ideological infiltration, and social tensions that could potentially be exploited by certain groups to undermine the power of the state. People have strong reasons to be worried about crime because of its negative impacts, especially related to reduced personal security and self-protection (Bun *et al.*, 2020). Countries need to develop more inclusive defense systems, in which civilian elements play an active role in detecting, responding to, and mitigating various forms of non-traditional threats. The foundation of a resilient civil defense posture lies in active community involvement, adequate understanding of security issues, and synergy between various parties, ranging from the government, local communities, to educational institutions.

The ideal civil defense posture must meet several key dimensions. First, the institutional dimension, which includes a clear regulatory framework, inter-agency coordination, and the presence of strong and effective civil defense institutions from the central to local levels. Good institutions ensure the existence of an efficient command line, resources, and coordination mechanism between elements of the government and the community. Institutions that are trusted by the community are able to encourage voluntary obedience that is much more effective than coercion. For example, the success of the National Disaster Management Agency in coordinating disaster response in Indonesia is often determined by the capacity of public communication that builds public trust in the state. Second, the human resource dimension plays a key role, emphasizing the importance of training, education, and community organizing in a sustainable manner. Civil defense will not be effective without citizens who are aware, trained, and have adequate social literacy. For example, national defense programs and digital literacy training among youth can strengthen collective awareness and foster a sense of responsibility for social security. Third, the dimension of information and communication systems plays an important role in shaping public awareness and regulating the flow of communication when disturbances occur. The system includes an early warning network, fast and accurate public information, and a digital platform that allows the public to respond quickly. Fast, transparent, and credible information can reduce panic while preventing social polarization. In civil defense, good public communication is a deterrence mechanism because it makes the public more critical of information manipulation and more resistant to provocation. Fourth, the logistics and infrastructure dimensions, include the readiness of public facilities, basic needs reserves, and accessibility to strategic locations in the evacuation or emergency assistance process. In addition, the civil defense posture also requires the support of a strong collective culture, namely the values of togetherness, solidarity, mutual cooperation, and the spirit of nationalism. Social resilience is an important factor, as it is able to accelerate recovery efforts and optimize response in emergency situations.

The development of a civil defense posture requires important components in the form of national education, digital literacy, and strengthening the values of unity as part of an integrated program. Civil defense education through this approach not only focuses on technical aspects, but also plays a role in strengthening social and political relations between society and the state. Military education encompasses more than just organizational and institutional structures, but it also plays a role in shaping the professionalism, individual identity of soldiers, and their social role in society. Exercises designed based on the alignment of different sectors play an important role in developing collaborative capabilities between the civilian and military sectors, emphasizing alignment between objectives, activities, and evaluations to achieve an effective response to crisis situations (Hedlund

and Alvinus, 2024). Activities such as crisis handling simulations, cross-community dialogue, and the development of community-based communication networks can serve as effective means of building social solidarity and increasing public trust in state institutions. In an effort to form a resilient civil defense posture, various complex challenges need to be faced, ranging from weak intersectoral coordination, limited resources, to the need to harmonize roles between civilian and military elements. One of the main challenges is the low level of public awareness and participation on non-military defense issues. The lack of defense literacy and the lack of integration of civil defense materials in the education system cause limited community preparedness in dealing with emergency situations. An integrated approach is needed with an emphasis on strengthening institutions, formulating policies that are responsive to threat dynamics, and developing human resource capacity in a consistent and sustainable manner. The active involvement of the private sector and civil society can expand the reach and effectiveness of civil defense systems (Bollen and Kalkman, 2022). Cross-sectoral coordination must be institutionalized through clear communication and command mechanisms, so that each agency, both at the central and regional levels, can carry out its role effectively in crisis situations. On the other hand, there are significant opportunities in strengthening civil defense through increased cross-sectoral cooperation, the formation of a culture of shared learning, and the use of local technology and innovation that can strengthen disaster response and prevention capacity. The integration of civilian and military roles must be built on the principle of mutually supportive cooperation, through integrated training, the preparation of joint doctrines, and the development of joint operating systems that are adaptive to field conditions and various types of crises that may occur.

Regulatory challenges, responsibility sharing, and potential human rights violations must also be anticipated so that civil defense does not create new vulnerabilities (Clayton and Thomson, 2016). This is in line with the modern defense paradigm that emphasizes the importance of the active role of citizens in dealing with various potential disturbances to the sovereignty and integrity of the nation. The civil defense posture also requires state institutions that have high credibility and are able to build trust in the community. If people do not trust the government, law enforcement officials, or other state institutions, then their involvement in the civil defense system will be difficult to achieve. Collaboration with a wide range of stakeholders, including civil society organizations, the media, education, and the private sector, is key to success. This cross-sectoral synergy is needed to ensure that efforts to strengthen civilian resilience truly touch all levels of society, as well as be able to respond to the challenges of an increasingly complex and dynamic era. It should be emphasized that the civil defense posture is dynamic and must always be adjusted to the transformation of threats and the changing social dynamics of society. In addition, in the context of globalization and the era of

digital connectivity, the civil defense posture must be able to respond to transnational threats through international cooperation. Villamil *et al.* (2020) presented the results of their study in the Colombian state that civilian or non-military play a major role in the formulation of national strategies in the digital realm. The combination of strict punishment and interactive training is the most effective strategy to reduce cyber threats from within the organization (Kim *et al.*, 2019). This collaboration is important to deal with common threats such as cross-border terrorism, digital radicalism, and cyberattacks that threaten peace and security.

The civil defense posture also contributes to the creation of a culture of national defense based on awareness, not coercion. People who feel part of the effort to defend their country will be more ready to be actively involved in every threat prevention and countermeasure effort. This is also the foundation for the realization of sustainable national security, based on social strength, and not solely on military power. The civil defense posture is not something static, but must be seen as an integral part of the national defense system and continuously evaluated and adjusted to the dynamics of threats and social developments. Modern challenges such as climate change, digital disinformation, and the potential for horizontal conflict require an update of civil defense strategies that are adaptive, data-driven, and supported by broad public participation. Its success depends on close collaboration between the government and the community, as well as the willingness of all parties to continue to strengthen the nation's social resilience. A country that is able to build a strong civil defense posture will have strong social capital to create non-military deterrence and maintain national security on a sustainable basis.

3.2. Sociological approach to non-military deterrence strategies

Prevention or deterrence strategies have often been associated with the use of military force as the main tool to deal with external threats. The strategy of deterrence through arms deliveries, as NATO has done to Ukraine, shows a new form of *deterrence by denial* that does not rely on direct military threats, but on a real and sustained commitment to strengthen the combat capacity of allies in the face of aggression (Lupovici, 2023). However, in a modern era full of non-traditional threats such as disinformation, radicalization, and social instability, a military approach alone is no longer enough. Sociological approaches are becoming increasingly important, especially in the context of non-military deterrence strategies, as they are able to understand the social roots of potential threats and strengthen people's resilience to manipulation and polarization. This approach views security as a social construct that depends not only on military power, but also on the ability of society to maintain the stability and legitimacy of institutions that play a role in dealing with non-military threats

such as ideological, political, economic, social, and disinformation. This strategy not only relies on military strength, but also involves various elements of the nation, including ministries or institutions outside of defense, civil society, and other social institutions to build national resilience and national defense awareness.

The importance of the sociological approach in a non-military deterrence strategy lies in its ability to build social trust and state legitimacy. Regaining the trust of citizens is a challenge for post-war governments. Solar (2022) emphasizes that the military can gain new legitimacy in the eyes of the public despite having an authoritarian legacy, especially when it is considered effective in tackling crime and chaos. Political beliefs play a crucial role in explaining the potential for the recurrence of internal conflicts and shaping new dynamics between the state and society (Dyrstad *et al.*, 2021). Social legitimacy as part of the theory of political sociology is an important foundation in building effective deterrence. The concept of political legitimacy involves an ever-changing social network, which integrates various bases of legitimacy claims and builds patterns of social habits as power relations shift among competing groups (Dolan *et al.*, 2024). The development of cooperation between the civilian and military sectors is based on pre-established relationships and collaborations while maintaining the same role in times of crisis, including taking steps to encourage cooperation between various sectors (Larsson *et al.*, 2023). One of the functions of the sociological approach in building social legitimacy is to encourage the active participation of civil society. This approach emphasizes that the success of deterrence strategies does not depend only on military power, but also on citizens' awareness, active participation, and social solidarity in the face of threats such as disinformation, for example, community engagement programs in the formulation of security policies or disaster management can increase a sense of ownership and trust in state institutions.

In the face of the threat of disinformation and digital propaganda, the state needs to build social resilience by strengthening the critical capacity of society. This approach can also be realized through education and digital literacy. Educational institutions and the government have an important role as driving nodes. Military academies as educational institutions were established earlier than sociology as a branch of science (Segal and Ender, 2008). The educational curriculum in schools can be modified to include elements of modern threat-based civil defense. The government has a role to play in facilitating training as part of a routine agenda to maintain security and resilience at the local level. Education and training are not only reactive, but they are a key element in a long-term prevention system. For example, media literacy education programs in local schools and communities can help individuals recognize fake news, understand the political context, and reject divisive information. From a policy perspective, socio-based non-military deterrence strategies emphasize the importance of a just and inclusive social system. This approach assumes that national stability will be stronger if

it is built on the basis of social justice, equality in access to resources, and respect for diversity of identities in society. Countries that are able to provide basic services such as education, health, and security equally tend to be more resistant to social disturbances and ideological infiltration that can weaken national unity. The sociological approach emphasizes the importance of strengthening social resilience as the main line of defense in the face of today's threats. This includes public education that instills national values and awareness of disinformation, preparedness training to deal with social and natural disasters, and community strengthening through strong social networks. People are not only seen as objects that need to be protected, but also as active actors in maintaining the stability and security of their environment. In addition, this strategy involves non-military institutions such as civil society organizations, educational institutions, the media, and local communities as an important part of the national defense system. Through the involvement of these various elements in decision-making, the state can strengthen policy legitimacy and improve the collective ability to detect and respond to threats early. The sociological approach to non-military deterrence does not stand alone, but is also supported by multilateral diplomacy efforts. Given the many cross-border threats such as terrorism, climate change, cybercrime, and pandemics, cooperation between countries is urgently needed, especially in information exchange, policy alignment, and strengthening international norms. By prioritizing collaborative and humanistic principles, this approach not only maintains national security, but also contributes to regional and global stability. In an increasingly complex and uncertain world, social power can be the main bulwark in maintaining the integrity and sovereignty of the country.

3.3. Social legitimacy-based deterrence approach

Social legitimacy in the defense sector has a crucial role in preventing non-physical threats such as the spread of disinformation. Levy (2021), states that military legitimacy is divided into two main aspects, extra-military legitimacy that comes from the support of the public and civilian authorities, and the intra-military legitimacy that develops within the military institution itself. These differences have the potential to disrupt national security stability, so it is important to create a balance between oversight from civilian authorities and the norms that apply within military institutions. In addition, social legitimacy also facilitates cooperation between the government, media, and digital platforms in dealing with disinformation issues more effectively. Social legitimacy is significantly influenced by factors such as institutional performance, representation of public interests, and public trust in political institutions (Dellmuth and Tallberg, 2015). Social legitimacy ensures that communications from the government are trusted and followed by the public, thereby reducing opportunities for parties

who want to take advantage of the information gap to spread false narratives. According to Tyler (2006), legitimacy not only makes people obey the rules because they are afraid of sanctions, but also because they feel that the rules and authorities are fair, feasible, and worthy of being followed. Legitimacy in authoritarian government can be strengthened through improving social services provided to the community, good public service performance can support strengthening legitimacy more effectively (Cassani, 2017). Socio-political resilience has also become stronger because people who believe in the legal system and government are not easily divided by the sensitive issues that are often used in disinformation. If the legitimacy of the state is weakened, society becomes more vulnerable to information manipulation that can trigger conflict or socio-political instability.

The approach to deterrence or threat prevention has been largely based on the classical paradigm that emphasizes punishment as the main tool to prevent unwanted behavior. This paradigm is of the view that the threat of firm and real sanctions is able to prevent individuals or groups from committing harmful violations or actions. Alternatively, a deterrence approach based on social legitimacy is beginning to be developed and is considered more relevant in dealing with such non-physical threats. Legitimacy built through fair procedures and good relations between the public and legal authorities can increase compliance and cooperation, going beyond traditional deterrence models (Tyler, 2024). A deterrence approach based on social legitimacy offers advantages in building sustainable social resilience. In the long run, a society that has a high level of legitimacy towards the government will be stronger in dealing with disinformation, less easily provoked, and able to respond to social threats jointly and organically. This approach emphasizes the importance of public trust in the state as an effective form of deterrence. Social legitimacy here means public recognition and acceptance of state authority, both in terms of tradition, the charisma of leaders, and the legality of applicable rules. The level of public trust is an important foundation to prevent them from being influenced by misleading information or engaging in socio-political conflicts that have the potential to destabilize stability. Social legitimacy serves as an internal prevention mechanism within the community. Schoon (2022) highlights the importance of applying the concept of legitimacy comprehensively by involving aspects of acceptance, trust, and compliance with institutions. The legitimacy strategy used is usually adjusted to the renewal character of the innovation, given that different innovations demand different approaches to legitimacy (Bunduchi *et al.*, 2023).

When citizens feel that the state has legitimate and trusted authority, they voluntarily follow the rules and norms without having to face the threat of harsh punishment. Individual adherence to ethical norms is more influenced by the level of certainty of the detection of violations than by the severity of the sanctions that may be received (Merhi and Ahluwalia, 2018). This approach is different from punishment-based deterrence strategies, which are external in nature and emphasize the aspect of

coercion. Through social legitimacy, the state fosters healthy and cooperative relationships with the community, so as to grow awareness to maintain order and stability together. Public trust in the state is also an effective shield against the spread of disinformation. The deterrence approach based on social legitimacy is also able to reduce sociopolitical conflicts that have the potential to threaten state stability. When people feel that the government is acting fairly, transparently, and responsibly, they are more likely to resolve differences peacefully and constructively. Conversely, if the legitimacy of the state is weakened, society is vulnerable to fragmentation and conflicts can easily erupt, which ultimately disrupts national order and security. In its implementation, this social deterrence can be seen in various state efforts to build and maintain legitimacy through policies that are responsive to the needs of the community, fair law enforcement, and effective and transparent communication. For example, in the context of preventing juvenile traffic violations in Indonesia, the implementation of social deterrence through legal education and socialization has proven to be more effective than relying solely on punitive sanctions. This suggests that approaches that prioritize social legitimacy and trust deliver more sustainable outcomes.

This approach to social legitimacy-based deterrence has become particularly relevant in the modern era full of non-physical threats and socio-political complexity. The classical paradigm that relies solely on punishment is unable to answer challenges such as the spread of hoaxes, political polarization, and widespread public distrust. Therefore, building and maintaining social legitimacy is the main strategy to maintain national stability and security in a sustainable manner. Social legitimacy-based deterrence offers a new paradigm that is more adaptive and effective in dealing with non-physical threats such as disinformation and sociopolitical instability. Public trust in the state is not just a symbol, but a real and powerful form of deterrence. By strengthening social legitimacy, the state not only prevents violations and threats, but also builds a solid foundation for long-term social and political resilience. This approach replaces the classic paradigm of deterrence through punishment that is increasingly less relevant in the face of modern social change. The creation of sustainable social and political resilience requires the state to no longer rely on a repressive approach through sanctions, but rather to build citizen trust, implement fair governance, and encourage active community participation in governance processes (Stollenwerk *et al.*, 2021).

3.4. The strategic role of civil defense in non-military deterrence

In the face of increasingly complex and not always military national security threats, a country's defense strategy needs to adopt a broader and more inclusive approach. One relevant and strategic approach is non-military deterrence, which is an effort to prevent aggression or disruption to the state

through non-physical forces by building deterrence based on social, psychological, and civilian forces. Civil defense plays a very important role as a vanguard in shaping the perception of national strength and readiness as a whole. Deterrence is classically often understood as a military force capable of providing a counter-threat to an opponent. But in its non-military form, deterrence works through the enemy's perception of the difficulties and uncertainties they will face if they try to weaken or attack the target country even without an armed response. One form of strong non-military deterrence is a society that is resilient, organized, and has the capacity to survive and rise from disruption. This is where civil defense becomes the main component in creating social-based deterrence. Civil defense works through strengthening public awareness and preparedness against various possible threats, including natural disasters, cyberattacks, disinformation, and social instability. The excessive application of civil defense has the potential to endanger individual freedoms and democratic principles, so a balanced policy is needed between maintaining security and protecting the rights of the community (Ljungkvist, 2024). Activities such as evacuation training, disaster education, community logistics organization, emergency communication systems, and accurate dissemination of public information all contribute to building public confidence and strengthening the social structure as the basis of the country's defense. The state's strategy in building non-military deterrence is realized through various policies and approaches to community development. The state can strengthen its civic education system, expand digital literacy, and build a network of resilient communities that are responsive to crises. This strategy not only prepares society for possible threats, but also creates a psychological effect on outsiders that society will not be easily confused or divided through disinformation or provocation.

At the heart of the concept of non-military deterrence is the belief that the power of civil society is capable of creating doubt for opponents to attack. If the community shows a high level of readiness in dealing with threats through education, training, and collective awareness, then the opponent will assume that their efforts will be in vain or even trigger a backlash from the community itself. In defense theory, deterrence is generally understood as an effort to instill fear in the opponent so that they do not carry out an attack. This deterrence is not based on the power of weapons or physical sanctions, but on the strength of civil society and the credibility of state institutions in the face of social, informational, and psychological pressures. This theory is supported by research conducted by (Morgan and Morgan, 2012), which states that deterrence in contemporary international politics no longer relies solely on military capabilities but also encompasses social, psychological, and institutional aspects. Furthermore, Non-military deterrence relies on social and psychological forces by instilling in the opposing side the belief that the community has mutual resilience, supported by the right information and a strong sense of nationalism, so that any attack or infiltration attempt will

end up failing and actually harming the attacking party. Non-military deterrence also places more emphasis on manipulating perceptions, shaping public opinion, and strengthening social norms to prevent undesirable actions (Miljkovic *et al.*, 2022).

One of the main pillars of non-military deterrence is social power. A solid unity of society, based on mutual trust to protect national interests, is a powerful shield in the face of all kinds of threats. Gustafsson and Mälksoo (2024) argues that a country's social power is seen through collective narratives, political memories, and shared identities, which can be leveraged as instruments to strengthen social cohesion and reduce vulnerability to external intervention. This social force includes the ability of the community to unite in the face of disinformation, polarization, and attempts to fight sheep that are often used by outsiders to weaken the internal stability of a country. In addition to social strength, the psychological resilience of the community also plays a central role in non-military deterrence strategies. People who have strong mental toughness are not easily influenced by propaganda or asymmetric threats. According to Unal and Uludag (2020), the success of deterrence strategies in asymmetric conflicts requires synergy between military forces and long-term political approaches, including constructive dialogue efforts, strengthening inclusive public policies, and building trust between the state and society. The implementation of non-military deterrence can be carried out through civilian training programs, the preparation of reliable public information systems, and the implementation of emergency simulations on a regular basis. Training programs can include education, social disaster preparedness, and communication system training so that public information can reach all levels of society quickly and accurately. In the current era of information technology, strengthening cyber resilience is one of the tangible forms of non-military deterrence. Taddeo (2018) states that classical deterrence theory has significant limits in the cyber context, as the theory's inability to explain ambiguity, multi-actors, and uncontrolled escalation in the digital world. Digital attacks such as hacking of important state systems, cyberattacks, and the spread of disinformation have become forms of aggression in the modern era. Lilli (2021) emphasized that an effective cyber deterrence strategy must take into account the active contribution of the private sector in building credibility and capabilities to prevent cyberattacks, as well as in building resilient and adaptive national security. The development of a national cybersecurity system and the improvement of people's digital literacy are an integral part of a non-military-based prevention strategy.

A country with a transparent government and fair law enforcement will be difficult to shake by those who intend to carry out unconventional aggression. This stability also creates public trust in the state, thereby strengthening legitimacy in every defense and security policy. The active participation of the community is the key to making this strategy truly effective. This means that deterrence efforts must develop from below through the participation of citizens in protecting their environment,

fighting hoaxes, and contributing to efforts to defend the country. Building non-military deterrence is not without challenges, one of the main challenges is the low public literacy against forms of non-physical threats such as disinformation, psychological warfare, and public opinion engineering. Social inequality, conflicts among community groups, and weak public trust in state institutions can reduce the strength of the deterrence built. Solving these various obstacles requires the active role of the government with a fair, open, and inclusive approach. Cooperation between countries is becoming increasingly crucial in strengthening non-military deterrence systems, especially in the digital era that penetrates national borders. Packa and Mares (2021) emphasizes the importance of political coordination and good resource management to strengthen civil-military cooperation in order to build an integrated national cyber force. Countries should cooperate in designing early detection systems against disinformation across national borders, sharing cybersecurity technologies, and formulating joint regulations to address transnational social threats. Governments and military institutions together with other countries need to establish political and technical coordination to build an integrated national cyber force and strengthen collective resilience in the face of cross-border threats.

Conclusions

The civil defense posture is one of the main pillars in maintaining Indonesia's national security, which is comprehensive and involves all components of the nation. The pillars of national security, which include military, diplomacy, economic, socio-cultural, technological, and civil defense aspects, are integrated into a complete system. As part of the universal state defense system, civil defense involves not only military power but also the active role of civil society in dealing with various threats that can disrupt the sovereignty and territorial integrity of the country. Civil defense appears as a strategic pillar that bridges the logic of state defense with the social reality of society. When people have disaster preparedness, have the capacity to survive and rise from disruption, and are able to respond in an organized manner to non-conventional threats, effective deterrence is formed. It is at the heart of a non-military deterrence strategy that a country's strength lies not solely in its military, but also in its social resilience and the strength of its civil society. A strong civil defense posture includes institutional aspects, human resource capabilities, responsive information and communication systems, and supporting infrastructure. A country that is able to build a civil defense based on local culture and the participation of the wider community will have a deterrence force that is difficult to match, even without relying on military force, but rather a force that grows out of deep solidarity.

Social legitimacy as part of the theory of political sociology is an important foundation in building effective deterrence. When state institutions are trusted and seen as legitimate by their citizens, the potential for interference from outside and within can be minimized through collective response and mutual awareness. The approach of military sociology teaches that defense is a social process, not just a technical problem. Non-military deterrence is effective when the public has high trust in state institutions and actively plays a role in maintaining security. In this context, the military is not only an armed apparatus but also an agent of social change, a public educator, and a facilitator of cooperation between the state and the people to build comprehensive national resilience. Cooperation between countries in this context also encourages policy harmonization in the fields of education, digital literacy, and civil society empowerment. The effort aims to broaden the global community's collective awareness based on the importance of maintaining a peaceful and just social order. Countries can support each other in designing joint programs that focus on strengthening the values of tolerance, mutual cooperation, and respect for differences, so that sociologically based non-military deterrence strategies do not stop at conceptual structures but are realized in concrete actions across borders.

From a European Union policy perspective, the findings of this study highlight the strategic importance of embedding civil defense and societal resilience within the European Union's evolving security governance framework. As the European Union increasingly confronts complex, trans boundary, and non-military challenges, the effectiveness of deterrence depends not only on regulatory capacity and military readiness but also on the degree of social legitimacy and public engagement embedded in security policies. The emphasis on civic preparedness, digital literacy, and community based resilience aligns with the European Union's whole of society approach, which recognizes citizens and civil society as active security actors rather than passive beneficiaries of protection. Embedding these sociological dimensions into policy design can enhance policy coherence across member states, reduce vulnerabilities exploited by hybrid threat actors, and strengthen trust in both national and institutions. In the long term, such an approach contributes to a more cohesive and adaptive European security environment, where deterrence is sustained through societal solidarity, institutional credibility, and coordinated cross-border action.

Non-military deterrence strategies based on a sociological approach not only strengthen the country's internal resilience but also open up a space for collaboration that strengthens solidarity between nations in the face of unconventional threats. This collaboration is an important foundation for the creation of sustainable peace and security, where social forces are seen as the main element of deterrence, replacing the dominance of coercive forces in the classical paradigm of defense. Thus, a civil defense posture based on social legitimacy is not only relevant but also urgent to be developed

as a key pillar of national security. Civil defense education and training designed to strengthen public trust in the state is a strategic instrument in dealing with a spectrum of unconventional threats. In the midst of global dynamics full of uncertainty, a strong country is a country that is able to activate the potential of its people as the main bulwark of national defense.

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Resilient cultural communication in the age of AI: how specialists navigate audience engagement and technological transformation

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Abstract

In a time when digital communication dominates marketing efforts and personal interactions, we need to ask: what role does artificial intelligence (AI) play in building resilience through communication strategies? Undoubtedly, AI offers efficiency. But what about authenticity and creativity – “trademarks” of cultural manifestation? This study explores how AI could improve communication strategies for cultural events by examining the perspectives of cultural communicators and managers, focusing on their audience engagement strategies, challenges, and views on AI’s usefulness, limits, and ethical implications. My qualitative analysis of nine interviews with specialists in cultural events communication and organization revealed cautious adoption of AI, mainly used for research and task automation. Experts emphasized that AI cannot replicate human emotional storytelling, vital for audience engagement. Their ethical concerns regard content credibility and impact on artistic integrity. Still, participants expressed openness to using AI for tedious tasks, allowing focus on creation, strategy, and personal engagement.

Keywords: artificial intelligence, cultural marketing, communication strategies, emotional engagement, AI ethics

Introduction

The cultural realm is known to struggle with obtaining and managing resources, as well as the attention of the public. On the list of people’s priorities, especially in the modern era, cultural activities do not occupy the top ranks. Since the growth of online access to various types of entertainment, it has become increasingly difficult for cultural managers and communicators to attract the public, who, in addition, would remain loyal. Classical cultural events (art exhibition, theater play, opera show, book launch, etc.) have a strong competition in other forms of leisure - most requiring significantly less effort - for the time, attention, and budget of modern people. This is why communication for cultural events or products plays a vital role. The mission of cultural communicators and managers seems more challenging than ever in a race to reach their target audiences and convince them to attend an event.

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Culture is a domain that has its particularities; it addresses both the intellect and the emotional spectrum of an individual. Quantitative research is very efficient in presenting the factual coordinates, but the subtleties in how culture is perceived, communicated, and consumed can elude the most rigorous statistics.

Researchers' interest in AI applications appears to be increasing, but their focus is mainly oriented towards commercial areas, such as e-commerce, service chatbots, or AI-driven consumer goods, leaving a gap in understanding its role and potential in the cultural and artistic realm. Specifically, little is known about how AI can support communication efforts in cultural events while respecting their emotional and creative dimensions. My study addresses this gap by exploring the perspectives of cultural communicators and managers, identifying the strategies they use, the challenges they encounter, and their views on the usefulness, limitations, and ethical implications of AI.

For a more in-depth understanding, I conducted qualitative research to explore communication strategies for cultural events, with a particular focus on the role of Artificial Intelligence (AI). As research literature reveals, AI has been embraced in marketing from data analysis, task automation, to marketing content generation. Consequently, cultural communication is a domain that might also benefit from the advancement of this technology. While AI's uses in marketing are widely studied, its integration into cultural communication remains underexplored, particularly in understanding how it aligns with the unique characteristics of cultural events. One significant limitation lies in AI's capacity to evoke and stir emotions, which is a cornerstone of cultural events. Unlike other domains where efficiency and precision are paramount, cultural communication must resonate on a deeply emotional and human level, engaging audiences in ways that inspire creativity, reflection, and connection. AI tools, despite their sophistication, often lack the nuanced understanding of human emotions needed to craft messages that fully capture the essence of cultural experiences. Emotional AI, for instance, relies heavily on algorithms trained on datasets that may not adequately reflect the diversity or complexity of human emotional expression, particularly in a cultural context. Furthermore, the perception of AI in cultural communication introduces an additional layer of complexity. Culture is widely seen as a mirror of human creativity and authenticity, elements that are inherently tied to the human experience. The use of AI in this domain may raise concerns about the dilution of these values. This perception could create resistance among both cultural consumers and professionals, particularly when authenticity is a critical component of brand identity.

In order to understand how AI technology could adapt and work for the specificities of culture (and the professionals working in this domain), I conducted interviews with specialists involved in organizing and communicating cultural events of various types and extents. The research gap that I

identified guided me to address, in my study, the following objectives: to examine how cultural communicators reach and engage audiences, to explore the challenges they face and how these audiences look like, what motivates them, and, ultimately, to analyze the experts' perceptions of AI's potential, limitations, and ethical implications in cultural communication. This paper presents the main findings in relation to the opportunities and challenges of integrating Artificial Intelligence (AI) into cultural communication strategies, as revealed through the perspectives of these specialists. It begins with a review of relevant literature, followed by a description of the qualitative methodology used, an analysis of the findings, and a discussion of their implications for cultural communication strategies.

1. Literature review

Researchers continually examine audiences' reactions to marketing efforts, digitization, and the integration of Artificial Intelligence. The cultural sector, though less frequently studied than consumer goods and various types of services, still stirs the interest of scholars, who seek to understand the role of cultural manifestations in society and how professionals can more effectively reach broader audiences. This literature review examines previous studies on cultural consumption, in Romania and internationally, in relation to other services competing for people's attention and leisure time.

1.1. Overall context of cultural consumption

To understand cultural consumption, it is indispensable to grasp an understanding of the wider context: cultural products are mainly consumed for entertainment purposes and compete with various other entertainment sources. The Internet is the most accessible environment for leisure and passing the spare time. Out of more than 8 billion people on Earth, 5,52 billion use the internet (Kemp, 2024). The same report shows that there are also over 5 billion social media identities. Over 97% of internet users own a mobile or smartphone. Looking closer to home, in Eastern Europe, the same report shows that there are still 30 million people who do not use the Internet. Going back to cultural consumption, over half of the internet users seem to watch videos, movies, and TV shows online, and 47% access and listen to music on the Internet. In Latvia, for example, movie watching is the most used digital cultural content by youths between 18 and 25 years old, followed by seminars and courses about culture, watching conferences on culture topics, virtual tours in world museums, and, on the last rank, studying

books (Budanceva and Svirina, 2023). The authors of the study on Latvian young cultural consumers found that half of the respondents spent 25% of their online time consuming cultural content.

Zooming in on the Romanian cultural landscape, the latest Cultural Consumption Barometer (Croitoru *et al.*, 2024) shows a relatively modest interest of the adult population in cultural events in 2023, as I will explain further. It is worth mentioning that the above mentioned report focuses on the consumption of public events, in the offline environment. As the research shows, in 2023, 25% of the population attended at least one theater play or classical music concert. Among the young population aged between 18 and 35, only 18% attended a literature festival and 20% a film or theater festival. The interest in music and gastronomic festivals, however, seems higher, with an attendance of half of the young respondents. Museums, exhibitions, and art galleries attracted, in 2023, 45% of the respondents, compared to 30% in 2022. The researchers concluded that a quarter of the consumers in Romanian cultural communities show interest in culture in public spaces. At the same time, half of the participants in the study do not consume cultural or artistic products.

