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"Economic Policies, Business Perspectives, and Sustainability Transformation"

21-23 MAY, 2025, BRELA, CROATIA

Faculty of Economics, Business and Tourism
University of Split

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"Economic Policies, Business Perspectives, and Sustainability Transformation"

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Foreword

Welcome to the **Conference Proceedings** of the **15th FEBST International Conference**, organized by the Faculty of Economics, Business and Tourism of the University of Split, held **from 21st to 23rd May 2025** in **Brela, Croatia**.

For the past **three decades** this **biannual international conference** has addressed contemporary economic and social issues and has served as an important platform where scholars and practitioners from different countries, cultures and backgrounds meet and debate. The 15th conference edition has undergone a significant redesign, reflecting not only the changing landscape of our global economy but also the evolving needs for a clearer response from the academic community and higher education institutions. Therefore, on the occasion of **the 50th anniversary** since the establishment of the **Faculty of Economics, Business and Tourism (FEBT)** and the **University of Split (UNIST)** the conference has received a new name and has evolved into the **FEBST International Conference**.

On its **15th jubilee** the focus has been placed on **"Economic Policies, Business Perspectives, and Sustainability Transformation"**. The main idea was to provide critical insights into current economic policies and to highlight the importance of the interactive or dialectical relationship between policy makers and economic agents in order to achieve policy objectives or revise policy measures. Only with a factual, scientifically based and critical approach can we draw relevant, objective and adequate conclusions about the potential pitfalls of certain economic policies and obstacles that countries around the world face on their path to economic growth and responsible development.

During the exciting **three-day programme**, we hosted **six keynote speakers**, who are among the busiest in their respective fields of expertise, and organised four special sessions, one Horizon project roundtable, three workshops on scientific excellence and business education, two meet-the-editors sessions (with seven international journals presented, three of which are Q1 journals), and one session for young researchers and PhD students. In total, **112 papers were presented**, either orally or as posters. This edition of the conference had eight international partner journals and resulted in a Springer-edited book dedicated to environmental responsibility and sustainable tourism.

The FEBST conference wouldn't be possible without the dedication of programme committee members, the hard work of organizing committee, and our sponsor and donors who consider this conference valuable investment in their social responsibility. We would also like to thank the **President of the Republic of Croatia, Mr. Zoran Milanović** for his continuous support, as well as **the European Commission representative in Croatia** for being a partner in organizing this conference.

Furthermore, we would like to express our gratitude to the reviewers who ensured a rigorous **double-blind review process**, resulting in this collection of articles covering various research topics, including the innovation ecosystem, sustainability reporting, challenges faced by tourism stakeholders, workforce challenges, female leadership, as well as the application of social marketing for church organisations, and raising awareness of mental health issues. Special thanks and appreciation are extended to **Prof. Ivana Ninčević Pašalić** for serving as editorial assistant for this collection.

Once more, we are truly grateful for the commitment of all those who enabled this conference to advance as a respected platform for scientifically based dialogue on policy-making and business practice, especially to our distinguished speakers who chose the FEBST International Conference to share their expertise, present new ideas, and disseminate research. We hope we have offered our participants an experience that encourages collaboration and long-lasting networking. Finally, congratulations to the authors of these proceedings on their inspiring research!

Sincerely,

Ana Kundid Novokment, Goran Dedić, Zvonimir Kuliš
Faculty of Economics, Business and Tourism, University of Split

Content

THE INNOVATION ECOSYSTEM OF MARITIME INDUSTRIES – THE CASE OF THE ADRIATIC CROATIA **1**

Katarina BAČIĆ, Nikolina POMENIĆ, Irena ĐOKIĆ

THE SEASONAL DILEMMA: DO COASTAL RESIDENTS PREFER YEAR-ROUND TOURISM? **35**

Maša TRINAJSTIĆ, Jelena ĐURKIN BADURINA

HOW TO PREVENT EARLY RETIREMENT IN CROATIA? **56**

Željko MRNJAVAC, Predrag BEJAKOVIĆ, Goran LUBURIĆ

HR MANAGERS COMPETENCIES IN THE ERA OF SMART INDUSTRY: A SYSTEMATIC REVIEW AND FUTURE RESEARCH DIRECTIONS **80**

Lukrécia HUNKOVÁ, Samuel BODY

THE CHARACTERISTICS AND IMPACT OF FEMALE LEADERSHIP STYLES IN THE CONTEMPORARY BUSINESS WORLD: AN EMPIRICAL STUDY OF THE INTERNATIONAL BUSINESS WOMEN'S NETWORK **103**

Senka BOROVAC ZEKAN, Antonija ROJE, Petra BABAN

Content

INTEGRATION OF SOCIAL PILLAR INTO NON-FINANCIAL REPORTING: CASE OF LARGE BANKS IN CROATIA **124**

Ana IVANIŠEVIĆ HERNAUS, Branka TUŠKAN SJAUŠ, Nikolina DEČMAN

JOURNEY WITH PURPOSE: THE INTERSECTION OF PILGRIMAGE AND VOLUNTEER TOURISM **150**

Konstantinos TOMAZOS

THE POSSIBILITY OF APPLYING SOCIAL MARKETING IN THE CATHOLIC CHURCH AND CHURCH ORGANIZATIONS IN BOSNIA AND HERZEGOVINA **183**

Zoran MIHANOVIĆ, Stipe MIHALJ

PSYCHOLOGICAL NEEDS AND BURNOUT IN THE HOTEL INDUSTRY: A CASE OF FOUR AND FIVE-STAR HOTELS **207**

Marina LAŠKARIN AŽIĆ

THE IMPACT OF SOCIAL MARKETING CAMPAIGNS ON MENTAL HEALTH AWARENESS AND THE DESTIGMATIZATION OF MENTAL DISORDERS **221**

Ela PRVAN, Ljiljana NAJEV ČAČIJA

THE INNOVATION ECOSYSTEM OF MARITIME INDUSTRIES – THE CASE OF THE ADRIATIC CROATIA

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Abstract

Maritime industries are a traditional economic specialization of the Adriatic Croatia region, supported by strong engineering capabilities, a diversified shipbuilding sector, and several major cargo and passenger ports. The innovation ecosystem associated with these industries has been mapped for the first time within the European cross-border project INNO2MARE. This paper explores the configuration and dynamics of the maritime innovation ecosystem in Adriatic Croatia, using the Quadruple Helix

model and widely accepted definitions of innovation ecosystems as the theoretical framework. The research aims to enhance understanding of how the ecosystem is structured and its implications for regional development. Data were collected through surveys, semi-structured interviews, and participatory workshops with key stakeholders, complemented by economic and financial data from a business database analyzed using descriptive statistics. Given the complexity of innovation processes, the study applies multiple R&D indicators and mixed-method approaches to capture ecosystem characteristics and innovation outcomes. Findings indicate that innovative maritime firms contribute to regional growth through above-average productivity. While there is evidence of existing cooperation among stakeholders, the ecosystem's potential is currently underutilized. These insights may inform regional and EU-level policy design, particularly in the context of the Blue Economy, by highlighting both the strengths and the limitations of the maritime innovation ecosystem in Adriatic Croatia.

Keywords: *innovation ecosystems, research and development, maritime sector*

***JEL classification codes**: R10, 030*

1. Introduction

The Blue Economy is an area of economic interest for the European Union. According to the 2025 EU Blue Economy Report, the term Blue Economy refers to marine-based economic activities, including those conducted in oceans, seas, and coastal areas, as well as marine-related activities that use or produce products and services for marine-based industries. These include, but are not limited to, seafood processing, marine biotechnology, shipbuilding and repair, port operations, maritime communication, the use of maritime equipment, maritime insurance, and maritime surveillance. Innovative activities and investments in the Blue Economy across Member States and regions are actively promoted in order to enhance the competitiveness of sectors within the Blue Economy (EC, 2025, 2025.a).

One of Europe's Blue regions is Adriatic Croatia, the coastal area of the Republic of Croatia, a prominent example of a region historically and contemporarily specialized in maritime activities. It is one of the country's four major non-administrative statistical NUTS2 regions and comprises seven administrative counties, all situated along the Adriatic Sea coast. Adriatic Croatia's maritime specialization is built upon a foundation of highly skilled engineers and seafarers, as well as well-developed production facilities, ports, and other maritime infrastructure. The region's strong competitive position has also been shaped by its strategic geographical location, in the

Eastern coast of the Adriatic Sea. Today, Croatia's maritime sector is undergoing profound transformations, driven by the imperative to address climate and environmental challenges while sustaining competitiveness in the global market (BSC, Lemur Legal, 2023).

An important aspect of the region's economic landscape is its active participation in the international market, which exposes it to numerous competitive challenges. In response, some maritime companies are pursuing innovative activities aimed at offering improved or entirely new services, or at developing innovative products. These efforts are often undertaken independently, or within larger corporate groups, where specific units may be assigned particular innovation-related tasks. By nature, innovation activities are inherently risky, with uncertain outcomes—especially regarding commercialization, given the unpredictability of market response. Innovation policies are thus designed to stimulate and accelerate innovation by providing financial support for diverse purposes, fostering cooperation among otherwise unrelated actors, and facilitating knowledge exchange.

Innovation ecosystems are seen as a path that enables cooperation between various agents that should lead to promoting and enhancing innovation activity. They provide a safe and stable framework for cooperation on projects, education, and policy initiatives. Often, having an ecosystem is an antecedent to carrying out innovation policies as it allows policies to be carried out in a more systematic and encompassing manner. The EU has embraced this concept to promote innovation. While the national innovation (eco)system issue has been discussed in the Croatian case, regional and sectoral innovation systems have received less attention.

Recently, the EU Horizon project Inno2mare brought together partners from Croatia, Slovenia, and Belgium with the objective of strengthening the capacity for excellence within the innovation ecosystems of Western Slovenia and Adriatic Croatia. This goal is being pursued through a set of jointly designed and implemented actions aimed at supporting the digital and green transitions of the maritime and related industries. The project also represents the first attempt to systematically map the innovation ecosystem of the maritime sector in Croatia. The data and insights generated through this initiative will be referenced throughout this paper.

Adriatic Croatia was included in the European Union's Regional Innovation Scoreboard 2023 (Hollanders for EC, 2023). With an index value of 66.9, Adriatic Croatia ranked 186th among European regions and was classified within the *Emerging Innovator+* group. The region has shown some progress in its year-on-year ranking; however, it is important to note that this is not the highest-ranking Croatian region. The City of

Zagreb, for example, is ranked higher and is categorized as a *Strong Innovator* region (Hollanders for EC, 2023). Earlier research on regional innovation systems in Croatia by Bačić and Aralica (2016) indicated that Adriatic Croatia was underperforming in terms of innovation activity, despite having advantages in entrepreneurial and technological infrastructure, as well as scientific capacities, compared to the Central and Eastern Croatia region.

The aim of this paper is to contribute to the understanding of how an ecosystem, defined by both sectoral and geographical criteria, is configured and what effects it generates on the regional economy. The innovation system was mapped as part of the Inno2mare project, providing in-depth data that now enables new insights into the structure and functioning of the ecosystem. The analysis of the ecosystem in this paper will thus be carried out using two established approaches to innovation: the Innovation Ecosystem concept and the Quadruple Helix model, representing the main scientific contribution.

Our findings indicate that the Maritime Innovation Ecosystem of Adriatic Croatia is an emerging one, characterized by a dispersed network of actors who, at present, often do not fully recognize the potential benefits of collaboration—primarily due to issues of trust. Within the ecosystem, both competition and collaboration coexist, depending on the specific needs and interests of its stakeholders. Nevertheless, stakeholders consistently express the need for the ecosystem to function as a flexible and responsive network. At this stage, stronger and more persistent initiatives—particularly those that should be driven by key stakeholders within the ecosystem—are lacking. Most companies remain primarily focused on their core business activities. One notable initiative, however, is the formation of a maritime innovation cluster, which includes several internationally active firms that also operate in Adriatic Croatia.

When the maritime network is analysed through the lens of the Innovation Ecosystem concept, it becomes evident that a network is already in place; however, it exhibits missing links between certain actors, leading to underperformance in terms of collaborative value creation. While the ecosystem meets the conceptual criteria, research confirms that the four primary agents—university, industry, government, and the public/societal sector—do, to varying degrees, assume their expected roles. Nevertheless, the position of some key agents, particularly within academia, appears to have weakened over time, largely due to the erosion of ties with industry. Additionally, the stakeholders perceive the institutional environment as complex. The civil society/NGO sector role within this system also appears to be in an early stage of development. Technology transfer between universities and industry could be significantly improved by fostering a stronger innovation culture and by aligning

academic activities more closely with the needs of the economy and society. Although some progress is observable, further advancement typically requires greater exposure to change—achieved through international cooperation with similar institutions, deeper collaboration with maritime firms, the establishment of spin-offs, and related initiatives.

The paper is structured into five main sections. Following the Introduction, the Theoretical and empirical framework provides an overview of the relevant literature on Innovation Ecosystems and the Quadruple Helix model. This is followed by the Methodological Framework, which outlines in detail the research steps and methods employed. The fourth section, entitled The Adriatic Maritime Ecosystem's configuration and attributes, presents the results and analyses them through the lens of the aforementioned theoretical models. The paper concludes with a final section summarizing key findings and implications.

2. Theoretical and empirical framework

Innovation ecosystems are business networks and communities established to foster and promote innovation. In the literature, related terms such as *platforms*, *milieu*, and *environment* are also commonly used in discussions of innovation ecosystems. The concept itself is closely linked to modern knowledge-based economies and the development of emerging technologies (Smorodinskaya et al., 2017). The innovation ecosystem framework is grounded in the principle of non-linear innovation, wherein the innovation process is understood as interactive and iterative, involving continuous feedback loops in the creation and application of knowledge (OECD/Eurostat, 2018). Innovation ecosystems may be organized around specific industries, geographic areas (often local or regional), or technologies (Jackson, 2011). These dimensions are often interrelated, and local systems are typically connected to broader national and global innovation systems (OECD/Eurostat, 2018).

Within an innovation ecosystem, innovative firms collaborate with a variety of other agents, including suppliers and subcontractors, clusters, universities, research institutes, professional associations, buyers, and public agencies. These agents are heterogeneous and hierarchically independent, yet complementary in function (Ritala and Thomas, 2025). Together, they contribute to the generation of products or services targeted at a specific user audience (Autio and Thomas, 2020). The relationships among these actors are multidimensional: while they may cooperate in creating value, they may also compete outside the boundaries of the ecosystem (Ritala et al., 2013).

The ecosystem concept has undergone continuous development, resulting in numerous proposed definitions. Granstrand and Holgersson (2020) reviewed these definitions, identified the key components of the concept, and offered a synthesized definition of the innovation ecosystem (p. 1): *"An innovation ecosystem is the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors."* In this context, artifacts refer to products and services, resources (including technology), and other types of system inputs and outputs, such as innovations. Collaborative relationships are considered *complementary*, while competitive relationships are viewed as *substitutes*.

Collaboration within an ecosystem occurs through interactive communication among actors (Smorodinskaya et al., 2017). In parallel, more formal types of cooperation may also take place, including structured interactions via contacts, joint projects, policy initiatives, and similar mechanisms. The efforts of these networked actors are oriented toward the creation of value through both innovation and its market diffusion (Bomtempo et al., 2017, in Granstrand and Holgersson, 2020).

Innovation ecosystems in modern economies are grounded in flexibility (Smorodinskaya et al., 2017). Given the polarity of relationships, it can be assumed that actors will engage in collective networked actions as long as the resulting synergy yields greater benefits than individual efforts. Actors may choose to collaborate on certain matters—such as joint projects or policy initiatives—while simultaneously competing in other areas, depending on their respective interests. In particular, relationships among major actors can be analyzed through key attributes such as their attitudes, activities, and aspirations, which may either facilitate or impede collaboration (Singer and Oberman Peterka, 2012).

An innovation ecosystem is not merely a heterogeneous collection of actors or stakeholders. Simply identifying the presence of stakeholders does not, in itself, constitute evidence of an innovation ecosystem. In many cases, a group of stakeholders may act independently, pursuing individual goals with minimal coordination or integration. Their relationships may remain fragmented, driven by necessity and focused on short-term, transactional goals, with limited collaboration or systemic integration. In contrast, a genuine innovation ecosystem depends on strong interconnections between participants, where each plays a distinct yet complementary role, contributing to collective success and the creation of system-wide value (Moore, 1993; Iansiti and Levien, 2004; Adner, 2006).

The innovation ecosystem also encompasses two distinct, yet interconnected, economies. On one side is the research economy, driven by fundamental research, and on the other is the commercial economy, driven by market forces. The innovation ecosystem functions by bringing together the resources of these two economies. (Jackson, 2011). That supports the translation of research into innovation.

The ecosystem design is closely aligned with the Quadruple Helix innovation model, which describes the interactions among university, industry, government, and the public in fostering innovation. Carayannis and Campbell developed this model by expanding upon the Triple Helix framework originally proposed by Etzkowitz and Leydesdorff. The Triple Helix model explains the dynamic interplay between academia, industry, and government in promoting entrepreneurship, innovation, and economic growth within a knowledge-based economy. This model was initially formulated based on the observation of successful collaboration between entrepreneurial universities and high-technology clusters, supported by strategic policy interventions in the United States (Cai and Lattu, 2022). Over time, mainstream scholarship has shifted from the concept of the knowledge economy associated with the Triple Helix to the broader notion of a knowledge society or knowledge democracy, which is achieved by incorporating a fourth sphere—civil society (ECR-CSPEE / Cavallini et al., 2016).

The Quadruple Helix model does not merely represent a grouping of four stakeholder types; rather, it emphasizes the dynamic, systemic interactions and co-creation processes among these groups, including synergistic relationships and shared innovation objectives (Carayannis and Campbell, 2009). The Quadruple Helix model and the innovation ecosystem concept are interrelated and complementary frameworks that can be operationalized in tandem. The Quadruple Helix model serves as a structural or actor-based framework within the broader innovation ecosystem concept, by identifying who participates in the ecosystem and defining the roles of various stakeholder groups, while the innovation ecosystem framework emphasizes the dynamic interactions, co-creation processes, and functional interdependencies among these actors.

A broadly applicable and operational concept in both innovation ecosystem frameworks and policy theories is that innovation drivers were also used in the Inno2mare project. Innovation drivers are factors that promote, stimulate, enable, or accelerate innovation. As a descriptive tool, innovation drivers help identify the key influences shaping innovation activity. For example, the European Commission's Blue Economy Report 2025 highlights sustainability goals, digitalization, and stakeholder cooperation as central innovation drivers. Similarly, the Oslo Manual (OECD/Eurostat,

2018) points to regulation, technology, and market conditions as critical influences on innovation.

As part of the Inno2mare project, Slovenia's maritime ecosystem was mapped alongside Croatia's Adriatic maritime system. The outcomes are directly comparable, as both cases apply an identical definition and scope of maritime activities, and both economies operate within a post-transitional economic context. Despite these similarities, the ecosystems differ significantly across key dimensions, including their structural configuration. The Slovenian ecosystem is compact, innovation-driven, and concentrated around a single dominant actor—the Port of Koper. In contrast, the Adriatic maritime ecosystem in Croatia is larger, more diversified, and rooted in a strong industrial tradition, with greater international integration and higher levels of infrastructural investment. However, the innovation culture in Adriatic Croatia remains cautious, shaped to a large extent by historical legacies and institutional frameworks (BSC, Lemur Legal, 2023).

3. Methodological framework

This section outlines the various methods employed to collect and analyze both quantitative and qualitative data in order to gain insights into the maritime innovation ecosystem within the scope of the Inno2mare project. The ecosystem was defined according to two main criteria:

- Geographic criterion – the system was delineated as *regional*, corresponding to Adriatic Croatia, which comprises seven Croatian counties.
- Sectoral criterion – the system was defined within the maritime sector, based on the scope of economic activities.