Regarding the limits of cultural consumption in Romania, the Institute for Cultural Research and Formation (Institutul pentru Cercetare și Formare Culturală) conducted ample research between 2020 and 2022 on the cultural and creative sectors, both public and private, in Romania. The study found that the main barrier in the development of cultural consumption is the capacity of understanding and connecting cultural symbols and metaphors to cultural identity values (Arsene *et al.*, 2020). The study stood as a foundation for the “Strategic Vision on Culture in Romania 2023-2030 (SSDC 2023-2030)”, in which the authors underline the necessity to focus on local communities and on building the cultural offer in alignment with the interests and expectations of the local audience. Moreover, the strategy emphasizes the need for cultural education among all consumer categories, with a highlight on children and youngsters. The authors also consider that contextualizing the role of culture in the development of the society and economy is an important element that could lead to larger adoption of cultural products.

In this aspect, the European Capitals of Culture (ECOC) program is a good example of a strategic effort to bridge cultural and economic development, pointing out the role of culture in developing communities through cultural tourism. The program brings benefits on multiple levels: economy, city image, urban regeneration, cultural production, and consumption (Liu, 2014). However, after studying the cases of European Capitals of Culture over 20 years from the perspectives of experience economy, image shaping, urban regeneration, cultural impacts, and partnerships establishment, the author concludes that it is difficult to establish patterns in the long-term cultural development of those communities. What he found as a common element is the need for a strategy to

continue to engage the public (local and international) with the cultural life of the respective city, after the end of the European Capital mandate. Such one-time efforts, as complex as they are, do not suffice to produce a regular increase in cultural consumption, unless maintained by strategic, consistent, and constant actions.

1.2. Challenges in attracting new public categories

Culture is not a general consumption product. It requires some level of education, general culture, the capacity to conceptualize, an aesthetic education, an open mind, curiosity, and inner reflection. As the Barometer of Cultural Consumption in 2022 Romania showed, the level of education is a serious challenge in increasing the interest for cultural events and products. Considering the consumption behavior of the younger generations defined by the use of digital devices and more than 6 hours/ day spent online by people aged over 16 (Kemp, 2024), convincing new public categories to take part in offline cultural events is a challenge in itself. While in the 1970s the cultural marketing was unidirectional, promotional-tailored, just offering factual information (Kolb, 2013), the new digital era requires a new, digital approach for cultural communication. Meeting people where they consume information means, for cultural organizations, being present online, especially on social media. But mere presence is not enough. The new audiences expect personalized communication. They expect to be able to engage. They expect experiences, due to the emergence of an “experience economy” (Pine and Gilmore, 1998), according to (Liu, 2014).

Social changes lead by the general access to social media is also a challenge. The public doesn't regard art as devised between “high art”, with intrinsic value, and “popular culture”. Social media brought a uniformization of social categories, including in how culture is viewed and consumed (Kolb, 2013); the attribute of “artist” is no longer reserved for the “chosen ones”.

Earlier, I showed how the study conducted by the Romanian Institute for Cultural Research and Formation found that the lack of education was a serious barrier in cultural consumption. Viewing that a small part of the population engages in public cultural events in Romania (Croitoru *et al.*, 2023) I could draw the conclusion that the level of education of the current society is problematic and represents a serious challenge for attracting new audiences for cultural products and events. One may even say that the current quality of cultural products (movies, music, TV shows, theatre plays, paintings, or sculptures, fashion, etc.) reflects the rather precarious level of education in the society. However, Steven Johnson would disagree. He thinks that, despite the general perception that the popular cultural outputs are losing in depth and complexity, with a “dumbing effect”, the pop culture

is, actually, more demanding from an intellectual point of view (Johnson, 2006). He states that there are environments that encourage cognitive complexity and others that do not. Cultural products are seen as outputs, not metaphors for the system that produced them.

Brand image and reputation are also challenges to consider. A big, well-known festival or a popular artist's concert will have less trouble in attracting new audiences than a small, local event like poetry recitals, independent theater plays, less-known artists' concerts, or exhibitions.

1.3. Digital and social media in cultural marketing

As emphasized by Bonita Kolb (2013), cultural organizations need to move from unidirectional communication to audience engagement. Any cultural organization and event organizer who wants to be present in the conscience of its audience needs an online presence, including or especially on social media platforms. This is where the audience engages and the young audience spends most of their time. Organizations need to allow their audiences to experience the cultural act, to be “part of the creative process”.

In 2010, Andreas Kaplan and Michael Haenlein researched the social media usage at the time, grouping the applications by characteristic in “collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds” (Kaplan and Haenlein, 2010). Following their analysis of the specificities of social media applications, they elaborated on several guidelines for enterprises that want to be present on social media and engage with their audiences. These guidelines underline the expectations of social media users, which can also narrow to the audiences of cultural products or events. The first point stresses the need for interaction and constant activity. The second point is about “being interesting”, which translates into avoiding general statements. Instead, cultural organizations should listen to their audiences and adapt the content to the topics of interest of the public at that point in time. Another point the researchers suggest is humility – not showing you know better than your audience. In the cultural consumption case, communicators of cultural products and events need to be careful not to sound condescending. As it was pointed out by Steven Johnson (2006) and reiterated by Bonita Kolb (2013), the hierarchy between “high art” and “pop culture” is slowly fading and audiences see themselves as creators, too. Honesty and authenticity are two other points that count in the social media presence of a brand, which can also very well apply to cultural communication. Imperfection and the reflection of reality are two traits that present audiences appreciate. The brand becomes more relatable. In the end, to

attract new audiences, cultural entities need to be more relatable and accessible. At the same time, they need to keep the high standards of quality culture, avoiding falling into a kitsch-trap.

1.4. AI integration in cultural communication

Aligning the cultural phenomenon to the 21st century cannot happen without taking Artificial Intelligence (AI) into account, including the communication of cultural events and products. AI has already transformed marketing in general. A survey by Salesforce showed, in 2019, that AI would be the most adopted technology by marketers in the future (Columbus, 2019). According to Davenport *et al.* (2020), marketers use AI tools for more precise audience targeting or to automate time-consuming, repetitive tasks. They rely on AI to analyze customer data, their preferences, and behavior, to provide insights used in customized marketing campaigns and communication (Petrescu and Krishen, 2023). From a customer experience point of view, the AI technology has been used to improve its cognitive and behavioral dimensions (Puntoni *et al.*, 2021).

Lately, generative AI tools have emerged and been perfected, transforming the work of marketers, communicators, and content creators alike. But like any new technology, there is a curve in adopting AI tools, especially when it comes to generating content (Moore, 2014). The acceptance of AI tools by marketers and cultural communicators may also be explained through the lenses of the extended Technology Acceptance Model (TAM) (Venkatesh and Davis, 2000), which included the “subjective norm” - the influence of what the closest people think about using the respective technology. Also, people tend to reject task automation when the output's consumption is closely tied to their identity (Brüns and Meißner, 2024; Leung *et al.*, 2018). The researchers found that those individuals who strongly identified with a social role proved to be more reluctant toward automation technology in that domain, as it diminished their ability to derive identity-related benefits.

On the other side, there are the content consumers, whose relation to AI is also subject to research. When talking about AI used in social media communication, it appears that emotional display of content can trigger more engagement (Yu *et al.*, 2024), as posts on social media mostly communicate emotional experiences (Steinert and Dennis, 2022). Also, consumers seem more inclined to view AI-generated ads favorably when these ads focus on empowerment and individual agency (Chen *et al.*, 2024).

2. Methodology

Research questions and objectives

The purpose of this research is to explore how AI can improve communication strategies for cultural events by understanding the perspectives of cultural communicators and managers. I aim to understand how these specialists reach, attract, and engage diverse audience segments: the strategies and methods they use, and their challenges. I also want to better understand, through their lenses, who their audience is and what drives people to attend a cultural event. Furthermore, I want to analyze how they see the role of AI in enhancing communication strategies for cultural events. How useful do they find AI tools? If they use AI, how do they employ it? What are the limits? How do they see the ethical implications? In addition, I am interested in examining their view on the use of emotion to engage audiences in cultural communication and to drive audience participation.

Research design

For this study, I employed a qualitative research design based on interviews. This method allowed me to gain an in-depth understanding of the subject from the perspective of practitioners actively engaged in cultural event organizing and communication. The method suits the exploration of complex phenomena, such as the integration of Artificial Intelligence (AI) into communication strategies for cultural events, where insights are shaped by individual experiences, perceptions, and contextual factors.

I conducted semi-structured interviews with nine Romanian specialists in cultural communication and event organization. I used pre-defined themes and questions aligned to the research objectives, thus ensuring that all relevant topics were covered systematically while allowing the interviewees the freedom to elaborate on their experiences and provide nuanced insights. This format facilitated a deeper exploration of how practitioners perceive the challenges and opportunities associated with cultural communication, attracting new public categories and the use of AI.

The participants were selected based on their professional involvement in cultural event organization and communication, ensuring they could provide relevant and informed perspectives. Their expertise spans diverse event types and scales, from large international festivals to smaller local events, offering a rich and varied data set for analysis. Their experience averages 10 years in the field

and covers a multitude of cultural manifestations: literature, classical and contemporary music, visual arts, education, debates, and conferences on culture-related topics.

Considering that my qualitative research comprises only nine experts, the study is an exploratory endeavor meant not for statistical generalization, but rather to delve deeper into the experts' perceptions and practices and uncover patterns that may serve as a basis for further research.

Interview guide

The interview guide was structured to explore the key themes related to cultural communication and the integration of AI. It comprised a mix of open-ended questions, organized into thematic sections, to encourage detailed and reflective responses.

The main themes were:

- Introduction on general background and experience – to understand the participant's professional role and experience in cultural event communication and organization.
- Current marketing approaches and challenges - to explore the difficulties practitioners face in attracting and retaining audiences, particularly younger demographics.
- Perception of AI in cultural communication - to assess how practitioners currently employ AI tools and to view their perspective on the compatibility of AI with the cultural sector's creative and authentic nature.
- The public of cultural events and the use of AI – to understand how practitioners perceive, from their experience, the relation of the audiences they engage with and the employment of AI tools.
- Ethical concerns – to identify possible ethical questions raised by the use of AI in the context of culture as human output.
- Future perspectives - to capture the specialists' views on the evolving role of AI in the cultural sector.

Expert Selection

In the selection of the participants, I was guided by the principle of proximity and the snowball effect, leveraging my professional network to identify specialists with substantial experience in cultural communication and event organization. I chose this approach to facilitate access to participants who were both relevant to the research topic and willing to engage in detailed, in-person

discussions about their practices and perceptions. The participants have worked for various local and international cultural events in Iași, Cluj, and Bucharest.

While snowball sampling proved effective in accessing highly engaged practitioners, it also introduced certain limitations: the sample was restricted to three major Romanian urban centers, which may limit the diversity of perspectives. As revealed by the experts themselves, there are visible differences in consumption behavior between the three cities, considered as due to economic disparities and cultural background. Also, it is worth mentioning that these cities are among the largest in Romania. The question arises how and whether audiences of cultural manifestations behave differently in smaller communities, and whether the approach towards AI differs among experts working in smaller cities and other regions in Romania. These constraints are acknowledged here to ensure methodological transparency.

The nine specialists brought complementary experiences, covering literature, music, visual arts, and interdisciplinary cultural projects. Their professional involvement ranged from managing communication for international festivals to coordinating smaller-scale local events, ensuring a diversity of perspectives on cultural communication practices. On average, they had 10–20 years of experience in the field, and many combined multiple roles over time. For instance, they moved between festival communication, NGO cultural projects, artistic initiatives, or editorial and journalistic work. Several participants had extensive backgrounds in organizing and communicating large-scale literature festivals and music events (spanning classical, jazz, and contemporary genres), while others specialized in contemporary art exhibitions and related public debates. A few combined cultural communication with broader cultural management activities.

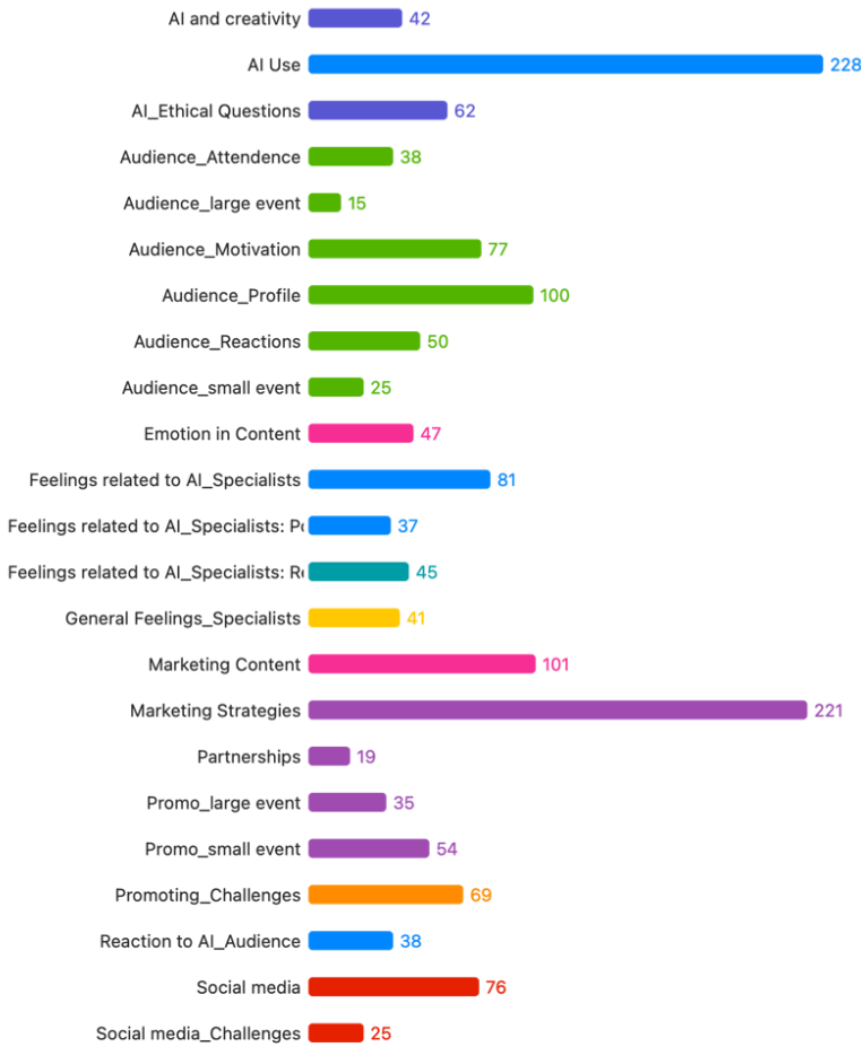
This diversity of roles and experiences ensured that the experts' insights covered a broad spectrum of cultural manifestations and audience types. It also highlights the common challenges practitioners face when balancing established practices with innovation in cultural communication.

Prior to conducting the interviews, each participant received an information sheet about the study's aims and procedure, before agreeing to take part. I obtained their written informed consent, including permission to record and anonymize the interviews. To ensure confidentiality, I removed from the interview transcripts any personal identifiers, and participants are referred to only by „Specialist A”, „Specialist B”, etc. Before running the transcript analysis, I also changed the names of the organizations or events in which the experts were involved. Thus, I ensured that the study met, concurrently, standards of transparency, voluntary participation, and respect for respondents' professional integrity.

Method of analysis

Following the informed consent, I recorded the interviews. Two were conducted in-person and seven online, via Zoom and Microsoft Teams. I manually transcribed the dialogues for three interviews, while for the ones on Microsoft Teams, given the possibility of an automatic transcript, I only edited to correct the transcription errors. Next, I used Atlas.ti to conduct the transcripts’ analysis, after having coded any names or data related to confidential information or that could lead to identifying the experts. Based on the recurrent themes in the transcripts, I set 23 (see Figure 1) codes grouped around four main subjects that were aligned to the research objectives and interview guide: Marketing Strategies, Audience, Promo challenges, AI and, separately, the specialists’ general feelings.

Figure 1. Code list and frequency of appearance



Source: own representation

Table 1. Code frequencies by interviews

	1 Interview Spec...	2 Interview Spec...	3 Interview Spec...	4 Interview Spec...	5 Interview Spec...	6 Interview Spec...	7 Interview Spec...	8 Interview Spec...	9 Interview Spec...	Totals	
	182	213	161	137	68	67	77	74	64		
AI and creativity	42	7	8		4	8	3	5	7	42	
AI Use	228	37	33	34	35	15	8	33	12	21	228
AI_Ethical Questions	62	1	8	4	13	6	10	8	3	9	62
Audience_Attendance	38	12	5	8		5	2	1		5	38
Audience_large event	15	7	3				1			4	15
Audience_Motivation	77	15	12	26		1	7	4	2	10	77
Audience_Profile	100	32	12	31	3	7	5	5			100
Audience_Reactions	50	8	17		2	1	6	9	2	5	50
Audience_small event	25	4	15	3		1	1		1		25
Emotion in Content	47	6	13	4	7	2	9	5	1		47
Feelings related to AI...	81	5	18		5	11	10	9	10	13	81
Feelings related to AI...	37	4	10		5	9		1	3	5	37
Feelings related to AI...	45	1	9			2	10	8	7	8	45
General Feelings_Spe...	41	12	16		4	2	4	1	2		41
Marketing Content	101	21	40	8	13	3	4	3	9		101
Marketing Strategies	221	41	45	29	52	7	16	6	17	8	221
Partnerships	19	3	2		7			1	4	2	19
Promo_large event	35	12	6		10	1	3	2	1		35
Promo_small event	54		30	20						1	54
Promoting_Challenges	69			11	10	13	7	14	8	6	69
Reaction to AI_Audien...	38		8	15	1	2	2	4	5	1	38
Social media	76	23	35	3	1		6	3	2	3	76
Social media_Challen...	25	7	11	1				4	2		25
Totals	251	355	205	168	87	121	122	107	110	1526	

Source: own representation

3. Findings

Following the content analysis of the interviews, I found that, regarding the communication strategies, all nine specialists mentioned the importance of using a mix of traditional, offline (posters, flyers) and online (social media) methods to attract a diverse audience. As seen in Table 2, media partnerships were mentioned in 20 instances, referring to collaborations with radios, newspapers, and local cultural institutions. As for the online platforms, they are the main communication channel for small scale events. Instagram (10 mentions) and TikTok (19 mentions) are considered essential to reach young people. Facebook remains effective for more mature audiences. The specialists insisted on the need for interaction and two-way communication (“engagement”, “talk”). An interesting, unexpected find was the education of young audiences as a method of attracting and cultivating new audiences. Whether it concerns literature, classical music, or contemporary art, organizing events in schools and universities and building partnerships with educational institutions appears to be a long-term strategy embraced by various event organizers.

Table 2. Keyword frequency about promotion strategies

Keywords	Instances
People	61
Communication	21
Media	20
TikTok	19

"to speak"	18
Facebook	14
Hard	12
Instagram	10
Emotion/ sense	9
Posts	9
Story	9
Partners	8
Video	7
Attract	6
Newsletter	6
Text	4

Source: own representation with data extracted from Atlas.ti

The interviews revealed that the specialists don't view their audience as a heterogeneous population. All specialists underlined how diverse the cultural events audience is, even within realms – different audiences within contemporary art, for instance, or literature, classical music. The variations appear to depend on the venue and the artistic content: "A museum like Tate Modern or Reina Sofia, which are contemporary art museums, organize other types of events than museums like Moco, which are also museums that call themselves Modern Contemporary, but address other types of audiences" (interview specialist C). Cultural events attract young people (mentioned in 10 instances), who are more active on Instagram and TikTok. People aged 30-50 are more inclined to attend traditional cultural events. As for the main motivations when attending a cultural event, the specialists mentioned curiosity, enthusiasm, and socializing – highlighted in 8 instances. At the same time, three experts highlighted a potential fear of feeling misplaced or not understanding the cultural event when it came to the audience's reluctance to participate in an exhibition opening or classical music concert. The importance of the social factor was outlined by all the specialists, whether through the importance of friends' presence – specifically mentioned, recommendation from friends, voluntary work, or for the "spectacle of the masses". There is also a small category of consumers for whom attending cultural events is a habit, part of their lifestyle. As challenges in attracting their audiences, the specialists mentioned the difficulty in building audience loyalty, convincing people to keep coming to the next events: "I prefer 20 who come constantly to 100 who come once and never return" (interview specialist C). There is also a lack of a large audience for niche cultural events, such as contemporary art exhibitions, poetry recitals, and film screenings.

Among the challenges mentioned in the nine interviews, managing the brand presence on multiple platforms is mentioned specifically by six experts (“Nowadays, social media seems to be getting harder and harder to navigate, as if people...you have to do a PhD to learn how to manage it” (interview specialist B). According to them, TikTok poses the biggest challenges (“there is a universe in itself and we don't have the ability to manage presence on TikTok” (interview specialist B). Another challenge that resurfaced in all interviews was the lack of resources – time and people. All four specialists were involved in various aspects of the event organization. Those whose role was focused on communication also dealt with organizing activities and vice versa: “In the cultural area, people wear many hats: they are also project managers, they are also communicators, they also raise funds” (interview specialist D). Thus, the available time and concentration (as well as budget) for conducting effective presence on all communication channels is limited: “you're under super high pressure all the time, especially being like this, short on resources. In fact, it's super high pressure, and it's hard to relax when you're at the buttons of a campaign or at the buttons of a post, at the buttons of a press release, and very importantly, it feels very clear at the end of the line.” (interview specialist E). As for the role of AI in enhancing communication strategies for cultural events, I learned that, overall, AI is seen as a useful but incomplete tool by the specialists. The 14 mentions of ChatGPT (see Table 3) highlighted its role in repetitive or administrative tasks. The specialists also consider that AI cannot convey emotion - an aspect highlighted in 6 instances. The specialists’ sentiment towards AI is generally positive. 20 instances highlight favorable perceptions (words like “useful”, “cool”, “awesome”, “can’t wait”), while there are also concerns (9 instances) about lack of authenticity or communication mistakes in AI-generated content. Concerning the audience’s reaction to the use of AI in promoting cultural events, in the 24 mentions, the reactions were indicated as neutral or positive, suggesting the gradual acceptance of AI in promotion, especially among young people. As expected, the specialists mentioned that the young audience is the most open to using technologies. One expert, however, observed that there is a category of very conservative young people who are reluctant towards technology, probably due to taking over their parents’ values.

Table 3. Keyword frequency about AI usage

Keywords	Instances
“to help”/ “help”	24
Text	18
ChatGPT	14
Post/ Posts	12

Instrument	10
Plan/ plans	7
Images	6
Useful	5
Easy	5

Source: own representation with data extracted from Atlas.ti

Concerning the ethical issues and risks associated with the use of AI in promoting cultural events, all specialists expressed worries in 62 instances. These included the risks of manipulation, plagiarism, loss of authenticity, human creativity, and critical thinking. Four specialists expressed opinions about AI and the creative act, rather indicating surprise and curiosity about how AI becomes a “pseudo-creator”. Though they did not point out a clear favorable or against position, the tone of voice and choice of words indicated reluctance and disapproval: “creation can take new forms [...] maybe for them creation means generating, inserting a good prompt that generates something completely new to you” (interview specialist B); “It's a competition, it ends up being a competition of the artist with...I was about to say the pseudo-artist. It's not even a pseudo-artist, because we can't talk about a pseudo-artist as long as we're not talking about an entity [...] Where is the ethics in comparing an artist with a compilation of information? Because, in the end, that's what AI is” (interview specialist F).

Regarding the importance of emotional engagement in cultural communication and its relationship with audience participation and loyalty, eight of the nine experts emphasized that emotion must be present in promotional content. However, using it excessively or out of alignment with the event content can affect the brand's credibility and, thus, the public's perception. For literature events, for example, the public is seen as more selective and critical about the communication content. Contemporary art, on the other hand, is described by one specialist as a cultural act that is mostly consumed rationally, that addresses the intellect rather than the emotions. All experts agreed that the way to connect with and attract audiences to cultural events is by mostly addressing their emotional register, appealing to the human need for connection, belonging, and feeling. Words describing humour, the feeling of pride or belonging were used in regard to social media posts for events presenting classical music or literature.

Limits of the study

While this research shed light on cultural marketing practices and the use of AI for both large- and small-scale events in various cultural domains, the study has limitations. The conclusions are

drawn based on only nine interviews. While the specialists have an extensive and varied experience, both with the local and international cultural stage, they are all based in three main cities in Romania: Iași, Cluj, and Bucharest. Thus, they can offer limited considerations on audience motivations and behavior, the public's relation to AI technology, as well as the audience's response to marketing. Differences in perception and behavior are bound to exist between cities, not to mention countries and cultures. Extensive research is needed to obtain a more realistic picture of the phenomenon.

Another limit of the study may be related to an identity bias (Brüns and Meißner, 2024) in the case of those specialists who are content creators. They may have wanted, consciously or unconsciously, to defend the value of their work (as human creation) by adopting a cautious position and not speaking openly about how they really feel about the use of AI tools. Four of the experts, who are also content creators in their communication efforts, specifically denied using AI tools for writing their texts and underlined, by repeating negations, their refusal to use generative AI tools for content creation. However, in the conversations, they disclosed that they do use such tools to obtain a text draft or generate new content ideas.

4. Discussion

This research started with a question about what role AI plays in building resilience for cultural events organizers, in their efforts to reach, engage, and convince their audiences. In terms of strategies that the cultural events experts I interviewed already implement, all nine specialists stressed the importance of authentic communication, adapted to each category of audience. They also stressed the diversity of the public. There are different types of cultural event consumers, even by event type (e.g. classical music at the Philharmonic and classical music in an unconventional space), which raises challenges in diversifying the messages and communication channels efficiently enough. The lack of resources and the fact that one person (be it communicator or organizer) needs to handle multiple, various activities represents a barrier in effectively applying the marketing actions that could improve the results. In this respect, AI tools appear to be the appropriate solution, as they can automate repetitive or tedious actions, fasten planning, and even creative processes (as in suggesting ideas and helping to overcome “creative paralysis”). The general sentiment of the specialists towards the use of AI tools was positive, comprising enthusiasm and anticipation. The general acceptance, however, was mostly related to the help AI can give in administrative tasks, mostly. When it came to content generation, though they admitted having used ChatGPT, the attitude was more reserved and uncertain. The more reserved tone and affirmations came from the specialists directly involved in

communication and content creation. It may appear that identity (content creator versus organizer) may play an important role (Brüns and Meißner, 2024) in the acceptance of AI tools. The major concerns were about the authenticity and emotion that needed to be perceived by the target audience, especially the loyal category. The brand's credibility depends, in their view, on how genuine the messages sound, how well they evoke or represent what actually takes place in that particular event. And this is where AI instruments are limited, in the specialists' opinion. However, they recognize that there are AI creations that are accepted as genuine art creations, sometimes even without the public's awareness of the authorship. Also, they admitted having used ChatGPT for generating some texts, summarizing long-form content, or "translating" content to fit the audience's level of understanding (ex. curatorial texts).

These findings resonate with the findings of Brüns and Meißner (2024) and Leung *et al.* (2018), who suggest that professional identity and role strongly influence the acceptance of automation technologies. As the interviews revealed, practitioners focused on content creation seemed more cautious toward AI-generated output. It also reflects the extended Technology Acceptance Model (Venkatesh and Davis, 2000) with the subjective norm playing a significant role in technology adoption.

One of the key aspects that transpired from the nine interviews, which I did not anticipated, was socialization as one of the audience's strongest motivations when choosing to attend a cultural event. I started with the presumption that art and culture are mostly individual experiences (Dewey, 2024). I relied on the idea that people tend to seek such events in order to connect with their feelings, to meditate on life and their own existence (McCarthy *et al.*, 2001). The social factor, though important, seemed to come secondary. What these interviews revealed is rather the contrary: people come, firstly, to connect with other people, to feel they belong, to find like-minded or like-spirited peers, to meet with friends. People seek connection both in the communication of events and in the cultural experience (in participation). This is why specialists, in their communication efforts, still count on "talking" to people and the power of the word-of-mouth. Thus, the more connection their messages transmit, the stronger the impact: audience engagement and participation. Connection also implies emotion. This is where AI tools need to prove their capability – generate the kind of messages to which people can relate and connect, through reason and emotion. Although the specialists' underlined the importance of factual communication, emotional content was also considered important, as long as it remained authentic, without exaggerations (too many adjectives, metaphors, hyperboles). It remains to be seen how capable generative AI tools are in creating such content, balancing facts and emotion that resonate with a human audience. Human creation is still seen at the heart of the public's motivation to attend a cultural event.

These considerations reflect the discussion brought to attention by John Dewey (2024) and McCarthy *et al.* (2001) on the interaction between individual aesthetic experience and social engagement, suggesting that AI-mediated communication should not only transmit information but support both individual experiences along with relational aspects of cultural participation.

Communication must also be adapted to the context of current reality (what is being talked about, what concerns them at that moment). This is a particular challenge for cultural events professionals who need to focus on various tasks, engage with several different audience types on different platforms, and constantly communicate (especially for small-scale events). Frequent mentions of Instagram (10) and TikTok (19) show that promotion strategies must be adapted to the characteristics of the young audience. It appears that, in this case, AI tools could prove helpful in better managing this kind of varied communication: identifying current topics, suggesting content related to the interests of different categories of audience, even automating content creation and distribution.

These insights reinforce the theoretical frameworks for platform-sensitive and interactive engagement strategies. They connect to the findings of Kolb (2013) and Kaplan and Haenlein (2010), who highlight the need for cultural organizations to engage audiences online, be present on social media, and adapt communication to the interests of specific user groups.

Another interesting finding was the use of education as a strategy for attracting new audiences and cultivating audience loyalty. Young volunteers, for instance, are an important category in both organization and promotion (mentioned by 4 specialists). Partnerships with schools and universities, to bring events directly to the younger audiences, are another important element, mentioned by four experts. It is also important to remember that these young audiences grow up in a digital, AI-driven environment. To be able to connect with them means to also embrace their language and interaction style. It is another opportunity to use AI tools that could generate the type of content to appeal to this generation.

This supports the literature emphasizing the importance of audience development and digital engagement strategies in cultural consumption (Arsene *et al.*, 2020; Kolb, 2013). It shows how educational initiatives and communication tailored for generational characteristics reinforce audience connection and loyalty.

Conclusion

To conclude, this study explored the role of AI in developing resilience through enhanced communication strategies for cultural events, drawing insights from semi-structured interviews with specialists in the field. In the view of these experts, the way AI can build resilience when it comes to

communication is by using it as a complementary tool to automate administrative tasks, optimize content distribution, and generate ideas for creative messages. However, its effectiveness depends on integrating a human, authentic approach that preserves the emotion and cultural specificity of communication, in order to generate a sense of connection.

The participants in the study emphasized that the emotional component is an important driver in audience engagement. While AI can assist in structuring content, they consider that it struggles to convey authentic emotion, which is crucial in marketing events centered around art, literature, and music.

The specialists raised concerns around authenticity, manipulation, and loss of artistic integrity. Practitioners remain cautious about the overuse of AI-generated content, as audiences value human connection and originality in cultural storytelling.

Instagram and TikTok were identified as the most effective platforms for reaching younger audiences, while Facebook remains relevant for older demographics. To retain the audience, the specialists use a hybrid approach, combining AI-assisted automation with human-driven engagement.

Cultural managers face time and personnel constraints, making AI a valuable tool for optimizing workflows. However, they still have limited expertise in AI-driven marketing, which poses a barrier to adoption.

From a practical perspective, these findings suggest that cultural event organizers should leverage AI selectively, to optimize workflows while ensuring human oversight in content creation. Emotional resonance must remain a priority and AI could support, but not yet replace, human storytelling in cultural marketing. Strategic adaptation across digital platforms is necessary, with AI-assisted analytics helping tailor messaging to different audience segments. Ethical considerations must be addressed proactively, ensuring that AI-generated content aligns with the values of authenticity and artistic integrity.

Looking ahead, the study also points to clear directions for future research. As mentioned in the limitations of the study, future research should apply these insights to larger and more diverse samples to assess how different cultural sectors and geographic regions engage with AI in communication. Investigating how different demographic groups perceive AI-generated content in cultural marketing would provide further practical insights. Cross-cultural comparisons could examine variations in AI adoption and effectiveness in different marketing environments. Moreover, as AI continues to evolve, future studies should explore how improvements in AI-generated content impact audience engagement over time.

Taken together, these insights underline AI's potential to act as a resilient ally in cultural communication, provided, of course, that it is guided by human creativity, ethical responsibility, and

cultural sensitivity. By bridging technological innovation with authentic connection, both practitioners and researchers can ensure that AI strengthens, rather than diminishes, the human stories at the heart of cultural expression.

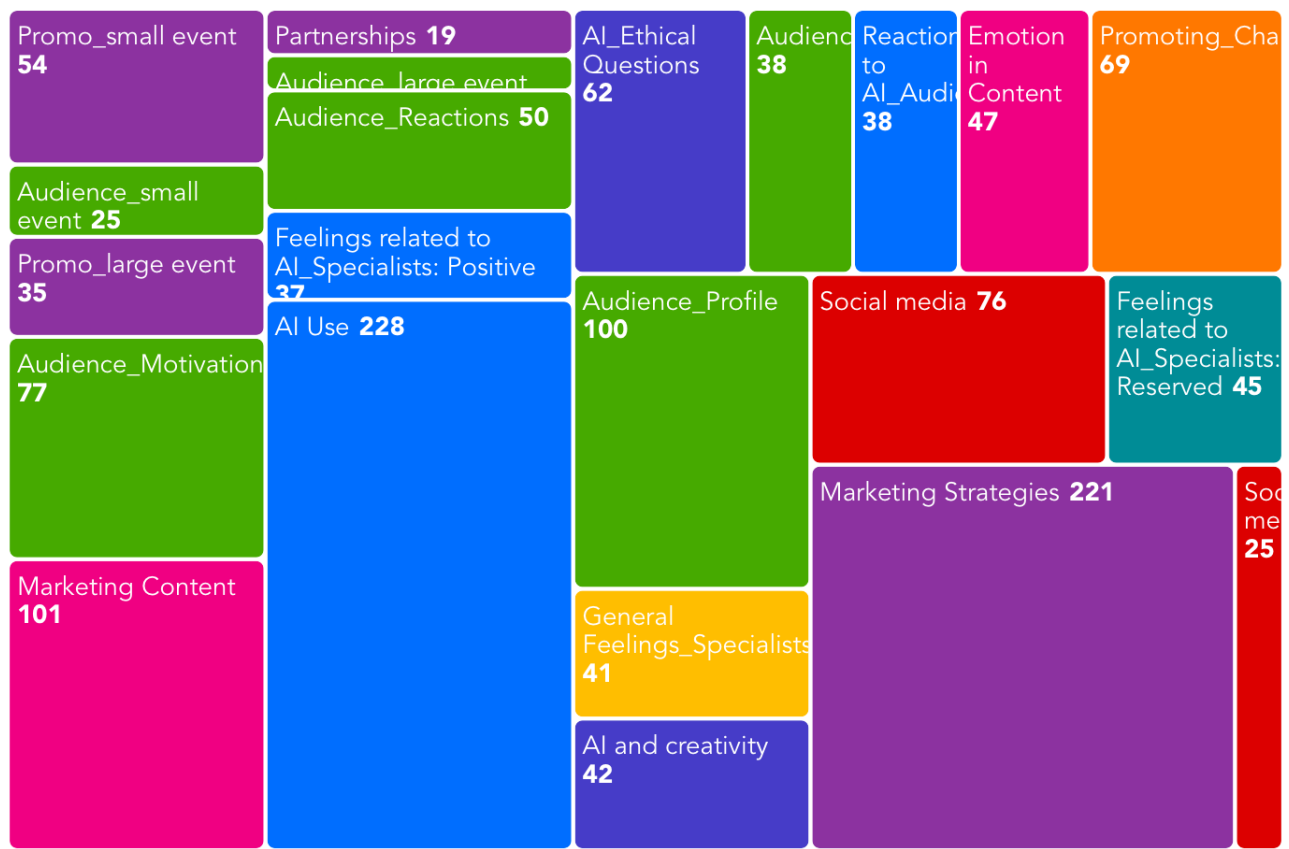
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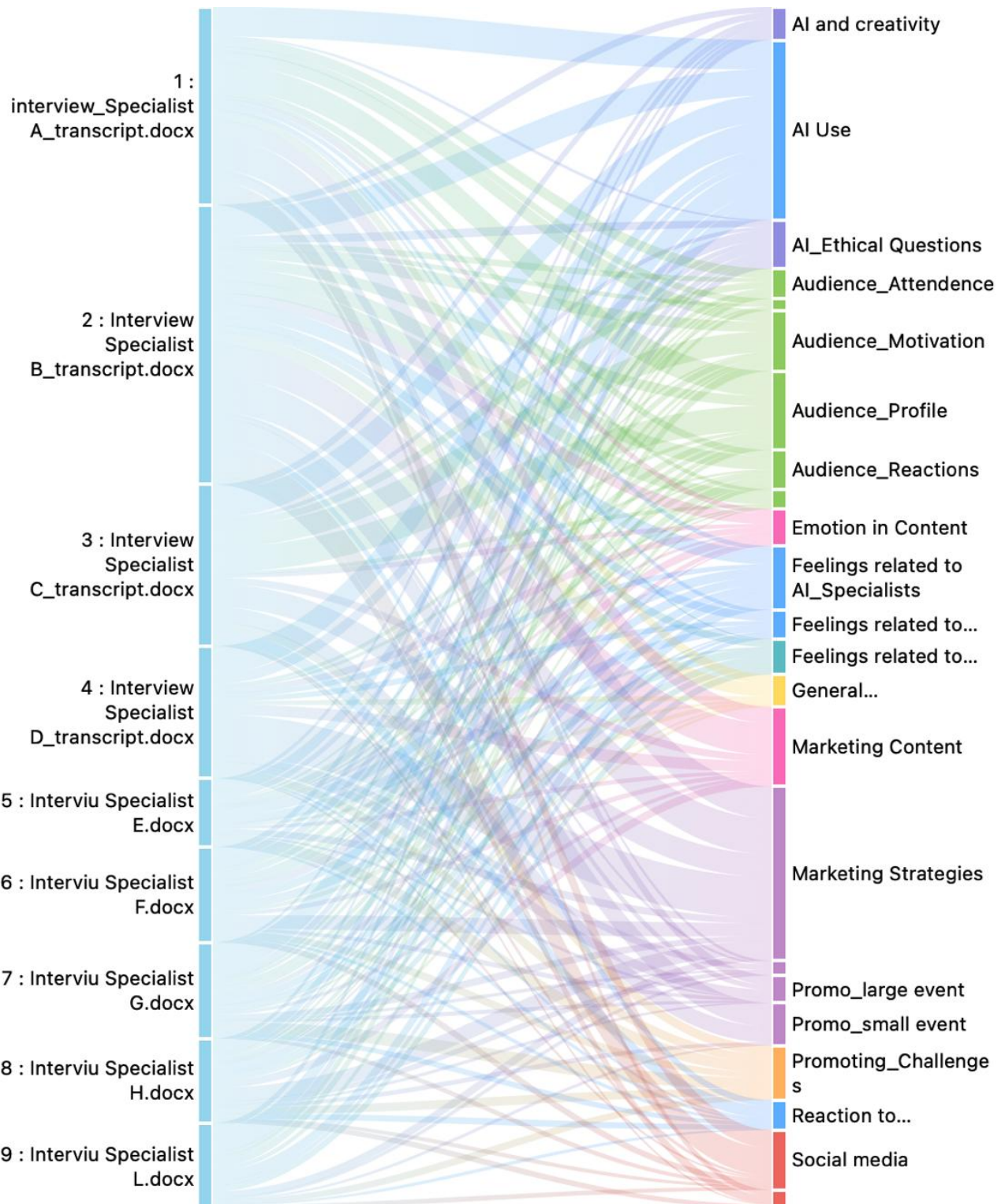
Yu, J., Dickinger, A., So, K.K.F. and Egger, R. (2024), Artificial intelligence-generated virtual influencer: Examining the effects of emotional display on user engagement, *Journal of Retailing and Consumer Services*, 76, p. 103560. <https://doi.org/10.1016/j.jretconser.2023.103560>

Annex 1. Code frequency blocks



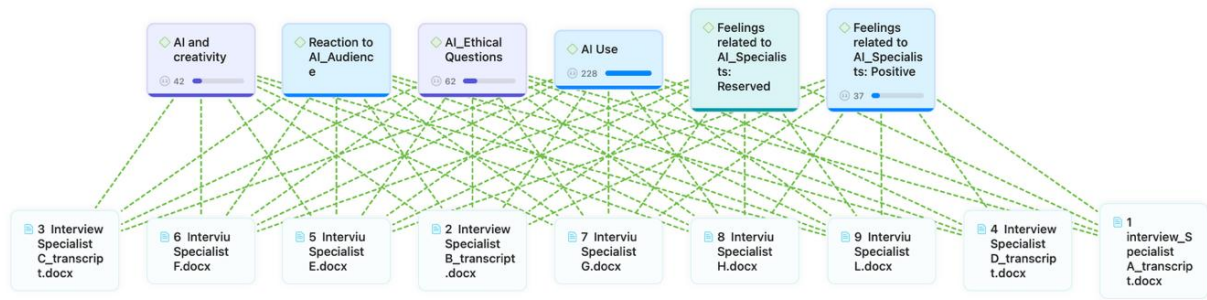
Source: own representation

Annex 2. Sankey Diagram Interviews and codes co-occurrence



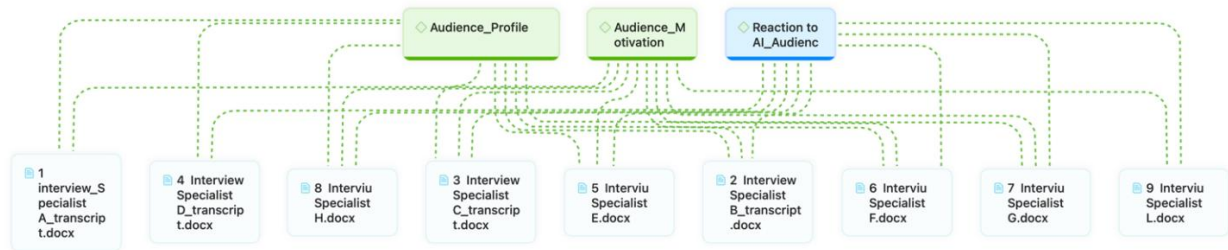
Source: own representation

Annex 3. Visual map of mentions of AI Use in interviews



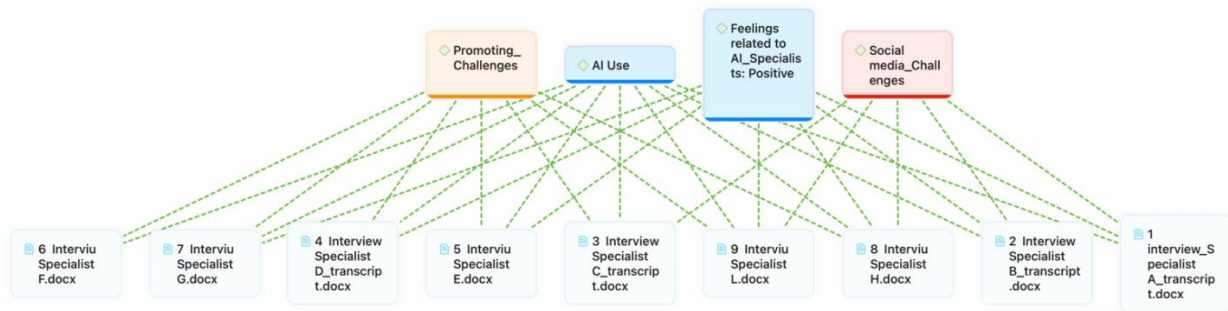
Source: own representation

Annex 4. Visual map of mentions of Audience and AI Use in interviews



Source: own representation

Annex 5. Visual map of mentions of AI Use and Promoting Challenges in interviews



Source: own representation

Intra-regional disparities and hidden inequalities in the employment of PhD Holders: evidence from Eastern Macedonia and Thrace - one of the EU's poorest regions

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Abstract

This study investigates the employment patterns of PhD holders in Eastern Macedonia and Thrace, among the European Union's less developed regions. Drawing on the 2021 Population and Housing Census conducted by the Hellenic Statistical Authority (ELSTAT), it examines both employment status and forms of employment, emphasising variations across the region's six units. The findings reveal notable gender and territorial disparities, with most PhD holders occupying salaried positions, predominantly in the public sector, while a substantial proportion remains economically inactive, reflecting the underutilisation of highly skilled human capital. By highlighting intra-regional differences within one of Europe's most disadvantaged areas, the study contributes to the discourse on doctoral employability in peripheral labour markets and discusses relevant policy and educational implications, particularly concerning local development and the mitigation of regional inequalities.

Keywords: employability, PhD holders, regional inequalities, gender, regional development, gender equality

Introduction

The employability of PhD holders has emerged as a critical research field, especially in light of rapid global and national labour market transformations. Doctoral graduates exhibit the highest employment rates among all educational levels - 92% across OECD countries (OECD, 2022) - yet their career trajectories are not without challenges. New generations face employment precarity, limited mobility between academic and non-academic sectors, and increasing competition as the number of doctorates rises (Hnátková *et al.*, 2022; Pizzolato *et al.*, 2023).

In Greece, these dynamics are particularly pronounced due to the combined effects of the economic crisis, digitalisation, and structural changes in production. While Greek PhD holders show

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high overall employment rates (EKT, 2022b), significant inequalities persist, especially in terms of gender and geography (Roupakias, 2018; OECD, 2023).

Eastern Macedonia and Thrace represents an emblematic case. Despite hosting a major academic institution—the Democritus University of Thrace—the region remains one of the least developed in the European Union, with GDP per capita amounting to just 48% of the EU average (Eurostat, 2022). Structural weaknesses such as low productivity, demographic decline, and weak labour absorption hinder the full utilisation of highly skilled human capital (Iammarino, Rodríguez-Pose and Storper, 2022).

According to the OECD (2020), persistent regional imbalances in Greece constrain innovation capacity and the employment of highly qualified workers in the northern and eastern regions. The European Commission (2025) classifies Eastern Macedonia and Thrace among the Emerging Innovators in the Regional Innovation Scoreboard 2025, reflecting low R&D intensity and a fragile innovation ecosystem. Similarly, Ierapetritis (2019) highlights that limited social capital and insufficient networking between universities and local enterprises restrict regional development and innovation potential in northern Greece.

Recent regional labour reports show that employment in Eastern Macedonia and Thrace remains dominated by low- and medium-skill sectors, while opportunities for PhD holders are largely concentrated in the public sector, particularly in education and research (ELSTAT, 2023 Q4). The National Smart Specialisation Strategy 2021-2027 also emphasises the need to strengthen regional innovation ecosystems as a means to improve employment outcomes for highly skilled graduates (GSRI, 2022). These findings confirm that structural weaknesses at the regional level significantly influence the employment prospects of highly educated individuals, including PhD holders.

The purpose of this study is to investigate the employment patterns of PhD holders in Eastern Macedonia and Thrace, one of the least developed regions of the European Union, with particular attention to the intra-regional disparities observed across its six regional units. By examining employment status and forms of employment using census data, the study seeks to highlight gender- and territory-based inequalities in the employability of doctoral graduates. In doing so, it aims to contribute to the broader debate on the integration of highly qualified human capital into peripheral labour markets and to inform policy and educational strategies designed to reduce regional disparities.

The research is guided by the following questions: What is the distribution of PhD holders in terms of employment status across the six regional units of Eastern Macedonia and Thrace? How does employment status differ between male and female PhD holders in each regional unit? What forms of employment (salaried, self-employed, other) prevail in each regional unit? What patterns of

economic inactivity are observed among PhD holders, and how do these vary by gender and regional unit?

1. Literature Review

1.1. Employability of PhD holders at international level

International data indicate that PhD holders enjoy high employment rates, although their career trajectories increasingly diverge from traditional academic paths (OECD, 2022). Limited absorption capacity in education and research sectors has led to diversified career paths, with many PhD holders employed in the private sector, consultancy, or industry (Robinson-Garcia *et al.*, 2016). The literature emphasises the importance of interdisciplinarity, adaptability, and transferable skills for professional success (Pizzolato *et al.*, 2023; Sala-Bubaré *et al.*, 2023).

Significant differences in employment and job satisfaction are observed across academic fields. PhD holders in Engineering and Computer Science predominantly work in industry and services, reporting lower satisfaction in terms of knowledge application compared to those in universities or public research centres (Alfano, 2021). Graduates from social sciences and humanities face difficulties finding employment matching their qualifications and salary expectations (Boulos, 2016). Furthermore, hard science PhDs generally enjoy better career outcomes than graduates in softer fields, such as sociology (Passaretta, 2018; Daouli, 2015). Investigating the link between field of study and career trajectory is crucial for understanding PhD employment patterns.

Specialised research skills are essential for non-academic employment. PhDs working outside R&D often assume demanding roles or positions related to their academic training (Haapakorpi, 2017), with employers placing high value on expertise.

1.2. Gender inequalities in PhD employment

Research consistently shows gender disparities in career progression. Women are less likely to occupy leadership roles, more frequently work in precarious positions, and are underrepresented in STEM entrepreneurship (Van den Brink and Benschop, 2014; ERC, 2021; European Commission, 2024a). The Figures 2021 and 2024 indicate that, despite near parity at graduation, inequalities widen upon entering the labour market (EKT, 2022a; European Commission, 2024b).

The literature also shows that specialised skills, prior academic experience, and professional networks influence men and women differently (Herrera, 2015; Pham, 2023), highlighting the need for policies that support both access and career advancement.

At the national level, the Greek context provides further evidence of persistent gendered employment patterns. Gender disparities are particularly visible among PhD holders and researchers. According to the National Documentation Centre (EKT, 2023b), women represent nearly half of new doctoral graduates but remain underrepresented in high-level academic and research positions. They are also more likely to be employed in the public sector, particularly in education and health sciences. Empirical research on the employment of PhD holders in Greece confirms these differences: Daouli and Nikolatou (2015a) found that female doctorate holders are significantly more concentrated in lower-paid public sector occupations, whereas men are more likely to work in research-intensive and higher-remunerated positions. At the international level, the OECD (2024a) report on the state of academic careers highlights that women PhD holders continue to face barriers in securing stable and well-paid research positions, particularly within STEM disciplines. Addressing such gender imbalances is essential to ensure both equality of opportunity and the effective utilisation of highly educated human capital in Greece.

1.3. Regional inequalities and development traps

Regional disparities affect the PhD labour market, with certain areas identified as “development traps,” where low productivity and limited job demand hinder convergence despite high educational attainment (Iammarino *et al.*, 2022). These regions struggle to retain and utilise high-skilled workers, limiting mobility and human capital utilisation (European Commission, 2022).

Applied to the Greek case, this framework helps interpret the intra-regional variations we observe. Regions such as Attica, with more diversified innovation ecosystems and stronger research–industry–governance linkages, achieve better outcomes for PhD holders (EKT, 2023a; GSRI, 2022). By contrast, peripheral areas such as Eastern Macedonia and Thrace remain constrained by institutional inertia, public-sector reliance and weak private-sector absorption (ELSTAT, 2023; European Commission, 2023). These conditions mirror the characteristics of “development traps”, where limited diffusion of innovation and insufficient interaction between academic and productive sectors hinder the full utilisation of highly skilled human capital. From a Regional Innovation Systems perspective, such patterns reflect limited connectivity among universities, firms and regional authorities, which reduces the diffusion of innovation and slows structural transformation (Asheim and Gertler, 2006).

Over-education, international experience, and socio-demographic factors influence employability and study-to-work match. Overseas experience positively affects overcoming mismatches, and positions within universities or research centres increase the likelihood of successful matching (Ermini, 2017; Massimiliano, 2022). Age, marital status, and family ties also influence career trajectories (Daouli, 2015b; Tocchioni, 2021).

1.4. The Greek context

In Greece, PhD holders show high employment rates (97.5%), primarily in the public sector, yet face overrepresentation and skills mismatches (OECD, 2010; EKT, 2022b). The National Documentation Centre records significant international mobility and connections with the diaspora (EKT, 2023). Regional disparities are pronounced: metropolitan areas offer more opportunities, while peripheral regions face structural barriers (Vlados *et al.*, 2019; Kosmetatou, 2025).

Research highlights that PhDs in the private sector display varied profiles depending on academic field, type of research, funding sources, and level of study (Herrera, 2015). General skills, such as analytical thinking and problem-solving, along with social capital, are crucial for professional success (Kyvik, 2012; Pham, 2023; Waaijer, 2016).

Finally, the literature emphasises the need for active policies to attract and retain PhDs and enhance their contribution to the economy and higher education. Intermediary organisations, public-private partnerships, and public administration can play a crucial role if adequately supported by resources (Santos, 2016; Alfano, 2021; Boulos, 2016; Fraguas-Sánchez, 2023; Passaretta, 2018).

2. Research methodology

2.1. Research design

This study adopts a quantitative research approach, based on census data. The objective is to investigate employment inequalities among PhD holders in Eastern Macedonia and Thrace, focusing on gender and regional dimensions. The use of secondary, population-wide data ensures stronger validity compared to sample-based studies.

2.2. Dependent and independent variables

To address the research questions, the study employs variables drawn from the 2021 Population and Housing Census of the Hellenic Statistical Authority (ELSTAT). The dependent variables concern labour market outcomes, namely employment status (employed, unemployed, or economically inactive) and form of employment (salaried, self-employed, or other). These measures capture the degree of integration of doctoral graduates into the labour market and allow for the identification of prevailing employment patterns.

The independent variables comprise gender and regional unit. Gender (male or female) enables the analysis of possible inequalities in employment outcomes between men and women. The regional unit variable distinguishes between the six subdivisions of Eastern Macedonia and Thrace—Drama, Kavala, Xanthi, Rodopi, Evros, and Thasos—and makes it possible to examine intra-regional disparities. Taken together, these variables facilitate an in-depth exploration of the interplay between gender, territorial context, and employment outcomes among highly qualified individuals in a less developed European region.

Finally, in line with the definitions provided by ELSTAT (2021), the economically active population comprises those who are employed, formerly employed, or newly unemployed, whereas the economically inactive population includes students, retirees, individuals living on private income, homemakers, and others. Employment position is further classified into six categories: self-employed with employees, self-employed without employees, salaried or wage earners, members of producers' cooperatives, contributing family workers, and other cases.

2.3. Data Source and sample

The data are drawn from the 2021 Population and Housing Census conducted by ELSTAT. For the first time, the census included detailed information on the highest level of education attained, enabling the identification of PhD holders at the regional unit level. The final dataset covers all PhD holders residing in Eastern Macedonia and Thrace, thus ensuring complete population coverage rather than relying on sample surveys.

2.4. Analytical procedure

Data processing was conducted using SPSS. The analysis proceeded in two steps:

- Descriptive statistics: distributions and percentages of employment status and type of employment, disaggregated by gender and regional unit.
- Inferential statistics: chi-square tests were employed to assess associations between gender, region, and employment variables. In cases where expected cell counts were small, alternative methods (e.g., Fisher's Exact test, Monte Carlo simulations) were used to confirm robustness.

While the census data used in this analysis provide a comprehensive and reliable overview of PhD holders' employment patterns, it is important to acknowledge a key limitation. Such data are highly effective for identifying associations and structural trends but cannot establish causality or explain the underlying mechanisms behind observed relationships. Recognising this limitation clarifies the scope of the findings and underscores the value of complementary qualitative research to explore the underlying "why" behind these patterns.

3. Results

3.1. Analysis of the association between regional unit and gender among economically active PhD holders

This study examines the relationship between Regional Unit (Kavala, Drama, Xanthi, Rhodope, Evros, and Thasos) and gender among economically active PhD holders, based on the 2021 population census. The sample comprises 1,498 valid observations.

Overall, males constitute 63.9% and females 36.1% of the economically active PhD population, with variation across regions (The full results are presented in Table A1 (Appendix)). Thasos exhibits exclusively male representation (100%, albeit with a very small sample), while Rhodope demonstrates the highest male predominance (70.4%). Drama and Evros show a relatively balanced gender distribution (61.7% and 60% males, respectively), whereas Kavala and Xanthi approximate the overall average.

A Pearson Chi-Square test (Table 1) indicated a statistically significant association between Regional Unit and gender ($\chi^2 = 11.981$, $p = 0.035$). Given the presence of low expected frequencies in some cells, a Monte Carlo simulation was conducted, which corroborated the significance ($p = 0.032$, 99% confidence interval: 0.028–0.037). These results were further supported by the Likelihood Ratio test ($p = 0.017$) and Fisher's exact test ($p = 0.035$). The Linear-by-Linear Association test did not reveal a significant linear trend ($p = 0.917$), consistent with the categorical nature of the variables.

Table 1. Chi-Square test for the association between regional unit and gender of economically active PhD holders

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	11.981 ^a	5	0.035	0.032 ^b	0.028	0.037			
Likelihood Ratio	13.729	5	0.017	0.018 ^b	0.015	0.022			
Fisher's Exact Test	11.688			0.035 ^b	0.030	0.040			
Linear-by-Linear Association	0.011 ^c	1	0.917	0.923 ^b	0.916	0.929	0.465 ^b	0.452	0.478
N of Valid Cases	1498								

Notes: a. 2 cells (16,7%) have expected count less than 5. The minimum expected count is 1,81.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is -,104.

Source: own processing in SPSS based on data provided by ELSTAT

Symmetrical measures (Table 2) of association (Phi and Cramer's $V = 0.089$) indicate a weak but statistically significant relationship. In other words, while gender distribution varies across regions, the strength of this variation is limited.

Table 2. Symmetrical measures of association (Phi and Cramer's V) between regional unit and gender of economically active PhD holders

	Value	Approx. Sig.	Monte Carlo Sig.			
			Sig.	99% Confidence Interval		
				Lower Bound	Upper Bound	
Nominal by Nominal	Phi	0.089	0.035	0.032 ^c	0.028	0,037
	Cramer's V	0.089	0.035	0.032 ^c	0.028	0,037
N of Valid Cases	1498					

Notes: a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on 10000 sampled tables with starting seed 2000000.

Source: own processing in SPSS based on data provided by ELSTAT

In conclusion, the geographical distribution of economically active PhD holders is statistically associated with gender, albeit with low intensity. These findings may reflect broader socio-economic, cultural, or institutional factors influencing regional mobility and labour market integration, with a gendered dimension.

3.2. Analysis of the association between regional unit and gender among economically inactive PhD holders

This study investigates the relationship between Regional Unit and gender among economically inactive PhD holders, based on the 2021 population census. The sample comprises 634 valid cases.

Overall, males account for 64.7% and females for 35.3% of the economically inactive PhD population, with relative stability across most regions (The full results are presented in Table A2 (Appendix)). Drama exhibits the highest male predominance (73.7%), whereas Evros displays the lowest (55.2%). Rhodope, Kavala, Xanthi, and Thasos report proportions around 66%, with Thasos reflecting the general trend despite a small sample size (13 individuals).

A Pearson Chi-Square (Table 3) test indicated a statistically significant association between Regional Unit and gender ($\chi^2 = 12.275$, $p = 0.031$). Due to low expected frequencies in one cell, a Monte Carlo simulation was conducted, confirming the significance ($p = 0.030$, 99% CI: 0.025–0.034) and enhancing the robustness of the results. The association was further supported by the Likelihood Ratio test ($p = 0.032$) and Fisher's exact test ($p = 0.033$). The Linear-by-Linear Association test was not significant ($p = 0.377$), as anticipated given the nominal nature of the variables.

Table 3. Chi-Square test of regional unit and gender among economically inactive PhD holders

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	12.275 ^a	5	0.031	0.030 ^b	0.025	0.034			
Likelihood Ratio	12.175	5	0.032	0.036 ^b	0.031	0.040			
Fisher's Exact Test	11.972			0.033 ^b	0.028	0.038			
Linear-by-Linear Association	0.779 ^c	1	0.377	0.383 ^b	0.371	0.396	0.201 ^b	0.191	0.212
N of Valid Cases	634								

Notes: a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 4,59.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is ,883.

Source: own processing in SPSS based on data provided by ELSTAT

Symmetrical measures (Table 4) (Phi and Cramer's $V = 0.139$) indicate a weak but statistically significant association, suggesting that gender distribution varies across regions, though the effect is moderate.

Table 4. Phi and Cramer's V by regional unit among economically inactive PhD holders

	Value	Approx. Sig.	Monte Carlo Sig.			
			Sig.	99% Confidence Interval		
				Lower Bound	Upper Bound	
Nominal by Nominal	Phi	0.139	0.031	0.030 ^c	0.025	0.034
	Cramer's V	0.139	0.031	0.030 ^c	0.025	0.034
N of Valid Cases	634					

Notes: a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on 10000 sampled tables with starting seed 2000000.
Source: own processing in SPSS based on data provided by ELSTAT

In conclusion, the geographical distribution of economically inactive PhD holders differs significantly by Regional Unit. The Monte Carlo approach effectively addresses low-frequency issues, and the observed disparities may reflect broader socio-economic or cultural factors, gender equality concerns, and structural differences in local labour markets and access to postdoctoral opportunities.