A comprehensive research design was developed, structured around four distinct research objectives and supported by complementary research methods, as detailed in the table below.

Participants in the survey, interviews, and workshops were assured anonymity and the confidentiality of their responses.

Table 1. Overview of research goals and corresponding methods

Research goal 1: Mapping the Innovation Ecosystem a. Desk research b. Questionnaire-based survey c. Interviews	**Research goal 2: Identification of Innovative Companies** d. Application of the Innovation drivers' tool
Research goal 3: Identifying Needs, Opportunities, and Gaps in the Ecosystem e. Stakeholder workshops	**Research goal 4: Estimating the Economic Contribution of the Ecosystem** f. Economic analysis of stakeholders' business data

Source: Authors' presentation.

Table 2. Overview of data collected by method

Method 1: Questionnaire-based survey

Data collected: Thematic qualitative data related to the domains listed below.
• Stakeholder R&D capabilities
• Nature of stakeholder interactions
  ◦ Collaboration: Co-innovation processes, joint R&D projects, knowledge and technology transfer, academic and student collaboration
  ◦ Competition: Competition in global markets and within the local ecosystem
• Innovation activities, including perceived enablers and inhibitors
• Needs, gaps, and opportunities in relation to the digital and green transitions

Method 2: Semi-structured interviews

Data collected: In-depth thematic qualitative data covering the domains listed below.
• Stakeholder R&D capabilities
• Nature of stakeholder interactions
  ◦ Collaboration: Co-innovation processes, joint R&D projects, knowledge and technology transfer, academic and student collaboration
  ◦ Competition: Competition in global markets and within the local ecosystem
• Innovation activities, including perceived enablers and inhibitors
• Needs, gaps, and opportunities in relation to the digital and green transitions
• Stakeholder perspectives on business operations and the current state of the ecosystem
• Concrete challenges and real-world business cases
• Contextual insights

Method 3: Workshops

Data collected: Thematic qualitative data on the needs and gaps in the Ecosystem, as listed below. • Communication and coordination among stakeholders • Workforce-related challenges • Academia–industry collaboration in education, R&D, and knowledge transfer • Barriers to accessing innovation funding • Issues related to regulation and governance • Overall innovation capacity and systemic barriers • Shared interests in future collaboration
Method 4: Descriptive statistics
Data: Company-level quantitative data extracted from FINA database. • Key economic and financial indicators of the maritime sector provided.

Source: Authors' presentation.

3.1. Mapping the Innovation Ecosystem

Mapping of the ecosystem was identified as a key research priority and was conducted over a period of three months in 2023. Desk research was a critical step in identifying potential key stakeholders within the ecosystem. NACE codes were employed as structural identifiers for delineating the maritime innovation ecosystem, and the FINA business database served as the primary source of stakeholder data. In total, 56 four-digit NACE activities were identified as constituting the maritime sector (see table below). Additional activities were included through an analysis of the value chain and interpreted through the lens of the Quadruple Helix model. The production of naval crafts and ships was identified as the key to the ecosystem, with related activities such as shipbuilding design, infrastructure development, information technology, and others contributing to the broader system. Only business entities registered under the identified NACE activities, with their headquarters located in one of the Adriatic Croatia counties, were considered potential key stakeholders. The exceptions were business entities registered in another Croatian region, but carrying out significant operations in Adriatic Croatia. The existing infrastructure includes ports, which are formally registered as companies.

The academic sector (universities) was readily identified, as it comprises a limited number of specialized institutions and programs. With regard to the civil society/NGO sector, relevant actors were recognized in the form of associations, chambers of commerce, clusters, and similar organizations that are actively engaged in the maritime or nautical industries. As for the policy sphere, key stakeholders included

state agencies, regulatory bodies, and other public institutions involved in governing, supervising, or otherwise actively participating in the maritime or nautical sectors.

The scope of the analysis conducted using the FINA database was delimited by applying the NACE 2007 classification, as presented in table below.

Table 3. Maritime activities considered in the analysis (NACE 2007)

Code	Description	
	Scope of maritime activities	Scope of maritime production activities
1623	Manufacture of other builders' carpentry and joinery	
2221	Manufacture of plates, sheets, tubes and profiles of plastic	+
2361	Manufacture of concrete products for construction	
2511	Manufacture of metal structures and parts of structures	+
2561	Treatment and coating of metals	
2620	Manufacture of computers and peripheral equipment	+
2630	Manufacture of communication equipment	
2712	Manufacture of electricity distribution and control apparatus	
2790	Manufacture of other electrical equipment	+
2811	Manufacture of engines and turbines, except aircraft and motor vehicle engines	+
2813	Manufacture of other pumps and compressors	
2814	Manufacture of other taps and valves	+
2815	Manufacture of bearings, gears, and driving elements	+
2849	Manufacture of other machine tools	+
3011	Building of ships and floating structures	+
3012	Building of pleasure and sporting boats	+
3313	Repair of electronic and optical equipment	+
3314	Repair of electrical equipment	+
3315	Repair and maintenance of ships and boats	+
3320	Installation of industrial machinery and equipment	+
4322	Installation of plumbing, heating and air-conditioning systems	
4399	Other specialized construction activities	
4619	Agents involved in the sale of a variety of goods	
4669	Wholesale of other machinery and equipment	
4690	Non-specialized wholesale trade	
4719	Other retail sales in non-specialized stores	
4799	Other retail sales not in stores, stalls or markets	
5010	Sea and coastal passenger water transport	
5210	Warehousing and storage	
5222	Service activities incidental to water transportation	
5224	Cargo handling	
5229	Other transportation support activities	
5520	Holiday and other short-stay accommodation	
5590	Other accommodation	
6201	Computer programming	

6202	Computer consultancy activities	
6203	Computer facilities management activities	
6209	Other information technology and computer service activities	
6311	Data processing, hosting, and related activities	
6419	Other monetary intermediation	
6810	Buying and selling of own real estate	
7010	Activities of head offices	
7022	Management consultancy activities	
7111	Architectural activities	+
7112	Engineering activities and related technical consultancy	+
7120	Technical testing and analysis	
7219	Other research and experimental development in natural sciences, engineering, and technology	+
7410	Specialized design activities	+
7490	Other professional, scientific and technical activities	
7734	Renting and leasing of water transport equipment	
7810	Employment activities	
8542	Higher education	
8559	Other education and teaching	
9329	Other amusement and recreation activities	
9412	Activities of professional organizations	
9499	Activities of other membership organizations	

Source: Authors based on BSC and Lemur Legal, 2023, Maritime Map Croatia Final, Appendix to D2.1.

Throughout the research process, attention was given to the possibility of misregistration of business entities, as well as to the likelihood that some entities classified under relevant NACE codes may not be actively engaged in innovation activities. To validate the stakeholder list, a cross-checking process was conducted using website analysis, policy documents, and other credible public sources, in addition to data obtained through the questionnaire. Stakeholders were subsequently grouped according to their core business activities, such as production, shipping, services, logistics, infrastructure, software development, start-ups, and incubators/venture capital organizations.

The following attributes and data were collected for each identified stakeholder in this research phase: the name of the business entity, NACE 2007 classification, type of services provided, and the core service category based on the previously established classification scheme. In addition, a brief description of business activities, website link, legal information about the company or organization, as well as the name, function, and role of a key contact person, along with their contact information, were also recorded.

A questionnaire survey was conceived as the primary method for obtaining insights into innovation activity and the interrelations within the ecosystem and was directed

at prominent stakeholders alone. The methodological approach resonates, to some extent, with the principles outlined in the *Regions and Innovation Policy* study (OECD, 2011), as the questionnaire was designed to enable cross-referencing of firm-level characteristics with ecosystem-level functions.

The questionnaire consisted of two main sections.

- **The first section** focused on research and development (R&D), innovation performance, and the types of interactions among stakeholders.
- **The second section** explored the needs, gaps, and opportunities within the ecosystem in relation to the digital and green transitions. It also addressed the main inhibitors and facilitators of innovation performance through four open-ended questions. This format enabled stakeholders to respond freely and to determine both the depth and breadth of information they were willing to disclose.

Prominent stakeholders were identified based on an assessment of their involvement in innovative activities, as well as their size and revenue. The questionnaire was distributed via email to the 80 most relevant stakeholders, selected to reflect the four-actors structure of the Quadruple Helix framework. The questionnaire was provided in an electronic document format and was to be returned via email. Respondents received multiple reminders to submit completed forms. As responses began to arrive, additional stakeholders and collaborators were identified and subsequently invited to participate in the survey. The final response rate was 25%, with answers collected over the course of one month.

Interviews were employed as a complementary research method and were offered to stakeholders who preferred this format due to time constraints or other considerations. The interviews were conducted as a semi-structured interview, either in person or via telephone. The questions followed the structure of the questionnaire. A total of ten interviews were conducted, with the majority of interviewees representing the maritime production sector/industry. The responses collected through both the survey and interviews were predominantly descriptive in nature.

3.2. Identification of innovative companies

The Oslo Manual (OECD/Eurostat, 2018) states as main innovation criteria contribution to novelty or improvement, through development or adoption of new ideas, technologies, or processes, implementation, and value creation. The concept of innovation drivers was introduced with the aim of identifying innovative companies

among the stakeholders and adapted to the needs of the project. An innovation driver was defined as a company that fosters the development and adoption of new ideas, technologies, or processes, resulting in significant positive change or improvement within the maritime and/or nautical industry.

Additional criteria were also applied for a company to be included in the ecosystem's Innovation Canvas, as outlined in a checklist developed by BSC and Lemur Legal (2023). These criteria include factors such as changing market demands, the emergence of new technologies, evolving government regulations, industry collaboration, and technological advancements, particularly in areas such as artificial intelligence, robotics, and big data. The descriptive data collected from stakeholders were further organized and analyzed using the Innovation Canvas, a structured analytical tool used to examine key dimensions of an innovation ecosystem, including customers, value proposition, stakeholders, resources, activities, networks, regulations, culture, and infrastructure (BSC, Lemur Legal, 2023).

3.3. Identification of needs, opportunities and gaps in the Ecosystem

Workshops were designed to gather insights specifically on the ecosystem as a whole, in contrast to the previous methods, which were more focused on the perspectives of individual stakeholders. Two hybrid workshops were held in July 2023 in Rijeka, a key hub of the Croatian naval industry. The workshops aimed to engage stakeholders in addressing key questions related to the structure and functioning of the ecosystem. To ensure broad geographical representation, online participation was enabled, allowing stakeholders from more distant counties to take part. In total, 22 participants attended the workshops (PRIGODA, 2023). In terms of the Quadruple Helix framework, three of the four helices were represented: industry, academia, and civil society. The public sector was invited to take part, but there was no response, apart from the organizing body.

The issues raised during the workshops concerned the ecosystem's strengths and weaknesses, key challenges, the most promising areas of innovation, as well as inhibitors to innovation, current collaboration patterns, and priorities for the digital and circular economy in support of maritime R&D. In addition, participants discussed the policy and regulatory framework shaping maritime innovation ecosystems (PRIGODA, 2023). The descriptive data gathered during the workshops were analyzed in conjunction with data collected through the previously applied methods.

3.4. Quantitative analysis of the stakeholders' business data

Finally, the descriptive statistics method was applied to the quantitative data extracted from the FINA database, with a specific focus on company data from annual financial statements. Detailed business and financial information on legal entities was collected and processed. This analysis enabled a preliminary estimation of the economic strength contribution of the ecosystem to the Adriatic region's economy.

3.5. Data collection limitations

Several challenges in obtaining information from stakeholders emerged during the course of the research. The first major difficulty was the non-responsiveness of some stakeholders in providing data on their innovation activities, primarily due to time constraints and the perception that such information is confidential and/or commercially sensitive. In addition, certain companies did not perceive any direct benefit from participating in an EU-funded public project. Furthermore, some internationally oriented firms expressed little interest in the local or regional innovation ecosystem, and in some cases, were unfamiliar with its existence or relevance.

4. The Adriatic Maritime Ecosystem's configuration and attributes

As information gathered from surveys, interviews, and workshops offered descriptive insights and are complementary in the issues they address, they are presented synthetically in the remainder of the paper.

4.1. Quadruple Helix design of the Adriatic Maritime Innovation Ecosystem

The mapping process resulted in the identification of 285 stakeholders within the Adriatic Croatia maritime innovation ecosystem, across all categories, of which 261 were companies. Within this group, 41 companies were identified as innovative, using innovation drivers' concept as a tool.

The configuration of the Adriatic Maritime Ecosystem, as interpreted through the Quadruple Helix framework, is presented in Figure 1. As expected, the industry helix forms the central axis of the ecosystem, accounting for approximately 90% of all mapped stakeholders, which reflects the ecosystem's strong business orientation. The remaining 10% is distributed among the other helices: academia/research and

education, government bodies, societal actors, and Quadruple Helix intermediaries, all of which play a supportive yet significant role in relation to the industry. Importantly, stakeholders confirmed that, at various points, the different helices indeed assumed their typical roles within the network—regardless of whether their level of activity was high or low.

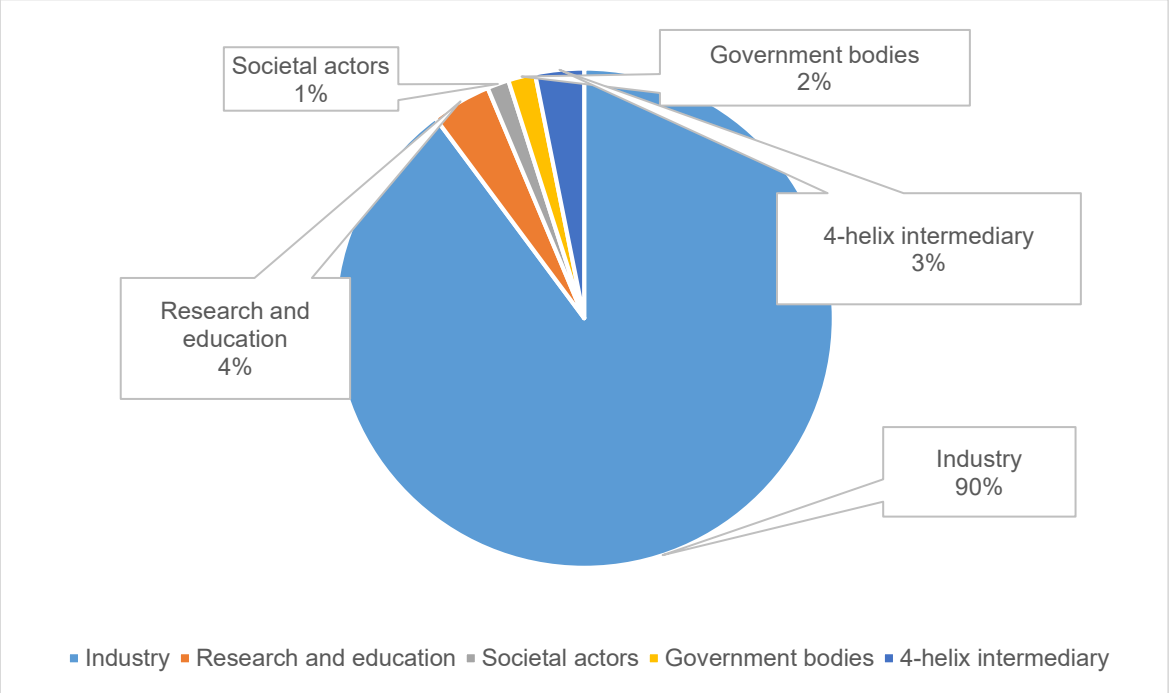

Figure 1. Quadruple Helix design of the Adriatic Maritime Innovation Ecosystem in 2023

Source: Authors' adaptation based on BSC and Lemur Legal, 2023, p. 21.
Note: The relative size of the sections was determined based on the total number of representatives from each stakeholder category.

4.2. The geographical distribution of the Ecosystems' stakeholders

Considering the geographical distribution of stakeholders within the Adriatic Croatia maritime innovation ecosystem, the highest concentration is found in Primorje-Gorski Kotar County (46%), followed by Split-Dalmatia County (25%) and Istria County (13%). The remaining representation includes Šibenik-Knin County (7%), Zadar County (5%), and Dubrovnik-Neretva County (4%). The predominance of stakeholders in Primorje-Gorski Kotar County is primarily attributed to the region's leading maritime ship design hub, the city of Rijeka, which hosts a significant concentration of shipbuilding firms, port infrastructure, academic institutions, and innovation actors. Notably, approximately 40 companies specializing in marine engineering and naval architecture are located in Rijeka. The results of the mapping process reflect the actual spatial

distribution of maritime industrial and innovation activity, shaped by the region's historical legacy and structural concentration of maritime enterprises, educational institutions, and supporting innovation infrastructure.

4.3. Activity-based structure of the Ecosystem

To better understand the interactions among stakeholders, an activity-based categorization of actors was introduced. The scope of this categorization was defined along the lines of the (innovation) value chain. In its narrower form, the categorization included core maritime activities such as logistics, production, shipping, services, infrastructure, as well as research and academic institutions involved in naval and maritime disciplines, and other services related to the maritime and nautical industries.

However, the final definition was broadened to include software companies, start-ups, venture capital firms, and incubators, as their presence is considered an enabling factor for innovation and reflects ongoing digitalization processes within the ecosystem (BSC, Lemur Legal, 2023). The structure of the ecosystem based on this activity-based stakeholder categorization is presented in Figure 2.

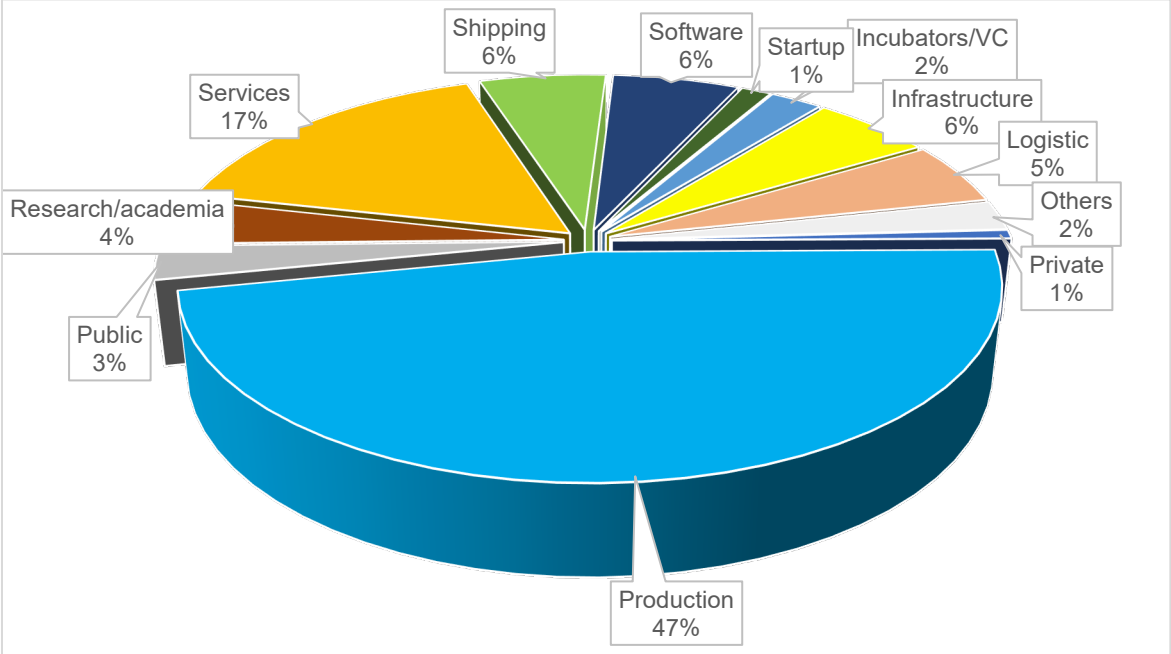

Figure 2. Stakeholders of the Adriatic maritime innovation ecosystem by their activity in 2023

Source: Authors' adaptation based on BSC and Lemur Legal, 2023, p. 17.

An overview of the results was provided in BSC and Lemur Legal (2023), and several key conclusions are synthesized here based on those data. Production emerged as the leading category and constitutes the central block of the ecosystem, representing 47% of all stakeholders. This is followed by the services sector, which accounts for 17% of the ecosystem structure. There are 134 production companies, and notably, 34 of them also meet the innovation criteria. The production group includes design offices, shipyards, marine equipment manufacturers, and suppliers. The scope of maritime production activities, as classified under NACE 2007, was presented earlier in Table 3.

4.3.1. Collaborative roles across the value chain

Collaborative roles were initially identified through desk research and subsequently reassessed using data gathered from the survey, interviews, and workshops. Information related to the innovative value chain was synthesized in this section to provide a more comprehensive understanding of how stakeholders interact and contribute to innovation within the ecosystem. An overview of stakeholders' innovative profiles is given in the table below and further elaborated.

Table 4. Stakeholder innovative profiles

Stake-holder Type	Primary Activity	Innovative Capacity	Innovation Type	Innovation Needs and Challenges	Data Source
Design offices	Naval design, engineering	High	Advanced design, cutting-edge technologies, state-of-the-art software usage, and digital design innovation	• Fierce competition for the highly skilled workforce, brain drain • Innovation activities of foreign-owned companies are in the headquarters, outside Croatia • Insufficient collaboration with Academia on specific R&D projects • Lack of alignment between industry needs and study programs, modernization of study programs is needed	Survey, interviews, workshops
Large ship-yards	Export-focused vessel production	Low	Process upgrades only	• Technological lagging • Dependency on government financing • Lacking in certain profiles of skilled workforce	Survey, workshop, desk research

Stake-holder Type	Primary Activity	Innovative Capacity	Innovation Type	Innovation Needs and Challenges	Data Source
Medium ship-yards	Custom vessel product-ion	Moderate to High	Niche innovation, innovative design, customized production	• Funding/dependency on EU-funded R&D • Fierce competition for the highly skilled workforce • Adaptability as a positive aspect	Survey, interviews, workshops
Marine equip-ment SMEs	Compo-nents supply, selective R&D projects	Low-Moderate	Client-oriented R&D, prototyping	• R&D Funding	Survey, database research, and desk research
Acade-mia	Research and educa-tion	High	Research, co-innovation, tech transfer, technological parks/ accelerators	• Sporadic R&D project involvement • Highly dependent on EU funding • Decline in interest in naval study programs • Knowledge transfer is not sufficient/depending on specific projects • Modernization of study programs is required	Survey, workshops
Start-ups	Product-ion of innova-tive products / services	High	Innovative design and solutions, state-of-the-art software usage	• Funding • Dependency on R&D incubators/accelerators	Work-shops, desk research
Civil society	Raising public awaren-ess on maritime innovat-ion and its benefits	N/A	N/A	• Better representation and a role in the ecosystem • Insufficient communication with other stakeholders	Desk research

Source: Authors' assessment based on project outputs.

Shipyards and ship producers

The central sectoral actors are the shipyards and ship producers. The shipbuilding industry includes large state- and privately-owned, medium, and small shipyards, differentiated by their production capacities and the size of vessels they are capable of constructing. These entities possess immense know-how and capacities that could play a significant role in innovation-oriented collaboration. However, in terms of technological advancement, the larger, traditional shipyards appear to be lagging behind, often lacking in-house innovation capabilities. Furthermore, their ability to participate in collaborative innovation is frequently constrained by financial limitations.

Large shipyards represent the central development axis of the shipbuilding industry and export nearly all of their production. However, they are also heavily reliant on government support. The major weaknesses observed in state-owned shipyards simultaneously pose significant obstacles to innovation in the sector. These shipyards are technologically lagging, exhibit lower productivity, and face structural constraints such as an inadequate skills composition of labour and limited financial capacity, all of which restrict their ability to engage in innovation activities. For these reasons, large shipyards were not included in the list of innovative companies identified in this research.

In contrast, medium and small shipyards, which often operate within specialized product niches, appear to be more open to innovative processes. Their engagement in innovation is driven largely by competitive pressures in both international and domestic markets. Access to EU-backed innovation financing, along with opportunities for collaboration with academia, seem to act as key enabling factors for innovation in these firms.
Large and medium-sized shipyards, excluding those that are state-owned, are predominantly part of larger foreign corporate groups, with ownership links to parent companies based in Slovenia, Italy, and Denmark. Findings from the survey and interviews suggest that medium-sized shipyards are responding and adapting more rapidly and effectively to evolving market demands. One key strategy has been innovation in vessel design and features, aligned with increasing demand for high-quality, custom-built ships that incorporate innovative design and superior performance. These shipyards produce a diverse range of vessels, including fishing boats, cargo ships, passenger vessels, mega-yachts, and offshore structures used in construction and the energy sector. For many small shipyards, EU funding represents a crucial enabling factor for innovation. These firms tend to be agile and strongly innovation-oriented, participating in both traditional and modern boatbuilding

practices. Small shipyards are widely recognized for their exceptional craftsmanship and their focus on designing and constructing yachts, luxury yachts, boats, and ship equipment for both seagoing and inland vessels.

Design offices

While shipyards play a significant economic and developmental role within the broader maritime sector, design offices serve as key drivers and co-creators of innovation within the ecosystem. These entities lead in the domain of technology, representing some of the most technologically advanced firms in the sector. They employ cutting-edge tools and methodologies, positioning themselves at the forefront of innovation and technical development within the maritime innovation ecosystem.

SMEs *cooperating with large shipyards*

Many small and medium-sized enterprises (SMEs) in the maritime sector conduct their business activities primarily as subcontractors to large shipyards. In many cases, these SMEs are entirely dependent on large shipyards, which serve as their main—and sometimes sole—client. Consequently, the innovative output of these companies is typically aligned with the specific needs and requirements of the large shipyards, limiting their autonomy in innovation and strategic development.

Marine equipment producers and suppliers

Marine equipment producers and suppliers, primarily small and medium-sized enterprises (SMEs), represent a vital component of the Adriatic Croatia maritime innovation ecosystem. While the majority of these firms operate primarily as importers of marine equipment, a subset is actively engaged in innovation activities. Some of these SMEs have established partnerships with universities to collaboratively address specific technological or operational challenges, thereby contributing to the innovation capacity of the ecosystem.

Academia

Academia holds a strong position in Adriatic Croatia, led by well-established engineering, technical, and maritime faculties, alongside research and technology parks and accelerators. However, cooperation between academia and businesses in the context of innovative projects remains sporadic and is largely limited to EU-funded initiatives, where such collaboration is often a formal requirement. By its nature, academia is engaged in scientific research and contributes to innovation through

start-up formation and participation in incubators, which may function as innovation hubs. Nevertheless, survey and interview respondents and workshop participants expressed a desire for increased project-based collaboration and knowledge transfer between academia and industry. Importantly, academia plays a crucial role in providing knowledge, expertise, and—most significantly—skilled human resources to the ecosystem. Notably, the competition for Croatian engineering talent is intense, particularly among foreign companies operating in the region (PRIGODA, 2023).

Government bodies and societal actors

Government bodies and Societal actors are least represented, but they play an important role in the Ecosystem's dynamic. The highest authority for the maritime sector is the Ministry of the Sea, Transport and Infrastructure, and specifically for the shipbuilding industry, the Ministry of Economy and Sustainable Development. Feedback from the stakeholders on institutional issues points to a complex business environment. Societal actors' role is that of popularizing the innovative culture, advocating marine protection and sustainability issues, which is seen as largely important in raising awareness and in supporting public interest, especially with the younger generations.

Government bodies and societal actors are the least represented stakeholder groups within the ecosystem, yet they play an important role in shaping its dynamics and long-term development. The highest authority overseeing the maritime sector is the Ministry of the Sea, Transport and Infrastructure, while matters specific to the shipbuilding industry fall under the jurisdiction of the Ministry of Economy and Sustainable Development. Stakeholder feedback regarding institutional matters points to a complex and often challenging business environment, which may hinder more effective collaboration and innovation. Societal actors contribute by promoting an innovation-oriented culture and advocating for marine protection and sustainability issues. Their role is considered particularly important in raising public awareness and supporting the public interest, especially among younger generations, where long-term cultural and behavioural shifts can have a transformative impact on the ecosystem.

4.4. State of the Ecosystem, attributes and models of cooperation

The results of the survey, along with insights gathered through interviews and workshops, indicate that within-firm innovation is most prevalent in design offices,

small and medium-sized shipyards, and among marine equipment producers and suppliers within the ecosystem.

Collaboration vs. competition

A formal attempt to promote collaboration within the ecosystem is reflected in the establishment of a Maritime Innovation Cluster. The cluster is centred around key themes such as networking, R&D collaboration, and project-based cooperation within the shipbuilding value chain and related industries (MARINN, 2025). As mentioned, another important formal avenue for collaboration is participation in EU-funded projects, which bring together a broader range of stakeholders across sectors. The formation of the cluster confirms that some stakeholders are actively seeking to strengthen cooperation in areas such as shared use of business and educational infrastructure, the development of smart skills and training for future jobs, knowledge and expertise exchange, joint policy initiatives, and the effective utilization of EU funding mechanisms.

The results of our research also indicate that competitive dynamics within the ecosystem can at times hinder stronger cooperation among stakeholders. Nevertheless, there are instances of joint project collaboration, particularly in cases involving the development of major infrastructure or state-funded innovation projects, where individual stakeholders—often competitors—lack the capacity to execute these tasks independently. Some degree of innovation collaboration also occurs within client–supplier relationships, particularly between design offices and shipbuilders, including collaborations involving state-owned stakeholders. These forms of cooperation demonstrate that, despite competition, pragmatic alliances emerge when mutual interests and complementary capacities align.

Enabling factors of innovation

Among the major enabling factors of innovation, the research identified the internationalization of business activities and access to EU funding as particularly significant. Cooperation with academia was also recognized as important, especially in the context of knowledge transfer. However, respondents noted that the volume and intensity of such cooperation remain insufficient, despite a shared recognition of academia's key role in the development of a highly qualified workforce essential to the innovation ecosystem.

Internationalization represents a significant driver of innovation activity within the ecosystem. Croatian design companies operate in international markets, and many are partially or fully owned by multinational corporations based in countries such as Germany, Norway, Finland, the Netherlands, and Italy. These companies typically operate in Croatia as branches or subsidiaries, while innovation activities are primarily concentrated in their foreign headquarters. Croatian-based subsidiaries often participate in specific phases of the design process rather than leading innovation efforts. Nonetheless, some firms report involvement in joint innovation projects in collaboration with their headquarters. Importantly, design offices serve as key integrators within the ecosystem, facilitating collaboration among various stakeholders in joint development projects. They contribute critical expertise to innovation processes and occupy a central role in cooperating with universities, research institutes, classification societies, R&D divisions, shipyard design departments, and marine equipment manufacturers.

Factors hindering collaboration

In addition to the traditional nature of the maritime sector and a general reluctance to engage in collaboration among Quadruple Helix stakeholders, one of the key underlying issues hindering the development of the ecosystem is the lack of effective communication among the four principal agents—academia, industry, government, and societal actors. Communication among these groups was found to be sporadic, fragmented, and lacking a clear strategic focus or coordination mechanism (PRIGODA, 2023). This communication gap significantly limits the potential for systemic collaboration, knowledge exchange, and the co-creation of innovation within the ecosystem.

An overview of the results across thematic areas of the ecosystem is given in the table below.

Table 5. Summary of research results by thematic areas

Thematic Area	Main Findings	Data Source
Activity	Production is the leading activity (47%), followed by services (17%). Production includes shipyards, design offices, and marine equipment producers.	Survey, economic analysis based on company data, desk research
Size and Structure	The majority are SMEs. 134 production firms identified, of which 34 are involved in innovation.	Survey, economic analysis based on company data

Innovation	Design offices and some SMEs (start-ups) are key innovators. Large shipyards are lagging due to financial/technological constraints. Medium-sized shipyards are more adaptable. Innovation occurs mostly via EU-funded projects.	Survey, interviews, workshops, desk research
Competition	Faced with competition from large foreign shipyards with stronger R&D capacity. Local firms compete through niche markets and customization. Competition for a highly skilled workforce.	Interviews, surveys, and workshops
Cooperation	Moderate cooperation across the Ecosystem. Maritime Innovation Cluster (MARINN) is a formalized initiative. Collaboration between academia and business exists largely fragmented. Collaboration among businesses on R&D projects sporadic.	Interviews, workshops, and open-ended survey responses
Stakeholder Interaction	Design offices are central hubs for innovation and cooperation. Academia's role is important and growing but limited by insufficient communication and non-alignment to industry needs. Knowledge transfer perceived as insufficient.	Survey, workshops
Internationalization	Strong international ownership of design offices and medium-sized shipyards. Many foreign-owned firms operate as subsidiaries. Innovation is often driven by foreign HQs. Export orientation is high.	Interviews, surveys, and secondary data
Policy & Institutional Environment	Ministries play the central role. Lack of strategic communication and coordination across the 4-helix model (Academia-Industry-Government-Society). Complex business environment. Insufficient stakeholder communication.	Interviews, workshops
Workforce	Insufficient supply of highly skilled workforce and fierce competition for professionals. Brain drain.	Interviews, workshops
Education	Need to modernize study programs to align with Industry needs. Insufficient interest in naval design studies.	Workshops
Communication	Sporadic, insufficient, lack of strategic approach.	Workshops

Source: Authors' assessment based on project outputs.

4.5. Innovation supply and demand within the Ecosystem

Two distinct types of stakeholders within the ecosystem emerged by applying the innovation driver criteria:

- **Supply-side stakeholders** – companies engaged in innovation activities, acting as producers of innovative products, services, and processes;
- **Demand-side stakeholders** – companies or organizations that purchase, commission, or utilize these innovative products, services, and processes.

Stakeholders positioned on the supply side of innovation are recognized as creators and enablers of innovation. Research findings indicate that these include start-ups, entrepreneurial support institutions, production companies developing in-house solutions based on advanced technologies and innovative approaches, as well as software companies. The latter either market their products as stand-alone, proprietary solutions, or develop them on commission to meet specific client needs.

Stakeholders on the demand side of innovation are those who act as drivers of innovation out of necessity, as they seek to maintain or enhance their competitive advantage and/or comply with regulatory requirements. These stakeholders predominantly come from traditional industries, including infrastructure, shipping, logistics, shipbuilding, and the public sector. Their motivation to modernize and digitize operations is driven by the need to remain competitive in international markets. As a result, these stakeholders actively engage with supply-side actors, thereby stimulating demand for innovative products and services (BSC, Lemur Legal, 2023).

When applying the innovation driver criterion, a total of 41 companies were identified as innovative, with 34 belonging to the production category. All of these are privately owned firms, and they represent a range of company sizes—including large, medium, and small enterprises. Data gathered from interviews, survey responses, workshops, and company websites indicate that these innovative firms operate in diverse market niches and maintain varied product portfolios. They have adopted advanced technologies and are predominantly export oriented. These companies apply cutting-edge approaches to product development, often incorporating advanced materials, innovative design solutions, and modern engineering techniques (BSC, Lemur Legal, 2023).

4.6. The Ecosystem's economic traits and the contribution to the regional economy

As part of the Inno2mare project, efforts were made to identify key economic indicators of the ecosystem and to estimate its contribution to the regional economy. An economic analysis was conducted, and an overview of the findings was presented in *Inženjerski biro for PRIGODA* (2023), which this paper reflects upon. A key finding of the analysis is that the maritime innovation ecosystem demonstrates above-average sectoral performance within its native region, Adriatic Croatia, highlighting its economic significance and potential as a driver of regional competitiveness and growth.

The scope of the economic analysis was limited to the entrepreneurial segment of the ecosystem. Data were aggregated from companies' annual financial statements for the period 2018–2022, based on the previously mapped list of stakeholders. The company-level data were extracted from the FINA database. The analysis primarily included firms registered in the Adriatic Croatia region. However, a small number of companies registered in Continental Croatia were also included, as they conduct significant maritime sector operations within Adriatic Croatia and were identified as relevant contributors to the regional maritime innovation ecosystem.

The results indicate that the ecosystem's contribution to the regional economy is significant, particularly in terms of employment generation and value added. In 2022, the Croatian maritime sector—comprising a total of 261 entities—accounted for 0.5% in the number of overall registered businesses in Adriatic Croatia. However, with 11,315 employees, it represented 4.06% of total regional employment within that sector. In the same year, the Croatian maritime innovation ecosystem generated 5.37% of total business revenues, 6.33% of newly created value, and an exceptional 14.1% of total exports from the entrepreneurial sector in Adriatic Croatia. This disproportionately high share of export activity underscores the strategic importance of maritime ecosystem stakeholders in driving international trade flows. For a small region such as Adriatic Croatia, internationalization is essential for overcoming the limitations of domestic market size. Through increased export activity, the region can generate additional value added, thereby contributing to regional economic growth and competitiveness.

Additionally, average company performance within the ecosystem offers clear evidence of above-average standing in the regional economy. One notable distinction is that firms within the maritime innovation ecosystem are, on average, significantly larger than other companies in the region. With an average of 43.35 employees per company, these firms far exceed the regional business sector average of 4.91

employees, indicating greater operational capacity, including the ability to engage in innovation activities. At all levels of the economy, one of the most important indicators of competitiveness is productivity. In this analysis, newly created value per employee (in euros) was used as a key productivity measure. In 2022, this value amounted to €55,346 for companies within the ecosystem. When compared to the average value added per employee in Adriatic Croatia, the ecosystem demonstrates a 56.11% higher level of productivity, confirming its strategic and promising position within the regional economy. This elevated level of productivity has also enabled a gross wage per employee that is 41.18% above the regional average. A competitive wage structure within the sector is particularly important given the noted shortage of highly skilled labor, and it supports the ecosystem's ability to attract and retain talent essential for innovation-driven growth.

The analysis also revealed important insights into investment and innovation activity within the ecosystem. The maritime sector contributed 10.65% of the total regional value of concessions, patents, licenses, trademarks, service brands, software, and other intellectual property rights in the entrepreneurial sector of Adriatic Croatia. At the company level, the contrast is even more pronounced: the average maritime company reported an innovation-related asset value of €235,210, compared to just €10,162 for the average company in the region, highlighting the ecosystem's disproportionately strong role in driving regional innovation output.

When focusing specifically on the innovative companies within the ecosystem, authors (*Inženjerski biro for PRIGODA*, 2023) observed a notable shift in the structure of this group, marked by a growing share of small and medium-sized enterprises (SMEs). This structural change coincided with a period of significant external challenges, including the COVID-19 pandemic, the energy crisis, inflationary pressures, and disruptions in global value chains. During the same period, the entry of new, strategically important maritime market players into Adriatic Croatia was also documented, indicating an ongoing transformation of the regional maritime sector. A summary of the key findings from the economic analysis of the ecosystem is presented in Table 6.