3.3. Synthesis of results regarding the association between regional unit and gender among economically active and inactive PhD holders

Analysis of the 2021 census data for PhD holders in Eastern Macedonia and Thrace shows a statistically significant but weak to moderate association between region and gender (Cramer's $V = 0.089$ for active, 0.139 for inactive). Men predominate among the economically active, reaching 70.4% in Rhodope and approaching parity in Evros (60% male). Gender imbalances are sharper among the inactive, notably in Drama (73.7% male) and Thasos (69.2% male), with Evros again displaying greater balance.

These results mirror broader trends: She Figures 2024 reports that women comprise 50% of PhD graduates but only 39% of researchers, below the EU-27 average (European Commission, 2024a; 2024b). In Greece, 52.2% of 2022 graduates were male (EKT, 2023), confirming that parity at graduation weakens in the transition to employment (García, 2020). International studies also note compounded gender–regional inequalities, with women facing more precarious labour market entry, especially in weaker economies (Auriol *et al.*, 2013), while socio-economic norms and spatial dynamics further constrain career paths (Kosmetatou, 2025). She Figures 2021 highlights persistent underrepresentation in STEM and ICT self-employment (EKT, 2022a), consistent with our findings of higher male concentrations in self-employment-oriented regions (e.g., Kavala, Rhodope).

The predominance of male PhD holders in both economically active and inactive groups may be partly explained by gendered patterns in field of study, mobility, and career choices. Men are more frequently concentrated in STEM-related disciplines, which offer greater opportunities for private-sector employment and self-employment (Encinas-Martín, and Cherian, 2023). Women, on the other hand, tend to specialise in education and public-sector–oriented fields, where job security is higher but regional mobility and entrepreneurial options are limited (EKT, 2022a; KEPE, 2022).

Additionally, family-related responsibilities and work–life balance constraints have been found to affect women’s career continuity, particularly in peripheral regions with fewer flexible employment options (EIGE, 2025; European Commission, 2024a).

In sum, while the statistical effect of geography is modest, its persistence underscores structural inequalities. Policy must therefore address not only women’s participation in research but also the creation of regionally balanced infrastructures for high-skilled employment.

3.4. Analysis of the association between regional unit and employment status of economically active PhD holders in Eastern Macedonia and Thrace

This study examines the relationship between Regional Unit and employment status among economically active PhD holders in Eastern Macedonia and Thrace, based on 2021 census data. The sample comprises 1,547 valid cases. Overall, 96.4% of PhD holders were employed, 2.9% were formerly employed, and 0.7% recently unemployed, indicating a high labour market absorption rate (The full results are presented in Table A3 (Appendix)). Regional variation was minimal: Thasos 100% employed, Drama 98.3%, Xanthi 97.2%, Rhodope 96.5%, Evros 95.9%, and Kavala 95.1% with the highest proportion of formerly employed individuals (4.9%).

Table 5. Chi-Square test by regional unit among economically active PhD holders

	Value	df	Asymp. Sig. (2- sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	14.474 ^a	10	0.152	0.144 ^b	0.135	0.153	0.479 ^b	0.466	0.492
Likelihood Ratio	17.167	10	0.071	0.061 ^b	0.055	0.067			
Fisher's Exact Test	14.198			0.140 ^b	0.131	0.149			
Linear-by-Linear Association	0.009 ^c	1	0.923	0.929 ^b	0.922	0.936			
N of Valid Cases	1547								

Notes: a. 7 cells (38,9%) have expected count less than 5. The minimum expected count is ,05.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is -,096.

Source: own processing in SPSS based on data provided by ELSTAT

The Pearson Chi-Square test (Table 5) did not reveal a statistically significant association between Regional Unit and employment status ($p = 0.152$), a finding corroborated by Monte Carlo and Fisher’s Exact tests. The Linear-by-Linear Association test was also non-significant ($p = 0.923$), indicating no linear trend. Symmetric measures (Table 6), Phi and Cramer’s V (0.097 and 0.068 respectively), were low and non-significant.

Table 6. Symmetric measures (Phi and Cramér's V) by regional unit among economically active PhD holders

		Value	Approx. Sig.	Monte Carlo Sig.		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Nominal by Nominal	Phi	0.097	0.152	0.144 ^c	0.135	0.153
	Cramer's V	0.068	0.152	0.144 ^c	0.135	0.153
N of Valid Cases		1547				

Notes: a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on 10000 sampled tables with starting seed 2000000.

Source: own processing in SPSS based on data provided by ELSTAT

In conclusion, PhD holders in the region exhibit generally high and homogeneous employment, with minor local differences lacking statistical significance. Their strong labour market presence is likely linked to the existence of academic institutions, research centres, and the gradual decentralisation of knowledge-based activities.

3.5. Correlation analysis between regional unit and employment status of economically inactive PhD holders in Eastern Macedonia and Thrace

Analysis of the 2021 census data on economically inactive PhD holders in Eastern Macedonia and Thrace reveals notable differences in types of inactivity across Regional Units. The dataset comprises 555 valid cases, with retirees forming the vast majority (88.1%), followed by students (5%), other forms of inactivity (4.7%), and homemakers (2.2%).

At the regional level (The full results are presented in Table A4 (Appendix)), Thasos has the highest share of retirees (100%), followed by Evros (90.9%) and Xanthi (90.7%). Kavala (81.7%) and Drama (81.1%) show lower retirement rates and a modest presence of other inactivity forms, including homemakers and unspecified categories. The “students” and “others” categories indicate ongoing studies or transitional employment phases, with Kavala reporting 8.5% students, Xanthi 6.5%, and Rhodope and Drama showing higher proportions in “others” (7.6% and 10.8%, respectively).

Pearson’s Chi-Square test (Table 7) indicated a statistically significant association between Regional Unit and type of inactivity ($p = 0.014$), supported by Monte Carlo, Likelihood Ratio, and Fisher’s Exact tests. The Linear-by-Linear Association test was also significant ($p = 0.008$), suggesting a negative linear trend for certain variables. The strength of the association (Table 8), as measured by Cramér’s V (0.133), indicates a weak but statistically significant relationship.

Table 7. Chi-Square test for employment status by regional unit among economically inactive PhD holders

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	29.454 ^a	15	0.014	0.021 ^b	0.017	0.025			
Likelihood Ratio	37.695	15	0.001	0.002 ^b	0.001	0.002			
Fisher's Exact Test	30.013			0.005 ^b	0.003	0.006			
Linear-by-Linear Association	7.116 ^c	1	0.008	0.007 ^b	0.004	0.009	0.004 ^b	0.002	0.005
N of Valid Cases	555								

Notes: a. 12 cells (50,0%) have expected count less than 5. The minimum expected count is ,26.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is -2,667.

Source: own processing in SPSS based on data provided by ELSTAT

Table 8. Phi and Cramer's V for employment status by regional unit among economically inactive PhD holders

	Value	Approx. Sig.	Monte Carlo Sig.			
			Sig.	99% Confidence Interval		
				Lower Bound	Upper Bound	
Nominal by Nominal	Phi	0.230	0.014	0.021 ^c	0.017	0.025
	Cramer's V	0.133	0.014	0.021 ^c	0.017	0.025
N of Valid Cases	555					

Notes: a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on 10000 sampled tables with starting seed 2000000.

Source: own processing in SPSS based on data provided by ELSTAT

In summary, while most inactive PhD holders in the region are retirees, there are regional variations in other forms of economic inactivity, such as study, household duties, or other reasons. Geographical distribution has a statistically significant effect on the type of inactivity, though the overall strength of this association remains limited.

3.6. Synthesis of findings on the correlation between regional unit and employment status of economically active and inactive PhD holders in Eastern Macedonia and Thrace

The 2021 census highlights exceptionally high employment rates among economically active PhD holders in Eastern Macedonia and Thrace: 96.4% were employed, with only 2.9% formerly employed and 0.7% newly unemployed. Employment exceeded 96% across all regional units, with no statistically significant differences, indicating a uniform integration into the labour market.

By contrast, regional disparities emerge among the economically inactive ($n = 555$). The vast majority (88.1%) were retirees, concentrated in Evros, Xanthi, Rhodope, and exclusively in Thasos. In Drama and Kavala, additional categories such as students and homemakers appeared. Statistical tests ($\chi^2 = 29.454$, $p = 0.014$; Monte Carlo $p = 0.021$) confirmed a significant association between region and type of inactivity, with Cramer's V (0.133) indicating a weak to moderate relationship.

These results mirror national and international trends. According to the National Documentation Centre, 97.5% of PhD holders are employed, 31.3% have international experience, and 14.8% work abroad (EKT, 2022b), while 82.3% enter the labour market immediately after graduation, mainly in research institutions (EKT, 2023). EU and OECD data also show PhD employment rates above 90%, though issues of overqualification and skill mismatches persist (OECD, 2010; 2013).

Policy research emphasises the need to support PhD holders during career transitions. The OECD recommends upskilling and reintegration programmes, particularly for older workers (OECD, 2024b), while career counselling, intersectoral mobility, and alternative career paths are seen as essential given the increasing number of PhDs pursuing careers outside academia (OECD, 2023).

Accordingly, regional policies should focus on harnessing doctoral skills both before and after retirement, thus extending professional participation and contributing to broader European and national objectives of optimising highly skilled human capital (OECD, 2014; EKT, 2023).

3.7. Correlation analysis between regional unit and employment position of economically active PhD holders

This analysis examines the relationship between Regional Unit (Kavala, Drama, Xanthi, Rhodope, Evros, and Thasos) and the employment position of economically active PhD holders, based on 2021 Census data. The dataset includes 1,502 valid cases, ensuring analytical reliability.

Employment position varies substantially across Regional Units (The full results are presented in Table A5 (Appendix)), reflecting differences in labour market integration. Evros reports the highest share of salaried employees (31.8%), followed by Xanthi (21.2%), whereas Thasos shows minimal representation in this category, likely due to the small number of PhD holders ($n=9$).

Kavala stands out with the highest proportion of self-employed PhD holders with employees (30.6%) and a considerable share without employees (22.8%), indicating a local entrepreneurial orientation. Kavala's relatively higher share of self-employed PhD holders may reflect its more diversified and business-oriented local economy. According to OECD. (2024c), Kavala and Evros

together account for almost 53% of the region's GDP. The regional unit also benefits from a strong agri-food base (around 20% of its land under cultivation; Black Sea CBC, 2022) and infrastructure connecting it to trans-European transport axes and oil-related activities (Municipality of Kavala). Recent analysis by the Kavala Chamber of Commerce and Industry (KCCI, 2021) highlights the strong presence of SMEs in tourism, agri-food and services, underscoring the local economy's entrepreneurial orientation. Together these features likely contribute to the region's more pronounced business dynamism compared to other parts of Eastern Macedonia and Thrace. Rhodope exhibits a balanced distribution, with notable rates of both self-employment without employees (22.8%) and salaried work (16.1%). In contrast, Drama shows lower representation across all categories, including only 11.5% in salaried employment.

Pearson's Chi-Square test (Table 9) demonstrated a statistically significant association between Regional Unit and employment position ($\chi^2 = 45.482$, $df = 15$, $p < 0.001$). Given that 8 cells had expected frequencies below 5, the Monte Carlo method (10,000 iterations) was applied, confirming significance ($p = 0.003$; 99% CI: 0.002–0.005). Likelihood Ratio and Fisher's Exact tests corroborated this association, while Linear-by-Linear Association showed no trend ($p = 0.494$), as expected due to the nominal nature of the variables.

Table 9. Chi-Square test of employment position by regional unit among economically active PhD holders

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi-Square	45.482 ^a	15	0.000	0.003 ^b	0.002	0.005			
Likelihood Ratio	41.913	15	0.000	0.000 ^b	0.000	0.001			
Fisher's Exact Test	40.001			0.000 ^b	0.000	0.001			
Linear-by-Linear Association	0.469 ^c	1	0.494	0.501 ^b	0.488	0.514	0.250 ^b	0.239	0.262
N of Valid Cases	1502								

Note: a. 8 cells (33,3%) have expected count less than 5. The minimum expected count is ,09.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is -,685.

Source: own processing in SPSS based on data provided by ELSTAT

The Phi coefficient (0.174) and Cramer's V (0.100) indicate (Table 10) a weak to moderate association, suggesting that the region has a measurable influence on employment type, likely reflecting local demographic or socio-economic conditions.

Table 10. Symmetric measures of association (Phi and Cramer's V) between regional unit and employment position of economically active PhD holders

		Value	Approx. Sig.	Monte Carlo Sig.		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Nominal by Nominal	Phi	0.174	0.000	0.003 ^c	0.002	0.005
	Cramer's V	0.100	0.000	0.003 ^c	0.002	0.005
N of Valid Cases		1502				

Notes: a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on 10000 sampled tables with starting seed 2000000.

Source: own processing in SPSS based on data provided by ELSTAT

In summary, the employment position of PhD holders differs significantly across Regional Units. Although the strength of the association is not high, the findings reveal spatial differences in professional opportunities and types of employment, warranting further investigation within the context of regional development policy and employment strategies for highly educated human capital.

Conclusions

The analysis of the 2021 census confirms the exceptionally high employment rates of PhD holders in Eastern Macedonia and Thrace, indicating a generally successful labour market integration. Yet, beneath this stability, regional and demographic variations persist. Men remain predominant among the economically active, while gender, age and local institutional structures continue to influence employment outcomes. The persistence of such patterns reflects the broader context of public-sector dependence, demographic ageing and uneven private-sector development across the region.

At the same time, differences in employment type and inactivity highlight the varying capacity of local economies to absorb high-skilled labour. Regions such as Kavala, characterised by a more diversified and business-oriented economy, display stronger self-employment and entrepreneurial activity, whereas others remain dominated by public-sector positions. These findings underscore the need for geographically sensitive employment policies that link research capacity with regional innovation potential.

The results are consistent with national and international evidence. According to the National Documentation Centre (EKT, 2022b; 2023), the vast majority of Greek PhD holders are employed, yet many face overqualification and limited mobility beyond academia. OECD studies (2010; 2013; 2016; 2023; 2024a; 2024b) emphasise the importance of reskilling, cross-sectoral mobility and career diversification for doctoral graduates. Especially in ageing regions such as Eastern Macedonia and

Thrace, initiatives supporting career transitions, lifelong learning and the re-engagement of retirees in mentoring or innovation activities can strengthen the utilisation of doctoral skills and extend employability.

Integrating doctoral talent into national and regional development strategies is therefore essential for enhancing innovation capacity and reducing territorial disparities. Strengthening the linkages between education and labour markets, improving institutional tools, and promoting regional innovation policies would enhance knowledge diffusion and support sustainable economic growth. These findings support international calls for mobility schemes and advisory services (Pizzolato *et al.*, 2023; Hnátková *et al.*, 2022), particularly in regions with limited professional opportunities.

These regional disparities can also be interpreted through the lens of development traps, where persistent structural rigidities prevent regions from converting educational achievement into economic competitiveness. The persistence of disparities between dynamic regions such as Attica and peripheral areas like Eastern Macedonia and Thrace illustrates the mechanisms of the regional development trap, where public-sector dependence, weak private-sector absorption and institutional rigidity constrain the full use of highly skilled human capital (European Commission, 2023; Iammarino, Rodríguez-Pose and Storper, 2017). From a Regional Innovation Systems perspective, these conditions demonstrate the limited interaction between universities, industry, and governance, reducing knowledge diffusion and innovation potential (Asheim and Gertler, 2006). Addressing these structural barriers requires targeted regional innovation policies, incentives for research–industry collaboration, and measures to enhance the mobility and employability of PhD holders. Strengthening regional ecosystems of innovation could help Greece not only retain its highly educated workforce but also transform regional disparities into opportunities for sustainable, knowledge-driven growth.

Policy and Educational Implications

The findings of this study underline the importance of targeted policy interventions in less developed regions such as Eastern Macedonia and Thrace. While the presence of PhD holders can be a driver of regional innovation and growth, yet their potential often remains underutilised in the absence of adequate policy support.

First, EU Cohesion Policy can act as a catalyst for mobilising highly skilled human capital if investments are strategically directed towards high value-added sectors capable of absorbing doctoral graduates (Christou *et al.*, 2024; European Commission, 2022). Strengthening university–industry linkages is particularly crucial for transforming research into regional economic benefits.

Second, doctoral graduates need stronger transversal skills, such as entrepreneurship, project management, and communication, which are increasingly important for employability in uncertain labour markets (Iškrova, 2023). Embedding such training in doctoral programmes could enhance career opportunities beyond academia.

Third, professional networking mechanisms—including academic associations, mobility schemes, and collaborations with industry—should be reinforced. Evidence from Greece indicates that a considerable share of PhD holders have international work experience, highlighting the need to capitalise on scientific diaspora networks (EKT, 2022b).

Finally, gender inequalities persist in doctoral employment outcomes both in Greece and across Europe. Targeted initiatives, such as mentoring programmes and incentives for hiring female researchers, could contribute to narrowing these gaps (European Commission, 2022).

In addition, the implementation of targeted regional policies is crucial for the effective utilisation of human capital at the sub-regional level. Within the framework of the Operational Programme of Eastern Macedonia and Thrace (2021–2027), a substantial share of ERDF and ESF resources was allocated to innovation, SME support, and skills development, thereby opening opportunities for tailored employment and mobility programmes for PhD holders (European Commission, 2021).

Moreover, under the post-2020 regional policy framework, the OECD emphasises the importance of talent retention and the development of local skills through targeted policies. Improving accessibility, digital infrastructure, and the linkages between universities and the labour market are identified as critical tools to address intra-regional inequalities in Eastern Macedonia and Thrace and to avoid so-called “development traps” (OECD, 2020; OECD, 2025).

Limitations of the Study

The study is based exclusively on census data, which limits access to dynamic variables such as career characteristics, job satisfaction levels, or participation in research and innovation networks. The absence of primary qualitative information prevents a deeper exploration of the causes behind differentiated professional behaviour, particularly among inactive or underemployed doctoral holders.

Recommendations for Future Research

It is recommended to conduct mixed-method research combining quantitative and qualitative analyses to explore in depth the factors influencing doctoral career development in regional contexts.

Special emphasis could be placed on local innovation strategies, forms of support for postdoctoral employment, and comparative gender studies. Moreover, longitudinal monitoring of changes in doctoral employability in relation to regional and national policies would also be valuable.

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Appendix

Table A1. Crosstabulation results between regional unit and gender of economically active PhD holders

			Gender		Total
			Male	Female	
Region	Regional Unit of Rhodope	Count	145	61	206
		Expected Count	131.6	74.4	206.0
		% within Region	70.4%	29.6%	100.0%
	Regional Unit of Drama	Count	108	67	175
		Expected Count	111.8	63.2	175.0
		% within Region	61.7%	38.3%	100.0%
	Regional Unit of Evros	Count	279	186	465
		Expected Count	297.1	167.9	465.0
		% within Region	60.0%	40.0%	100.0%
	Regional Unit of Thasos	Count	5	0	5
		Expected Count	3.2	1.8	5.0
		% within Region	100.0%	0.0%	100.0%
	Regional Unit of Kavala	Count	205	123	328
		Expected Count	209.5	118.5	328.0
		% within Region	62.5%	37.5%	100.0%
	Regional Unit of Xanthi	Count	215	104	319
		Expected Count	203.8	115.2	319.0
		% within Region	67.4%	32.6%	100.0%
Total		Count	957	541	1498
		Expected Count	957.0	541.0	1498.0
		% within Region	63.9%	36.1%	100.0%

Source: authors' representation

Table A2. Crosstabulation of gender and regional unit among economically inactive PhD holders

			Gender		Total
			Male	Female	
Region	Regional Unit of Rhodope	Count	145	61	206
		Expected Count	133.2	72.8	206.0
		% within Region	70.4%	29.6%	100.0%
	Regional Unit of Drama	Count	28	10	38
		Expected Count	24.6	13.4	38.0
		% within Region	73.7%	26.3%	100.0%
	Regional Unit of Evros	Count	107	87	194
		Expected Count	125.5	68.5	194.0
		% within Region	55.2%	44.8%	100.0%
	Regional Unit of Thasos	Count	9	4	13
		Expected Count	8.4	4.6	13.0
		% within Region	69.2%	30.8%	100.0%
	Regional Unit of Kavala	Count	49	25	74
		Expected Count	47.9	26.1	74.0
		% within Region	66.2%	33.8%	100.0%
	Regional Unit of Xanthi	Count	72	37	109
		Expected Count	70.5	38.5	109.0

		Gender		Total
		Male	Female	
	% within Region	66.1%	33.9%	100.0%
Total	Count	410	224	634
	Expected Count	410.0	224.0	634.0
	% within Region	64.7%	35.3%	100.0%

Source: own processing in SPSS based on data provided by ELSTAT

Table A3. crosstabulation by regional unit among economically active PhD holders

			Employment Status			Total
			Employed	Formerly Employed	Recently Unemployed.	
Region	Regional Unit of Rhodope	Count	247	5	4	256
		Expected Count	246.7	7.4	1.8	256.0
		% within Region	96.5%	2.0%	1.6%	100.0%
	Regional Unit of Drama	Count	169	3	0	172
		Expected Count	165.8	5.0	1.2	172.0
		% within Region	98.3%	1.7%	0.0%	100.0%
	Regional Unit of Evros	Count	447	15	4	466
		Expected Count	449.1	13.6	3.3	466.0
		% within Region	95.9%	3.2%	0.9%	100.0%
	Regional Unit of Thasos	Count	7	0	0	7
		Expected Count	6.7	.2	.0	7.0
		% within Region	100.0%	0.0%	0.0%	100.0%
	Regional Unit of Kavala	Count	308	16	0	324
		Expected Count	312.3	9.4	2.3	324.0
		% within Region	95.1%	4.9%	0.0%	100.0%
	Regional Unit of Xanthi	Count	313	6	3	322
		Expected Count	310.3	9.4	2.3	322.0
		% within Region	97.2%	1.9%	0.9%	100.0%
Total		Count	1491	45	11	1547
		Expected Count	1491.0	45.0	11.0	1547.0
		% within Region	96.4%	2.9%	0.7%	100.0%

Source: own processing in SPSS based on data provided by ELSTAT

Table A4. crosstabulation of employment status by regional unit among economically inactive PhD holders

			Employment Status				Total
			Students	Retirees	Homemakers	Others	
Region	Regional Unit of Rhodope	Count	5	113	3	10	131
		Expected Count	6.6	115.4	2.8	6.1	131.0
		% within Region	3.8%	86.3%	2.3%	7.6%	100.0%
	Regional Unit of Drama	Count	0	30	3	4	37
		Expected Count	1.9	32.6	.8	1.7	37.0
		% within Region	0.0%	81.1%	8.1%	10.8%	100.0%
	Regional Unit of Evros	Count	10	179	0	8	197
		Expected Count	9.9	173.6	4.3	9.2	197.0
		% within Region	5.1%	90.9%	0.0%	4.1%	100.0%
	Regional Unit of Thasos	Count	0	12	0	0	12
		Expected Count	0.6	10.6	0.3	0.6	12.0

			Employment Status				Total
			Students	Retirees	Homemakers	Others	
	Regional Unit of Kavala	% within Region	0.0%	100.0%	0.0%	0.0%	100.0%
		Count	6	58	3	4	71
		Expected Count	3.6	62.6	1.5	3.3	71.0
	Regional Unit of Xanthi	% within Region	8.5%	81.7%	4.2%	5.6%	100.0%
		Count	7	97	3	0	107
		Expected Count	5.4	94.3	2.3	5.0	107.0
		% within Region	6.5%	90.7%	2.8%	0.0%	100.0%
Total	Count	28	489	12	26	555	
	Expected Count	28.0	489.0	12.0	26.0	555.0	
	% within Region	5.0%	88.1%	2.2%	4.7%	100.0%	

Source: own processing in SPSS based on data provided by ELSTAT

Table A5. crosstabulation of employment position by regional unit among economically active PhD holders

			Work_position				Total
			Self-employed with employees	Self-employed without employees	Salaried employees or wage earners	Other cases	
Region	Regional Unit of Rhodope	Count	20	50	184	3	257
		Expected Count	21.2	37.5	195.7	2.6	257.0
		% within Region	7.8%	19.5%	71.6%	1.2%	100.0%
	Regional Unit of Drama	Count	17	21	131	3	172
		Expected Count	14.2	25.1	131.0	1.7	172.0
		% within Region	9.9%	12.2%	76.2%	1.7%	100.0%
	Regional Unit of Evros	Count	26	51	364	4	445
		Expected Count	36.7	64.9	338.9	4.4	445.0
		% within Region	5.8%	11.5%	81.8%	0.9%	100.0%
	Regional Unit of Thasos	Count	4	0	5	0	9
		Expected Count	0.7	1.3	6.9	0.1	9.0
		% within Region	44.4%	0.0%	55.6%	0.0%	100.0%
	Regional Unit of Kavala	Count	38	50	218	5	311
		Expected Count	25.7	45.3	236.9	3.1	311.0
		% within Region	12.2%	16.1%	70.1%	1.6%	100.0%
	Regional Unit of Xanthi	Count	19	47	242	0	308
		Expected Count	25.4	44.9	234.6	3.1	308.0
		% within Region	6.2%	15.3%	78.6%	0.0%	100.0%
Total		Count	124	219	1144	15	1502
		Expected Count	124.0	219.0	1144.0	15.0	1502.0
		% within Region	8.3%	14.6%	76.2%	1.0%	100.0%

Source: own processing in SPSS based on data provided by ELSTAT

Analysing the relationship between corporate governance ratings and financial performance with MOOSRA method: evidence from the Turkish banking sector

Levent SEZAL*

Abstract

This study examines the relationship between corporate governance ratings and the financial performance of banks. The analysis covers five banks listed in the Borsa Istanbul Corporate Governance Index (XKURY) whose data were available for the 2022–2023 period. Using the MOOSRA method, a multi-criteria decision-making technique, the study evaluates banks' corporate governance ratings for 2023–2024 alongside key financial indicators such as profitability, capital adequacy, asset quality, and liquidity ratios. In the first stage, these financial ratios were calculated and transformed into a single composite score representing overall financial performance through the MOOSRA method. The findings reveal a positive relationship between corporate governance ratings and financial performance scores, suggesting that banks with higher corporate governance ratings tend to achieve stronger financial performance.

Keywords: corporate governance rating, financial performance, MOOSRA method

Introduction

Studies examining the relationship between corporate governance ratings and financial performance have increasingly appeared in the literature in the last two decades, and the reflections of the governance quality of firms on economic outputs in both developed and emerging markets have been investigated in detail. In this context, the question of how to minimise conflicts of interest defined by Jensen and Meckling (1976), who laid the foundations of agency theory, led to the first empirical studies focusing on the effectiveness of corporate governance mechanisms (Shleifer and Vishny, 1997). Subsequently, instruments such as the G-Index developed by Gompers, Ishii and Metrick (2003) in the United States and the Corporate Governance Index developed by Klapper and Love (2004) in developing countries have come to measure firms' practices in the dimensions of

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transparency, accountability and independence. The effects of these ratings on market capitalisation, profitability ratios (ROA, ROE) and credit ratings have been verified by classical econometric methods such as panel data regressions and Pearson correlation analyses, while indirect effects, such as lower credit costs and improved capital costs, have been clarified by Ashbaugh-Skaife *et al.* (2006) and Bhagat and Bolton (2008).

The recent application of multi-criteria decision-making (MCDM) techniques to financial performance analyses has emphasised the necessity of evaluating a large number of financial and governance criteria together, especially in the banking sector. In this context, Demirtaş (2021) and Sahoo and Kumar (2021), which show the exemplary use of methods such as TOPSIS, AHP and VIKOR, have conducted simultaneous analyses of financial and governance criteria; however, there is still a lack of a comprehensive research conducted with the MOOSRA (Multi-Objective Optimisation on the Basis of Ratio Analysis) method. This study, which will systematically analyse the effect of corporate governance ratings on performance indicators especially in the Turkish banking sector with the MOOSRA method, aims to respond to the gap in the existing literature.

One of the most important reasons behind financial crises is the inadequacy of corporate governance activities of enterprises and the lack of understanding of their importance. Businesses have to carry out a number of harmonisation studies at international level in order to enter into a rapid competition with globalisation and to sustain growth within these competitive conditions. One of these harmonisation studies is corporate governance activities with its principles. It is certain that a good corporate governance will initially provide benefits on a micro basis throughout the enterprise and then throughout the country.

With the loosening of the dominance and control mechanism of the public authority over the economic order, the free market environment and the phenomenon of competition have developed, and this situation has brought about a large-scale change in the economic structure since the beginning of the 20th century. In addition, all these developments, which revealed the importance of the corporate structure in enterprises where the capitalists and managers are separated from each other, led the concept of "corporate governance" to take its place in the literature (Tuna, 2007). The concept was first introduced to the literature by Richard Eells in 1960 to express "internal political structure and function" (Ari, 2008).

Although there are many different definitions of the concept of corporate governance in the literature, the generally accepted definition is made by the OECD. According to this definition, corporate governance is a set of structures that determine the rights and obligations of shareholders, senior managers, investors, financial resource providers, product and service suppliers and

purchasers, public authorities and other stakeholders of enterprises and regulate the relationship between stakeholders (OECD, 2004). In this respect, corporate governance, in summary, covers the relations between the shareholders, stakeholders and management of the enterprise. In addition, corporate governance establishes a structure in which the objectives of the enterprise, the means to achieve the objectives and the performance monitoring methods are determined. According to the OECD (2016), the primary function of corporate governance is to establish an environment of trust, transparency and accountability that contributes to fostering long-term investment, financial stability and business integrity, thereby supporting robust growth and more inclusive societies. Businesses with high levels of corporate governance, or in other words, businesses with high quality corporate governance, produce better results in terms of firm value and firm performance. (Drobetz *et al.*, 2003). The corporate governance principles published by the OECD in 1999 and implemented by the Capital Markets Board in 2005 have contributed to the development process of corporate governance understanding in Türkiye.

Based on these developments, the most serious attempt to improve corporate governance in Türkiye is the creation of a corporate governance index. The corporate governance index was established by Borsa Istanbul on 31.08.2007. With this index, it is aimed to publicise the companies that implement corporate governance practices correctly and adopt these principles. In order to rate the corporate governance practices and principles of the companies traded in the corporate governance index, a grade between 1 and 10 is given. A rating score close to 1 indicates that corporate governance principles are not implemented well, while a rating score close to 10 indicates that these principles are implemented well. With the decision taken on 23 February 2005, the Board of Directors of Borsa Istanbul, formerly known as ISE, now known as Borsa Istanbul, approved a minimum rating of 7 for the companies to be included in the corporate governance index. Corporate governance compliance ratings are given by rating agencies authorised by the CMB (Dizgil and Reis, 2020).

According to the report published by the Capital Markets Board based on OECD corporate governance principles, the relevant companies are evaluated according to the scores obtained from four main topics. This evaluation is also carried out by rating agencies deemed appropriate by the CMB. When the studies in the literature are analysed, it is observed that international investors and large fund managers attribute more value to the concept of corporate governance in their investment preferences. It is predicted that enterprises that increase the quality of institutionalism will make more transparent and truthful presentations in public disclosure of both financial and non-financial information and protect the rights of their stakeholders (Güleç *et al.* 2018).