Table 6. Summary of the Ecosystem's key economic indicators

Indicator	Value / Share	Comment / Comparison
Total Number of Companies in Ecosystem	261	Based on mapped companies
Employment Share	11,315 employees (4.06% of the regional total of Adriatic Croatia)	Significant contribution to regional employment

Indicator	Value / Share	Comment / Comparison
Business Revenue Share	5.37% of the total regional business revenue of Adriatic Croatia	Indicates a strong contribution to the regional output
Value Added (Newly Created Value) Share	6.33% of regional total	Confirms a strong economic contribution to the regional output
Export Share	14.1% of regional exports	High internationalization relevance
Average Employees per Company	43.35	Significantly larger than an average regional company (4.91)
Productivity (Value Added per Employee)	€55,346	56.11% higher than the Adriatic Croatia average
Gross Wage per Employee	41.18% higher than the regional average	Indicates a competitive wage environment
Innovation Output Share (Patents, Licenses, etc.)	10.65% of regional innovation value	Contribution to innovation output
Innovation Output per Maritime Company (Patents, Licenses, etc.)	€235,210	Compared to €10,162 for the average regional firm
SME Growth in Innovative Segment	Increased share post-2020	COVID-19 and economic turbulences enabled new entrants

Source: Authors based on Inženjerski biro for PRIGODA, (2023).

The results of the economic analysis further confirmed that the use of multiple methodologies to identify innovative actors within the ecosystem was justified and necessary. It appears that certain innovation-related activities are not always captured under typical innovation-related items in companies' annual financial statements (Inženjerski biro for PRIGODA, 2023). This reinforces the importance of combining quantitative financial data with qualitative insights from surveys, interviews, and stakeholder engagement when analyzing innovation ecosystems.

5. Conclusions

A series of methodological steps was undertaken within the Inno2mare project to collect data enabling the first comprehensive mapping of the Adriatic Maritime Innovation Ecosystem. The delineation of the ecosystem was both sectoral and regional, comprising a network of actors distributed along the Adriatic coast, spanning seven administrative counties. The mapped data revealed that the industry sector,

particularly production activities—including shipyards/shipbuilders along with design offices and marine equipment producers and suppliers—constitutes the core axis of the ecosystem in terms of both scale and innovation capacity. Geographically, the city of Rijeka and the Primorje-Gorski Kotar County emerged as the center of gravity of the ecosystem, due to the high concentration of industrial and academic institutions.

Viewed through the lens of the Quadruple Helix framework, other stakeholder groups—research and education institutions, societal actors, government bodies, and intermediaries—are also represented in the ecosystem, performing their typical roles in the innovation and value creation process. This configuration was validated through the application of multiple research methods, which enabled various stakeholders to articulate their experiences of collaboration, as well as to identify needs, opportunities, and existing gaps.

Both collaborative and competitive relationships among actors within the Adriatic Maritime Innovation Ecosystem were reported by stakeholders. Innovation activity was found to occur not only within firms, but also through co-creation processes involving multiple ecosystem actors. In this regard, design offices—which are highly internationalized in terms of both ownership and market orientation—demonstrate strong potential for generating network synergies. Their ability to convene various stakeholders across the ecosystem, combined with their adoption of advanced technologies in innovative design and product development, positions them as key innovation drivers.

Among the most prominent enablers of innovation, stakeholders identified EU funding, which has facilitated access to finance and enabled small and medium-sized production companies to engage in innovation. Collaboration with academia was also recognized as a crucial enabling factor, especially in the areas of knowledge transfer and skill development.

On the other hand, a significant barrier to innovation is posed by the financial constraints, organizational hurdles, and technological lag observed in large state-owned shipyards, on which many subcontractors still depend. While these entities would traditionally serve as innovation anchors—either through internal development or as strong actors on the demand side of innovation—their weakened role has reduced their ability to stimulate innovation ecosystem-wide.

The production and industrial sector more broadly are facing challenges related to brain drain and the shortage of highly skilled professionals, particularly engineers, who are essential to innovation and the effective use of advanced technologies.

Additionally, a decline in interest in naval design study programs was identified as another restraining factor. Finally, communication among stakeholders was found to be sporadic, fragmented, and lacking a coordinated strategic approach, further limiting the potential for sustained collaborative innovation.

By applying a set of "innovation driver" criteria, the research identified both innovative firms—representing the supply side of innovation—and buyers of innovative products and services—representing the demand side—within the ecosystem. This classification further supports evidence of collaborative relationships among ecosystem stakeholders. On the supply side, key actors include startups, companies, and institutions that are actively building a supportive environment for entrepreneurship. These also include manufacturing and production companies developing their own solutions using advanced technologies and innovative approaches. Additionally, software companies play an important role, developing applications and software products that are marketed through various models for use by clients in the maritime sector.

On the demand side, stakeholders belong primarily to traditional industries, such as infrastructure, shipping, logistics, shipbuilding, and public sector entities, all of which seek innovative solutions to maintain competitiveness and respond to evolving market and regulatory conditions. Out of 41 companies that were identified as innovative, 34 belong to the production category. All of these are privately owned firms, primarily comprising innovative maritime production companies. These firms operate across diverse market niches, maintain varied product portfolios, and are active in international markets. Their innovation capacity is reflected in the adoption of cutting-edge technologies in product development, including the use of advanced materials, innovative design methodologies, and specialized production techniques.

Business and financial indicators confirm that the maritime sector is not only a significant contributor to the regional economy but also displays above-average economic performance in several key areas, further underlining its strategic importance within the Adriatic Croatia region. The ecosystem shows considerable potential, as evidenced by the recent establishment of the maritime innovation cluster. While some collaborative activities are already taking place, overall networking remains limited. The tension between competition and collaboration persists, reflecting the complex dynamics within the system.

In this context, the innovation ecosystem concept proves particularly valuable, as it offers the flexibility needed for stakeholders to form collaborations when strategically beneficial, without requiring rigid, formalized structures. This adaptability is essential

for fostering innovation in a sector characterized by both traditional industry structures and emerging technological opportunities.

Several limitations of the research should be acknowledged. Firstly, some degree of non-responsiveness of certain stakeholders to surveys, interviews, and workshops limited the representativeness of some helices, particularly societal actors and policymakers. As a result, the perspectives of these stakeholder groups were less articulated in the paper, and their potential roles in fostering innovation may have been undervalued. To mitigate this limitation, the study incorporated desk research and publicly available data sources. Secondly, while the use of business data was essential for analysing the economic scope of the ecosystem, such data can only partially reflect innovation activity. In particular, non-R&D forms of innovation, including digital innovation, are often difficult to capture through traditional financial indicators. As such, the study largely relied primarily on stakeholders' perceptions and their involvement in funded R&D projects to assess innovation dynamics. Furthermore, due to the sensitive nature of innovation-related information in the private sector, it was not possible to gather detailed primary quantitative data on innovation activity. Consequently, the findings are based on qualitative insights, including opinions and self-reported data.

Finally, the research was limited to examining the structure and collaborative dynamics of the Adriatic Maritime Innovation Ecosystem, and did not include in-depth comparative analysis with previously researched maritime innovation systems in other regions. Such a comparative approach is recommended for future research and would contribute to a deeper understanding of regional innovation dynamics, policy effectiveness, and transferable models of ecosystem development.

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THE SEASONAL DILEMMA: DO COASTAL RESIDENTS PREFER YEAR-ROUND TOURISM?

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Abstract

Seasonality in tourism is a phenomenon that affects both the demand and the supply side and has a strong impact on destinations. From an economic, socio-cultural and environmental point of view, seasonality has more negative than positive effects on host destinations. As far as local residents are concerned, their perception of the intensity of tourism throughout the year is an issue that deserves further study, because although seasonality means that some attractions and activities are not available to locals during the low season, it also allows residents and nature to 'rest' and recover for a certain period of the year. This paper examines the attitudes of residents in Opatija, a seasonal coastal destination with a long tradition of tourism. The research aims to understand residents' perceptions of the intensity of tourism during the year and to identify the characteristics of residents who prefer seasonal tourism to year-round tourism in terms of their socio-demographic profile, dependence on tourism and perception of the impact of tourism. A sample of 118 questionnaires was collected and analyzed using non-parametric statistical methods. The results indicate that the residents of Opatija generally support the development of year-round tourism, while those who are more inclined to maintain the seasonal nature of tourism differ significantly from the other respondents in terms of age, education, perception of the socio-economic impact of tourism, but not in terms of

economic dependence on tourism. The findings can serve as a useful resource for local policy makers and tourism authorities in creating future tourism development strategies.

Keywords: *seasonality, year-round tourism, residents, coastal destinations*

JEL classification code: *Z32*

1. Introduction

Tourism plays a vital role in many destinations influencing not only local economies but also the daily lives of residents (Ko and Stewart, 2002). Shifts in tourist demand, characterized by increased numbers of trips, shorter stays, and evolving visitor motivations and behaviors, have created significant challenges for tourist destinations. These include overcrowding, growing resident dissatisfaction, and environmental degradation, all of which have contributed to overtourism (Mihalič, 2020) in certain locations. One enduring challenge that continues to affect many destinations, despite significant efforts to mitigate its impact, is seasonality. Butler (2001) defines seasonality as "the temporal imbalance in the phenomenon of tourism, which may be expressed in terms of dimensions of such elements as numbers of visitors, expenditure of visitors, traffic on highways and other forms of transportation, employment and admissions to attractions". While "traditional" seasonality still persists as described in previous definition, modern temporal shifts of tourism flows represent complex phenomena that depend on a combination of natural, geographical, societal and economic factors.

In Mediterranean coastal destinations, seasonality is particularly pronounced, with a sharp increase in tourist arrivals during the summer months. During peak periods, these destinations often exceed their capacity to accommodate visitors, while in off-peak times, they struggle with low tourist numbers (Ćorluka, 2019). Local policy prompting significant investment in strategic planning and regulation to extend the "shoulder seasons" or transform destinations into year-round destinations. Still, for many residents of coastal areas, tourism is a welcome source of economic activity, and most of the income is generated during the high (summer) season. During peak months, local businesses, including restaurants, hotels, and retail stores, experience increased revenue (Cuccia and Rizzo, 2011), but consequently tourists and residents pay higher prices for any kind of product and service they buy. Having that in mind, it is essential to investigate residents' attitudes towards tourism intensity during the year in order to formulate strategic plans for tourism and develop policies that strike

a balance between economic benefits and the well-being of the community. This paper examines the attitudes of residents in Opatija, a seasonal coastal destination with a long tradition of tourism. The research aims to understand residents' perceptions of the intensity of tourism during the year and to identify the characteristics of residents who prefer seasonal tourism to year-round tourism in terms of their socio-demographic profile, dependence on tourism and perception of the impact of tourism.

Sections cover the following: past research on the seasonality and attitudes of residents toward tourism, the methodology used, the results of the study and discussion, and the policy implications of the findings.

2. Literature review

Tourism would experience continuous growth over the next two decades, driven by a global increase in leisure time and rising disposable incomes in both developed and developing countries (Edgell et al., 2008). The World Tourism Organization confirms this trend, reporting that global tourism continues to expand, generating substantial annual revenue. In 2024, 1.4 billion international tourist arrivals were recorded globally, and tourism receipts reaching USD 1.6 trillion - about 3% more than in 2023. Additionally, international arrivals continued to rise in the first quarter of 2025 (UNWTO, 2025).

Seasonality is one of the main aspects affecting tourism. Seasonality in tourism refers to the fluctuations in tourist demand over a given period, often reflecting sharp peaks and falls within the year. It is characterized by a concentration of tourism activity during certain months, such as the summer season, with a noticeable decline in other periods (Butler, 2001). Seasonality is a widespread phenomenon, particularly in destinations with highly seasonal attractions, such as Mediterranean coastal regions where the majority of tourism activity is concentrated in a few months (Niavis, 2020).

The most widely used classification of seasonality divides its causes into two primary categories: natural and institutional (Ćorluka, 2019; Koenig-Lewis and Bischoff, 2005). Natural seasonality, as the term suggests, arises from natural phenomena and environmental conditions, including factors such as sunlight, daylight duration, air and water temperature, snowfall, ice cover, rainfall, wind, humidity, precipitation, cloudiness, and visibility (Butler, 1994). As stated in fundamental literature sources such as Allcock (1989) and Butler (1994) variations usually occur in predictable, cyclical patterns linked to the changing seasons, however, it must be noted that these patterns are no longer as predictable as they once were, due to considerations relating to

climate change. In light of the prevalence of last-minute reservations as well as cancellations, destinations are increasingly exposed to the potential impact of weather conditions that deviate from anticipated patterns. This phenomenon is especially evident in the Mediterranean region, which is a well-known traditional coastal and seasonal tourism destination, but is currently also an area experiencing climate change at a rate that is significantly faster than the global average. As demonstrated by Muñoz et al. (2021) in the context of Spain, there is a clear relationship between temperature variability in the destination region and a decline in tourism demand and weather conditions continue to play an important role in tourists' decisions regarding their vacation destinations. As for institutional seasonality, it generally results from religious, cultural, social, ethnic and organizational factors (Bar-On, 1999) and variations in tourist activities are often caused by holidays (public as well as school ones), but also special events, festivals, sporting seasons and similar (Senbeto and Hon, 2019). Additional factors affecting human travel behavior and consequently impacting institutional seasonality include inertia, traditions, and social pressures (Zvaigzne et al., 2022). While there are some evidences from scenario-based modelling and simulations supporting the notion that seasonality will decrease in period towards 2030, even in sun and sea tourism destinations (Reintinger et al., 2016), currently it still generates significant impacts for host destinations.

The impacts of seasonality on tourism can be diverse, positive and negative, supply-side and demand-side impacts, and economic, employment, sociocultural and ecological impacts (Yabanci, 2023). From an economic standpoint, seasonality is generally agreed to impact the tourism business negatively, often leading to fluctuations in revenue and employment instability. Many studies indicate that summer months generally register the highest tourist inflows and occupancy rates, while the winter is associated with lower activity and reduced employment. Obadić and Pehar (2016) indicate that seasonality is a significant characteristic of tourism in Mediterranean countries, leading to fluctuations in employment and economic performance. Baum and Lundtorp (2001) highlight short-term employment as a major drawback of seasonality in tourism, often resulting in high levels of off-season unemployment or temporary outward migration. Seasonal jobs typically attract individuals on the fringes of the labor market—those with lower education levels or limited skills—rather than drawing in skilled young professionals seeking long-term careers. This can make it challenging to maintain consistent product and service quality in the absence of a stable workforce. Some countries, such as Croatia tried to adapt to the seasonal nature of the work in tourism by implementing policies oriented on protecting the status and employment benefits of those workers that continuously seasonally work at the same employer (so called “permanent seasonal worker”) but this policy measure is no longer active from 2025, most likely due to the solving seasonal

workforce issues with "import" of foreign workers (Župan, 2025). Still, foreign workforce for seasonal jobs still does not solve the issue of yearly-based recruitment and training process for the new teams of employees which can affect the consistency and high level of tourism product quality (Zvaigzne et al., 2022).

However, seasonality is not universally detrimental; it provides opportunities for those who prefer temporary employment and allows workers and environment to rest and recover during the off-season (Ćorluka, 2019; Rossello and Sanso, 2017, Petrevska, 2015). Off-season period does not only provide nature with the opportunity to recover, but also business and public sector to implement restoration, renovation and conservation activities on tourism and public infrastructure in order to maintain them for the future (Grizane, 2016).

After economic and ecological perspective, it is necessary to also discuss social effects of seasonality. The peak tourist season typically results in a significant increase in cultural activities at destinations, with a focus on events and nightlife. While this can be advantageous for the local community, it also leads to an escalation in noise levels. The availability of necessary infrastructure such as roads, communications, parking lots, etc. during periods of high season is directly related to the tourism industry as outlined by Commons and Page (2001). In terms of future strategic planning, it is important to consider whether this infrastructure will be used with similar intensity throughout the year or only under great pressure during the several months. An increased number of people in a given area may require additional support in terms of medical services, public transport, order and security, which increases the burden on current personnel, e.g. police and medical workers, to provide necessary services. This can contribute to temporary dissatisfaction in the local community and reluctance to extend the period to the entire year (Zvaigzne et al., 2022). Given the variety of contexts present in tourist destinations, the forms and types of tourism services available at the local level (e.g. the structure of accommodation, such as the mix of hotels and private accommodation), and the overall state of public infrastructure and the natural environment, it is crucial to view the effects of imbalance and seasonality as a unique phenomenon in each destination (Zvaigzne et al., 2022). In this regard, it is imperative to examine and understand how local residents perceive seasonality and its impact on tourism and their daily lives.

For over thirty years, researchers have focused on examining the impacts of tourism, including seasonality impacts, on local residents, acknowledging the widespread significance of this issue and its profound influence on host communities worldwide. Since tourism relies upon the goodwill of the local residents, their support is essential

for its development, successful operation, and sustainability of the industry in the long term (Lança et al., 2024; Vargas-Sánchez et al. 2014).

Residents do not form a homogeneous group in their perceptions of tourism impacts (Andriotis and Vaughan, 2003). Social exchange theory confirmed that those who benefit more from tourism tend to view its effects positively, while minorizing negative effects, while residents without direct benefits from tourism tend to perceive it mainly negatively (Nunkoo, 2013). Key variables affecting residents' perceptions are often linked to socio-demographic and economic factors, such as age, gender, and income level (Sharma and Dyer, 2009). Additionally, residents' attachment to their local community and their interactions with tourists play a significant role in shaping their perspectives (Deery et al., 2012). Brida et al. (2011) explore residents' perceptions of tourism impacts and how they affect attitudes towards local tourism policies. The study shows that residents without a direct economic benefit from tourism and with a negative perception of the socio-cultural tourism impacts are less willing to support tourism development. Additionally, this group of residents also prefers to maintain the current peak of tourism, instead of distributing the tourism flow all year round. Foroni et al. (2019) analyze the impact of tourism on residents in a well-established and mature Mediterranean destination, Sardinia. Their findings highlight seasonality as a key external factor influencing residents' satisfaction with tourism. The study also reveals that in larger municipalities, such as Cagliari, residents report higher satisfaction with tourism during autumn and winter, whereas in smaller towns, satisfaction is greater during the summer months. Another mature, and mass destination, Gran Canaria is analyzed by Moreira Gregori et al. (2022). They concluded that the positive influence of tourism and tourists in the destination is more likely observed by those residents who reside in a tourist municipality or in the capital city, live in couple, are men, have an income less than 1500€ and have had a frequent interaction with tourists. In her work, Segota (2019) analyzes perspective of local residents on mechanisms that are needed for transforming a mass tourism destination into the upscale, all-year-round holiday community. Data was collected in two mainland coastal destinations – Rovinj in Croatia and Piran in Slovenia. Results reveal that local residents perceive current tourism activity as highly seasonal, mass tourism. Over 60% of interviewees want for their community to attract visitors out-of-the-peak season.

Although numerous studies have explored residents' perceptions of tourism, there remains a notable gap in research on mature, coastal and highly seasonal tourist destinations, particularly regarding residents' attitudes toward year-round tourism. Many coastal destinations, rely heavily on seasonal tourism and it is part of the destinations' tradition and lifestyle, implying that potentially local systems also

adapted to the economic fluctuations, employment instability, and challenges in resource management. Shifts in lifestyle, climate changes and overall VUCA surroundings pose a threat to those established patterns and challenge destination management authorities. Therefore, understanding the perspectives of mature coastal destination residents on tourism desired intensity throughout the year is crucial for designing sustainable tourism strategies that balance economic benefits with social and environmental well-being.

The present study aims to investigate attitudes of residents in Opatija as mature coastal tourism destination, toward the intensity of tourism during the year. Specifically, it seeks to address the following research questions: What is the ratio of residents inclining towards seasonal tourism as opposed to those who would prefer to have year-round tourism? Which are the key socio-demographic characteristics of residents who prefer seasonal tourism over year-round tourism? How does residents' dependence on tourism influence their preference for seasonal or year-round tourism? What are the perceived positive and negative impacts of tourism among residents, in regards to their preference to seasonal vs. year-round tourism? By analyzing residents' perspectives on the development of year-round tourism in comparison to the existing seasonal coastal tourism model, this study aims to contribute to the literature on sustainable tourism development and community engagement.