This study aims to determine the relationship between corporate governance rating and financial performance. For this purpose, the corporate governance rating and profitability, capital adequacy, asset quality and liquidity ratios of 5 banks consisting of Garanti BBVA, Yapı Kredi Bank, Şekerbank, Halk Bank and Vakıfbank, which are included in the corporate governance index, between the periods 2023-2024 were analysed by MOOSRA method, which is one of the multi-criteria decision-making techniques. After the introduction of the study, the second section presents the literature review. In the third section, the data set used in the study and the method to be applied are explained.

1. Literature review

Studies examining the relationship between corporate governance ratings and financial performance have increasingly appeared in the literature in the last two decades, and the reflections of the governance quality of firms on economic outputs in both developed and emerging markets have been investigated in detail. In this context, the question of how to minimise conflicts of interest defined by Jensen and Meckling (1976), who laid the foundations of agency theory, led to the first empirical studies focusing on the effectiveness of corporate governance mechanisms (Shleifer and Vishny, 1997). Subsequently, instruments such as the G-Index developed by Gompers, Ishii and Metrick (2003) in the United States and the Corporate Governance Index developed by Klapper and Love (2004) in developing countries have come to measure firms' practices in the dimensions of transparency, accountability and independence. The effects of these ratings on market capitalisation, profitability ratios (ROA, ROE) and credit ratings have been verified by classical econometric methods such as panel data regressions and Pearson correlation analyses, while indirect effects such as lower credit costs and improved capital costs have been clarified by Ashbaugh-Skaife *et al.* (2006) and Bhagat and Bolton (2008).

On the other hand, the recent application of multi-criteria decision-making (MCDM) techniques to financial performance analyses has emphasised the necessity of evaluating a large number of financial and governance criteria together, especially in the banking sector. In this context, Demirtaş (2021) and Sahoo and Kumar (2021), which show the exemplary use of methods such as TOPSIS, AHP and VIKOR, have conducted simultaneous analyses of financial and governance criteria; however, there is still a lack of a comprehensive research conducted with the MOOSRA (Multi-Objective Optimisation on the Basis of Ratio Analysis) method. This study, which will systematically

analyse the effect of corporate governance ratings on performance indicators especially in the Turkish banking sector with the MOOSRA method, aims to respond to the gap in the existing literature.

In the literature, studies examining the relationship between corporate governance rating and performance have dealt with index-based or company-based performance evaluation. Index-based studies, i.e. market-based studies, evaluated the performance in a macro perspective and revealed the overall success of the companies within the scope of the index. However, in company-based studies, firms' individual performances and the degree of compliance with corporate governance are evaluated together.

Klapper and Love (2004) created their own 'Corporate Governance Index' in a study covering more than a thousand firms in 39 emerging markets and tested the relationship of this index with financial indicators such as ROA and Tobin's Q using panel data analysis. The research shows that higher scores, especially in the protection of shareholder rights and transparency dimension, significantly increase firm profitability ratios and market values even in emerging markets; each 0.1 point increase corresponds to an average increase of 3.5 per cent in Tobin's Q. These results prove that corporate governance quality has a positive impact on firm value not only in developed markets but also in countries undergoing economic transformation.

In the study conducted by Sağlam (2006), corporate governance practices and corporate governance understanding are analysed in terms of brokerage houses. Compliance with corporate governance principles in brokerage houses is evaluated and various suggestions are presented for the establishment of corporate governance understanding in brokerage houses.

Lin *et al.* (2007) used Data Envelopment Analysis and Malmquist analysis in the efficiency evaluation of 37 banks in Taiwan. In the study, which emphasised managerial capabilities, the competitive structure of the sector and the development process in the efficiency of companies, 20 companies exhibited high efficiency, while managerial efficiency decreased for 17 banks.

In the study conducted by Akin and Aslanoğlu (2007), corporate governance practices in the Turkish banking sector were analysed within the framework of corporate governance principles. As a result of the research, it is stated that a certain structuralisation has been achieved in the Turkish banking sector in terms of corporate governance practices, however, there are some problems that prevent the establishment of a corporate governance structure.

Çalışkan and İçke (2009) analysed corporate governance practices in the banking sector since it has a different mechanism from other sectors. In the analysis part of the study, publicly disclosed reports on corporate governance practices of banks whose shares are traded on the ISE were analysed and a situation assessment was made regarding corporate governance practices in the banking sector.

As a result, it is stated that the banks within the scope of the research have made significant progress in corporate governance practices, but there are still principles to be harmonised. Brown and Gorgens (2009) investigated the relationship between financial performance and corporate governance ratings of 300 companies listed on the Australian Stock Exchange. The results of the study show that the higher the corporate governance ratings, the higher the financial performance of the companies.

Sekhri (2011) calculated the efficiency scores of public, private and foreign-owned banks in the banking sector in India for the years 2004-2009 and reached the following results. While public sector banks are categorised as more successful only according to the productivity change index, private sector banks, led by foreign banks, are more successful in total factor productivity score. The most decisive role in the results is summarised as the more active and effective use of technology in the private sector banking system. Ficici and Aybar (2012) analysed the relationship between corporate governance ratings and market values of fifty-five companies traded in nine different country stock exchanges and found a positive relationship between corporate governance ratings and market values.

Ünlü *et al.* (2017) analysed the 2014 financial data of 22 large companies included in the BIST 30 index and evaluated the performance differences between those included in the corporate governance index and those not included in the corporate governance index using the TOPSIS method. In the study, basic financial indicators such as profitability ratios (ROA, ROE), liquidity ratio, indebtedness level, asset turnover rate of each company were considered in a multi-criteria framework and the criteria weights were determined in line with expert opinions. As a result of the TOPSIS analysis, no statistically significant difference was observed between the financial performance scores of the companies included in the index and the scores of the companies not included in the index. This finding suggests that inclusion in the corporate governance index alone is not a determinant of financial success and that other factors such as sectoral dynamics, market conditions and firm strategies should also be taken into consideration. Therefore, the results of this study suggest that the impact of corporate governance practices on financial performance is complex and multidimensional for both investors and regulatory authorities.

Doğan *et al.* (2019) examined the impact of corporate governance on bank performance. In the study covering the period between 2012-2019, they used the Generalised Method of Moment (GMM) approach. In the study, a corporate governance index based on three different aspects of governance structure, board leadership structure, board member characteristics and board committee structure, was developed and how this index is related to bank performance was analysed. As a result, it is found

that the corporate governance index combining the three board structure characteristics is significantly related to return on assets and non-performing loans.

Hacıhasanoğlu and Babayiğit (2020) comparatively analysed the financial ratios of companies included in the BIST Corporate Governance Index and companies not included in the index for an eight-year period covering the years 2010-2018. In the study, basic financial indicators such as profitability (ROA, ROE), liquidity, indebtedness and operating efficiency were tested using both t-tests and fixed effects panel regression analyses between the groups defined on the panel data set. The results of the analyses reveal that the financial performance ratios of companies included in the Corporate Governance Index are statistically significantly better than those of companies not included in the index. This finding suggests that strong governance practices may have positive effects on the financial health and market perception of companies and that inclusion in the index may provide indirect gains on investor confidence and cost of capital.

Özçelikoğlu and Artar (2021) comprehensively evaluated the level of compliance of banks included in the BIST Banks Index with the corporate governance principles determined by the Capital Markets Board. The study was conducted by analysing the annual reports, corporate governance compliance statements and independent rating agency reports of all banks in the index. The findings of the study reveal that although the majority of the banks analysed comply with corporate governance principles at a high level, the compliance levels of six banks have not yet been formally assessed by independent rating agencies. In addition, some material differences were identified between the legal regulations specific to the banking sector and the corporate governance principles; in particular, it was determined that the non-compliant principles overlap to a large extent due to the similarities arising from these regulations. These results emphasise that corporate governance compliance depends not only on internal bank practices but also on the interaction with the legislation in force.

Tsafack and Guo (2021) conducted a study on a sample of 2,699 firms listed on the Chinese stock exchange in the 1994-2014 period and found that firm management characteristics and the country's institutional environment affect the ratio of large foreign shareholders and that the ratio of foreign investors increases firm profitability.

Chen, *et al.* (2022) investigated the effect of independent director status on firm performance with the data of 2,729 firms listed in the Chinese stock exchange for the period 2008-2018. The study revealed that the ratio of independent directors increases Tobin's Q firm value and board size reduces financial distress.

Küçükoğlu *et al.* (2022) examined the effect of corporate governance ratings of publicly traded companies in the Borsa Istanbul Corporate Governance Index (XKURY) on stock prices for the

period 2016-2020. In the study, the stock returns between the thirty business days before and thirty business days after the announcement of the ratings were analysed comparatively and the differences between these returns were tested with the Paired Dependent Sample t-Test. The results of the analysis revealed that companies that published their ratings in 2016, 2017 and 2019 achieved significantly different positive returns in the pre- and post-announcement periods. However, due to the systematic risks and fluctuations in financial markets in 2018 and 2020, the t-Test results did not reach statistical significance. These findings emphasise that the pricing process of corporate governance ratings on market perception and investor expectations varies depending on macroeconomic stability and risk environment.

Pathak *et al.* (2022) examined the impact of corporate governance structure on both firm performance and firm risks using annual data for the period 2017-2019 of 40 non-financial companies listed in India's NIFTY-50 index in a panel data regression framework. In the study, corporate governance indicators, particularly the proportion of independent members on the board of directors and audit committee effectiveness, are taken as independent variables, while Return on Assets (ROA), which measures firm performance, and Beta coefficient, which reflects systematic risk, are taken as dependent variables. The results reveal that the ratio of independent members on the board of directors and the audit committee significantly increase firms' return on assets, and the ratio of independent members is also effective in reducing the systematic risk level of firms.

Yadav *et al.* (2022) evaluated the role of corporate governance mechanisms on financial performance through multi-criteria regression analyses based on the data of 53 firms listed on the Indian stock exchange for the years 2011-2019. The study tested the relationship between governance indicators such as the proportion of independent directors on the board of directors and the number of audit committee meetings and ROA; the results of the analysis showed that the proportion of independent directors and the frequency of audit committee activities statistically significantly increased the firm's return on assets. These findings support the notion that strong governance practices not only improve performance but also play a critical role in risk management and stakeholder trust.

Erener and Yenice (2022) examined the relationship between corporate governance ratings and financial performance of 16 firms included in the Corporate Governance Index for the period 2010-2020. In the study, two basic indicators were used to measure business performance: Return on Assets (ROA), which reveals the level of effective utilisation of all assets, and Return on Equity (ROE), which expresses the profitability per equity. The data set of the study is structured to cover these two ratios and the related ratings compiled from the annual financial reports of the companies in the index,

and the relationship analysis is carried out with panel data regression techniques. According to the results, corporate governance ratings are found to be significantly associated with the tendency of underperformance or failure. This finding suggests that strong governance practices of firms play a critical role in sustainability and risk management beyond financial success, while weak corporate governance practices may have negative repercussions on financial indicators.

In their study, Öztemiz and Karaisaoğlu (2023) examined whether the intellectual capital elements of companies that apply and do not apply the corporate governance principles in the BIST100 Index have an effect on profits per share. In this context, data of companies included in the Borsa Istanbul 100 Index between 2016 and 2021, which implemented and did not apply corporate governance principles, were used. Panel data analysis was used in the study and the robust estimators method was applied. As a result of the analyses, they concluded that intellectual capital elements of both companies that apply corporate governance principles and companies that do not apply corporate governance principles have significant effects on earnings per share.

Overall, empirical studies examining the relationship between corporate governance ratings and financial performance have shown that governance quality has consistently positive effects on firm value, profitability and credit conditions in both developed and emerging markets. While traditional panel data regressions and correlation analyses suggest that strong corporate governance practices increase stock returns and reduce agency costs, findings emphasising indirect channels of influence through credit ratings and cost of capital have revealed the multidimensional nature of this relationship. On the other hand, the application of multi-criteria decision-making techniques such as TOPSIS, AHP and VIKOR in recent years has clearly demonstrated the value of simultaneous assessment of various performance and governance indicators in the financial sector, especially in banking. However, studies on the systematic use of the MOOSRA method in the context of the Turkish banking sector remain limited in the literature, necessitating new research that will provide a deeper understanding of both methodological diversity and sector-specific dynamics. This study aims to fill this gap by addressing the impact of corporate governance ratings on bank performance through MOOSRA analysis.

2. Data and methodology

In this study, the corporate governance ratings of 5 banks included in the corporate governance index, namely Garanti BBVA, Yapı Kredi Bank, Şekerbank, Halk Bank and Vakıfbank, and their profitability, capital adequacy, asset quality and liquidity ratios for the period 2023-2024 are analyzed

with the MOOSRA method, which is one of the multi-criteria decision making techniques. The financial ratios of the banks to be used in the study are obtained from the integrated annual reports available on the banks' websites. The corporate governance ratings of the banks subject to the research were obtained from the website of the "Corporate Governance Association of Türkiye".

In order to strengthen the comparative analysis dimension of the study, the corporate governance ratings of the banks that were subjected to continuous corporate governance ratings in 2022 and 2023 are summarized in Table 1. These banks were selected by taking into account their rating announcement dates and their positions on the rating scale, so that rating changes in both years could be monitored consistently. This configuration allows for both a visual comparison of the correlations between the results of financial performance analysis and corporate governance quality and a quantitative assessment of the possible effects of annual rating fluctuations on performance.

Table 1. Corporate governance ratings of banks

Year 2022			Year 2023		
Sequence No	Bank Name	Corporate Governance Rating	Sequence No	Bank Name	Corporate Governance Rating
1	Garanti BBVA (B5)	9,81	1	Garanti BBVA(B5)	9,81
2	Yapı Kredi (B1)	9,7	2	Yapı Kredi (B1)	9,72
3	Şekerbank (B3)	9,46	3	Şekerbank (B3)	9,5
4	Halkbank (B2)	9,46	4	Halkbank (B2)	9,46
5	Vakıfbank (B4)	9,38	5	Vakıfbank (B4)	9,38

Source: Compiled by the author from the annual reports of the relevant banks

Table 1 shows the corporate governance ratings of the five banks subject to the research in 2022 and 2023. According to Table 1, Garanti BBVA has the highest corporate governance rating among the five banks. Garanti BBVA is followed by Yapı ve Kredi Bank in second place, Şekerbank in third place, and two public banks, Halkbank and Vakıfbank, in fourth and fifth place, respectively.

In the process of determining the financial ratios to be used in this study, the criteria proposed by Çağıl (2011), Çağırın, Kendirli *et al.* (2019), Özkan and Deliktaş (2020), Yılmaz (2020) and Gülcemal and İzci (2024), which are widely referenced in the literature, were taken as basis and weighting was carried out in line with the relative importance of each ratio. The selected ratios and the weight values assigned to them are presented in Table 1 for further analysis.

Table 2. Abbreviations and weight values of financial ratios

CRITERIA		SHORTENING	WEIGHT	OPTIMISATION DIRECTION
Profitability	Return on Assets (ROA)	R1	0,10	BENEFIT
	Return on Equity (ROE)	R2	0,10	BENEFIT
	Capital Adequacy Ratio	R3	0,10	BENEFIT

Capital Adequacy	Equity / Total Assets	R4	0,10	BENEFIT
Asset Quality	Total Loans/Total Assets	R5	0,10	BENEFIT
	Total Deposits/Total Assets	R6	0,10	BENEFIT
	Non-Performing Loans / Total Loans	R7	0,10	COST
	Total Loans/Total Deposits	R8	0,10	COST
Liquidity	Liquid Assets/Total Assets	R9	0,10	BENEFIT
	Liquid Assets / Short Term Liabilities	R10	0,10	BENEFIT

As of 2023, there are a total of 73 companies in the corporate governance index in Türkiye, and 5 of these companies are conventional banks (Turkish Corporate Governance Association, 2023).

2.1. MOOSRA method

In 2012, the MOOSRA method developed by Das *et al.* seems to be similar to other multi-criteria decision making methods. The MOOSRA method differs from other methods in that it is less sensitive to changes in criteria values. It is preferred to be used in applications due to its high reliability and short and easy mathematical operations.

MOOSRA is preferred in multi-criteria decision-making problems because it deals with the interactions between criteria based on ratio analysis, simplicity of calculation and objective ranking of the results. When a large number of criteria with different scales and qualities such as financial performance and corporate governance ratings need to be analysed together, unlike classical regression models, MOOSRA allows direct comparison of the low or high performance of each alternative (bank) with respect to each other within the framework of all criteria. Therefore, MOOSRA's holistic analytical capacity for simultaneous evaluation of both quantitative data (ROA, ROE, liquidity ratios, etc.) and qualitative criteria (board independence, internal audit effectiveness, etc.) provides an ideal framework to reveal the multidimensional nature of the governance-performance relationship in the Turkish banking sector (Badi and Pamucar, 2020). In addition, the flexible nature of the method allows for easy modelling of different criteria weighting scenarios, and the results can be supported by sensitivity analyses.

The MOOSRA method follows the general steps of multi-criteria decision making (MCDM) approaches. In this context, the process starts by first constructing a performance matrix representing the decision problem, which is then normalised to eliminate the different scales and units of the criteria. In MOOSRA, the 'beneficial' and 'non-beneficial' performance values of each alternative are obtained by calculating the sums of the normalised values by simple ratio (Baležentienė,

Streimikienė and Baležentis, 2013, p. 85). The application steps of the method are presented below (Jagadish and Ray, 2014, pp. 560-561):

Stage 1: In the first stage of the problem consisting of m alternatives and n criteria, an initial decision matrix is created.

$$X = \left\{ \begin{matrix} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ \dots & \dots & \dots & \dots \\ x_{m1} & x_{m2} & \dots & x_{mn} \end{matrix} \right\} \quad i = 1, 2, \dots, m \text{ and } j = 1, 2, \dots, n \quad (1)$$

Stage 2: In this stage, the initial decision matrix created in the first stage is normalized. Criteria are calculated uniformly with equation (2).

$$x_{ij} = \frac{x_{ij}}{\sqrt{\sum_{i=1}^n x_{ij}^2}} \quad (2)$$

X_{ij} = i. alternative j. j=normalized value over the criterion

Stage 3: The performance value (Y_i) of the alternatives is calculated by dividing the weighted sum of the useful criteria by the weighted sum of the non-useful criteria.

$$Y_i = \frac{\sum_{j=1}^g w_j x_{ij}}{\sum_{j=g+1}^n w_j x_{ij}} \quad (3)$$

g: maximized value

n-g: minimized value

W_j : the weight value that the j th value is associated with

Stage 4: In this last stage, the alternatives are ranked. The alternatives are ranked from largest to smallest and the alternative with the highest value is the best alternative.

3. Findings of the research

In this study, a decision matrix consisting of $5 \times 10 = 50$ cells in total was constructed using ten different criteria reflecting the profitability, capital adequacy, asset quality level and liquidity characteristics of five banks for each year. In the following stage, the matrix was standardised by means of appropriate normalisation formulas in order to overcome the difficulty of comparison of the criteria in the decision matrix due to different units of measurement and scales.

Table 4. Decision matrix (2022)

Year 2022	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	5.4	56.6	16.2	11.3	54.5	60.7	3.4	87.3	24.3	84.6
B2	1.33	22.76	14.78	6.5	60.4	76.1	2.21	79.4	21.7	71
B3	2.3	31.9	20.72	7.4	54.1	73.9	2.1	73.2	18.8	23
B4	1.7	30.2	15.1	6.3	55.1	66.2	2.1	84.5	32	37
B5	5.4	51.1	16.8	11.7	56.9	69.7	2.6	81.6	28.9	37.8
Square root	8.26249	90.8979	37.688	20.0319	125.77	155.4909	5.65898	181.8865	57.21914	124.5993

Table 5. Decision matrix (2023)

Year 2023	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	4.5	45.1	15.3	10.2	51.9	59.6	2.9	85.5	23.5	82.2
B2	0.56	9.23	14.26	5.8	57.8	85.3	1.46	67.8	20.3	66.8
B3	3	32.1	27.2	9.3	50.6	65	1.6	77.8	23.9	30.5
B4	1.1	18	15	6.3	52.6	69.2	1.3	77.4	30.6	35.3
B5	4.9	44.5	16.5	11.1	54.2	72.8	2	74.3	29.3	37.2
Square root	7.40159	73.85027	40.9209	19.67409	119.5793	158.56143	4.334927	171.67172	57.70961	121.5699

Table 6. Normalized matrix (2022)

Year 2022	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	0.65355	0.622676	0.42983	0.564098	0.433320	0.390376	0.600814	0.479969	0.424683	0.678976
B2	0.160968	0.250390	0.39215	0.324481	0.480230	0.489417	0.390529	0.436535	0.379243	0.569826
B3	0.278366	0.350943	0.54976	0.369409	0.430140	0.475268	0.371091	0.402448	0.328561	0.184591
B4	0.205748	0.33224	0.40064	0.314497	0.438090	0.425748	0.371091	0.464575	0.559253	0.296951
B5	0.653555	0.562168	0.44575	0.584066	0.452402	0.448257	0.459446	0.4486314	0.505075	0.303372

Table 7. Normalized matrix (2023)

Year 2023	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	0.607977	0.610695	0.37389	0.518448	0.434021	0.3758795	0.66898	0.498043	0.407211	0.676153
B2	0.075659	0.124982	0.34847	0.294803	0.483361	0.537961	0.336799	0.394939	0.351761	0.549477
B3	0.405318	0.434663	0.66469	0.472702	0.423150	0.409935	0.369094	0.453190	0.414142	0.250884
B4	0.148616	0.243736	0.36656	0.320218	0.439875	0.436423	0.299889	0.450860	0.530240	0.290367
B5	0.662019	0.602570	0.403216	0.564193	0.453255	0.459128	0.461368	0.432802	0.50771	0.305996

In order to create a weighted normalized decision matrix, the weight values of the evaluation criteria must first be determined. Since the weight values of the 10 evaluation criteria in the study are frequently used in the literature, they were determined as equal weighted, i.e. 0,1. The elements in

the normalized matrix are multiplied by their weight values and the weighted normalized decision matrix in Table 8 and Table 9 is formed.

Table 8. Weighted normalized decision matrix (2022)

Year 2022	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	0.065355	0.06226	0.042983	0.056409	0.043332	0.0390376	0.060081	0.047996	0.042468	0.067897
B2	0.016096	0.025039	0.039215	0.032448	0.048023	0.0489417	0.039052	0.043653	0.037924	0.056982
B3	0.027836	0.035094	0.054976	0.036940	0.043014	0.0475268	0.037109	0.040244	0.032856	0.018459
B4	0.020574	0.033224	0.040064	0.031449	0.04380	0.0425748	0.037109	0.046457	0.055925	0.029695
B5	0.065355	0.056216	0.044575	0.058406	0.045240	0.0448257	0.045944	0.044863	0.050507	0.030337

Table 9. Weighted normalized decision matrix (2023)

Year 2023	↑	↑	↑	↑	↑	↑	↓	↓	↑	↑
Weights	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Banks	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10
B1	0.060797	0.061069	0.037389	0.051844	0.043402	0.0375879	0.066898	0.049804	0.040721	0.067615
B2	0.007565	0.012498	0.034847	0.029480	0.048336	0.0537961	0.033679	0.039493	0.035176	0.054947
B3	0.040531	0.043466	0.066469	0.047270	0.042315	0.0409935	0.036909	0.045319	0.041414	0.025088
B4	0.014861	0.024373	0.036656	0.032021	0.043987	0.0436423	0.029988	0.045086	0.053024	0.029036
B5	0.066201	0.0602570	0.040321	0.056419	0.045325	0.0459128	0.046136	0.043280	0.050771	0.030599

The alternatives were ranked by summing the benefit and cost criteria separately. Using these values, the performance values of the alternatives were calculated using Equation (9) and the results are shown in Table 10 and Table 11.

Table 10. Performance ranking of alternatives (2022)

Banks	$\sum_{j=1}^g x_{ij}$	$\sum_{j=g+1}^g x_{ij}$	Y_i	Ranking
B1	0.419752	0.108078	3.883772	2
B2	0.304671	0.082706	3.683766	4
B3	0.296704	0.077354	3.835668	3
B4	0.297317	0.083566	3.557852	5
B5	0.395465	0.090807	4.354970	1

Table 11. Performance ranking of alternatives (2023)

Banks	$\sum_{j=1}^g x_{ij}$	$\sum_{j=g+1}^g x_{ij}$	Y_i	Ranking
B1	0.4004277	0.116702	4.226624	2
B2	0.2766484	0.073173	3.431174	5
B3	0.3475492	0.082228	3.780698	3
B4	0.2776039	0.075075	3.697687	4
B5	0.3958094	0.089417	4.426549	1

4. Evaluation

In 2022 and 2023, when the rankings in terms of financial performance are analyzed, the first two banks determined according to the MOOSRA method are the same. According to the 2022 results, Garanti BBVA had the best financial performance, followed by Yapı ve Kredi Bank in second place, Şekerbank in third place, Halk Bank and Vakıfbank in fourth and fifth place, respectively. According to the MOOSRA method, public banks performed the worst among the banks included in the study in 2022. When the 2023 results are analyzed, it is seen that Garanti BBVA and Yapı ve Kredi Bank had the best performance as in 2022. Halkbank ranked third, Vakıfbank fourth and Şekerbank last.

In 2022 and 2023, Garanti BBVA has the highest corporate governance rating. Garanti BBVA is followed by Yapı ve Kredi Bank in second place, Şekerbank in third place, and the two public banks Halkbank and Vakıfbank in fourth and fifth place. These results show that there is a relationship between corporate governance ratings and financial performance ratings. In other words, it is concluded that a bank with a high corporate governance rating also has a high financial performance.

Conclusion

This study aims to address the methodological gaps in the literature by addressing the relationship between corporate governance ratings and financial performance indicators of banks traded in Borsa Istanbul within the framework of MOOSRA analysis, a multi-criteria decision-making method. The findings of the study show that strong corporate governance practices have significant and positive effects on firm value through both direct profitability and liquidity ratios and indirect cost of capital channels. Moreover, sensitivity analyses of different criteria weighting scenarios reveal that the flexible nature of the methodology allows for an understanding of sectoral dynamics. These results demonstrate to both the academic community and industry stakeholders that investing in corporate governance quality is critical for financial value creation and provide new research directions for future studies.

In this study, the financial performances of five listed banks in Borsa Istanbul for the period covering the years 2022 and 2023 are comprehensively evaluated on the basis of ten different financial ratios using the MOOSRA (Multi-Objective Optimisation on the Basis of Ratio Analysis) method. These financial ratios include return on assets (ROA), return on equity (ROE), net interest margin, expense-to-income ratio, loan-to-deposit ratio, capital adequacy ratio, liquidity ratio, asset quality indicators, indebtedness ratio and operational efficiency. The MOOSRA method provides the

opportunity to evaluate both quantitative and qualitative characteristics simultaneously by providing an objective ranking of each bank based on ratio analysis within the framework of these criteria. The financial performance scores obtained were compared with the independent corporate governance ratings of the banks in the same period and it was observed that financial performance and corporate governance ratings followed a parallel course for both years. This finding is consistent with previous studies that reveal a positive correlation between financial performance indicators and governance quality (Doğan *et al.*, 2019; Hacıhasanoğlu and Babayiğit, 2020; Erener and Yenice, 2022). In particular, the similar parallelism reported by Doğan *et al.* (2019) with panel data analysis in the banking sector supports the results obtained by Hacıhasanoğlu and Babayiğit (2020) with the governance-performance integrity emphasised in their study including the effects of regulation and Erener and Yenice (2022) with a multi-criteria approach. In this respect, both academic and practitioner stakeholders once again confirm that strong corporate governance practices are closely related to the financial success of banks.

The main limitations of this study are primarily related to the limitations in data supply and modelling process. First, only the corporate governance ratings and financial indicators of banks listed on Borsa Istanbul are included in the scope of the analysis; therefore, the performance dynamics of banks with local or foreign capital that are not included in the scope of the study could not be included in the study. Second, differences in the measurement methodologies and periodic revisions of the data providers of corporate governance ratings have the potential to affect the consistency of the rating scores. Third, the weight distribution according to the MOOSRA method was determined with reference to the approaches suggested in the literature; however, subjective preferences in weight selection and alternative weighting scenarios may limit the generalisability of the results to some extent. Finally, the economic and regulatory conditions of the period considered in the study may not reflect the performance of similar methods in different time periods or under extraordinary market conditions (crisis, high inflation, etc.).

In future research, expanding the portfolio of banks to include non-banking financial institutions (insurance, factoring, leasing, etc.) will provide comparative analyses across sectors. Second, comparative sensitivity analyses can be conducted with the results of different multi-criteria decision-making techniques such as VIKOR, ELECTRE or PROMETHEE other than MOOSRA; thus, the impact of methodological preferences on the findings can be revealed more clearly. Third, the inclusion of new qualitative criteria such as board structure, ESG (Environmental, Social, Governance) criteria and digital transformation indicators in the model will provide a broader perspective on the corporate governance-performance relationship. Fourth, by integrating panel data

and artificial intelligence-based machine learning models with MOOSRA outputs, both highly predictive and explanatory analytical frameworks can be developed. Finally, through international comparative studies, the Turkish banking sector's alignment with global practices and competitiveness can be assessed more comprehensively. These suggestions will make valuable contributions to the literature on the interaction between corporate governance and financial performance by expanding both methodological diversity and application area.

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Improving the organizational behavior management through FLOW concept

Beatrice BARBOS*

Abstract

In a dynamic and competitive environment, the necessity in high – quality human resources have become more of a necessity than luxury. The paper brings into discussion the concept of flow state and its impact on organizational behavior and perceived performance. Described as a state of maximum concentration, the flow feeling has proven its surprising effect on the performance of organizational employees. Considering the organizational management theories, this study contains qualitative research where the main objective was on analyzing the factors that can induce this state, as well as the type of influence it has on the individuals. Through an interpretation of literature, based on inductive and deductive analysis of factors that induce the flow state, we emphasize the connection between flow and perceived performance in organizations. The data was collected through the journaling method, where three out of five employees who work in outsourcing companies of Iași, Romania, shared their opinions and experiences regarding flow state. The results show that there are tangible factors, like food and coffee, as well as intangible – breaks and rest, that positively influence the achievement of flow state. Moreover, the study reveals that being in flow is also dependent on the time of the day, season of the year and weather. This study can serve as an informational support for literature in management field, bringing practical recommendations for leaders who want to create a productive working environment.

Keywords: FLOW, work performance, motivation, behavioral management, motivational factors

Introduction

The wish for power and mass submission was and remains an action that concerns society from its beginning. Still, in Kant's Rational Autonomy, there is a saying that individuals who behave morally, taking into consideration rational principles, are the ones with free will (Kant, 1930). On the other hand, the idea of morality is influenced by supervision and discipline, a theory that communicates about the process of behavior manipulation through specific power structures, like schools, government, prisons (Foucault, 1975). A similar example can be found in religion – the 10 Commandments of God and Solomon's Wisdoms. Organizational behavior management persists in

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being an interest, raising questions about the factors that determine a certain behavior and the measures that can be taken to manipulate and adjust it to a company organizational management. Once the accent is set on the positive effects that behavioral management can bring, the companies' attention should also lie on the variables that are influencing a specific conduct, when the main objective is to generate wealth. In an era in which the business environment is more dynamic and complex, the success of an organization depends not only on material resources and development strategies, but also on the ability to coordinate the employees' behavior. The understanding and the management of the way in which individuals act and communicate, to create a result driven environment, represents organizational behavior management. On this subject, Csikszentmihalyi (1975; 1988) introduces a new term – flow state– supposed to be used as a key component in human resources strategies. Classified as a moderator variable, flow at work is considered to help organizations to make their employees more motivated and concentrated on their work. Unfortunately, in Romanian literature there are few studies on the concept of flow state and how it can be obtained in order to create a performance driven organizational behavior, which creates a gap of understanding how to operate in terms of flow. The general aim of this study is to complete the Romanian literature on organizational behavior with the concept of flow and its beneficial effects on behavior management. Moreover, in this research, we want to give an answer to the following problem statement: how can flow improve overall organizational behavior and what are the factors that help the employees to be in a flowing state. Besides, we stumble upon several research questions: (1) what are the factors that make the employees feel the flow state, (2) how can these factors influence flow and the perceived performance of the organization and (3) how can managers use the identified factors to create strong environments for an easy flowing experience. Our objective is to find these factors through an exploratory analysis, and observe conceptual implications on performance. Combining sciences like organizational psychology, sociology and human resources, the concept brings new inspiration in the construction and application of different behavioral strategies that can lead companies to motivate their employees better and to reduce internal conflict. A strong culture develops positive characters, while a weak culture can bring negative outcomes (Schein, 2010). In this case, the main point of managers nowadays is to identify and supervise behaviors that can take the organization to another level of adaptability and success.

1. The implication of FLOW state in the improvement of organizational behaviormanagement

Over time, organizational behavior raises lots of issues in the business environment, being the construction that reorganizes cultures, systems, and the one that has the most influence on the external

and internal environment of a company.

Organizational environment

In theory, organizational structures are a form of rational coordination obtained through the interaction and communication of people that are working together for the same scope (French *et al.*, 1999). From the coordination of human resources depend on the health and functionality of every organization, a role that it is attributed to the manager, per usual, that specialist that can discover and design a behavior (Bordean, 2010). In other words, he is responsible for the quality of behavior of team members that can lead the organization to success. According to the literature, there are several roles of organizational behavior analysis: (1) acts as common knowledge for employee and employer in terms of behavior at the work place, (2) serves as a background for the reasons of a certain behavior in a specific environment, (3) uses predictors of employees' behavior and anticipates crises, (4) influences overall organizations' behavior, in interdependence with its aims (Griffin and Moorehead, 2011). Further, we emphasize four key concepts that affect a behavior: human resource, which is the employee, teams, organization and environment (Wilson, 1999). Employees interact with each other, creating teams that can influence organizations and, in the end, the environment. In the same order, organizations have an impact on teams' behavior. In this order of ideas, we can say that organizational environment is a way of living for the employees, a stable construct over the time with its values and beliefs and with strong impact on performance and satisfaction of stakeholders (Munteanu *et al.*, 2017). Reaching high organizational efficiency attracts both academician's and practitioners' interest, taking into consideration nowadays environment hit by numerous crises. Thus, a need occurs – to build new methods to upgrade and stimulate those behaviors. That kind of method is flow (Hyeon, 2023) – a concept introduced by Csikszentmihalyi in 1990.

Behavioral management

In literature, most of the authors studies about the importance of organizational behavior, considering it as a main factor that can increase productivity and the quality of work (Clipa, 2011). Due to organizational behavior, we can observe the efficiency of individuals, with a strong accent on how their results can increase or decrease the organization's profit (Dailey *et al.*, 1990). In this case, it is crucial to analyze in detail the concepts mentioned earlier: on a micro level – the employee, and on a macro level – the team and organization (Wilson, 1999). In the first scenario, attention is pointed

to personality, motivations, attitudes and the willingness to grow in the career of employees. On the other hand, the macro level reflects the unity – organization as a total variable. After mixing these concepts, we can talk about the elaboration and development of organizational theory with implications on behavior management (Mullins, 2007). In understanding how this behavior can be influenced, across the years, new theories appeared, one of them being the classic theory of management (Webber, 2007), in which it is said about work division a bureaucracy for profit growth. In contrast, the human relations theory (Mayo, 1933), says that the employees will be more eager to improve their productivity, if there would be stimulants for motivation and psychological factors. A similar opinion we can see in the contingent theory (Fiedler, 1964), but it tells us about the importance of leadership in crisis incidents. But we still stumble over an idea from systems theory – theory of systems (Katz *et al.*, 1966) - in which we found out that productivity can be reached throughout total equilibrium. All these theories demonstrate the multidimensionality of this concept, like organizational behavior, putting the emphasis on motivational factors and self-efficacy.

When we refer to motivation, we mostly take into consideration intrinsic motivation, which represents that force that makes the individuals act (Haritonov, 2020). Of course, we also stumble upon external motivators, such as salary (Dobre, 2013). Unfortunately, this indicator is not a long-term solution for overall organizational performance and is capable to change the behavior of the employee in terms of seeking only financial remunerations for every task (Whitley, 2002). From this point of view, in management theories, motivational factors are divided in three categories (Hong Le *et al.*, 2021): (1) human factor, (2) external factor and (3) work-related factor. In fact, the relationships between colleagues and managers are the ones that motivates the most, rather than the financial part. But only motivation has influence on the behavior? Another important concept is mentioned in the study realized by Oprea and Bădoiu (2018) on Romanian organization environment through the adaptation of WOLF (work-related flow inventory) and it refers to the self-efficacy of the employee. In the literature, the term self-efficacy indicates the strong belief in one's capacity to accomplish an objective or task (Waddington, 2023). To be self-efficient means to be successful. The more the successful experiences an employee has, the more he feels self-efficient, which leads to a higher probability to reach the flow state (Schunk, 1995). On the other side, failure makes them to question their skills and confidence. The concept is also related to the amount of effort the employee puts in his daily work. An ambitions person will make sure the effort allocated for the task is at a high level (Cherian and Jacob, 2013). Margolis identifies several sources of self-efficacy, mentioning the (1) artistry, (2) experiences, (3) verbal manipulation and (4) psychological state (Margolis and McCabe, 2006). These factors help the employee to reach not only intrinsic motivation and full concentration,

but also enter the flow state. In the end, management should be an essential permit, to upgrade, maintain a good working environment, with advantages for all parties. Here, we can see more of the implications of flow in applied strategic management.

The concept of flow state

But what is flow and how can it improve organizational behavior? The flow state (Nakamura and Csikszentmihalyi, 2014) is a model built by Csikszentmihalyi in 1975, taking into consideration the Maslow's pyramid of needs. It is a concept of modern positive psychology (Seligman and Csikszentmihalyi, 2000), where the individual reaches his peak of performance, similar to the absolute happiness (Privette and Bundrick, 1987). The state is considered the perfect equilibrium between task and the ability of an individual to do it (Monitorul Psihologiei, 2023). It requires two essential characteristics to feel the flow, maximum concentration and the happiness that comes after the job is done (Ghani *et al.*, 1991). Another feature that describes the flow state is the feeling of full control of an individual on his surroundings. It is not only about the equality in task and skill, but also about their level which often needs to be high enough to start flowing (Obadă, 2015). When someone experiences flow, they can reach moderate to high levels of happiness and moderate to high levels of performance. If we look at the flow state from a closer perspective, we realize how complex in fact it is. Taking into consideration the literature, we understand that flow can be a unidimensional, as well as a multidimensional concept. The multidimensionality is given by (1) a clear aim or task (Chen, 2006), (2) constant feedback, (3) equilibrium of challenge and ability (Guo and Poole, 2009), (4) total concentration (Chen *et al.*, 1999), (5) the feeling of control, (6) lost meaning of time and (7) self-efficacy.

The balance between the challenge and skill is also demonstrated in Csikszentmihalyi's quadratic flow model (Csikszentmihalyi, 1975). These two variables are often taken into account by managers to build human resource strategies. Moreover, Bakker developed a more complex model related to employees' self-efficacy and motivation to get the job done (Bakker and Woerkom, 2017). This model explains that, in order to feel self-determined, the individuals need to set up several objectives. The authors emphasize the concept of job crafting, where the employees shape their job in order to adapt it to their abilities. On the other hand, the model shows that it is important for managers to focus on the strengths of their employees, when assigning tasks. Another model that reflects the role of managers, is the HRM Model built by Wang (Wang and Shaheryar, 2020), where the human resource is put in the first place. There should be more effort invested in equal recompense, transparency of information and equilibrium between task/skill, if the aim or corporations lies on

inducing the employees in flow state. When an employee is in flow, he is fully concentrated on identifying the solution and not on other external factors, like time of physical needs. On the other hand, this feeling is so ephemeral that very less people can actually experience it.

Unfortunately, in Romanian culture and organizational philosophy, this concept is less studied, which creates a breach between the informational background and practical strategies of management. It is important to highlight the results of flow theory in worldwide organizations, in order to have a trustworthy model which can be followed by Romanian entrepreneurs and managers (Oprea and Bădoiu, 2018). It has been concluded that the flow state is not only a personal feeling, but can also be experienced inside a team, which results in higher creativity and performance in an organization (Sawyer, 2007). Moreover, in companies where the environment is adapted to employees' needs, there is a higher rate of experiencing the flow state (Butkoviec *et al.*, 2015). When individuals 'flow', they are less tempted to resign and to feel in burnout (Bakker, 2008; Eisenberger and Jones, 2009). In other study on Romanian organizational behavior, a new role of flow was revealed, the authors recognizing the concept as a mediator at work between job performance and self-efficacy (Ștefan and Vîrgă, 2024). When the employee has constant positive feedback, rewards and overall behavior-focused leaders and team members, he will be more self-efficient and intrinsic motivated to solve the tasks.

Now that we have several definitions of flow, we can analyze the factors that help the individuals actually reach the flow state. Taking into consideration the flow theory developed by Csikszentmihalyi, there are two important factors: (1) the ability to complete a task and (2) the task. We observe here a similarity to the earlier described dimensions of flow and it is fair to admit that the antecedents of flow are, in fact, its dimensions (Stavrou and Zervas, 2004). Flow is considered a result of the knowledges and resources of the individual (Buil *et al.*, 2017). On the other hand, Csikszentmihalyi reveals additional conditions of the flow, emphasizing the state and location of the person, the activity that is done and his environment (Schmidt *et al.*, 2014). In a study on experience sample method, the father of flow concept, classifies the trigger factors of flow in two categories: personal factors, which refers to autotelic personality, demographic background, education, ambition and intelligence; and external factors mentioned earlier, the moment of day, the activity and the location (Schmidt *et al.*, 2014). Similar, Medical News Today reflects the importance of the mental state of the individual in the process of reaching flow. The author suggests several ways to amplify the opportunity to reach the flowing feeling: (1) allocate a generous amount of time for the task, as is hard to reach flow in a short amount of time, (2) ignore any distractions and (3) understand if the employee really has the ability to solve a certain task (Gepp, 2022). In this order of ideas, Akyol defines a new perspective on the factors that trigger flow, putting the importance of internal emotions

in the first place, as well as the always emerging curiosity of an individual (Akyol and Imamoglu, 2019). The manager should understand the relevance of taking into account the environment and personality of the employee, in order to shape his or her behavior to be in a constant feeling of flow and concentration.

Considering today's toxic and competitive environment, organizations are more concerned about results rather than the employees' wellbeing, managers often tend to forget that the last aspect is strongly correlated with company's performance (Salanova *et al.*, 2006). Another challenge is given by the last years crisis, like Covid – 19 that had the most drastic impact on economic environment with lots of people getting fired or the bankruptcy of small enterprises (AmCham Moldova, 2020). With the introduction of remote work, it has been observed a decrease in employees' efficiency and in the intrinsic motivation to maintain high productivity levels (Platforma Națională a Forumului Societății Civile din Parteneriatul Estic, 2021). Another crisis that affected the individuals' performance, is the Ukrainian war – a time for companies to take into consideration their human resource more (Prohorov, 2022). Thus, we can see a gap between the desired performance and the perceived one at the workplace, which makes it difficult to obtain a full concentration state. But how can managers create an environment to fit that state? Let us see below what factors we might take into consideration when trying to reach the flow feeling.

2. Method

The aim of this study is to observe the possible causality between the factors that determine the flow state, and the performance perceived over time at the workplace. As per the above, we take into consideration the following objectives:

O1: To identify the possible determinant factors of flow.

O2: To describe the potential influence of these factors on the workplace's perceived performance.

Research design

In this study, we operated with a concept introduced in the '90, and the Romanian literature and research in this domain is still in a continuous growth. Thus, this analysis has an alternative aim, to serve as a supply for the gaps in Romanian literature, adding new and detailed information about flow. To answer this problem, we used the qualitative research method, which gives us the possibility

to see beyond numbers, to observe relations between individuals and phenomenon, and to formulate hypotheses and interpretations that can be hidden for a quantitative researcher (Heloise and Rafique, 2021). We applied journaling as an instrument for an efficient qualitative analysis, with a strong accent on reflections of the sample taken into consideration (Bandini *et al.*, 2021).

Population and sample

In the analysis of behaviors at the organizational level, the population considered for the study was formed from employees working for an international organization in human resources which is conducting its activity in Iași, Romania. Inside the company, a Google Form was sent on the work email of the employees, in order to filter the individuals who felt at least one time the state of full concentration from the ones who were yet to achieve this feeling. The form was completed by five people, and only three of them gave their acceptance to participate in the research (annexes nr. 1). The aim and the objectives of the study were communicated to and they have been assured that their feedback is completely anonymous and will be used just for academical purposes. The demographical background of participants consists of different ages, two of them were Millennials and only one from Gen Z, and sexes – two females and one male. From geographical aspect, as their contract offers the possibility of remote working, two of them were located in rural areas around the county of Iași, and only one was living in the urban area.

Data gathering

The employees that gave their acceptance to participate to the journaling experiment, have been contacted on a separate group created in Microsoft Teams. In the starting, they were asked about their state at that moment and later, an explanatory text was posted in the group. Further, we gave a note with the definition of flow state for them to have more understanding of what they need to write about. The journal was sent to the employees in Word format, in which they could give their opinion on the questions like ‘When you felt the most concentrated during the work day?’. Also, the document contained free space to complete for each day of the study. The journaling method lasted 5 days, being conducted in the period 2nd – 6th of December 2024. During this period, the participants were notified daily to complete the journal with their reflections. After, the journals were collected from the participants and each of them was analyzed through a content evaluation which resulted into the

identification of several topics that responded to the earlier established objectives and research problem.

3. Results

Data received from the completed journals were processed through simple content analysis, where we identified 5 general themes that can give an answer to our research problem. In the following, we present a detailed image of each theme, refined through data coding.

Table 1. Initial state

Code	Frequency
P_Positive_state	19
Ready	1
Happy	2
Good sleep	4
Energy	4
Silence	1
Nice vibe	2
Concentration	1
Easy	1
Comfortable	1
Emotional	1
Productive	1
N_Negative_State	14
Tired	4
Less energy	3
Pushing	1
Pain	1
Lack of focus	3
Insomnia	1
Slow activity	1

Source: own representation of data processed based on journal analysis

The aim of this theme was to observe the initial state of the participants, to see their predisposition to be in flow, as the analysis of the mood can influence the behavior of employees in the workplace (Zaborilă, 2005). From the above table, we can see that the state of the individuals was rather positive (19 mentions) than negative (14 mentions). From the positive state, the good sleep was

the most mentioned (4 mentions), the most important factor that affected the wellbeing of the employees and the only one who helped them be more energetic (4 mentions) throughout the day. Quote: ‘I started the day with more energy, as I had a good and qualitative sleep’. Throughout the journaling period, the participants felt happy (2 mentions) and they had a nice vibe (2 mentions). Quote: ‘My day started quite peacefully, with a nice vibe’. On the other hand, one of them mentioned quite often tiredness (4 mentions) as being the most often felt state. Quote: ‘I started my shift very tiredly, and it took me more time than usual to concentrate, due to insomnia’. Moreover, all the participants had days with less energy (3 mentions) and with a lack of focus (3 mentions). In conclusion, we can affirm that for a good state for the whole day, it is important for the individuals to have a good sleep that can give them an energy boost and that can help them focus more easily.

Table 2. Factors that induce flow state

Code	Frequency
T_Tangible_Factors	17
Coffee/Water	8
Scented candle	1
Podcast	1
Food	4
Social scrolling	1
People	2
I_Intangible_Factors	21
Cozy atmosphere	3
Rest	3
Break	3
Writing	1
Avoiding multitasking	2
Avoiding social media	2
Silence	1
Room temperature	2
Music	3
Exercises	1

Source: own representation of data processed based on journal analysis

Considering that the objectives of this study refer to the determinants of flow state, the above theme offers a clearer image on them. Thus, we can observe that we have tangible factors (17 mentions) and intangible (21 mentions). The latter have a higher influence on inducing the flow, as the participants said that for them, a cozy and nice work atmosphere is very important (3 mentions).

Also, they mentioned rest (3 mentions) and frequent breaks (3 mentions). Quote: ‘Before starting the shift, I made coffee and I lit a scented candle to create a nice and cozy atmosphere’. We emphasized that the rest is connected to a good sleep, and the atmosphere with the nice vibe, codes that were analyzed in table 1. Another interesting factor that the participants mentioned was music (3 mentions). This result is like an outcome obtained by Csikszentihalyi in research with the usage of Flow Questionnaire. Quote: I discovered that music helps me to concentrate better on my tasks’. In contrast, for the tangible factors, the highest influence on inducing the flow state was generated by coffee (8 mentions). Quote: ‘At 11, after 3 coffees, I started to feel productive’. In conclusion, we extracted 4 main factors that offer the possibility for the employees to approach the feeling of flow, these being: workplace atmosphere, rest, breaks and coffee.

Table 3. The moment of flow

Code	Frequency
F_First_Part_of_Day	7
Around 10:00	2
First part of the day	5
S_Second_Part_of_Day	9
Before lunch break	2
After lunch break	2
16:00	1
14:00 – 16:00	3
12:30 – 16:00	1
D_Duration	6
Half an hour	1
2 hours	1
3 hours and 30 minutes	1
3 hours	1
4 hours	2

Source: own representation of data processed based on journal analysis

The moment of flow is useful when measuring the frequency and duration of this state experienced by the employees. After the codification of journal, we can see that participants are more likely to feel the flow in the second part of the day (9 mentions), rather than in the first part (7 mentions). They were flowing mostly in the time frame from 14:00 till 16:00 (3 mentions), a period connected also to after lunch break code (2 mentions). Taking into consideration this information, we can observe a correlation between one of the tangible factors - food (4 mentions) analyzed earlier and

the period of lunch break, participants saying that they need food for energy and maximum concentration. Quote: ‘The strongest state of concentration I felt from 14:00 till 16:00, because I had food and relaxed myself a bit’. We can define another two factors mentioned – rest and break. If we are talking about the duration of flow state, then the reflections are different from person to person, as everyone has a complex personality that is influenced by personal life elements. Thus, the longest flow state was almost 4 hours (2 mentions), and the shortest – half an hour (1 mention).

Table 4. Effects of flow

Code	Frequency
P_Positive_Effects	18
Satisfaction	2
Wellbeing	3
Stressless	1
Fulfillment	1
Happiness	1
Productivity	3
Pleasure	1
Focus	3
Energy	1
Active	1
Victory	1
N_Negative_Effects	11
Exhaustion	2
Tiredness	8
Sleep	1

Source: own representation of data processed based on journal analysis

Once we identified the factors that can influence the flow state, we want to continue with an analysis of the nature of the influence, which is done in the above table. As we can see, this nature is rather positive (18 mentions), than negative (11 mentions). From the positive effects mentioned, are wellbeing (3 mentions), productivity (3 mentions), focus (3 mentions) and satisfaction (2 mentions). Quote: ‘Emotions were of satisfaction and wellbeing knowing that I had the time to finish all the daily tasks without stress’, ‘I could focus more and to pay more attention to little details’, ‘The maximum concentration state was around 15:00 and it lasted 3 hours – time when I was very active and productive’. However, we observe that the negative effects also had an influence on flow state, tiredness being mentioned 8 times. Quote: ‘The shift ended at 20:00 with a high level of exhaustion’.

In conclusion, we can affirm that the flow state is usually accompanied by focus and attention, when the employees feel the most productive and satisfied by their work. But on the other end, the exhaustion and tiredness are the one who takes place as the workday ends.

Table 5. Factors that stopped the induction in flow

Code	Frequency
F_Factors	18
Full morning	1
Bad sleep	2
Weekend thoughts	1
Winter season	1
Weaknesses	2
Weather	3
Tiredness	3
Diverse events	2
Night shift	1
Unfinished tasks	1
High work volume	1

Source: own representation of data processed based on journal analysis

Beside the factors that help to induce the flow state, throughout the analysis of participants' reflections, we identified some elements that were stopping them to reach be in flow. We can see that the accent is on bad sleep (2 mentions), weather (3 mentions), tiredness (3 mentions) and diverse events (2 mentions). In total, the word 'tired' was said 15 times, which tells about the proportion between productivity and human resources, when the first one rises, the second one will decrease. Quote: 'Because it is December, the weather outside is gloomy and cloudy, which makes me feel tired and sleepy'. Thus, we can say that external factors have a high influence on flow state.

After the analysis of journals, we have extracted and defined the following hypotheses, which will serve as a breaking point for future studies:

H1: The workplace atmosphere, rest and breaks represent the factors with the most influence on flow through organizational employees.

H2: The consistency and frequency of flow is determined by the personality and behavior of each organizational employee.

H3: Tiredness is representative of all organizational employees, and it is perceived as a factor that stops the feeling of flow.

Discussions

The analysis of flow concept can help the organizations to reach a new level of development from the human resources management point of view (Bakker, 2008). Thus, the results of this study can serve as an informational basis for managers of multinational companies from Romania in regards with employees' behavior coordination. Also, it can help them to reach a new level of understanding of their employees and how to create a perfect environment for flow. After the content analysis of journals, we observed that the flow state can have different factors of influence, internal and external, it may have positive or negative outcomes and can be felt in diverse time intervals. Moreover, it is imperative that the initial state of employees before starting the workday be good and positive, with a qualitative sleep and rest (Table 1). In the table referring to factors that can induce flow, we determined more factors than the ones specified in the literature review on this subject, like music, work atmosphere and coffee breaks. Here we can add the results obtained by Csikszentmihalyi in a study on art people, where he identified the efficiency of music on productivity (Csikszentmihalyi and Nakamura, 2002). An unexpected factor that was found is coffee, all the participants saying that this is what gives them strength to concentrate better and to be more productive (table 2). In this case, we can confirm that we accomplished our first objective, where we identified the factors that determine flow. The second objective was accomplished due to table 4, where we emphasized the effects of flowing on workplace performance. We found out that the nature of these factors is positive, with adverse effects. Even though the employees feel more focused and are paying attention to details, they must deal with tiredness, lack of good sleep and high work volumes. These results can be folded on dimensions underlined by Engeser like concentration on present tasks, loss of us, loss of the concept of time and control on our own actions (Engeser *et al.*, 2021). Due to the analysis of data collected from journal, we can see the frequency of flow and its duration. On the other hand, when creating management strategies for a good flow environment, the human resources specialist needs to take into consideration also the factors that stop the feeling of flow.

Conclusions

This study implies an interdisciplinary view, from the perspective of organizational management and human resources, business psychology and behavioral economy. Combining concepts like organizational behavior management and flow, this research can contribute significantly to strategic and applicative methodologies, with the aim to improve the quality of behavioral

management and with a direct impact on increase of performance and wellbeing in general. Throughout the analysis, we saw how important the role of the manager in an organization is, we defined the theory of organizational behavior, and we gave an explanation regarding flow, and what it means to be in this state. Flow – a state of maximum concentration and optimal performance, which is hard to obtain without specific conditions. One of them was mentioned in the journal by the participants and it is related to the workplace atmosphere. It is imperial for it to be nice, cozy and comfortable for them to start the day with energy. Here we can also mention the implications of music, aroma therapy and even furniture. Another important factor refers to the workload, as when its levels are high, it is impossible to reach flow. Coffee breaks represent another essential aspect that needs to be taken into consideration, as they are crucial for the employees' well-being. All these elements help the individuals to focus on their activities better, to understand their own behavior, and manage their tasks more efficiently. Organizational behavior is also related to altruism and help, which is mentioned in the journals. A good collaboration between the team members is another element that helps to reach flow. Moreover, another aspect that was emphasized by the participants was movement, which helps them to clear their mind and concentrate better on their daily tasks. On the other hand, in managers' strategy it is important to take into consideration also those factors that have a negative influence on flow. In conclusion, we can confirm that we have accomplished our aim and the objectives we set earlier, as we observed what are the factors that can help in reaching the flow state and analyzed the nature of their influence on participants and organizational performance.

Even though the goals of this study have been reached, during the research we stumbled upon several limitations which are related to (1) small number of participants in the journaling experience, (2) participants were yet to be fully honest in their feelings, (3) some of the participants kept forgetting to update the journal on a daily basis, completing it on the last day for all the experiment period, (4) there was a vague understanding of the flow state concept among the participants, even after the given explanations. To surpass these limitations, we advise the following future research directions: (1) extend the number of participants and repeat the journaling method with more attention to details in the process, (2) add one more qualitative study, such as interviews with Romanian organizational employees, adapted with items from Self-efficacy Scale (Resnick *et al.*, 2000) and The Individual Performance Scale (3) with the results retrieved from interviews and items from the Flow Questionnaire (Csikszentmihalyi, 2002) build a questionnaire and apply it on multinationals that are located in Iași, Romania at the present time, (4) take into consideration the generational theory, in order to see how different generations reach the flow state and what are the afterwards sensations – are they similar or not. Through these future studies, we will be able to tighten the informational gap

regarding the flow state and make the entrepreneurs and managers more aware of the benefits and perceived performance the companies might get.

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Structural injustice and the failure of economic transition: the case of Bosnia and Herzegovina

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Abstract

This paper critically examines the nature and consequences of economic transition in Bosnia and Herzegovina, drawing on theoretical insights from David Harvey, Guy Standing, and Thomas Piketty. It explicates the relationship between the political constellation in Bosnia and Herzegovina and the economic outcomes of the transition, where key failures are reflected in systemic dysfunctionality and institutional instrumentalisation. The aim is to present, in a concise and informative manner, the economic consequences of the incomplete transition. The analysis combines secondary literature, statistical data, and international reports to demonstrate how privatisation, deindustrialisation, and unemployment were not neutral reforms but politically shaped processes with enduring social consequences. The study is theoretical-analytical and employs both quantitative and qualitative methods, using descriptive, analytical-synthetic, and heuristic approaches. Presenting these consequences offers insights into the broader impact of the absence of corrective institutional mechanisms, which sustain negative socio-economic outcomes in post-socialist and post-conflict societies.

Keywords: Bosnia and Herzegovina, privatization, deindustrialization, unemployment, informal economy

Introduction

Following the dissolution of the Socialist Federal Republic of Yugoslavia, the newly formed republics were confronted with the challenge of transitioning from a planned to a market economy. In this context, post-Dayton Bosnia and Herzegovina has faced numerous difficulties. The post-war period was marked by ethnic tensions, political instability, systemic inefficiency, public apathy, widespread socio-economic stagnation. This post-conflict period in Bosnia and Herzegovina has been characterised by political fragmentation and the dominance of ethnonationalist forces. In the Bosnian context, the transition process facilitated the enrichment and empowerment of ethnonational elites through their control over privatisation and redistribution processes. "The economic system of the

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ethnopolitical arrangement functions para-economically" (Mujkić, A., 2007, pp. XIII-XIV). Although Bosnia and Herzegovina represents a unique case, similar outcomes of transition have been observed in neighbouring countries. In Serbia, for example, the privatization process "led to the dismissal of 450,000 workers" (Šuvaković, 2012, p. 92). In Croatia, it created "a new class of tycoons, most of whom had no prior connection to economic activity before the dissolution of Yugoslavia" (Malenica, 2007, p. 133). Thus, the transitional challenges faced by post-Dayton Bosnia and Herzegovina are not isolated, but rather form part of a broader pattern seen across Central and Southeastern Europe, particularly in post-conflict societies. For this reason, Bosnia and Herzegovina's transitional experience merits deeper analysis.

This paper focuses on analysing the specific economic consequences of the transition, by examining its unique forms, mechanisms, and outcomes. The notion of transitioning from a planned to a market economy also presupposed the transformation of authoritarian political systems into liberal democracies (Miladinović, 2009). In many post-socialist countries, the transition was marked by an uncritical acceptance of the free-market model. This model prioritised the free market as the primary mechanism for resource allocation and the regulation of social relations. Privatisation, deregulation, and liberalisation emerged as key instruments in the reconstruction and development of institutions and economies in post-socialist societies. At the same time, these factors contributed to the creation of market oligopolies, the instrumentalisation of public institutions, rising unemployment, and the deepening of social inequalities. Examples of such practices can be found, among others, in Russia (Gelman, 2002; Kukolev, 1998), Ukraine (Elborgh-Woytek and Lewis, 2002; Gherghina and Volintiru, 2020), Bulgaria (Nikolova, 2017), and Moldova (Gherghina and Volintiru, 2020; Orlova and Ronnås, 2000).

Among the various transitional challenges in Bosnia and Herzegovina, the economic dimension is particularly symptomatic. On the political level, Bosnia and Herzegovina remains a politically polarised society, grappling with difficult and protracted reforms (Divjak and Pugh, 2008). The political dimension of the transition has significantly influenced the character and form of its economic transition (Vračić, 2019). Nonetheless, to grasp the true nature of Bosnia and Herzegovina's transition, it is especially important to examine its economic aspect. The shift towards a market economy entails privatisation and the restructuring of the economic system. A common challenge for all former communist bloc economies has been the establishment of a market and institutional infrastructure, alongside the privatisation of state-owned assets (Stiglitz, 2004).

Although privatisation and economic restructuring represent core elements of the transition process, in Bosnia and Herzegovina these processes have produced serious adverse consequences.