3. Data and methodology

3.1. Research area

The City of Opatija was taken as a study area for empirical research as it represents mature tourist destination with long tradition (170 years). Originating as a Benedictine abbey in the 14th century, Opatija developed into the Austro-Hungarian Empire's first climatic seaside resort in the late 19th century. This imperial patronage led to the construction of luxury hotels, parks, promenades, and grand villas that remain landmarks today (Vodeb and Nemec Rudež, 2017). In the context of contemporary tourism in Opatija, as with the majority of destinations along the Croatian coast, the main season is focused on the summer months and the appeal of the sea and sun (Čorak, 2005). However, recent studies of tourism seasonality and off-season offerings demonstrate that visitors of Opatija are engaged beyond beach activities, seeking out creative, educational, gastronomic and heritage experiences (Smolčić Jurdana et al, 2017).

It is also important to highlight that the residents of Opatija have a positive perception of regional well-being and that their satisfaction could increase with well-planned tourism initiatives, community engagement and successful management practices, as indicated by Soldić Frleta (2025).

Further paragraphs provide more detailed information on the seasonal fluctuations in tourism flows in Opatija throughout the year.

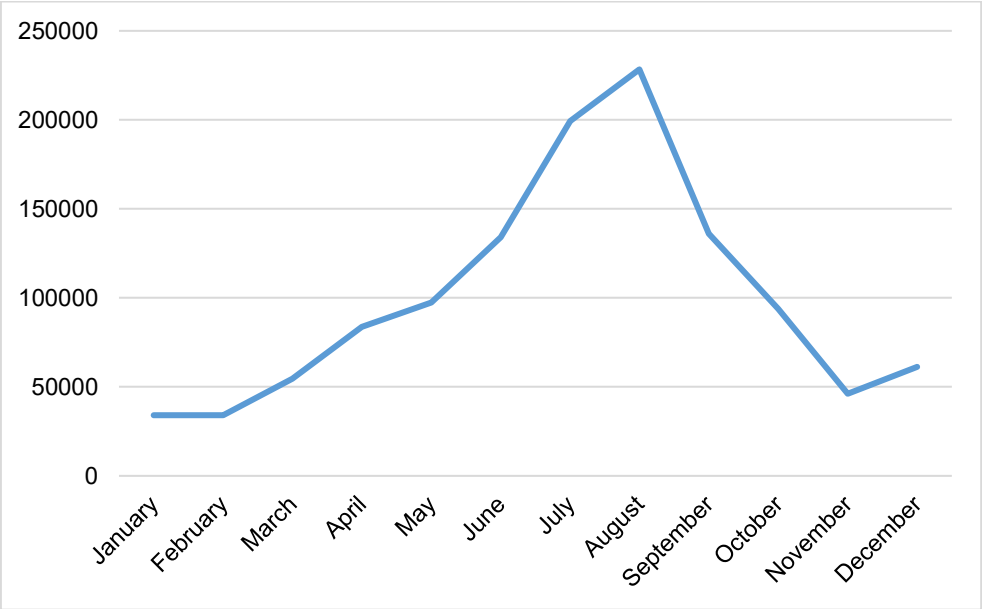

Figure 1. Tourist overnight stays in Opatija by month in 2023

Source: Authors' calculations based on data from the Opatija Tourist Board.

Figure 1 highlights the pronounced seasonality of tourism in Opatija, with over 58% of total overnight stays occurring between June and September. A notable rise occurs from April (Easter holidays) onward, indicating the start of the tourist season, which intensifies significantly during the summer months, peaking sharply in August, which records the highest number of overnight stays (approximately 230,000). Following this peak, the number of overnight stays quickly decreases from August, exhibiting a steep decline through October and November, and leveling off again in December.

Although there is a noticeable increase in overnight stays during the pre-season, Opatija continues to experience a high concentration of tourist activity during the summer months, reflecting its strong seasonal, summer-driven tourism pattern. Although the graph represents only situation in 2023, very similar patterns of arrivals and overnights are present in Opatija for the long period of years.

As for accommodation capacities in Opatija, the destination has 10.475 available beds in tourist facilities, out of which 49% is in hotels and similar accommodation and 51% is in private accommodation (Opatija Tourist Board, 2024). It is important to note that private accommodation capacities are in constant increase from 2021, especially those with high level of quality (Opatija Tourist Board, 2024).

According to the data on tourist demand in Opatija, the seasonal nature of tourism is highlighted.

The maturity of Opatija's tourism offer, long history of hospitality-related activities and seasonal character of tourism activities, in combination with relatively high satisfaction on quality of life of its residents, positions Opatija as interesting location for examining residents' attitudes towards seasonal and year-round tourism.

3.2. Methods

For data collection purposes, a survey was carried out among residents of Opatija during February and March 2023. A questionnaire was selected as the instrument for data gathering and was distributed to residents both onsite and online, employing convenience sampling—a nonprobability sampling method appropriate for collecting a sample of participants from the population (Etikan et al., 2016). Participation was voluntary and anonymous, as explicitly indicated in the questionnaire's introduction. The onsite survey was administered by the authors and research assistants at several prominent public areas in Opatija (such as squares, parks, and the local market), chosen for their importance as social gathering points for residents. Respondents who agreed to participate were provided sufficient personal space to complete the questionnaire independently, while the authors and research assistants remained available for further clarification if required. The online survey was conducted by sharing a link to the digital questionnaire within two major Facebook groups frequented by Opatija residents. In total, 118 valid questionnaires were collected and analyzed, with the results presented in the subsequent section.

The primary data collection described above was conducted with several research objectives in mind, and therefore the questionnaire comprised different topics and adjacent measurement scales. Some of the research results drawing on this data set have already been published (Trinajstić and Đurkin Badurina, 2023), and for the purpose of this study and answering its specific research questions, the following elements of the questionnaire will be used for analysis:

- Socio-demographic profile: questions depicting socio-demographic profile of the respondents, including their economic dependence on tourism (binary) and satisfaction with the tourism development of Opatija.
- A question related to the attitude of residents regarding seasonal vs. year-round tourism in Opatija: This question was formulated as a statement: "The tourist season should continue to be very busy for a few months, and the rest of the year should be calmer." The respondents were invited to indicate their level of agreement with the statement using a 5-point Likert scale ranging from 1 (completely disagree) to 5 (completely agree).
- Sets of statements related to the positive and negative economic, socio-cultural and environmental effects of tourism: The measurement scales for this part of the questionnaire were adopted from the following sources: Andereck and Vogt, 2000; McGehee and Andereck, 2004; Long and Kayat, 2011; Hanafiah et al., 2013; Meimand et al., 2017; Sanchéz-Cañizares et al., 2014. Also, the exact combination of statements measuring perception of tourism impacts has already been used in Đurkin Badurina et al. (2022).

The initial phase of the analysis entailed a general descriptive analysis of socio-demographic data. The authors then grouped the answers related to year-round versus seasonal tourism into the following categories: respondents who completely or somewhat disagreed with the statement were grouped as those in favor of year-round tourism; those who neither agreed nor disagreed were grouped and labelled as 'neutral'; and those who somewhat or completely agreed with the statement were grouped as those in favor of seasonal tourism. For the second step of the analysis, non-parametric statistical methods were used, more precisely Chi-square test and the Kruskal-Wallis test, in order to identify statistically significant differences in the tourism dependency and socio-demographic characteristics of residents who are “In favor seasonal tourism” those who are “Neutral” and those belonging to the “In favor of year-round tourism” group. The research then focused on finding potentially statistically significant differences among the mentioned groups in terms of their perception of the impacts of tourism.

4. Results

Table 1 presents key information on socio-demographic variables. The socio-demographic profile of the respondents implies a rather balanced distribution in terms of male vs. female respondents and economic dependency on tourism. A large number of respondents (almost 60%) hold college, undergraduate, Master or PhD degrees. What might be significant in terms of research results is the fact that a little over 54%

of the respondents have lived their whole lives in Opatija and another 35% have lived in Opatija for more than 10 years.

Table 1. Socio-demographic profile of respondents (N= 118)

	Frequency N	Percent %
Sex		
Male	57	48,3
Female	60	50,8
Missing	1	0,8
Age		
15-19	3	2,5
20-24	12	10,2
25-34	13	11,0
35-44	27	22,9
45-54	25	21,2
55-64	21	17,8
65-74	14	11,9
75+	3	2,5
Education level		
Elementary school	2	1,7
High school	46	39,0
College and undergraduate (bachelor level)	58	49,2
Master level or PhD	12	10,2
How many years have you been living in Opatija?		
Less than 5 years	3	2,5
From 5 to 10 years	8	6,8
From 10 to 20 years	16	13,6
From 20 to 30 years	27	22,9
Whole life	64	54,2
Economic dependence on tourism		
Yes (It's part of my income, either as a main or additional source of income for me or my family members)	69	58.5
No	49	41.5

Source: Authors' calculations.

Table 2. Opinion on preferred type of tourism (year-round vs. seasonal tourism)

	Frequency N	Percent %
In favor of seasonal tourism	29	24,6
Neutral	34	28,8
In favor of year-round tourism	55	46,6
Total	118	100,0

Source: Authors' calculations.

As shown in Table 2, almost 25% of respondents expressed their support for maintaining the current seasonal tourism model, which sees a high volume of tourism activities during the summer months and a more tranquil remainder of the year. A further 28.8% of respondents were neutral on the subject, neither agreeing nor disagreeing with the current seasonal nature of tourism. This indicates that slightly more than 50% of respondents do not actively support the transition towards year-round tourism, a finding that offers valuable insights for further analysis.

For the purpose of establishing potential association between preferred type of tourism and socio-demographic variables, chi-square test was conducted with a null hypothesis stating that there is no relationship between the two variables.

In terms of association between preferential type of tourism and dependency on tourism, chi square test revealed that there was no significant association between preferred type of tourism and respondents' dependency on tourism, $\chi 2$ (2, N = 118) = 4.6, p = 0,100. Null hypothesis was also accepted in terms of independence of type of preferred tourism and years of living in Opatija ($\chi 2$ (8, N=118) =9,308, p=0,317), sex ($\chi 2$ (2, N=118) =1,001, p=0,606).

When it comes to the age of the respondents and preferred type of tourism, null hypothesis was rejected: $\chi 2$ (14, N=118) = 30,168, p=0,007. Analysis of adjusted standardized residuals revealed that the youngest age group (15-19) was in favor of seasonal tourism, while respondents belonging to age groups 45-54 and 65-74 were more than expected (statistically) supportive of year-round tourism.

Also, in terms of relation between preferred type of tourism and education level, null hypothesis was rejected: $\chi 2$ (6, N = 118) = 14,581, p = 0,024. Analysis of adjusted standardized residuals revealed that less-educated respondents (primary school) are more prone to the seasonal tourism option, while those with college and undergraduate (bachelor level) are more oriented on year-round tourism.

The next step in the analysis was to perform Kruskal-Wallis test in order to examine the existence of statistically significant differences in perception of tourism impacts (measured on ordinal Likert 5-point scale) of respondents who belong to different groups based on their attitudes towards seasonality in tourism (In favor of seasonal tourism, Neutral, In favor of year-round tourism). The null hypothesis for Kruskal-Wallis test is that is that the mean ranks of the groups are the same (meaning there is no statistically significant difference among results, based on the belonging to different groups in regards to the preferred type of tourism – seasonal, neutral, year-round). The analysis will be presented separately for each type of tourism impacts.

Table 3: Mean values of respondents' perception of economic tourism impacts and the results of Kruskal-Wallis test

	Descriptive statistics		Results of Kruskal-Wallis test			
	Mean value	St. Dev.	Sig.	Test stat.	df	Decision
Tourism has improved employment opportunities in my community.	3,76	1,051	0,200	3,222	2	Retain the null hypothesis.
Tourism has attracted more investment to my community	3,97	0,956	0,961	0,080	2	Retain the null hypothesis.
Our standard of living has increased considerably because of tourism.	3,29	1,262	0,123	4,190	2	Retain the null hypothesis.
The prices of goods and services in the community have increased because of tourism	4,42	0,910	0,002	12,276	2	Reject the null hypothesis
The costs of developing public tourist facilities are too high.	4,08	0,843	0,299	2,414	2	Retain the null hypothesis.
Majority of tourism income generated doesn't stay in the destination.	3,78	1,095	0,654	0,850	2	Retain the null hypothesis.

Source: Authors' calculations.

Mean values related to the overall perception of positive and negative economic impacts among residents reveal that residents perceive most positively increased investments that tourism attracted to the community, but even for that variable, mean value does not exceed 4 (3,97). Economic impact that is most negatively perceived is related to the increased prices of goods and services (4,42).

From Table 3 it is also visible that there are statistically significant differences among respondents' perceptions of economic tourism impacts only for the increased perceived prices of goods and services in the community because of tourism. Post-hoc tests revealed the difference in mean ranks: those residents that are in favour of year-round tourism have statistically significantly higher mean rank (67,94) that those who are neutral on that matter (45,30).

Table 4. Mean values of respondents' perception of socio-cultural tourism impacts and the results of Kruskal-Wallis test

	Descriptive statistics		Results of Kruskal-Wallis test			
	Mean vale	St. Dev.	Sig.	Test stat.	df	Decision
Owing to tourism development, local people now have more diverse facilities and opportunities.	3,18	1,145	0,084	4.954	2	Retain the null hypothesis
Tourism is encouraging locals to various cultural activities.	3,31	1,195	0,050	5,990	2	Retain the null hypothesis
Tourism enhances the preservation of cultural heritage.	3,42	1,281	0,080	5,060	2	Retain the null hypothesis
Local residents have suffered by living in Opatija as tourism destination area.	3,22	1,192	0,450	1,598	2	Retain the null hypothesis
Tourism endangers the quality of life of the local population	3,07	1,145	0,637	0,902	2	Retain the null hypothesis
Tourism has led to more vandalism in Opatija	2,34	1,186	0,062	5,550	2	Retain the null hypothesis

Source: Authors' calculations.

As for the perception of socio-cultural impacts of tourism, respondents do not perceive particularly high positive, nor negative impacts in this category. Good news for tourism in Opatija is that the perceived influence of tourism on the increase of vandalism is particularly low (2,34).

From results of Kruskal-Wallis in Table 4 the only variable with potentially significant differences among perceptions is "Tourism is encouraging locals to various cultural activities" (p=0,05), but pairwise comparisons revealed no statistically significant differences among groups.

Table 5. Mean values of respondents' perception of environmental tourism impacts and the results of Kruskal-Wallis test

	Descriptive statistics		Results of Kruskal-Wallis test			
	Mean value	St. Dev.	Sig.	Test stat.	df	Decision
Tourism enhances environment protection and preservation.	2,85	1,194	0,584	1,075	2	Retain the null hypothesis
Due to tourism development, the infrastructure of Opatija (traffic, communal) is being improved.	3,27	1,202	0,036	6,623	2	Reject the null hypothesis
Tourism causes crowds and noise in Opatija	3,91	1,076	0,169	3,557	2	Retain the null hypothesis
Tourism is the cause of environmental pollution.	3,14	1,159	0,401	1,828	2	Retain the null hypothesis

Source: Authors' calculations.

Mean values for environmental effects of tourism are not particularly high, neither for positive, nor negative impacts. The highest mean value is measured for crowds and noise that tourism causes in Opatija (3,91).

Kruskal-Wallis test revealed statistically significant differences in the perception of improvements in the infrastructure of Opatija due to tourism. Post-hoc test revealed statistically significant differences in all three groups related to the perception of this variable: Those in favor of seasonal tourism perceive communal improvements higher (mean rank 70,65) than those who are neutral (mean rank 59,03), and residents in favor on year-round tourism have statistically significantly lowest mean rank of them all (51,17).

5. Discussion and conclusion

The results of empirical research highlight significant differences in tourism preferences based on age and education level among residents of Opatija. The youngest age group (15-19) showed a statistical preference for seasonal tourism, which may be attributed to the nature of employment opportunities available to them. Seasonal tourism often provides temporary and flexible job options which is appealing to younger individuals seeking summer employment or those not yet committed to long-term career paths. Additionally, younger residents may associate tourism with

the vibrancy and entertainment that peak seasons bring, rather than with economic stability and sustainability. On the other hand, older age groups (45-54 and 65-74) demonstrated a stronger preference for year-round tourism. This trend can be linked to their economic and social stability, as well as a greater concern for sustainable economic benefits rather than short-term seasonal gains. Additionally, this groups may appreciate the lower congestion and improved quality of life that year-round tourism could bring, as opposed to the intense peak-season tourism that can strain local resources.

Furthermore, the relationship between education level and tourism preference suggests that higher education levels correlate with a stronger inclination toward year-round tourism. The rejection of the null hypothesis ($\chi^2 = 14.581$, $p = .024$) confirms a statistically significant association between education and tourism preference. Less-educated individuals (those with only primary school education) tend to favor seasonal tourism, on contrarily, residents with college or undergraduate degrees are more inclined toward year-round tourism. This could be due to their more comprehensive understanding of long-term economic benefits associated with reducing seasonality, such as stable employment, business continuity, and infrastructural efficiency. More educated individuals recognize that sustainable and diversified tourism can enhance destination competitiveness and economic resilience.

What is specific is that there was not found any statistically significant link between attitudes towards the preferred tourism type regarding the seasonality and economic dependence on tourism. This link was to a certain extent expected having in mind that economic dependence on tourism is usually related to the overall tourism support (Martín Martín, et al, 2018). The finding that among people preferring seasonal to year-round tourism there are also individuals directly dependent on tourism, brings additional questions to reconsider in future research, as well as from the destination management's point of view.

The main aim of this study was to investigate residents' attitudes regarding seasonal vs. year-round tourism in Opatija, focusing on the socio-demographic characteristics that might influence these attitudes. The findings reveal that over 50% of respondents do not actively support transitioning to year-round tourism. Further, results indicate no significant association between preferred type of tourism (seasonal tourism) and respondents' dependency on tourism, years of living in Opatija or sex. However, a significant relationship was found between preferred tourism type and both age and education level. Younger residents (15-19) and residents with lower education levels were more inclined toward seasonal tourism. Regarding the tourism impacts – economic impacts, residents hold different views on how tourism affects local prices,

depending on their preference for seasonal or year-round tourism. Residents who support year-round tourism perceive price increases more strongly. In contrast, those who are neutral have a significantly lower mean rank (45.30), suggesting that they do not perceive rising prices due to tourism as strongly as year-round tourism supporters do. This finding implies that individuals who favor a shift to year-round tourism may be more aware of or concerned about the economic effects of tourism, particularly inflation in the cost of living. Regarding the environmental impacts results reveals statistically significant differences in how residents perceive improvements in Opatija's infrastructure due to tourism. Residents who support seasonal tourism rate these communal improvements the highest, those who are neutral have a lower mean rank, while residents who favor year-round tourism perceive the least infrastructure improvement. This suggests that supporters of seasonal tourism tend to see tourism as having a more positive impact on local infrastructure, whereas those who prefer year-round tourism may be more critical or have higher expectations for infrastructural development. It could also be argued that those in favor of seasonal tourism find that the short but concentrated tourist activity could be better for the state of infrastructure than tourism activities throughout the year.

By integrating residents' perspectives, socio-demographic analysis, and tourism impacts, this study expands the theoretical and empirical understanding of perception of seasonality in tourism. Its findings have practical implications for tourism development in coastal regions and contribute to ongoing academic discussions on balancing tourism growth with community well-being. The results from Opatija should be of significance for mature coastal destinations with a long-standing tradition in tourism. Such destinations are actively exploring strategies to diversify their tourism offerings and extend the tourist season. However, they are not yet aware of whether their residents actually support such changes and understand the potential impacts on their lives.

The results presented in this paper indicate the need to define public policies and effective measures to ensure inclusive, community-informed tourism planning. Policy makers need to recognize the importance of balancing visitor attraction with capacity management, which requires better spatial tourism planning, and deeper consideration of carrying capacity.