The absence of a clear and coherent legal and economic system has resulted in regulatory confusion that hinders the economy and threatens the stability of the state (Fočo, 2005). Privatisation, deregulation, and market liberalisation have had profoundly negative social impacts. The results of transition raise concerns about both future prosperity and the sustainability of the economic system (Elezović, 2024; Pepić, 2023). Unemployment, precarious and informal labour, corruption, social stratification, exclusion, and deepening poverty are closely linked to failed and clientelist-driven privatisation (Begić, 2016). Privatisation resulted in deindustrialisation, which, according to a report by Transparency International BiH (2009a), was marked by conflicts of interest, a lack of transparency, and a disregard for the protection of the public interest. Deindustrialisation significantly contributed to rising unemployment. Limited employment opportunities and undignified hiring practices created fertile ground for the informal economy, while the workforce—once protected by the state—was overnight transformed into a precarious class.

In this paper, transition is understood as a political project aimed at restructuring power relations. The theoretical framework is characterised by an interdisciplinary approach, incorporating both economic analysis of transitional policies and sociological perspectives on the social consequences of transition. The challenges and negative outcomes of economic transition in Bosnia and Herzegovina, as presented here, are intentionally framed to contribute constructively by synthesising existing proposals and recommendations. Accordingly, this paper also aims to support the articulation of potential solutions for mitigating and potentially remedying the socio-economic consequences of economic transition.

1. Theoretical framework

The theoretical framework incorporates economic, sociological, and more specifically, post-transition dimensions. The economic aspect of the framework contributes to understanding and problematising the structural changes that followed the initiation of the transition process. The conclusions and perspectives of David Harvey (2014), Thomas Piketty (2015), and Nancy Fraser (2013) provide crucial support to the statistical and empirical evidence that highlights the link between the market, institutional instrumentalisation, and the deepening of social inequalities.

David Harvey (2014) views neoliberalism as a project aimed at restoring class power, which, in the context of post-Dayton Bosnia and Herzegovina, can be associated with the privileged status of those overseeing the processes of privatisation and market deregulation. Insights from Thomas Piketty (2015) and Nancy Fraser (2013) concerning structural inequality and redistribution—across

both spatial and generational dimensions—contribute to a deeper understanding of the social problems stemming from an unsuccessful and non-transparent economic transition. Piketty (2015) identifies mechanisms through which wealth becomes concentrated, while Fraser (2013) offers a three-dimensional theory of justice that supports a more grounded analysis of depopulation and the erosion of social security. Her three dimensions—distribution, recognition, and participation—serve as critical tools for analysing the (in)just distribution of resources, the recognition of human identity and rights, and access to decision-making processes within political, economic, and social spheres. Fraser's framework further clarifies how the transition in Bosnia and Herzegovina was political instrumentalised.

The post-conflict period in Bosnia and Herzegovina enabled the instrumentalisation of economic reforms by political elites. In this regard, the work of Guy Standing (2014) on the concept of the precariat is particularly relevant. The emergence of the precariat in Bosnia and Herzegovina is largely a result of the collapse of industrial production, or deindustrialisation, followed by mass unemployment and the expansion of the informal economy. Standing's notion of the precariat enables a deeper understanding of the social consequences of economic transition in Bosnia and Herzegovina, especially in relation to precarious labour. The post-Dayton labour market does not function according to meritocratic or market principles, but is instead shaped by the dominant clientelist-political structure.

Given the significant instrumentalisation of institutions and political manipulation of the economic transition, it is also important to address the structural forms of organised crime. In this context, the investigative work of journalist Domagoj Margetić—*The Bloody Balkan Billions*—serves as a valuable source. Margetić (2019) illustrates how ethnonational political elites in the former Yugoslav republics, including Bosnia and Herzegovina, exploited the transition process as a vehicle for the accumulation of power and wealth. Additionally, the insights of Catherine Verdery (1996) on the cultural-political dimensions of privatisation offer a valuable theoretical tool for examining the socio-economic consequences of the transition in post-Dayton Bosnia and Herzegovina.

The aforementioned theoretical perspectives are instrumental in mapping key analytical frameworks for interpreting the transition process in Bosnia and Herzegovina. In other words, the authors referenced in this theoretical framework serve as touchstones or theoretical anchors. Their work provides the conceptual foundation upon which statistical data, empirical findings, and recommendations from international organisations are connected. This integrated approach enables a clearer identification of the social consequences arising from an incomplete and instrumentalised economic transition. Beyond contextualising theoretical insights within the post-Dayton transition,

this study provides a systematic examination of how political instrumentalisation of the transition has affected social inequality. It connects privatisation, deindustrialisation, unemployment, and the shadow economy as interdependent factors, offering a framework applicable to the analysis of transitions in other post-conflict societies.

2. Characteristics of economic transition in Bosnia and Herzegovina

In order to fully and adequately understand the socio-economic consequences of the economic transition in Bosnia and Herzegovina, it is essential, first and foremost, to examine the underlying causes that led to such outcomes. Accordingly, this paper focuses on four key processes—privatisation, deindustrialisation, unemployment, and the expansion of the informal economy. It is important to emphasise that these four processes are inseparable; they are interdependent, and the chronological order in which they are examined carries significant analytical weight in this study. These processes are understood as the result of political decisions and an instrumentalised institutional framework. Unsuccessful privatisation led to deindustrialisation. Deindustrialisation, in a country that was predominantly industrial, resulted in mass unemployment. Widespread unemployment, in turn, facilitated the growth of the informal or grey economy, the erosion of workers' rights, and a rapid decline in the population's standard of living.

Transitional mechanisms allowed the economic and political elites to monopolise power and resources, while simultaneously generating structural distortions in both the economy and the labour market. Catherine Verdery (1996) rightly argues that it is impossible to understand post-socialist transition without recognising that it also entails the reproduction of elite power. The investigative work of journalist Domagoj Margetić (2019) on corruption and organised crime in the former Yugoslav states fully supports Verdery's claim.

Post-Dayton Bosnia and Herzegovina, like other post-socialist societies, found itself in a position during the 1990s in which it was compelled to adopt a market-based economic model. According to Uroš Šuvaković, *"it was not acceptable for the transition to apply to Yugoslavia as a whole, but only to its constituent parts"* (2014, p. 269). This author argues that the aim of the transition—as a process he understands as part of a broader strategy directed against the will of the people in Yugoslavia—was the creation of completely dependent states without real sovereignty. Such states function as the periphery or semi-periphery, not only in economic terms but in every other respect as well. The abandonment of the planned economy affected all segments of Bosnian-Herzegovinian society. Social anomie and economic paralysis following the war required urgent

interventions to ensure the basic functioning of the system and to allow everyday life to continue for the population. However, the response of the political leadership to the pressing need for recovery in a post-conflict society was disheartening and detrimental to citizens. Political elites prioritised wealth and influence over citizens needs. Political decisions regarding privatisation, deindustrialisation, fiscal burdens, and regulatory frameworks were portrayed as inevitable.

As Nancy Fraser (2013) notes, the depoliticisation of economic power typically involves framing political decisions as economic, technical, or market-driven necessities. Fraser further concludes that neoliberal transformation generates structural injustice through economic decisions that are, in fact, deeply political. Even minimal critical reflection reveals that economic decisions are politically driven and entail far-reaching social consequences. In post-Dayton Bosnia and Herzegovina, transitional policy essentially served class interests, privileging the appropriation and concentration of power by political and economic elites at the expense of the broader public.

Like other former post-socialist states, Bosnia and Herzegovina sought to establish a nation-state modelled on 18th-century prototypes (Džafić, 2023). Under such conditions, rather than focusing on economic recovery and national prosperity, the post-conflict period in Bosnia and Herzegovina was characterised by competition among political elites over assets that had previously been under social ownership. In the early 1990s, as in other republics of the former Yugoslavia, one of the initial decisions was to declare socially owned property as state property. “Social ownership, according to its name, could be defined as the ownership of the social community — the common property of all members of society, property that does not belong to any individual natural or legal person” (Mujkić, E., 2012, p. 6). Under such circumstances, the post-war period in Bosnia and Herzegovina was marked by a struggle among political elites for control over property that had previously been socially owned. Earlier, during the war (in 1993 and 1994), laws had been adopted that transformed socially owned property into state property, a process that was later transferred to the entity level (Pepić, 2023).

The impending market liberalisation, driven by global centres of power, motivated ethno-political elites to exploit their existing political influence to the detriment of the country's citizens. As a result, foreign investment was obstructed, and monopolies emerged under the control of politically connected capitalists. In Bosnia and Herzegovina, as Džafić (2023) aptly concludes, the free participation of citizens was hindered because political elites held control over economic resources and determined their social distribution (Katunarić, 1994).

The greed of these elites and their inner circles resulted in widespread impoverishment, deep stratification, and the weakening of social norms. Corruption and a persistent lack of political will to

foster a favourable economic and social environment have given rise to numerous societal challenges, significantly diminishing both the quality of life for citizens and the country's developmental potential. Even three decades after the official end of the conflict, Bosnia and Herzegovina remains far from achieving its pre-war level of economic development.

The negative consequences of deindustrialisation in Bosnia and Herzegovina have further contributed to a dramatic rise in unemployment and the growth of the shadow economy. As most workers were previously employed in industry, the closure of major plants plunged many families into economic despair. In reality, the restructuring of the economy in Bosnia and Herzegovina was never fully realised; rather, it can be argued that economic growth was actively undermined by the political leadership. “In the absence of a real market economy, the main places of employment and the main employers become the political parties in power and the firms under their party-state control” (Kovačević, B., 2018, p. 99).

Politically driven employment has eroded economic efficiency and fostered a bloated, ineffective bureaucracy. As a result, the labour market functions in such a way that those unwilling to play by the unwritten “rules of the game” remain uncompetitive. By 2012, the state had lost over 20 billion convertible marks due to economic inefficiency (Kozic, 2012). There are countless examples of dysfunction within the political system, with corruption being among the most prominent. Regardless of which party holds power, ethnopolitics in the post-Dayton state has become strongly correlated with corruption (Džafić and Žiga, 2023). An economic order in which business actors aligned with political elites enjoy privileged treatment has had a detrimental impact on the broader economy.

The business environment in Bosnia and Herzegovina neither attracts foreign investment nor stimulates individual entrepreneurial initiative. “According to the Global Competitiveness Index for the period 2017–2018, Bosnia and Herzegovina ranked 92nd out of 141 countries” (UNFPA, 2019, p. 37). The country’s uncompetitive market, its weakened economy, and the enduring lack of political will to improve citizens’ living standards have all had a profound effect on the quality of life. In 2016, Bosnia and Herzegovina was ranked as the fifth poorest country in Europe (Kovačević, 2018).

Ultimately, the consequences of economic transition in Bosnia and Herzegovina have significantly shaped the country’s demographic profile. The average age at which women give birth has increased, birth rates are in decline, fewer marriages are being formed, and unemployment remains persistently high—particularly among young people. At the same time, the family model has undergone transformation: the meaning of family increasingly reflects partnership rather than

procreation (Bobić, 2003). In addition, there has been a noticeable rise in single-parent families, separated households, and families without children (Draganović, 2016).

The negative natural population growth and lack of motivation for parenthood in Bosnia and Herzegovina are direct consequences of the country's unfavourable economic situation. Over half a million people live below the poverty line, with poverty being particularly prevalent among the elderly, children, and the rural population (UNFPA, 2019). In the long term, the declining number of women of reproductive age is expected to have a negative impact on the country's ability to improve birth rates (UNFPA, 2019). Negative birth rates and continued emigration have been consistently accompanied by an increase in the proportion of the elderly population. Average wages are insufficient to cover even half of monthly living costs, while inadequate pensions often leave elderly individuals without essential support. Social inclusion of the elderly and other vulnerable groups is virtually nonexistent. Bosnia and Herzegovina allocates only two-thirds of the EU average (as a percentage of GDP) to social protection—less than other Western Balkan countries (International Labour Organization, 2022).

Economic transition in Bosnia and Herzegovina has produced lasting structural harm across society. The restructuring of the economy was never fully or adequately implemented in a way that would bring about the intended positive outcomes of transition. Market competition in Bosnia and Herzegovina is distorted; the past is nationalised, collapse is repeated, and the standard of living—as well as the overall quality of life for the majority of the population—reflects a reality of long-term neglect.

2.1. Privatisation

Privatisation is a term that carries overwhelmingly negative connotations for much of the population of Bosnia and Herzegovina, as well as for citizens of neighbouring countries. Successful cases of privatisation in Bosnia and Herzegovina are exceptions rather than the rule. Viewed through the theoretical lens of David Harvey (2014), privatisation in Bosnia and Herzegovina exemplifies capital accumulation through the expropriation of state property. Harvey argues that the transformation of social and state-owned property into private ownership is not a result of market rationality, but rather a politically instrumentalised process of capital redistribution. According to Harvey (2014), the process of economic liberalisation serves to entrench oligarchic structures. His insights suggest that the destructive social impacts of economic reforms are not unintended side effects but rather integral features of the neoliberal project. In this context, Bosnia and Herzegovina

may be seen as a striking example of widespread disenfranchisement of citizens and the consolidation of oligarchic power, resulting in pronounced class polarisation within society.

The success in consolidating the economic power of clientelist circles in Bosnia and Herzegovina can, in part, be linked to narrative and discursive maneuvers associated with the depoliticization of key social issues. In line with Nancy Fraser's theoretical approach, privatization is not presented merely as a structural or functional matter, but as a strategic discourse aimed at framing privatization—and all of its negative consequences—as an unavoidable necessity. Factory closures are therefore portrayed as the result of necessary market reforms, while social insecurity and the decline in living standards are framed as systemic failures and as inherited problems from the previous system.

Specifically in the context of Bosnia and Herzegovina, the suffering of citizens and workers was not depoliticized in the way Fraser describes in her concept of discursive normalization of injustice. Instead, injustice was politicized, and in this way presented as part of a broader, global neoliberal process which was used to justify the beginning of the country's economic transition. As a result, the negative consequences of transition were not hidden or denied, but rather framed in public discourse and academic literature as inevitable outcomes of altered global political and economic circumstances that directly affected the local level.

Although economic and business-related matters are primarily within the jurisdiction of the entities under the Constitution of Bosnia and Herzegovina, the state also holds certain assets and has ownership rights at the state level. Accordingly, the process of privatization has been regulated separately in each administrative unit. In the Republika Srpska, privatization was initially governed by the Law on Privatization of State Capital in Enterprises from 1998, and later by the 2006 law of the same name. In the Brčko District of BiH, the process is regulated by the Law on Privatization of Enterprises of the Brčko District. In the Federation of Bosnia and Herzegovina, it is governed by the Law on Privatization of Enterprises.

Most of the privatization process has already been completed. What remains under public ownership primarily includes enterprises of strategic importance, residual state capital in partially privatized companies, and assets recorded in the passive sub-balance sheets of privatized enterprises. The essence of the aforementioned laws lies in the formal possibility granted to citizens to purchase property, yet the actual economic conditions necessary for realizing that right were largely absent. In Bosnia and Herzegovina, social and state revenues have been concentrated within narrow clientelist circles and in the hands of the political-economic elite. On one hand, there were buyers who profited from the destruction of enterprises, while on the other, workers were left without jobs, material

security, or unpaid wages. This pattern is also reflected in the observations of Guy Standing (2014), who notes that stable employment has been replaced by insecure, informal, and temporary forms of work. In other words, the destruction of the economy in Bosnia and Herzegovina—through the misuse of privatisation—has led to the creation of the precariat. In this context, one can speak of a pronounced class polarization in society, in which a wealthy and influential ruling elite stands in opposition to the broad mass of impoverished and disenfranchised citizens (Šavija, 2015).

The conditions created as a direct consequence of the non-transparent privatisation process have facilitated the growth of the informal economy in the country. The privatisation conducted as part of the economic restructuring plan was exploited by legitimate representatives of ethnic groups to the detriment of the ethnicities they represent. The privatisation model in post-Dayton Bosnia and Herzegovina was “legalised by the war and its consequences” (Fočo, 2005, p. 85). *By imposing privatisation as part of the framework for the reconstruction and rebuilding of the war-devastated economy in Bosnia and Herzegovina, international actors thus supported the continuation of war policies aimed at appropriating capital by ethnonational elites* (Pepić, 2022, pp. 180–181).

Ethnonational elites used the transition process to stabilise their own power. Domagoj Margetić, in his research on the flow of money related to economic and privatisation scandals, as well as criminal activities, finds evidence of the involvement of political elites from the former Yugoslav states. Most of the large capital in the country originates from the war economy and continues to operate post-conflict under the cover of privatisation (Margetić, 2019). Numerous pieces of evidence regarding the exploitation of transitional processes for the appropriation of capital and its relocation to offshore accounts indicate that ethnonational elites cooperated in creating economic networks and extracting capital. Boards and managers close to political elites were installed in enterprises, leading them to bankruptcy and collapse. This practice aligns with Klaus Offe’s findings. Offe (1996) discusses hybrid transition regimes—societies in which the transition has not been successfully completed, where democratic and market reforms primarily benefit the interests of political elites and oligarchic circles close to them (Transparency International Bosna i Hercegovina, 2009b).

Thomas Piketty (2015), like Klaus Offe, emphasises that an unregulated capitalist framework leads to the rapid concentration of wealth within narrow clientelist circles, which exacerbates structural inequalities. In Bosnia and Herzegovina, political decisions and connections have created a privileged class of owners of capital accumulated through non-transparent means. This has widened the gap between rich and poor and closely aligns with Piketty’s analysis of redistributive injustice in neoliberal systems. However, unlike Piketty’s identification of the problem within the neoliberal framework itself, it is important to highlight that, in the context of post-Dayton Bosnia and

Herzegovina, the key issue is the inconsistent, selective, and exclusive model of establishing a neoliberal market system. In Bosnia and Herzegovina, it functions only nominally, as genuine free competition and independent market regulatory mechanisms do not truly exist. The dysfunctionality of the system in the country is partly due to the absence of a healthy foundation for establishing meritocracy. Citizens are bearing the costs of this dysfunction. Thousands of workers in the post-conflict period, due to job losses, have been left without pension and disability insurance contributions being paid, with the resulting losses compensated from the state budget. The irresponsible actions of the authorities stand as clear evidence of their disregard for the citizens and society at large.

Piketty observed that the pattern of wealth concentration is historically persistent, and he identifies it, for example, during the French Belle Époque. “At the time, Paris had about one-twentieth of France’s population but possessed a quarter of the country’s wealth” (Piketty, 2015, p. 366). Inequality continued to grow over the decades, reaching drastic proportions in the contemporary context.

Piketty identifies the political factor as a decisive element in enabling the concentration of wealth within narrow clientelist structures. The transition has proven to be an extremely effective mechanism for concentrating wealth in the hands of a few. The case of Bosnia and Herzegovina represents an extreme example of this phenomenon: wealth has been concentrated in the hands of a clientelist elite. The result is deep social polarization, the elimination of the middle class, and the establishment of permanent structural inequality, which does not support the rule of law but, quite the opposite, reinforces principles of domination.

In the post-conflict period, social and class inequalities were compounded by existing ethnonational divisions (Šavića, 2015). The privatisation process in Bosnia and Herzegovina not only fails to meet basic requirements but has also left far-reaching consequences on the functioning of society as a whole. Instead of the expected increase in efficiency and competitiveness, the Bosnian economy is characterised by non-competitiveness, lack of transparency, the privileging of economic actors close to the authorities, and a low level of trust in institutions. The established order continues to stifle social activism and economic initiative among citizens. For example, “in 2017—22 years after the end of the armed conflict in Bosnia and Herzegovina—264 bankruptcy procedures and 740 liquidation procedures were initiated” (Kovačević, 2018, p. 38). By 2020, a total of 727 companies were privatized in Republika Srpska, and 1,088 in the Federation of Bosnia and Herzegovina, making a total of 1,815 companies (Pepić, 2023, p. 568). The problematic privatisation model in Bosnia and Herzegovina has blocked economic development. The economic dimension of the transition has

affected all aspects of the lives of the Bosnian population. Privatisation has become one of the key mechanisms for generating structural inequality and a political instrument for the distribution of power and capital.

In order to define and implement a reform framework that would mitigate and limit the consequences of the incomplete economic transition in Bosnia and Herzegovina, it is essential to confront the underlying systemic problems. The economic system in Bosnia and Herzegovina must be depoliticised. Political appointments and the employment of party affiliates in public companies, institutions, and regulatory bodies must be halted. The judiciary must be freed from political influence so that justice can be administered without obstruction. This will enable the effective sanctioning of corrupt and other actions detrimental to the public interest. It is essential to rationalise expenditure on excessive administration in state and state-affiliated institutions, while simultaneously increasing funding for education, science, culture, and healthcare. Furthermore, it is necessary for citizens to recognise the need to establish strong, independent trade unions through which they can improve their bargaining position. Initiating these processes would act as a catalyst for decisive and positive systemic change. Ignoring or delaying the depoliticisation of the economic system and judicial reforms will render the system in Bosnia and Herzegovina increasingly dysfunctional, making life even more difficult for its citizens.

2.2. Deindustrialisation

Before the war, industry was the backbone of the Bosnian economy. "In 1961, 54.3% of all workers were employed in industry, 58.4% in 1981, and by 2000, 35.2% of the total employed in Bosnia and Herzegovina were in industry" (Nurkanović, 2007, p. 358). In the post-conflict period, damaged industrial infrastructure, disrupted supply chains, market uncompetitiveness, and outdated technology put the survival of industrial production in question. In the country, as in other Western Balkan states, significant foreign investment was necessary for the process of reindustrialisation (Miljković, 2020). The lack of foreign investment, combined with technological backwardness, has called into question the self-sustainability of enterprises. It is important to emphasise that the genuine willingness of the political elites in the country to attract foreign investment is also questionable. Oligarchic structures operated beyond institutional control, using the institutional framework for orchestrated, agreed-upon looting (Margetić, 2019). Formally, the key reasons for Bosnia and Herzegovina's unpopularity among foreign investors are political instability and the complexity of the administrative structure. However, numerous internal factors also contribute to this unpopularity, including corruption at all levels of society.

The process of restructuring the Bosnian economy most significantly affected the industrial sector (Miljković, 2020). The deindustrialisation process reduced the country's export potential and increased poverty among the population. Deindustrialisation is directly linked to non-transparent privatisation. By focusing on the development of small and medium-sized enterprises, the state became an exporter of raw materials, similar to other deindustrialised countries (Kovačević, B., 2018). The new owners of Bosnian enterprises, which had previously been the driving force behind economic development, either lacked the intent or the knowledge to revive industrial production. Instead, the newly minted owners sought to liquidate assets as quickly as possible for profit (Fočo, 2005). According to analyses of post-transition economies (Bohle and Greskovits, 2012), deindustrialisation in Eastern Europe is a consequence of systemic integration into the global economy, but in such a way that societies from the region operate as a periphery. From this perspective, deindustrialisation in Bosnia and Herzegovina is also a result of broader economic peripheralisation and the colonisation of capital.

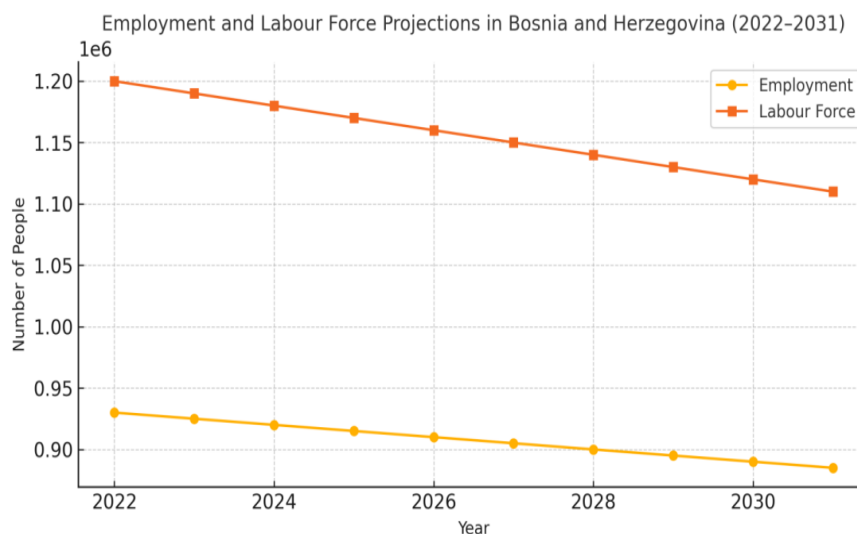
Neglecting the social consequences of the destruction of the country's industrial capacity led to an economic and social crisis within the system. The mass of disenfranchised, unemployed, and neglected citizens often had to work informally for the very employers responsible for their predicament. These workers were deprived of basic social benefits and received wages insufficient to cover fundamental living costs. This process, in the context of deindustrialisation as part of the transition in Bosnia and Herzegovina, confirms David Harvey's (2014) observation that neoliberal privatisation is a form of restoring class power. Public resources are transferred into narrow clientelist-political frameworks, while the resultant damage is compensated from the citizens' budgets. According to Miljković (2020), the economic crisis in the Western Balkan countries, caused by the deindustrialisation process, represents a persistent social crisis with no end currently in sight.

According to the Agency for Statistics of Bosnia and Herzegovina (2025), the majority of employed persons worked in the service sector (59.8%), followed by industry and construction (32.2%), while the smallest share was in agriculture, forestry, and fishing (7%). Although the share of industrial employment in 2025 is only slightly lower compared to the year 2000—especially considering the overall population decline—available data suggest that the industrial sector has not recovered. The dominance of employment in service activities potentially points to structural weaknesses in the labour market, as service jobs are often lower-paid and more precarious.

2.3. Unemployment

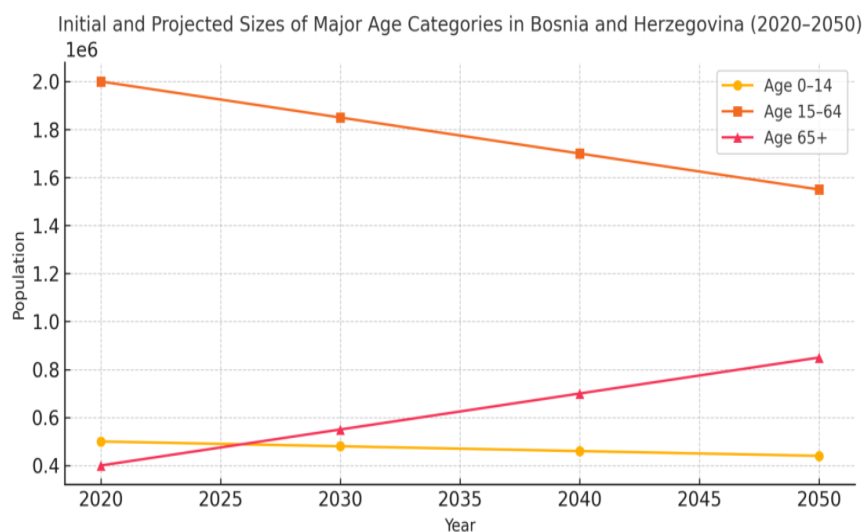
The labour force in Bosnia and Herzegovina continued to grow until 1991 (UNFPA, 2019). However, in the post-Dayton state, this trend has consistently declined. The main reasons for the reduction in the labour force are negative natural population growth and emigration. Nearly two-thirds of young people are unemployed, with little prospect of securing employment in the near future (Kovačević, 2018). The inability to find work is one of the primary factors motivating young people to leave the country. Even more acute is the difficulty young people face in finding adequate employment matching their qualifications and individual needs. The unemployment rate among young people aged 15 to 24 was 63.10% in 2012, and as many as 58.5% had been searching for work for over a year (Hadžimahmutović and Martić, 2013). In the first quarter of 2025, the labor force in Bosnia and Herzegovina was approximately 1.4 million people, with 86.6% employed and 13.4% unemployed (Agency for Statistics of Bosnia and Herzegovina, 2025). The number of people outside the labor force was about 1.47 million, marking a 1.4% increase. The activity rate was 48.7%, while the employment rate stood at 42.2%. Long-term unemployment, defined as unemployment lasting more than 12 months, remains very high—around 86% of all unemployed—especially among those with lower education levels (over 90%), while it is lower among those with tertiary education (around 69%). The high prevalence of long-term unemployment is particularly symptomatic. It can be assumed that a portion of these individuals engage in informal work or take on seasonal jobs abroad.

Due to the inability to find employment, young people most often leave the country in search of a better life. Economic migration reduces the domestic labour force and creates a demographically unfavourable situation that calls into question the very possibility of economic recovery. “Mass emigration flows in the 1990s have turned into persistent flows of economic migrants seeking better employment and educational opportunities in developed countries” (UNFPA, 2019, p. 19). Economic emigration also contributes to the ageing population. High unemployment has directly impacted the number of working-age people and the unfavourable ratio between workers and pensioners. “From 2006 to 2017, the total number of working-age people decreased by 13% in the Republic of Srpska, with an especially alarming inactivity rate (the share of inactive and unemployed people within the working-age population) reaching 63% in 2017” (UUPRS, 2019, p. 8). The situation in the Federation of Bosnia and Herzegovina reflects that of the Republic of Srpska. According to projections (UNFPA, 2022), the workforce in Bosnia and Herzegovina will decrease by nearly one hundred thousand people by 2031.

Figure 1. Employment and labour force projections in Bosnia and Herzegovina, 2022–2031

Source: UNFPA (2022)

Negative natural population growth and economic emigration will continue to influence the ageing of the population. According to UNFPA projections (2022), over the next thirty years, the number of children and adolescents in Bosnia and Herzegovina will be nearly halved. In contrast, the number of elderly people will increase by over 200,000 during the same period. By 2070, 42% of the population in Bosnia and Herzegovina will be elderly. Unemployment is closely tied to demographic ageing, contributing to declining marriage and birth rates.

Figure 2. Initial and projected sizes of major age categories, 2020–2050.

Source: UNFPA (2022).

2. 4. The Shadow Economy

The expansion of the shadow economy in Bosnia and Herzegovina is primarily a consequence of actions taken by authorities at all levels. Political decisions concerning the economy and industry have led to profoundly negative social effects, which have encouraged informal labour. Privatization in Croatia led to an increase in unemployment and forced people to self-organize (Malenica, 2007). A portion of unemployed Bosnian-Herzegovinian citizens, like those in neighboring countries, engaged in informal economy work, seasonal work abroad, or permanently emigrated. Research on the shadow economy in Bosnia and Herzegovina has shown that the informal economy accounted for more than 50% of the country's Gross Domestic Product (Tomaš, 2010). According to Piljić (2021), the deeper causes of the shadow economy stem from the economic system itself. Weak enforcement of laws, a lack of adequate mechanisms to combat the shadow economy, and an absence of political will to stimulate formal economic activity have resulted in annual losses amounting to billions of convertible marks for the state.

A significant factor contributing to rising unemployment is the extraction of capital from the country. Capital extracted through privatisation has never been reinvested into the domestic economy, a trend which also applies to neighbouring countries—Serbia, Croatia, Montenegro (Margetić, 2019). The primary beneficiaries of the shadow economy are the employers themselves, whilst workers suffer the most (Šarić, 2013). The nexus between crime and politics in post-Dayton Bosnia and Herzegovina is one of the reasons for the absence of concrete, effective measures to combat the shadow economy and stimulate formal employment. The authorities profit the most from the shadow economy, establishing a corrupt chain through illegal taxation and extortion (Tomaš, 2010).