Based on the new Tourism Act at the national level, destinations that fall into the high category of the tourism development index are required to prepare a destination management plan and calculate the carrying capacity. This will greatly benefit Opatija and similar destinations, as this document will ensure the destination's development

toward sustainability, in line with strategic planning documents, spatial plans, cultural heritage management plans, and other relevant plans and regulations.

Engaging local communities in the planning process is vital. Empowering local stakeholders ensures that tourism initiatives align with community needs, which subsequently supports sustainable development. Collaboration between government entities, tourism boards, and local businesses can generate segmented and synchronized strategies that consider supply capabilities, tourism infrastructure, and marketing efforts.

Furthermore, policymakers should ensure targeted communication campaigns for younger and less educated residents, highlighting tourism as a pathway to maintain high quality of life. They should design outreach programs using social media, community centers, and NGOs to raise awareness of tourism-related job opportunities, environmental conservation, and cultural heritage preservation, all with the aim of supporting tourism in the intensity acceptable for local residents and in line with their interests, tradition and long-term sustainability.

One of the limitations of this study is that it was conducted outside the tourist season, which may influence residents' perceptions differently compared to the peak tourist season (as argued in Bimonte & Faralla, 2016). The results could vary significantly if the survey was conducted during the high season, when tourism impacts such as overcrowding, noise, and economic pressures might be more pronounced. Another possible limitation of the study includes a small sample size of 118 respondents. This sample structure may have influenced the unexpected finding of this study that economic dependence on tourism was not significantly correlated with seasonal preferences. Furthermore, the focus of the study on a single destination, Opatija, limits the generalizability of these findings. Conducting similar studies during peak and off-peak seasons – and at multiple destinations along the Croatian coast – would help determine whether the findings are unique to Opatija or reflect broader patterns in mature tourism regions. Additionally, qualitative research (e.g., interviews or focus groups) could offer deeper insights into residents' underlying motivations and their understanding of how seasonal tourism affects their quality of life.

Future research could focus on conducting similar studies during the peak tourist season. Also, one of the recommendations is to use comparative studies with other coastal destinations (while taking into account their accommodation structure) to identify common trends and unique factors that influence support for seasonal or year-round tourism, as well as to investigate the level of adaptation of destinations to seasonal tourism.

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HOW TO PREVENT EARLY RETIREMENT IN CROATIA?

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Abstract

One of the most important goals of pension insurance is to maintain the income of the elderly. Not only has the poverty rate of the elderly fallen, but in most countries, it is usually close to the poverty rate of the total population. Unfortunately, this is not the case in Croatia, where the old-age poverty risk is among the highest in the EU. However, regardless of the high risk of poverty in old age and low replacement rates, many individuals leave the labour market at the earliest possible opportunity, receive a pension for a long period, and therefore create relatively high outlays for pension insurance, burdening public finances. Thus, the reasons for the difficulties in the Croatian pension system must be analysed. The important determinants of retirement are the legal and effective (actual) retirement age. The legal age should be prolonged in line with prolonged life expectancy, despite current public opposition. Even more efforts should be made to raise the effective retirement age that lags behind the legal age. The Croatian pension system already punishes early retirement and rewards a

longer stay in the world of work, but these measures will need to be strengthened in the future. Some other factors and inconsistencies define early retirement, which will be explained in the text.

Keywords: *legal and effective retirement age, pension system, public expenditures, labour market*

JEL classification code: *H55*

1. Introduction

One of the most important goals of pension insurance is to maintain the income of the elderly, and in this respect, the program has been quite successful. While the elderly were once more likely to belong to the relatively poor, compared to the general population, today's indicators point to rather positive effects. Not only has the poverty rate of the elderly fallen, but in most countries, it is usually close to the poverty rate of the total population. Unfortunately, this is not the case in Croatia, where the old-age poverty risk is among the highest in the EU.

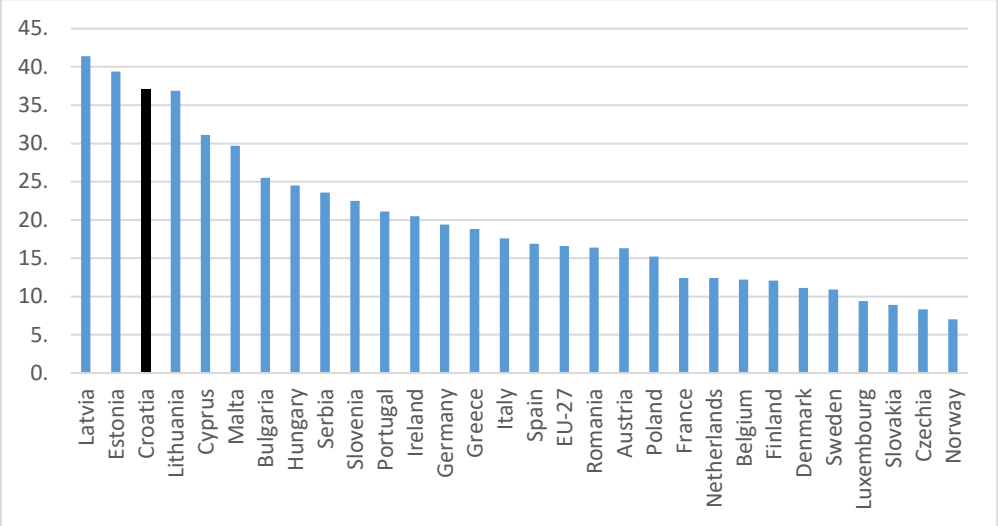

Figure 1. At-risk-of-poverty rate of older people 2024 (EU-SILC survey)

Source: Eurostat.

However, regardless of the high risk of poverty in old age and low replacement rates (average pension as a percentage of the average wage), many individuals leave the labour market at the earliest possible opportunity and receive a pension for a long period. Therefore, although the average replacement rate in Croatia is relatively low (Figure 2), working life is short, and a significant number of pensioners receive their

retirement benefits for a long period. This results in relatively high outlays for pension insurance (above 11% of GDP, while the average in OECD countries is around 8%).

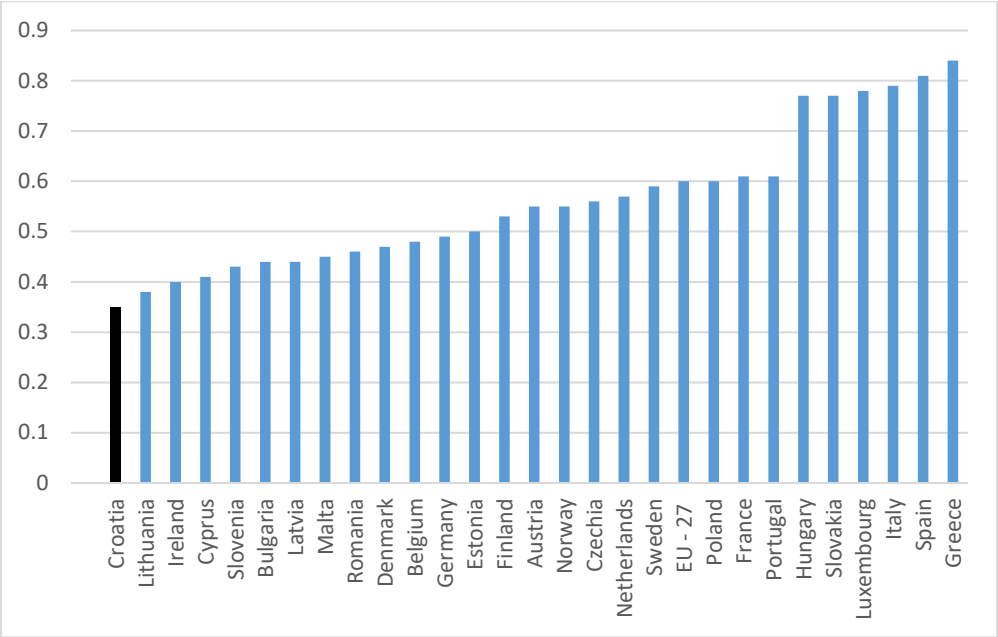

Figure 2. Aggregate replacement ratio for pensions (excluding other social benefits) 2024

Source: Eurostat.

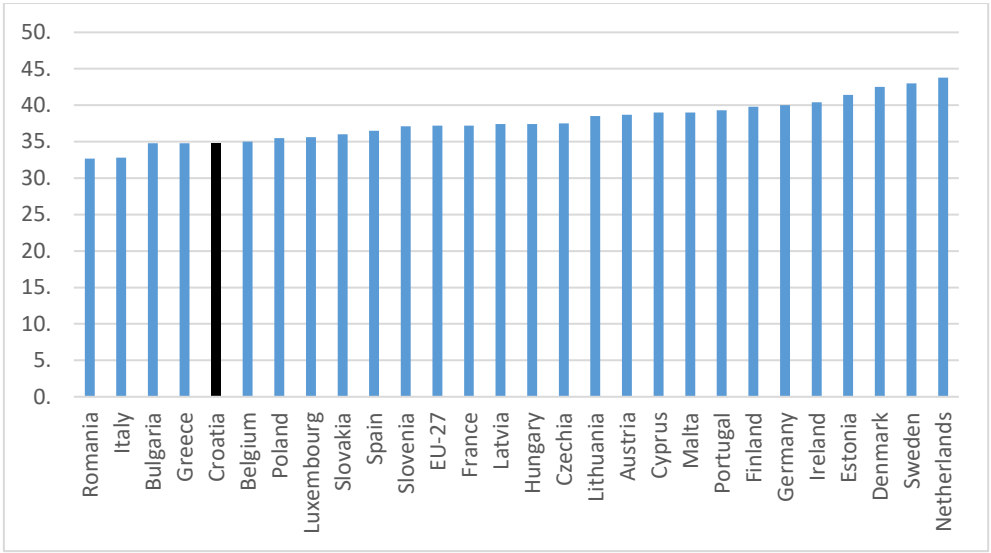

Figure 3. Duration of working life 2024

Source: Eurostat.

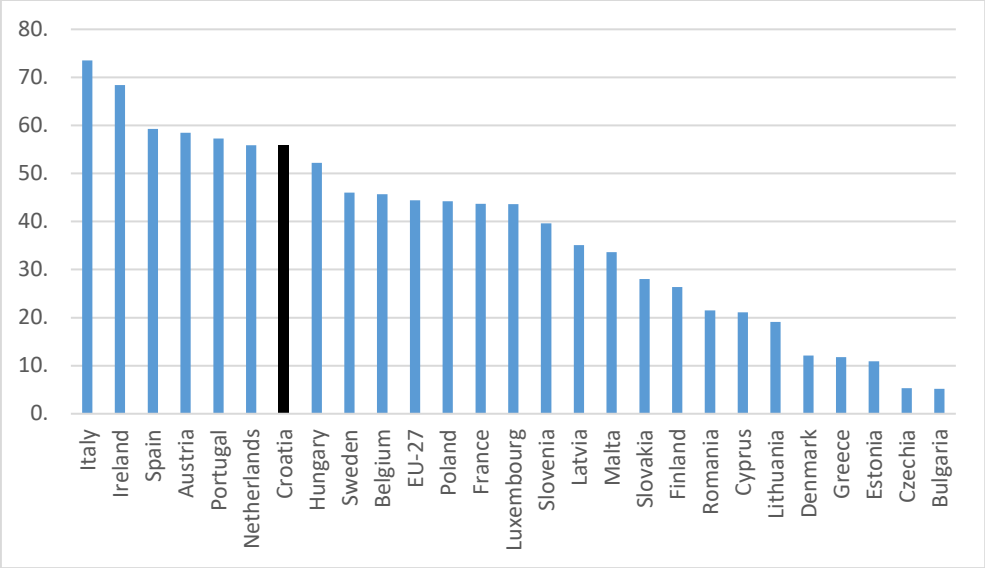

Figure 4. Early retirement among persons who receive an old-age pension (%) 2012
Source: Eurostat.

Therefore, it is important to ask: How is it possible that old-age poverty in Croatia is among the highest, while labour participation is among the lowest, and pensions are small? Is it systemic? What measures are needed to make the labour market and pension system function in a more synchronized way? Such questions lead the reader to consider the importance of changes in the pension system as well as labour market policies and practices, including the necessity of a flexible retirement age and flexible employment opportunities, which are discussed further in the text.

2. History of the Croatian pension system

To better understand the current problems of the pension system, there is a need to briefly explain the history of public pension insurance in Croatia. Public systems of intergenerational solidarity in Croatia were established with the Social Security Act (or the Workers' Insurance Act) in 1922. This Act was based on Bismarck's principles of social security (contributions from workers and employers, funds, and tripartite management). Due to a difficult economic situation and the inability of the authorities to establish a functioning system of financing and fund management, the Act came into force only in 1937.

After World War II, the new socialist economy continued with the inherited PAYG system. Due to low life expectancy (which in 1961 was 64.3 years for males and 69.0 years for females), and the legally stipulated retirement age (60 years for males and 55 years for females), men who retired at the legally stipulated retirement age typically

received pension benefits for only a short period - about four to five years. Women, on the other hand, received pension benefits for around 14 years. However, as there were relatively few retirees and many active insured persons paying pension contributions, financing the pension system was not particularly difficult.

Furthermore, those who were not eligible for an old-age pension often took advantage of relatively lenient disability pension criteria, which enabled early retirement. The system failed to account for demographic changes, as the late 1960s marked the last time enough children were born for simple population replacement. The demographic shift of the 1990s, combined with longer life expectancy and smaller new generations replacing larger retiring ones, revealed that the PAYG system was becoming unsustainable.

To improve the financial sustainability of pension insurance, the 1998 "small pension reform" was introduced, which aimed to better control pension-related outlays. It included the following changes:

- Stricter retirement criteria with gradual increases (by six months per year until 2008) in the legal retirement age for men to 65 and for women to 60 years.
- The legal age for early retirement was raised from 55 to 60 for men and from 50 to 55 for women, and early retirement pensions became subject to a permanent reduction of 0.34% for every month before the statutory retirement age (this penalty was later reduced).
- The formula for calculating the pension amount was changed: instead of using the best ten years with the highest earnings, pensions are now calculated based on the entire working life. This was intended to encourage consistent pension contributions and reduce evasion.
- The definition of disability was revised, and the process for determining disability became stricter, leading to fewer new disability pensions being approved.

Due to stricter retirement age requirements, one might have expected a significant increase in the effective retirement age; however, this did not occur.

The current pension system in Croatia was introduced in 1999 and became effective in 2002. It is a three-pillar system that combines elements of a pay-as-you-go (PAYG) system and capital-funded private savings. The goal of the reform was to ensure the long-term sustainability of the pension system by diversifying funding sources, reducing reliance on the state budget, and encouraging individual savings. However,

demographic challenges (an aging population and emigration) continue to put a pressure on the system.

In December 2018, the Croatian Parliament adopted the Act on Amendments to the Pension Insurance Act, which, among other things, accelerated the increase in the retirement age to 67 and significantly increased the penalties for early retirement. However, labour unions in their initiative „67 is too much" collected 750,000 signatures against these measures, representing nearly a quarter of the adult population, leading to a complete withdrawal of these provisions from the law.

3. How pension system parameters and outcomes affect labour market outcomes?

Overall, in Croatia, people leave the world of work relatively early, and as they receive pensions for a relatively long time, the financial situation of the pension insurance system has become barely sustainable. The following text explains the reasons and determinants behind improved labour activity of the elderly worldwide and in Croatia. The question that has often been neglected is the impact of the pension system on working behaviour and economic efficiency. Economists argue that the pension insurance system – especially intergenerational solidarity (PAYG) – distorts people's behaviour and negatively affects economic efficiency (Bagchi, 2015). Most of the discussion is about behaviour regarding savings (i.e., people do not save enough during their working life because they know they will receive a pension) and decisions about job offers (i. e., people withdraw from working activities at a time when they could still work). Such a phenomenon is not specific to Croatia but is extremely accentuated. Not only is the usual (regular) statutory retirement age significant in this sense, but also provisions allow most insured persons to retire earlier, and a relatively small number of insured persons reach full legal retirement age while still working.

3.1. Retirement age

The comparative approach reveals that public pension system rules that have been geared towards postponing retirement in many countries over the past decades are, indeed, significant determinants of lengthening working lives (Kuitto and Helmdag, 2021).

Since 1991, life expectancy in Croatia has increased by an average of almost seven years (8.5 years for men and 5.2 years for women). As people in Croatia retire relatively early – at the end of 2018, new old-age pensioners retired at an average age of 62.5 years:

63 years and 5 months for men and 61 years and 4 months for women – there is a relatively long average period of pension use: old-age pensioners receive benefits for an average of 21 years - 18 years and 11 months for men and 28 years and 3 months for women.

According to the data for July 2022, the insurance period for old-age pensions was 34 years, 9 months, and 21 days overall; 34 years, 10 months, and 25 days for men; and 34 years, 8 months, and 4 days for women (compared to the statutory requirement of 35 years and 9 months).

The average effective retirement age of new old-age retirees in Croatia between 2006 and 2022 increased only slightly for men, but for women, it increased by 2.5 years. This increase led to an overall increase of 1 year and 8 months for the total population, which is quite respectable.

In the broader European context, countries that have succeeded in increasing the effective retirement age, such as Italy and Germany, did so by continuously reducing the generosity of early exit pathways and ensuring transparent communication about pension sustainability (Angelini et al., 2009). Croatia could benefit from a similar strategy, combining indexation with reforms targeting both adequacy and fairness.

The classic study (Blöndal and Scarpetta, 1997) highlights how high implicit taxes on continued work, through low actuarial adjustments, lower the effective retirement age. Croatia's relatively generous early retirement options resemble the policy failures noted in Southern Europe during the 1990s, reinforcing the need for clear actuarial neutrality.

3.2. Early retirement age

There are almost certainly multiple reasons why effective retirement in Croatia occurs earlier than in other EU countries. One key reason was employers' disinclination to hire people over 50 years old until recently. Although employers valued the experience, knowledge, and expertise of older workers, they often did not hire them. The situation has changed due to labour shortages in recent years, but when given a choice, employers still prefer to hire a younger workforce.

Furthermore, the practice of agreed layoffs has been quite widespread because severance payments for older workers were exempt from taxation. This allowed employers to easily lay off excess workers, a phenomenon especially common in large

state-owned companies and many privatized companies in the telecommunications and financial sectors. Older people often accepted such a model of dismissal because they could continue to work in another company or in the informal economy.

Early retirement seems to be more appealing to people working in the private sector, those with a poor quality of life, less-educated workers, or individuals reporting poor health. They believe that amending the pension system to make early retirement less attractive is insufficient. Many Croatian employees would be willing to work longer if they had access to better jobs, education, and health services. These are the policy areas where Croatia requires large improvements. According to research by Štambuk et al. (2020), even digital training and improving digital skills of older workers can be a positive contribution and motivation to postpone retirement.

Dorn and Sousa Poza analysing data from 19 industrialized countries (Dorn and Sousa-Poza, 2010) show that "countries facing economic recessions and having strict employment protection legislation have higher shares of 'involuntary' retirements among early retirees. Generous early retirement provisions of the social security system not only make 'voluntary' early retirement more attractive for individuals, but also induce firms to push more employees into early retirement". These findings also explain well situation in Croatia. The cross-country project (Gruber and Wise, 1999) finds that early retirement is heavily influenced by institutional incentives. Countries with sharp early retirement penalties (e.g., USA, Japan) maintain higher labour participation of older workers. Croatia may need stricter early retirement penalties to reverse entrenched behavioural patterns.

3.3. Early retirement decrement

Estimates of the parametric model in France (Cosic and Steuerle, 2021) show that a 1 percent increase in the early claiming reduction decreases the retirement rate by 0.7 and 0.9 percentage points for men and between 0.2 and 0.4 percentage points for women.

Statutory early retirement in Croatia is available up to five years before reaching the standard retirement age, and comes with permanent reductions in pension benefits (0.2% per month of early retirement, with a maximum pension decrement of 12%). The statutory early retirement age is 60 for men and is gradually increasing to 60 for women by 2030. The minimum insurance period is 35 years for men and will gradually increase to 35 years for women by 2030. These provisions have often changed, but compared to other countries, they remain quite generous.

The report by OECD (OECD, 2017) shows that the actuarial fairness of pension systems (e.g., penalizing early exit and rewarding late exit) is critical to equality and fiscal sustainability. Croatia's early retirement decrement (max 12%) is still below what's needed to prevent long-term inequity across age cohorts.

3.4. Late retirement bonus

Late retirement bonus for a long-term insured person is 0.15% per month for up to 5 years (Article 85, Paragraph 4). For others, it is 0.45% per month, which, over 5 years, increases the annual bonus to 5.4% (Article 85, Paragraph 5). This provision was recently introduced in OG 119/2022 on 14 October 2022, so its results should be evident relatively soon.

This feature of pension insurance is called an actuarial adjustment. With increasing life expectancy and lower birth rates, actuarial adjustments are one possible way to incentivise postponed retirement and thus redesigning the PAYG pension system towards more actuarial neutrality (Giesecke, 2014). There is a need to increase pensions for those who retire later, as the pensioner will receive a pension for a shorter period while continuing to pay taxes and social contributions during their working years. But surprisingly, this is not the case in many countries, including Croatia. If this adjustment is not calculated correctly but instead decided under political pressure, once a person is entitled to retirement, continuing to work may result in receiving a lower total pension over the whole retirement period than if they had retired as soon as they met the first eligibility conditions. Thus, there is a very high implicit tax on labour, which greatly motivates insured people to retire and leave work as soon as possible.

Econometric estimates have shown that older people would behave differently if the pension system were "actuarially fair," i.e., if the amount of their pension was reduced by, for example, 6% per year for pensions earned and received before age 65, or increased by 6% per year for pensions earned after age 65. As a result, the average working life would increase (Gruber and Wise, 2007). The amendment to the Croatian Pension Insurance Act - PIA (OG 119/22, which came into full force on January 1, 2023), in Article 7, stipulates that in Article 85 of the PIA, the figure "0.34" is replaced with "0.45." This change increases the pension amount for each additional month of work beyond the legal retirement age required to qualify for an old-age pension for a long-term insured person. Therefore, the annual bonus of 5.4% is close to this updated

percentage. The Act stipulates that the initial pension factor can be 1.27 instead of 1.0, so we expect results to be visible soon.

Barr and Diamond (2008) argue that late retirement bonuses must be visible, actuarially fair, and well-communicated to have a real behavioural impact. Many systems (e.g., Sweden, US Social Security) offer delayed retirement credits of 6–8% per year, which create strong financial incentives to stay in the labour force longer. Croatia's current maximum bonus of 5.4% is a positive step, but it is still below the level needed to significantly affect behaviour. Moreover, late retirement incentives must be paired with reforms in labour law and health protection to reduce barriers for older workers who wish to remain employed. Evidence shows that when older workers perceive late bonuses as fair and attainable, labour participation increases.

3.5. Minimum pension and redistribution

Some other systemic reasons discourage a longer working life. One of them is excessive redistribution in the PAYG system, primarily through the minimum or guaranteed pension. Minimum pensions are particularly impactful for low-income workers and those with irregular employment histories. While they help ensure a minimum standard of living, they can also reduce the incentive to work and save (Jiménez-Martín, 2014). The theoretical replacement rates (the share of a pension relative to the previous wage) for low-wage earners typically factor in minimum pension provisions. If persons know that they can receive the minimum pensions with a very short period of contributions, they may withdraw early from the labour market. Such individuals are often more hesitant to extend their working lives compared to average wage earners.

Whitehouse (2009) emphasizes that poorly designed minimum pensions discourage long contribution careers. Croatia’s generous redistributive base risks undermining long-term savings behaviour and encourages informal work. Countries like Chile have refined basic pensions to protect the poor while maintaining incentives.

3.6. Disability pension rules

Disabilities can lead to involuntary retirement, but disability benefits may also serve as an exit route to early retirement and encourage individuals to leave the labour force early. Before the pension reform, the definition of disability was far from strict, and it was quite easy to obtain a disability pension. The definition of disability changed and

the procedure for determination of disability was revised. Therefore, the number of new disability pensions was reduced due to more restrictive criteria. Vukorepa (2015) warned about the need to tighten access to disability pensions. One should also not forget relatively underdeveloped health and safety standards on the job, which are quite often not fully respected, and therefore a relatively high number of accidents at work, which also contributes to demand for early or disability retirement.

The OECD (OECD, 2010) highlights that unclear disability definitions and lack of vocational rehabilitation systems lead to excessive reliance on disability pensions as early retirement. Croatia must invest in functional capacity assessment tools and rehabilitative employment options to prevent misuse.

3.7. Combining pension and work

Many European countries allow individuals to receive a partial pension while continuing to work part-time (European Commission, Directorate General for Employment, Social Affairs and Inclusion, et al., 2025). This setup provides an immediate income stream and can act as a bridge to full retirement, making early retirement more financially sustainable. By providing financial stability and flexibility, combining work and pension can encourage individuals to retire earlier than they might have otherwise. This is particularly true for those who can maintain a part-time income while receiving full pension benefits.

In Croatia, the ability to work part-time while receiving full retirement benefits was introduced relatively recently, in 2019. At first glance, this policy appears to be a win-win situation, where a pensioner can earn some money, while an employer gains an urgently needed worker. However, a deeper analysis shows that older workers who qualify for retirement may decide to withdraw from full-time work earlier, knowing that they would be better off receiving a pension while working part-time than continuing full-time work. In this way, the system may unintentionally stimulate early departure from the labour market.

However, international experience also suggests that allowing partial pension receipt while continuing part-time work can serve as a transition tool rather than a loophole. In Sweden and Germany, such phased retirement options are common and structured to maintain work incentives while gradually reducing hours (OECD, 2019).

In many European countries, phased or partial retirement is used as a bridge between full-time employment and full retirement. Typically, individuals receive a partial

pension (e.g., 40–60%) while reducing working hours proportionally, and these years continue to count toward final pension entitlements (Haan and Tolan, 2019). This model, found in Sweden, Germany, and the Netherlands, aims to extend working lives, particularly for workers in physically demanding jobs who may not be able to sustain full-time employment into their mid-60s.

By contrast, Croatia's model, introduced in 2019, allows individuals to receive their full pension while engaging in part-time work, even shortly after reaching the minimum retirement age. While this may appear beneficial on the surface, providing income continuity and labour flexibility, its design carries a significant risk of incentivizing early exit from full-time employment. Workers who are eligible for a pension may prefer to retire early and top up their income with part-time jobs, rather than continue working full-time and defer retirement.

The OECD (OECD, 2019) warns that if not properly structured, such policies can accelerate early labour-market withdrawal, especially when combined with weak actuarial adjustments. Croatia's policy lacks mechanisms to discourage early retirement or reward continued full-time engagement.

3.8. Survivor's pensions

In order to alleviate the poverty of low-income elderly people, especially women, and for reasons of efficiency, increased redistribution is sometimes necessary. This is largely similar to the rationale for mandatory old-age pensions, but with an additional factor of complexity—compromises are necessary within families and/or even between individual generations. Over time, active insured individuals as a group must pay more pension contributions or receive fewer pensions to finance benefits for their surviving family members. Survivor's pensions can significantly influence the labour participation of women, often in complex ways that depend on specific policies and cultural contexts (Şahin Keskin and Çavlin, 2023).

The programs that have been developed in different countries reflect prevailing social norms there about the role of men and women in the household and in the labour market. It is a less well-known fact that pension insurance programs also reshape these behaviours, i.e. they significantly influence the increased or decreased activity of women in paid work outside the home. While family benefit programs can improve both equity and efficiency, if not well designed, they can also be costly and lead to disincentives to stay in the world of work and unwanted redistribution. Many

countries have reformed or are reforming their pension insurance programs to make them fiscally sustainable and to remove their unwanted economic effects.

In Croatia, for decades, when taking over family pensions, the surviving family member would fully renounce their own entitlements. Women, who biologically live longer and have fewer contributions, were not incentivized to stay in the workforce beyond the minimum required period. A partial attempt to correct this was made by opening the possibility of receiving part of the family pension alongside one's own pension, introduced at the beginning of 2023. It is difficult to estimate whether this will have long-term effects.

Survivor's pensions historically aimed to provide income security to widows in the absence of their partner's earnings. However, mounting evidence suggests these schemes may inadvertently discourage women's participation in the labour force. Using a life-cycle model, Sánchez-Marcos and Bethencourt (2018) find that eliminating spousal and survivor benefits significantly boosts female employment, as the prospect of receiving these pensions induces early labour exit.

Critically, Werding (2005) argues that survivor pensions financed non-contributively are increasingly misaligned with contemporary gender roles and workforce participation patterns. His empirical work supports joint annuitization of couples' retirement rights as a fairer approach that maintains interspousal support without detaching benefits from individual contributions.

The OECD (OECD, 2018) further notes that survivor pensions remain widespread but are increasingly at odds with demographic and social changes. Many countries now face higher divorce rates, changing family structures, and more women with independent pension entitlements, which undermines traditional survivor schemes' rationale and sustainability.

For Croatia, current survivor pension policies may inadvertently disincentivize formal employment among women, especially those with intermittent careers or in part-time roles. Reform options include transitioning toward joint annuity models, tightening eligibility, or limiting the scale of spousal-derived benefits. Such changes would better align benefits with individual labour contributions while preserving social protection goals.

3.9. Additional factors

An additional factor that contributes to early retirement is the constant changes in eligible legal requirements for retirement, which motivate insured individuals to withdraw from the labour market out of fear of stricter conditions.

There is also an additional factor that demotivates further work and the payment of pension contributions, potentially endangering the equity of the public pension system. According to the Order on Amounts of Basis for the Calculation of Contributions for Compulsory Insurance for 2022 (*Naredba o iznosima osnovica za obračun doprinosa za obvezna osiguranja za 2022. godinu* - OG 127/21), there are both the lowest and the highest monthly bases for the payment of contributions for compulsory insurance. An employee with the highest monthly base pays a monthly pension contribution that is 5.7 times higher than that of a person with the average wage, or 15.8 times higher than that of a person who pays a contribution on the lowest monthly base. One would expect that the higher-paid person would receive a proportionately bigger pension. However, this is not the case, because there is a limitation on the maximum pension amount as stated in the Act on the Maximum Pension (*Zakon o najvišoj mirovini* - OG 168/98). In short, the highest pension can only be 3.8 times higher than the average pension, even though such a beneficiary has paid 5.7 times more in pension contributions. So not only are low-paid workers incentivized to exit the labour force due to minimum pensions, but high-paid workers are also incentivized in the same way due to the limited maximum pension.

Furthermore, there are relatively many legal hindrances to the continued employment of older people. For example, the Act on Civil Servants and Employees explicitly stipulates that a civil servant must terminate his or her civil service by law: (c) when they reach the age of 65 and have contributed for at least 15 years - on the last day of the year in which they reach this age, unless otherwise agreed based on service needs. A similar regulation exists in the Act on Civil Servants and Employees in Local and Regional Self-Government, which determines that the employee's service is terminated by law: (c) when they reach the age of 65 and have contributed for at least 20 years - on the last day of the year in which these conditions are met. There are similar rules in the healthcare, education, and social welfare systems.

Probably the most disastrous provision for the possible employment of older workers was that insured persons who have reached the age of 65 and have 15 years of pensionable service, cannot exercise the right to salary compensation at the expense of the Croatian Health Insurance Institute during temporary health incapacity, but exclusively at the expense of the employer's funds. This has been regulated recently

by the Amendments to the Mandatory Health Insurance (*Zakon o izmjenama i dopunama Zakona o obveznom zdravstvenom osiguranju* – OG 33/23) Article 50, which stipulates "An insured person who has reached the age of 70 and has 15 years of pensionable service based on dependent or independent work is not entitled to salary compensation from the funds of the compulsory health insurance during the period of temporary incapacity, but from the funds of the employer, or from the funds of the insured person liable to pay contributions".

Only in 2022 did the government recognize the necessity of changing the Labour Act's provisions related to the later termination of the employment relationship for workers who wish to remain employed despite having met retirement conditions. In this case, the employer is now relieved of obligations towards the employee related to the right to a notice period and severance pay, balancing the interests of both contractual parties and enabling the employee to stay in the workforce longer. Furthermore, it is necessary to redefine certain legal provisions of the general labour regulation, namely those on the right of workers to a notice period and severance pay in the event of termination by the employer, which currently discourage employers from retaining workers after they reach the age of 65.

There are also factors outside the labour market and pension system. For example, a lack of care facilities burdens mostly women to exit the labour force to care for family members. Also, one should not forget the social acceptability of the widespread shadow economy and the envelope wages, which also motivate early exit from the formal labour force.

4. Croatian pension system legal foundations

The pension system in Croatia consists of:

- The first pillar (tier) of compulsory pension insurance has retained the principle of current distribution and intergenerational solidarity. The Croatian Pension Insurance Institute is responsible for the implementation of pension insurance based on intergenerational solidarity. As mentioned previously, in addition to the contributions of the insured persons, the first pillar is financed by transfers from the state budget. The right to a pension can be exercised due to old age (old-age pension), partial or complete loss of working capacity (disability pension), or in the case of the death of the insured or beneficiary (when family members have the right to a survivor's pension).
- The second (mandatory) capitalized (or fully funded) pillar (tier) is based on individual capitalized savings from part of the pension contributions. When it

was introduced in 2002, its members became insured persons who were younger than 40 years old, and those between 40 and 50 years old who voluntarily opted for participation. Three-quarters of their pension contributions are directed to the first pillar, and one-quarter to the second pillar. The insured may be a member of only one mandatory pension fund at a time and may have only one personal account. Persons insured in the second pillar will receive two pensions - from the first and the second pillar.

- The third (voluntary) pillar (tier) of the pension insurance system is based, like the second, on capital financing, defined contributions, and personal savings accounts. It covers only those persons who want to secure themselves against the risk of old age, disability, and death. The third pillar is based on savings similar to life insurance, with each participant deciding independently on the amount of deposits and the duration of savings. During the period of accumulation of pension savings, contributions are collected in voluntary pension funds and personal pension savings accounts. Fundraising under the third pillar of pension insurance takes place through voluntary pension funds, while the payment of pensions is carried out by pension insurance companies. A third pillar insured person can be any adult who has permanent residence in Croatia. In closed pension schemes established by employers or trade unions, membership may be limited to employees or members of the trade union sponsoring the scheme. Citizens have complete freedom to decide whether to insure themselves or not; they have the possibility of enrolling in two or more voluntary pension funds and the possibility of choosing a pension program. Therefore, they have greater freedom to decide on the assets in which their contributions will be invested and wider opportunities to select types and forms of pensions. Unlike the mandatory pension fund, in the case of a voluntary pension fund, the insured person may be a member of one or more funds at the same time, and in one of them, he or she is entitled to the state incentive for voluntary pension insurance. A pension fund is an asset without legal personality, and it collects money paid by its members, who are also the owners of the fund. The task of the company that manages the pension fund is to invest that money in order to increase the value of the fund's assets. The goal of such an investment is to enable each member of the fund to receive as much pension as possible in the future. Finally, the amount in the personal account of the insured, which is kept in the Central Register of Insured (*Središnji registar osiguranika* - REGOS), will depend on the amount of contributions paid by the employer and employees to the fund and the manner of management of each fund.

According to the principle of defined benefits in the first pillar, the amount of the pension does not depend directly on the amount of contributions paid during the contribution period. In contrast, the amount of the pension in the second and third pillars depends directly on the amount of contributions paid, per the principle of defined contributions.

According to data from the Croatian Pension Insurance Institute, at the end of January 2025, there were 1.23 million pensioners, while the average pension was EUR 625 or 45.9% of the average net wage. Among them, there were 213 thousand receiving early old-age pensions; and 156 thousand persons with disability pensions (plus 76 thousand who transitioned to old-age pensions after the disability pension period), as well as 208 thousand beneficiaries of survivor's pension. The ratio of pensioners to the insured population, who are payers of pension contributions, is quite unfavourable, with only 139 insured persons for every 100 pensioners.

5. Demographic perspective

Next to the systemic reasons, the most important other reasons for the difficulties in the Croatian pension system can be grouped as demographic reasons. Demographic and organizational reasons are related to population aging, primarily an increased share of population 65+ in the total population. This phenomenon exists in all middle-developed and highly developed countries that have gone through the demographic transition.

The life expectancy in Croatia since 1991 has increased by an average of almost 7 years (male 8.5 years and female 5.2 years). Therefore, the Croatian population has been living quite long, which is a sign of civilization's success due to a better diet and improved health care. Consequently, in Croatia, the share of the population older than 65 years increased from 11.9% in 1991 to 22.5% in 2021, with estimates at around 32% by 2051. As a result, the age pyramid changed, and approximately by the middle of the 21st century, the age pyramid will look like an urn, it will be wider in the upper part than in the lower.

Early retirement, relatively short insurance period and a long period of entitlement to pension rights lead to the fact that although pension expenditures in Croatia are relatively high, the average pension is very low and seriously endangers the adequacy of pensions. Nestić and Tomić (2012) calculate the adequacy of pensions in Croatia using the theoretical replacement rate. Adequacy is assessed for the next 40 years under a no-policy-change assumption. At the time of their research, only persons

insured in the first pillar were entitled to a 27% pension protection supplement in accordance with the Act on Pension Supplement, realized under the Pension Insurance Act (OG 79/07) which was then enforced. Thus, there was a relatively big difference between pensions of those insured only in the first pillar and those insured in PAYG and fully funded insurance (mix system). The results point to two major challenges for future pension benefits in Croatia: (i) reduction in the relative pensions measured by the replacement rate, and (ii) substantial imbalance between pensions paid from the first pillar and those paid from both mandatory pillars. A worker who retires at 65 years of age after 40 years of service and who received an average wage during his whole working life could expect in 2012, the first pension in the amount of approximately 53% of the last-year wage. In 2050, according to Nestić and Tomić, this ratio would be 37%, one of the lowest in the EU. The replacement rate for pensioners from the mixed system depends on the rate of return of pension funds, while of course, higher yields allow for a bigger amount of pensions. Therefore, the authors deem that there is a need to provide measures for improvement of the replacement rate in the future. At that time, planned correction of inclusion of the pension protection supplement also for pensioners from the mixed system, which was realized in 2019, should enable an increase of the theoretical replacement rate.

The number of inhabitants of Croatia is declining, while the population is rapidly aging. Ageing report (European Commission. Directorate General for Economic and Financial Affairs., 2023) predicts that in the period 2022-2070, the population is projected to fall from 3.9 to 3.0 million. In parallel, life expectancy should increase significantly. Between 2022 and 2070, at the age of 65, life expectancy is projected to increase by 6.4 years for men and by 6.0 years for women. Survival rates between the ages of 65+ and 80+ are also expected to increase significantly. The old-age dependency ratio (population 65 versus population 15-64) will rise more than 50% until 2070, when it will be 62.2%. It is expected that the rate of aging of the aged (population 80+ versus population 65+) increased from 24.3% in 2022 to 40.5% in 2070. Net migration should not rise and is expected to have a rather weak impact on overall demographic development.

6. Identification of open policy issues, recent legal interventions

Regardless of its many positive characteristics, the pension system quite often stimulates people to withdraw from the labour market and to retire at a relatively early age, allowing them to receive a pension for a long period. Life expectancy in Croatia has significantly increased, particularly in the last 30 years, while the average effective retirement age of new old-age retirees has not changed. In Croatia and in many other

countries, there are a variety of factors and/or legal regulations which allow or motivate people to retire much earlier than the legally defined age.