Irresponsible actions by the authorities often render formal economic activity unprofitable for citizens. Corruption hinders social mobility and reduces opportunities for legitimate profit. At the same time, the poorest bear the brunt of corruption. The consequences of corruption are always most severely felt by honest people.

Unemployment and poverty play a particularly important role in fostering the shadow economy. In Bosnia and Herzegovina, approximately 900,000 people live below the poverty line (Kovačević, 2018). Given that the country had a population of 3.5 million according to the 2013 census, and that hundreds of thousands have since emigrated, it is likely that over one-third of the population currently lives below the poverty line. Poverty in Bosnia and Herzegovina is a major obstacle to limiting the shadow economy, and the state's efforts to address this issue are not focused on creating a more favourable business environment.

High income taxes are one of the factors contributing to the impoverishment of workers. Citizens of Bosnia and Herzegovina can afford only 38% of the products and services in the average European consumer basket, while also paying more for food than citizens of the European Union (Kovačević, 2018). High tax burdens incentivise of-the-books payments, with many workers registered only for the minimum wage. In Bosnia and Herzegovina, more than 35% of active workers in the shadow economy are reported as earning the minimum wage (SELDI, 2016). However, it should be emphasised that the exact scale of the informal economy in the country cannot be precisely determined. According to the *Employment Policy Review of Bosnia and Herzegovina* (ILO and Council of Europe, 2007–2008), only around one in five individuals who were unemployed in 2001 found formal employment within three years, while most transitioned into the informal labour market (p. 6). An analysis from 2008 revealed that “almost 290,000 people were employed in the shadow economy sector, of whom 80% were formally unemployed individuals” (Tomaš, 2010, p. 71). Informal labour is particularly prevalent in agriculture (around 30%) and in occupations performed by unskilled workers (UNFPA, 2019). Informal labour in agriculture is partly driven by the negative consequences of trade liberalisation. Farmers, burdened by taxes, cannot compete with imported products, so part of their income remains undeclared. This social policy has, to some extent, been imposed on companies as a form of business operation (Tomaš, 2010). Although it is clear that reducing income taxes would lead to an increase in the number of taxed salaries and have a positive impact on the socio-economic status of the population, the authorities have not withdrawn from the established tax levels.

The process of economic transition did not result in recovery, restructuring, or diversification of the economy. Instrumentalised institutions and the absence of self-correcting mechanisms in the system allowed the exploitation of the transition process for enrichment, the stabilisation of power, and the establishment of monopolies over the market and economy. This has demotivated foreign investment and citizens’ initiatives in both economic and wider socially contributive terms. The economic consequences of the incomplete transition in Bosnia and Herzegovina are the root causes of numerous social and demographic problems.

As a step towards addressing the issue of the shadow economy, it is recommended to simplify the tax system and reduce parafiscal charges (Efendić and Pugh, 2018). Some of the proposed economic development measures also include aligning the education system with labour market needs (ILO, 2022; OECD, 2022), youth employment programmes and retraining initiatives (UNFPA, 2024), accelerating the digitalisation of administrative services, public sector reform (ILO, 2022),

investment in transport, energy, and digital infrastructure to reduce regional inequalities (World Bank, 2024), and the digitalisation of the economy (OECD, 2024a).

Recommendations related to institutional and political reforms include, among other things, anti-corruption measures, increasing transparency, strengthening the institutional framework (Tomaš, 2010; Šiljak and Nielsen, 2022), and simplifying bureaucratic procedures (IMF, 2022; World Bank, 2024). The OECD (2024b) Report on the Competitiveness of the Western Balkans, based on identified weaknesses in areas such as digital transformation, education, and tourism, recommended the establishment of independent bodies to combat corruption with real executive powers, as well as the adoption of binding norms to prevent conflicts of interest and laws regarding the origin of assets.

Conclusions

Post-Dayton Bosnia and Herzegovina faces numerous challenges, many of which are closely linked to the process of economic transition. The analysis conducted in this paper points to deep and long-lasting structural consequences of transition in the country. Privatisation, deindustrialisation, unemployment and the expansion of the informal economy, as mutually connected processes, have generated effects that have irreversibly shaped society. Politically instrumentalised privatisation enabled clientelism and weakened the country's economic potential, while the closure of industrial enterprises left a large number of workers unemployed. Rising unemployment increased poverty, which in turn created space for the growth of the informal economy. Deprived of labour and social rights, citizens have often been compelled to work for the very actors responsible for their economic marginalisation.

The study highlights the decisive influence of political structures on the direction and character of economic reforms. Key aspects of transition were used as instruments of political consolidation. In the context of the social implications of instrumentalised transition in Bosnia and Herzegovina, economic polarisation stands out in particular, having had a markedly negative impact on demographic indicators. The lack of economic competitiveness and widespread social insecurity are direct consequences of a non-transparent privatisation process, which generated a series of additional adverse economic developments. The consequences of these processes are evident today in mass emigration and low natural population growth, that is, in depopulation which will, in the future, pose additional challenges to economic recovery.

It is necessary to emphasise that this study also has several limitations. First, the analysis relies on secondary sources. Second, the focus of the paper is on Bosnia and Herzegovina, while

comparisons with other countries were used solely to identify similar patterns of transition; similarities and differences between countries were not analysed systematically and thus represent a potential avenue for future research. Third, the interconnectedness of privatisation and deindustrialisation with rising unemployment and the expansion of the informal economy allows for the mapping of the basic characteristics of the mechanism of instrumentalised transition, but leaves out other important dimensions of the transitional process, such as fiscal policy, migration, broader institutional development and education reform.

The general conclusion points to the need for the depoliticisation of economic institutions and for strengthening the system's self-corrective mechanisms. The analysis indicates the necessity of a more transparent regulatory framework that would reduce barriers to investment and encourage innovation and competitiveness. Ignoring or postponing the depoliticisation of the economic system will make the system in Bosnia and Herzegovina increasingly dysfunctional, further worsening the living conditions of its citizens. Measures that would represent a genuine step forward — such as reducing parafiscal charges and simplifying the tax system — are still lacking, and the authorities do not consider them with sufficient seriousness. A dignified standard of living requires labour market reform, improved social protection and the restoration of trust in public institutions, all of which are inconceivable without consistent rule of law.

Based on this study, it is possible to identify several directions for future research that could enrich and further verify knowledge about the specificities of economic transition in Bosnia and Herzegovina, as well as broader patterns of transition in post-socialist societies. Future research could focus on comparative regional analyses, sectoral effects of transition and the examination of reindustrialisation potential. There is also significant scope for studies aimed at identifying systemic solutions for reducing the informal economy, as well as for analysing the role and position of trade unions in the process of economic transition. Particular value would be provided by empirical research on informal work, the experiences of workers in privatised enterprises and the situation of former workers following restructuring.

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Implementing electronic medical records (EMR) as a change management: challenges and insights as perceived by head nurses

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Abstract

Implementing digital information systems in healthcare presents significant technological and organizational challenges. Head nurses play a central role in this process, yet their perspectives remain underexplored. This study examined the implementation of electronic medical records (EMR) in a central Israeli medical center from the viewpoint of head nurses, focusing on change management. A qualitative content analysis was conducted based on semi-structured interviews with head nurses. Themes were identified regarding leadership strategies, challenges, and responses to EMR implementation. Five core categories emerged: (1) A positive approach to manage a change as key to successful implementation and staff mobilization; (2) EMR's perceived value in enhancing care quality, safety, and decision-making; (3) Leadership challenges in managing staff resistance through respectful dialogue and tailored solutions; (4) The importance of head nurses' active involvement and role modelling; and (5) Forming trust through transparent, committed leadership that increases cooperation. These insights may support policymakers and healthcare leaders in the European Union by highlighting the pivotal role of nurse managers in digital transitions and offering practical lessons for successful EMR adoption across publicly funded hospitals.

Keywords: Implementing electronic medical records, change management, head nurses, management strategies and challenges, quality and safety of care

Introduction

This article presents the findings of a qualitative study that aimed to investigate one of the most central and challenging issues in the healthcare domain in the digital era: implementing electronic medical records (EMR) and their meaning for the functioning of the head nurse. The aim of the article is to examine the experiences and strategies of head nurses in the implementation process, identify major challenges, and offer insights for successful management of change. EMR is a digital system for managing and documenting patients' medical information. This system allows secure keeping,

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updating, and sharing of patient data, while improving access to the information, reducing medical errors, and increasing the efficacy of clinical decision making processes (Uslu and Stausberg, 2021).

In Israel, the implementation of EMR began in the early 2000s across public hospitals, with various systems being introduced in different institutions. In recent years, the Israeli Ministry of Health has led a national initiative to implement a unified EMR platform across all government hospitals (Gerber and Topaz, 2014). The interviews for this study were conducted in 2024 in a public hospital in central Israel that had participated in this national project, and the new EMR was already fully implemented in the participating hospital, but still undergoing processes of adaptation and optimization.

Although EMR systems have been implemented in many hospitals around the world, the literature has yet to provide a sufficient response to questions related to managing the change as perceived by head nurses. A particular knowledge gap is evident regarding how they deal with resistance to the change, leading staff in a technological environment, and functioning as mediators between the management and the clinical staff (Strudwick *et al.*, 2017).

The Israeli healthcare system offers a unique context for studying EMR implementation. It is characterized by a centralized structure, with strong governmental regulation and national digital health strategies led by the Ministry of Health (Gilboa, 2022). All citizens are covered under a National Health Insurance Law (1995), and hospital care is largely public and standardized. These structural features have promoted relatively rapid digitalization, while also posing challenges in workforce capacity, change readiness, and integration across organizations (Gerber and Topaz, 2014).

The main argument of the article is that the head nurse's role is no longer restricted to operational management rather it is expanding to include technological leadership that combines management, clinical, and technological competencies. By analyzing the experiences and insights of head nurses, the article strives to illuminate possible ways of improving processes of implementation and the organization's culture in this context. In an era of rapid technological progress, the healthcare system is under increasing pressure to modernize its work methods, where EMR is becoming a corner stone of this process. EMR systems offer the potential of improving the quality and safety of care by upgrading access to information, reducing errors, and facilitating adapted care (De Benedictis *et al.*, 2020). Nonetheless, their implementation poses significant challenges in the transition from manual records to electronic records, particularly regarding management of the change and staff adjustment (Cho *et al.*, 2021).

Head nurses, as team leaders, have a critical role in directing their staff in this process, while ensuring that the technical and human aspects of the implementation are handled (Strudwick *et al.*,

2017). This article examines the experiences and insights of head nurses in the process of implementing EMR systems in one of central government medical centers in Israel, based on data collected in 2024. The study focuses on the strategies they utilized, the barriers they encountered, and the factors that affected their success, offering practical recommendations that may support similar implementation efforts in other healthcare settings.

1. Literature review

The era of technological change in healthcare systems has led to a deep transformation in the status and role of head nurses as leaders of EMR implementation process. The existing literature stresses several critical aspects related to this process. With the appearance of EMR and healthcare workers' difficulties with accepting and implementing this technology, it became clear that it is essential to understand and manage the change processes (Shoolin, 2010). Changes are challenging, but managing change is even harder (Shoolin, 2010). Resistance to change is one of the greatest barriers to successful implementation in any organization (Sholler, 2016).

Change management theories, such as Kotter's eight-step model (Kotter and Cohen, 2014), provide a useful framework for understanding the stages of EMR implementation. This theoretical framework emphasizes the need to build a sense of urgency, form a leading coalition, and develop trust and a clear vision for the change process. Using this theory allows head nurses to lead change in a structured and focused manner. The framework of the Technology Acceptance Model (TAM) devised by Davis (1987) helps understand the factors affecting the implementation of new technologies, stressing perceived benefits and ease of use. This model is particularly suitable for understanding the challenges and opportunities facing clinical staff when implementing EMR.

Head nurses have a crucial role in creating a safe and quality work environment and improving care outcomes in the organization. Studies indicate that advanced management capabilities, which include knowledge, competencies, attitudes, and suitable behaviors, are critical for the success of head nurses and for realizing the organization's aims (Abd-Elmoghith and Abd-Elhady, 2021). Head nurses have a critical role in implementing technology through education, advocacy, and direct support of the staff. The influence of head nurses depends on their ability to obtain additional resources, their availability, and their appropriate training (Strudwick *et al.*, 2017). Head nurses are key to forming a successful work environment; they often set the tone and they have a considerable impact on multidisciplinary elements (Moore *et al.*, 2016). Managing and leading successful and

efficient processes of implementing new technologies in general and EMR in particular are strongly influenced by managers' ability to handle the change and resistance among the staff.

Recent international studies emphasize the central role of nurse leaders in driving digital transformation in hospitals. Laukka *et al.* (2023) found that head nurses in Finland often face challenges such as digital overload, limited support, and increased pressure to lead technological change without adequate training. Despite these challenges, their engagement was crucial for staff adaptation and digital integration. Similarly, Burgess and Honey (2022) highlight how nurse leaders act as enablers of digital adoption by building trust, providing clinical relevance to digital tools, and facilitating ongoing education. These findings align with the current study's focus on head nurses as key change agents in EMR implementation.

While the benefits of implementing EMR are clear, there might be unintended consequences that head nurses will have to deal with: multiple changes in work processes and in the work environment, changes in information flow, discrepancies between work processes, and designing worksheets. All these can result in errors and have a detrimental effect on the safety of care (Gephart *et al.*, 2015). EMR is one of the most important information systems for everyday use by head nurses, intended to support managerial decision making (Saranto *et al.*, 2023). As a platform for managerial decision making, EMR provides data-based insights such as analyzing performance trends, following adherence to clinical protocols, and identifying areas that require improvement of the quality and safety of care (Chen, 2023). Hence the importance ascribed to this study.

2. EMR implementation in the Israeli context and in the study site

The implementation of electronic medical records (EMR) in Israeli hospitals began in the early 2000s, initially with varied systems developed independently across institutions. The process was gradual and unstandardized, with different hospitals adopting different technologies and levels of digital integration (Goldschmidt, 2014; Gerber and Topaz, 2014).

At the medical center in which this study was conducted, the process of EMR integration began in 2004, primarily for administrative purposes such as appointment scheduling and patient registration (Goldschmidt, 2014). In 2014, the system was expanded to include a clinical documentation module, implemented in approximately 70% of inpatient wards and intensive care units. However, the remaining departments continued using paper-based records, creating parallel documentation systems that limited continuity of care and cross-departmental communication.

In response to national needs for improved interoperability and data quality, the Israeli Ministry of Health initiated a strategic program aimed at standardizing EMR platforms across all government hospitals (Gilboa, 2022).

Between 2021 and 2023, as part of the Ministry of Health's national initiative to implement a unified EMR system in government hospitals, the medical center transitioned to a new, standardized EMR platform. During this phase, departments that had not previously used electronic records began full implementation, while others migrated from older systems to the new platform. This transition marked a major digital transformation across all clinical units, including departments that had formerly relied exclusively on manual documentation.

The interviews for this study were conducted in 2024, approximately one year after the main implementation phase had concluded. By that time, the EMR system was fully operational across the hospital, allowing head nurses to reflect not only on the initial transition but also on ongoing adaptation processes and the integration of the system into daily clinical and managerial routines.

3. Methodology

The current study was based on a qualitative approach and on the principles of grounded theory research (Creswell and Creswell, 2023), aimed at exploring the experiences and insights of head nurses in the process of implementing EMR. For this purpose, five semi-structured in-depth interviews were conducted with head nurses selected by purposeful sampling. The study was carried out at a government academic medical center in central Israel encompassing 720 beds. A uniform EMR information system was implemented in all in-patient departments and ambulatory services approximately two years before the study was conducted.

After receiving the written informed consent of head nurses, five interviews were held one-on-one and face-to-face, following a semi-structured interview guide. All the interviews were recorded and transcribed word for word. Each interview lasted approximately 45 minutes.

The interview guide was written in advance and included all stages of the interview, its aim, questions on general data about the interviewees, and six question categories, each comprised of 2-4 open-ended questions (Appendix 1). All the interviews followed the same guide; however, room was left for probing and deepening the data. A pilot was conducted, where the questions were explored; following the pilot, the questions were adapted for the needs of the study by expert validation.

Head nurses with at least one year's experience in a managerial role, who had managed the transition from manual medical records to electronic medical records, were chosen for the study.

Table 1. Profile of head nurses participating in the study

Interviewee	Gender	Age	Education	Length of experience as head nurse (years)
Interviewee 1	Female	49	Master's degree	5
Interviewee 2	Female	47	Master's degree	19
Interviewee 3	Male	39	Master's degree	5
Interviewee 4	Female	45	Master's degree	2
Interviewee 5	Female	53	Master's degree	11

Source: author's representation

All the interviewees were registered nurses, with a master's degree and advanced training in their field of occupation, such as emergency medicine, oncology and intensive care.

Data analysis was conducted in steps, as suggested by Creswell and Creswell (2023). In the first step, all texts from the interviews that had been fully recorded and transcribed were reread, with the aim of becoming thoroughly familiar with the data and identifying primary themes or prominent patterns. The content of the interviews was divided into meaningful units (quotes, ideas, or behaviors). Each unit of meaning was coded following main topics from the emerging categories. When a new content arose that was not included in the existing categories, a new category was added. The categories were reorganized. Specific categories found to be interrelated were clustered into one category. In-depth analysis of the categories was performed, after identifying the meanings that arose from each quote or idea. Associations were found between the main themes, behaviors, and attitudes identified. Interpretation and conceptualization utilized quotes from the interviews that represent the major patterns, to reinforce the claims and interpretations (Creswell and Creswell, 2023). The main categories were gathered under an overarching theme and are presented in Table 2.

Table 2. Categories emerging from the content analysis

Overarching theme	Perceptions of head nurses to implementing change: managing the change, challenges, and management strategies
1	Perception of managing change <i>"I like changes, [I] have faith in changes"</i>
2	Perception of implementing change – benefits of the EMR <i>"Documentation is a reflection of the work processes, facilitating their monitoring and analysis and reaching management decisions"</i>

Categories	3	Managerial challenge: dealing with the staff's resistance and concerns <i>"Listening to the staff and understanding their difficulties helped me find adapted solutions"</i>
	4	Managerial proficiencies for implementing change: personal involvement and personal example <i>"I am an active partner in the change processes... and I give myself as an example and use the system"</i>
	5	Managerial strategy for implementing change: forming trust <i>"If they see that it is important for me [head nurse], it is important for them too and they [the nurses] have faith in it"</i>

Source: author's representation

The validity and reliability of the findings in this article were confirmed by peer debriefing, utilizing a colleague who is an expert in qualitative research. The recorded interviews were transcribed and the transcripts were subsequently read carefully.

4. Results

After analyzing the interviews with the head nurses, five main categories were identified that reflect their perceptions towards implementation of the change: (1) perception of managing change, (2) perception of implementing change – benefits of the EMR, (3) managerial challenge: dealing with the staff's resistance and concerns, (4) managerial proficiencies for implementing change: personal involvement and personal example and (5) managerial strategy for implementing change: forming trust. These categories are affiliated with the overarching theme "Perceptions of head nurses to implementing change: managing the change, challenges, and management strategies".

Analysis and interpretation of the selected categories

Perception of managing change - "I like changes, [I] have faith in changes"

The findings that arose from analyzing the content of the interviews with the head nurses indicate that the ability of the head nurses to accept and lead change is a critical component of the implementation process. Quotes of Interviewee 1, such as *"I'm a person who accepts change... I*

become strongly... involved in change and I like to introduce changes", accentuate the importance of a positive attitude that allows them to serve as role models for the staff. An outlook that includes initiating change allows the head nurses to lead with confidence, as reflected in quotes such as *"I like to introduce changes"*.

The phrase *"have faith in changes"* expresses not only the understanding that there is need for change but also the inner faith of the head nurse that it brings meaningful added value to the staff and their work. When the head nurse sees change as something positive and necessary, her leadership becomes more authentic. Faith in the change trickles down to the staff through daily communication, personal example, and forming a work environment that facilitates cooperation. The optimistic attitude of the head nurse contributes to forming a sense of confidence and reducing the staff's natural concern of change.

In summary, it can be said that head nurses' perception of managing change combines a positive and proactive view. This view contributes to the long-term success of change and to leading the staff in complex circumstances.

Perception of implementing change: benefits of EMR - "Documentation is a reflection of the work processes, facilitating its monitoring and analysis and reaching management decisions"

The data analysis stresses the perception of the head nurse whereby EMR is not merely a means of recording but rather a major executive tool. This system provides access to up-to-date, extensive, and accurate information that makes it possible to reach data-based decisions in real time. Improving quality and safety processes: *"Quality indices – easier to follow and supervise"* – EMR constitutes a professional platform for improving care quality and safety processes. It makes it possible to hold efficient monitoring of records, locate gaps, and identify areas that require improvement. In this way, head nurses perceive EMR as an active apparatus for identifying and preventing failure. Accessible and available information, evident in *"the ease with which electronic data are retrieved"*, allows the head nurse to supervise care, identify irregular patterns, and expose problems swiftly. This transparency improves the effectiveness of reaching management decisions. The combination of analyzing records and monitoring stresses the role of EMR in supporting decision making based on data rather than only on intuition.

In summary, head nurses perceive the EMR as an active management tool that helps improve clinical decision-making, patient safety, and increases managerial professionalism. This reflects a

conceptual shift in the role of the head nurse from a primarily operational position to one that actively integrates data-driven decision-making into daily practice.

Managerial challenge: dealing with the staff's resistance and concerns - "Listening to the staff and understanding their difficulties helped me find adapted solutions"

The findings that arose from the content analysis of the data collected from the head nurses stress the importance of active listening. The head nurse understands that resistance does not appear in a vacuum, rather expresses the staff's concerns and needs. Her ability to listen respectfully creates a basis for effective coping with difficulties. *"I listen. When [they] start jumping [becoming agitated], I first of all listen, because sometimes the answer is [waiting] already between the lines"*. Respectful conversation and the ability to listen to the staff allow the head nurse to form trustful relations. Trust is the basis for the staff's readiness to follow the manager and participate in the implementation process. Sometimes resistance develops into outright or hidden conflict. *"Why do we need it? We're doing fine with the manual records... they [nurses] were concerned that it would slow down the process and cause delays in the treatment, particularly in urgent situations"*. The ability of the head nurse to manage the conflicts in a respectful and accommodating manner makes it possible to solve problems in real time and maintain a professional atmosphere: *"I told them, 'Don't worry', we'll get used to it gradually..."*. Through conversation and guidance, the head nurse helps the staff feel that they are capable of handling the challenge. The sense of personal and professional efficacy is a critical element in reducing resistance.

In summary, contending with resistance to change is a major challenge in the process of managing EMR implementation.

Managerial proficiencies utilized in implementing change: personal involvement and role modelling - "I am an active partner in the change processes... and I give myself as an example and use the system"

The quote *"I am an active partner in the change processes... and I give myself as an example and use the system"* reflects the approach of the head nurse as a manager who leads from a position of personal involvement. She does not make do with managing from a distance or giving instructions, rather takes an active part and demonstrates for the staff how the change processes should be carried out. When the head nurse is personally involved and gives an example, she conveys to the staff a

clear message: the change is important and meaningful. The manager becomes a role model and her involvement motivates the staff to make a similar effort. *“I’m constantly involved and it’s important for them [the nurses]. Involvement is the thing... involvement”*. The active involvement of the head nurse expresses her dedication and caring about the implementation process and about the staff. This involvement attests to her professional responsibility and her commitment to the success of the change. A head nurse who is strict about consistently performing successive monitoring in the process conveys to the staff that she is constantly *“in the process, I’m with it...”*. Monitoring allows her to identify gaps, correct mistakes in real time, and show the staff that the process is under successive and caring supervision. The involvement of the head nurse reduces the sense of distancing and resistance among the staff. They see that the manager not only requires them to introduce change, but rather also copes with the same challenge herself. Role modelling is a major tool for creating trust. When the manager takes an active part in the process, the staff trusts her more and sees her as a leader who can be followed.

In summary, it may be said that management proficiencies and role modelling are major elements in managing the implementation of change.

Managerial strategy for implementing change: forming trust - “If they see that it is important for me [head nurse], it is important for them too and they [the nurses] have faith in it”

The findings that arose from content analysis of the interviews with the head nurses accentuate the topic of building trust in the change as key to successful leadership: the understanding that the process begins with the manager’s own faith in the change. The head nurse serves as a leader, and when she demonstrates faith in the truth and importance of the change process, she creates a foundation of trust and motivation among the staff. Her faith conveys confidence that the change is positive, important, and necessary, which creates a sense of certainty and reduces concerns among the staff. Trust is formed not only through declarations but also in everyday communication with the staff. The head nurse arranges for transparency and explains the aims of the change, the necessary steps, and the anticipated benefits. *“Any process slated for assimilation should be very very clear: why is it beginning, where did it come from, what event preceded it...”*. When the staff understands the underlying logic of the change, trust in the process increases. The head nurse understands that her role as manager is critical for successful implementation. Her strong faith in the change, together with the understanding that she is leading the way, encourage the staff to *“have faith in the importance of the change”*.

In summary, it may be said that forming trust between the head nurse and staff is a central element in successful management of implementing the electronic tool, which facilitates diminishing resistance, increased sense of commitment by the staff, and an improved process of accepting the new system, which manages to transform the implementation of EMR into a more positive process linked to the caregiving staff.

5. Discussion

The article investigates challenges involved in managing electronic medical records from the perspective of head nurses, which encompassed examining management of the change, the challenges, and the management strategies involved in this process. The findings presented emphasize the major role of head nurses in leading complex change processes, the challenges they face, and the strategies they use to cope successfully.

One of the key elements highlighted in the interviews was the importance of the head nurse's individual perception toward change. A positive approach, as emphasized in quotes such as *"I like changes, [I] have faith in changes"*, allow nurses to serve as role models for their staff. This approach is consistent with previous studies indicating that managers who believe in the importance of change and exude confidence in the process generate motivation among their workers (Kotter and Cohen, 2014).

Furthermore, the findings indicate that EMR is perceived as a major tool not only for documenting but also for managing the quality and safety of care. As stressed in the quote: *"Documentation is a reflection of the work processes"*. Head nurses identify the system's potential to provide accurate data and improve the ability to reach decisions. This insight is compatible with the Technology Acceptance Model (TAM) (Davis, 1987), theory that highlights the perceived usefulness and benefit facilitating successful implementation.

Another significant category was the challenge of dealing with staff resistance. Head nurses emphasize the importance of listening to the staff and the need to understand the underlying causes of resistance. As one interviewee stated: *"Listening to the staff and understanding their difficulties helped me find adapted solutions"*. This approach highlights the importance of empathy and responsiveness, and supports previous literature which emphasizes open communication and transparency as essential components in building trust and fostering collaboration during digital transformations (Strudwick *et al.*, 2017).

Closely related to this was the emphasis placed on personal involvement by head nurses and the role of personal example in the implementation process. Phrases such as *“I am an active partner in the change processes... and I give myself as an example”* emphasize the importance of personal leadership for creating trust among the staff. Managers who are involved in the process and demonstrate personal commitment have more success in mobilizing their staff for the process.

Finally, the concept of trust emerged as a foundational management strategy in the implementation of EMR. The creation of trust between the head nurse and the nursing team was described as pivotal to the process, with statements like: *“If they see that it is important for me [head nurse], it is important for them too.”* This trust was cultivated through transparency, clarity in communicating the goals and benefits of the change, and consistent leadership behavior. The findings reinforce the idea that trust, once established, can reduce resistance, enhance cooperation, and support a more sustainable transition to digital systems (Strudwick *et al.*, 2017; Kotter and Cohen, 2014).

Conclusion

Implementing EMR is perceived by head nurses as a complex but vital step towards modernization of the healthcare system, with the purpose of improving the quality of care. The discussion of the findings emphasizes the importance of head nurses' role in change processes and their central leading of EMR implementation. The findings show that the success of the process depends on a combination of personal involvement, understanding the staff's challenges, and the ability to build trust. These insights might constitute a foundation for developing training programs focused on strengthening managerial abilities among head nurses, with the aim of successfully implementing additional changes in the healthcare system.

In addition, several policy-level recommendations may facilitate successful implementation. These include ensuring organizational commitment at all management levels, allocating dedicated resources for EMR training and support, integrating head nurses in early decision-making processes, and establishing national guidelines that promote standardization while allowing local adaptation. Such measures can support smoother adoption and long-term sustainability of digital health systems in hospitals.

Although this study is context specific to Israel, the findings hold broader relevance for healthcare systems in Europe. In particular, the emphasis on trust, leadership engagement, and structured support mechanisms may inform EU-level strategies aimed at strengthening the digital competencies of nurse leaders and facilitating more effective EMR integration in public hospitals.

This study is subject to several limitations that may affect the scope and interpretation of its findings: the study included five in-depth interviews with head nurses from a single medical facility, therefore the findings do not necessarily represent the entire population of head nurses in different hospitals. Expanding the sample in further studies may improve the generalizability of the results. The current study was based on a qualitative approach and therefore lacks examination of statistical associations performed in quantitative research. Integrating a mixed methods methodology in further studies may provide a more comprehensive picture of implementation processes.

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Appendix 1

Qualitative research: questions for in-depth interview

General information:

Sex: Male / female **Age:** _____ **Marital status:** Single / married / divorced / widowed

Schooling: Registered nurse / Bachelor's degree / Master's degree / Nurse practitioner

Position: Head nurse / Assistant head nurse

Length of experience as head nurse/assistant: ____ years

I. Initial questions:

1. Please tell me about your position and your areas of managerial responsibility.
2. How do you see your role in the process of implementing change in your department in general and regarding electronic medical records in particular?
3. What experience do you have with similar processes of change in organizations?

II. Questions about attitudes to implementing change:

1. How do you feel about the change involved in switching to electronic medical records?
2. What benefits do you identify in using electronic medical records?
3. What concerns or challenges for your staff do you see in use of this technology?
4. To what degree do you think that this change is important and impactful for the quality of care in the department?

III. Managerial challenges of implementation:

1. What are the major challenges you encounter as a manager in leading this change?
2. How do your staff respond to the shift to electronic medical records? Are you experiencing resistance, and if so – how?
3. How do you usually deal with resistance? Do you have certain strategies or methods that you utilize?
4. What tools or support do you feel that you lack for managing the process of implementation?

IV. Support and coping strategies:

1. What tools and resources are at your disposal for supporting the implementation process?
2. What strategies do you utilize to overcome challenges or resistance by the staff?

3. How do you perceive the support role of the hospital management in the assimilation process?
Do you have suggestions for improvement?

V. Looking forward:

1. What are your expectations regarding the impact of electronic medical records on everyday work and patient care?

VI. Summary questions:

2. Is there anything else you would like to add about the process of implementing and managing electronic medical records that we did not discuss?
3. How would you recommend that others in a similar situation prepare for implementing a new digital system?