Low pensions, along with a large number of retirees, also mean high total pension expenditures, which cannot be covered only by collected pension contributions. This requires increased transfers from the state budget, in the amount of approximately 2/5 of total pension expenditures, so the pension system is one of the most important sources of budget deficits and in the long run a public debt. Early retirement not only causes huge problems for the pension insurance system, but also creates serious difficulties for the labour market, which is currently suffering from a serious lack of workforce.

A comparative analysis of pension reforms in OECD countries shows that countries like Germany, the Netherlands, and Denmark have successfully used a combination of automatic age indexation, actuarial neutrality, and stricter eligibility criteria to discourage early retirement and promote extended working lives (Börsch-Supan and Coile, 2021). These approaches rely on linking retirement age to life expectancy, tightening early retirement pathways, and rewarding later retirement through bonus mechanisms. Austria, for instance, raised its early retirement age and witnessed a significant increase in the employment rate of older workers (Staubli and Zweimüller, 2013). Croatia can draw lessons from these practices, particularly the importance of consistency and credibility in reform implementation.

What can be done to make the situation, if not significantly better, at least not worse? Retirement conditions should be tightened because this is the only way to keep the pension system financially sustainable in the long run. Furthermore, it is necessary to tighten and/or consistently implement disability regulations to enable a reduction or at least stabilize the number of disabled pensioners.

Significant progress has been made in equalizing the legal retirement age of men and women. In further activities, it will certainly be necessary to consistently respect (and perhaps speed up) the implementation of the decision to increase the legal retirement age to 67 years. It is crucial to reconcile the legal and effective retirement age. This is certainly not pleasant, and citizens oppose it, but it is actually the only way to preserve the pension system and reduce existing problems in the labour market. This can be done either by an actuarially accurate penalty for early retirement or by a corresponding increase in pensions for longer periods of employment, as has been introduced through recent legal changes, which are quite positive.

Initiatives for prolonging active working life almost always attract negative reactions. In Croatia, many people oppose this prolongation, as they want to enjoy the pension to which they are entitled as soon as possible, and there are only a few who want to participate in the labour market for a longer period. Apart from that, there are many people who have spent their working lives in physically demanding occupations and those who, because of physical limitations or caregiving responsibilities, are not able to work any longer. On the other hand, some people want and can work longer - a group whose health conditions have not been negatively affected by their previous jobs and who perhaps have more opportunities to remain in the labour market.

In Croatia, the possibilities for staying longer in the labour market are much better for those who are highly educated and have a better financial status, as they have the most opportunities available to them. Those who remain longer in the labour market in Croatia do so mainly due to financial necessity, but also because they feel needed and included in society. Although a greater proportion of people choose to leave the labour market earlier (taking early or disability retirement), raising the retirement age has increased the labour force participation rate of the under-60s.

As has been shown, the legal framework discourages a longer stay in the labour market, linking it with the age of 65, while institutions of phased or deferred retirement have not been widely applied. Active labour market policies have not been sufficiently adjusted to the needs of the labour market for older workers. The level of participation of the elderly in lifelong learning is very low, and the small share of highly educated older people partially explains the low labour force participation rate among the elderly.

Because of the diversity of this group, the most important factor for older people has been identified as working time flexibility. The adaptation of working hours to individual needs is the main reason why older workers in many countries are very often self-employed and work part-time. The labour market for older people in the Republic of Croatia diverges significantly from other countries due to the small share of people working part-time, and the low share of older self-employed persons, which suggests that the labour market is not supportive of older workers.

In Nordic countries, reforms aimed to motivate people to retire later by linking life expectancy with adequate economic incentives. However, the results for prolonged labour market participation were worse than expected, necessitating further reforms (Lassila et al., 2014; Von Nordheim and Kvist, 2023; Laun and Palme, 2023). The first lesson from policy developments in the Nordic countries is that economic incentives alone are insufficient to make a large enough share of people work longer. Life

expectancy coefficients in the pension formula have failed to alter long-standing retirement behaviours to a sufficient extent. Economic incentives hidden in pension calculation formulas fail to send the required message. In addition, experience shows that those who most need to work longer tend to retire early, and vice versa. Consequently, instruments designed to protect both pensioners and the pension system have, in certain instances, instead become threats to both adequacy and sustainability.

In response, Nordic policymakers have explored other regulatory means. Reform efforts are now shifting from economic motivation toward statutory interventions that automatically adjust. Instead of linking benefit amounts to life expectancy, Finland and Sweden are following Denmark's lead in linking the pensionable age to longevity trends. Thus, the second lesson is that indexing pensionable ages to longevity may be a promising approach to regulating retirement. Politically, indexation avoids even more unpopular policies, such as reducing benefit adequacy as longevity increases. More importantly, raising the pensionable age sends a strong signal to society and policymakers that retirement practices must change. To function well, such statutory interventions must comprehensively address all aspects related to the retirement decision, including not only pensionable ages but also employment protection legislation and workplace conditions for late-career workers.

7. Conclusions

As mentioned earlier, regardless of its many positive characteristics, the pension system in Croatia often provides disincentives for older individuals to remain in the labour market. Experience from countries such as Finland and Sweden suggests that actuarial fairness and automatic adjustment mechanisms can promote later retirement, but only if accompanied by strong labour market policies and public support. For Croatia, aligning retirement age policies with increasing longevity, as done in Denmark and the Netherlands, may help ensure both adequacy and sustainability of pensions.

A higher labour force participation rate contributes to greater economic growth and tax revenues, which is particularly important for countries with an aging population and a large number of relatively young retirees. In Croatia, the demographic situation is deeply concerning. The labour force is shrinking; people are living longer but retiring earlier.

The responsibility for implementing fair and sustainable pension policies does not lie solely with the government - social partners must recognize this imperative and raise awareness about the necessity of sustainable pension systems and the benefits of prolonged labour market participation for both society and individuals.

Succinctly, we can reiterate that public pension systems often penalize longer work and/or encourage working-able elderly people to leave the labour market. Early retirement is rarely or insufficiently penalized, while later retirement is not rewarded sufficiently. Changes in the public pension system regulations would certainly increase the labour participation rates of older workers. This would significantly improve the financial condition of pension systems, which should in turn comply with the requirement of "actuarial equity". Retirement decisions in this way should rest on personal attitudes and preferences rather than on the fact that working longer is almost penalized instead of being rewarded.

Therefore, it is necessary to work systematically to remove incentives for early retirement, strengthen the link between contributions and pensions, improve preventive measures at work to reduce the number of disabled retirees, but also decisively break down prejudices about lower productivity of older workers and improve measures for their lifelong education, learning, training and skilling.

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HR MANAGERS COMPETENCIES IN THE ERA OF SMART INDUSTRY: A SYSTEMATIC REVIEW AND FUTURE RESEARCH DIRECTIONS

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Abstract

Aim/Purpose – The aim of this study is to identify key research areas concerning HR managers' competencies in the context of smart industry and Industry 5.0, while also highlighting existing research gaps and providing directions for future studies. This study addresses the gap, that there is a lack of a comprehensive literature review that systematically addresses HR managers' competencies and smart industry requirements. Design/methodology/approach – A systematic literature review was carried out using bibliometric analysis (VOSviewer) and the PRISMA analysis. The search was conducted in the Web of Science (SSCI) database and limited to peer-reviewed Q1–Q2 journals in management and business published between 2015 and 2024. The multi-stage process included identification, screening, and choosing of relevant studies. After applying all filters, 25 relevant articles were retained for in-depth analysis. Findings – Two main thematic areas can be identified: (1) the importance of competencies and the impact of HRM practices on organizational performance, and (2) managerial competencies in the digital era. Despite the existing research, several significant gaps remain, including geographical diversity of research, comprehensiveness and linking of competences, and challenges related to ethical

aspects and HR managers' competencies. Research implications/limitations – The results provide practical insights for HR managers and organisations preparing for Industry 5.0, emphasising the need to develop both digital and interpersonal competencies. The implications extend to practice, society, and education, including the integration of digital and soft skills into HRM curricula and the use of innovative learning methods in higher education. The study is limited by its reliance on a single database (WoS) and a restricted set of keywords, which may have led to the exclusion of relevant literature. Future research should therefore expand to other databases (e.g., Scopus). Originality/value/contribution – This study offers insights into the addressed areas related to the issue of HR managers' competencies in the smart industry, and the results obtained can serve as a starting point for further studies.

Keywords: *HR managers, smart industry, human resource management*

JEL classification codes: *M12, O33, Q55*

1. Introduction

By 2030, more than 40% of current jobs worldwide are expected to be either displaced or replaced by the development of technologies such as automation, artificial intelligence (AI), virtual reality and augmented reality (Pandya et al., 2022). This technological revolution will require workers to possess a new set of knowledge, skills, abilities and other attributes that are essential for effective performance in the workforce of the future (Pandya et al., 2022). According to the authors Maddikunta et al. (2022), Industry 5.0 represents a significant step forward, combining the creativity of human experts with the performance and intelligence of machines. The aim of this collaboration is to create manufacturing solutions that are more resource-friendly and better adapted to the needs of users, compared to the previous era of Industry 4.0.

This industrial revolution brings with it new challenges for human resource management, as organisations need to adapt their strategies to new technologies and systems. According to studies by authors such as Abdus-samad et al. (2022), Maddikunta et al. (2022) and Kholod et al. (2021), digitalisation and the development of smart technologies, as well as the implementation of Industry 4.0 and 5.0 concepts, are having a significant impact on HR management and are changing the way HR managers approach their role. These technological advances require new competencies for HR managers, which are essential to effectively manage people in this new environment.

Competencies encompass the nexus of knowledge, skills and attitudes that are becoming critical to the success of organisations. These competencies are essential for job performance, have an impact on job performance, can be assessed against defined criteria and can be developed through education and training (Parry, 1996, cited in Wong, 2020). In the context of smart industries, it is crucial that HR managers have the competencies to effectively adapt their organisations to new technological trends and to exploit the potential of these innovations. These competencies are not just about technical skills, but also about the ability to manage change, adapt to new tools and foster a culture of innovation in organisations.

Despite the growing number of studies on digital business transformation and workforce adaptation, there is a lack of a comprehensive literature review that systematically addresses the competencies of human resource managers and the requirements of smart industry. The aim of this study is therefore to identify key research areas concerning HR managers' competencies in the context of smart industry and Industry 5.0, while also highlighting existing research gaps and providing directions for future studies. Addressing this gap is important because HR managers play a central role in enabling organisations to adapt successfully to digital transformation and to develop the competencies required for long-term competitiveness in the smart industry.

The present study applies a systematic literature review based on bibliometric analysis and the PRISMA protocol. This approach makes it possible to consolidate fragmented findings, identify the main thematic areas of research on HR managers' competencies in the smart industry, and highlight the most significant research gaps. By synthesising existing studies, the paper provides a structured overview that adds clarity to the current knowledge base and supports the formulation of more targeted implications for both research and practice.

This study contributes by systematically reviewing and synthesising research on HR managers' competencies in the context of smart industry. It provides a clearer understanding of the main thematic areas, identifies significant research gaps, and formulates implications for theory, practice, and education.

The remainder of the paper is structured as follows. Section 1 revies the introduction of the paper, Section 2 reviews the literature on HR competencies in smart industry. Section 3 outlines the methodology. Section 4 presents the findings, followed by Section 5 with the discussion. The paper concludes with the contributions of the study, including implications, as well as limitations and directions for future research.

2. Literature review

Recent studies increasingly underline the complexity of competencies required from HR managers in the digital era. Research from Zervas and Triantari (2025) and Eprianto et al. (2025) emphasises that digitalisation is reshaping HRM practices and creating new demands on managers to guide employees' readiness for technological change. These contributions confirm that the rapid pace of Industry 4.0 and the transition toward Industry 5.0 place HR managers at the centre of organisational adaptation.

In addition to technical skills, behavioural and emotional competencies have gained particular attention. Philip et al. (2023), Shet (2024), and Shahruddin et al. (2024) highlight that competencies such as emotional intelligence, conflict resolution, teamwork, and adaptability are essential for effective functioning in technology-driven workplaces. This body of work indicates that HR managers need to balance digital expertise with strong interpersonal and emotional capabilities.

Empathy has also been recognised in recent literature as a critical competency for HR managers. Leonard (2025) emphasize that empathetic leadership is central to supporting both people and organisational strategy, while the Center for Creative Leadership (2025) shows that empathy enhances trust, collaboration, and performance, making it an indispensable skill in the digital workplace.

Technological innovation also creates new challenges. Eger and Žiška (2024) show how innovation enhances productivity and flexibility while at the same time generating demand for new skills such as critical thinking, communication, and collaboration. Similarly, Kronberger et al. (2024) analyse the implementation of artificial intelligence in HR processes, while Zhang et al. (2024) examine evolving competency models. These studies provide valuable insights into how technology affects HR competencies but still focus primarily on isolated aspects of the phenomenon. This study acknowledges the relevance of the dynamic capabilities theory (Teece, 2007) as a perspective that can enrich the understanding of HR managers' competencies in the smart industry. Dynamic managerial capabilities, such as human, social, and cognitive capital (Adner and Helfat, 2003), may provide a useful lens for analysing how managers build, integrate, and reconfigure resources in rapidly changing environments.

Despite these contributions, a research gap remains. None of the existing studies explicitly link the day-to-day tasks of HR managers with the competencies required to perform them effectively in the context of smart industry. This underlines the need for a systematic review that integrates fragmented findings and builds a comprehensive

understanding of competencies that are most relevant for HR managers in Industry 4.0 and 5.0.

3. Methodology

The aim of this paper is to identify key areas of research in the context of HR managers' competencies and smart industry, while subsequently identifying research gaps in this area and providing suggestions for future research.

In order to align with this aim, the following research questions have been formulated: RQ1: Which key research fields investigate the competencies required for HR managers in the context of Smart Industry? RQ2: What are the research gaps that hinder a comprehensive understanding of HR managers' competencies in addressing the challenges posed by Smart Industry.

To achieve the set aim and answer the research questions, bibliometric analysis and PRISMA analysis were applied. The bibliometric analysis was carried out using the VOSviewer software and the international scientific database Web of Science (WoS) as a data source. The PRISMA four-phase flowchart (Page et al., 2021) was utilised in conjunction with the WoS database too and it was conducted in January 2025. A search of the database using the three key terms "smart industry," "human resource management," and "competencies" revealed an insufficient number of relevant articles. A similar limitation was observed when using the keyword combinations "smart industry" and "human resource management" as well as "smart industry" and "competencies". This constraint is recognised as a limitation of the research paper in conducting a systematic literature review using the PRISMA approach, due to the inability to directly connect "competencies", "human resource management", and "smart industry" through keywords, which made the process challenging. Consequently, a decision was taken to adjust the search strategy, which resulted in the utilisation of only two key terms: "competencies" and "human resource management".

Following the acquisition of the preliminary dataset, a series of filtration stages were implemented, predicated on predefined criteria. In line with the PRISMA protocol (Page et al., 2021), the process was divided into three main stages: identification, screening, and selection. In the identification stage, a total of 3,020 studies were retrieved from the Web of Science database. During screening, several exclusion criteria were applied, including publication year (only 2015–2024), document type (only peer-reviewed journal articles), SSCI indexing, and subject category (restricted

to business and management). Finally, in the selection stage, only articles published in Q1 and Q2 journals were considered, and after reviewing abstracts for relevance, a final set of 25 articles was included for in-depth analysis.

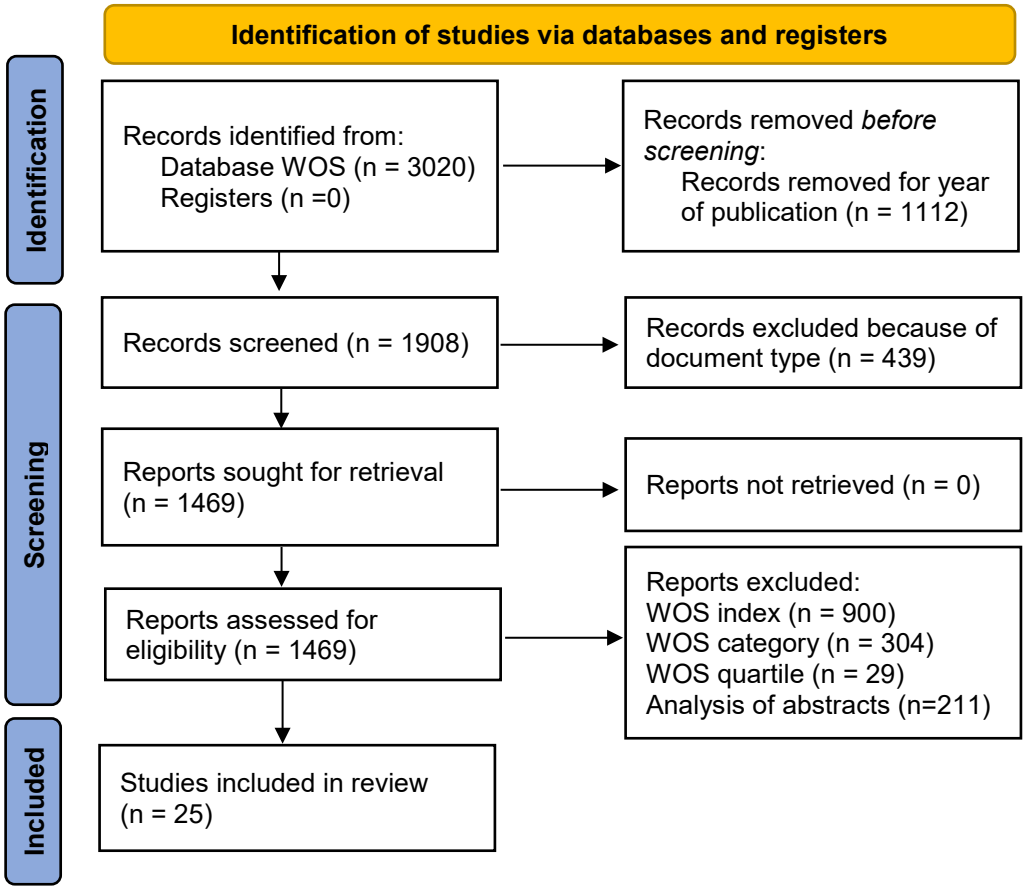

Figure 1. PRISMA diagram

Source: Authors' processing based on PRISMA flow diagram (Page et al., 2021).

A preliminary search in the Web of Science database using the keywords "competencies" and "human resource management" yielded a total of 3,020 scientific studies. To ensure the quality and relevance of these studies, a multi-step filtration process was applied, involving several criteria to select the most suitable papers.

In the first stage, the publication period was limited to 2015–2024, excluding 1112 studies outside this range. This timeframe focused on recent developments in „competencies" and „human resource management". Next, only peer-reviewed journal articles were retained, removing 439 publications such as conference papers and book chapters and so on. Only SSCI-indexed articles were kept, eliminating 900 studies not indexed in this database. Articles from unrelated fields were excluded, with a focus on the categories of business and management, resulting in 304 studies removed. To ensure quality, only articles from Q1 and Q2 journals were selected, removing 29

articles from lower-ranked journals. Finally, after reviewing abstracts, 211 studies were excluded for lack of relevance, specifically those that did not relate to competencies, human resource management (HRM), and smart industry, resulting in a final selection of 25 articles for in-depth analysis, offering valuable insights into competencies in human resource management and identifying key research gaps.

4. Results

In this section, we focus on our results and discussion. We focus on the research areas identified by the keyword-based bibliometric analysis and the findings of authors. We will then discuss the authors' findings focusing also on identifying gaps in the current literature and areas that require further research.

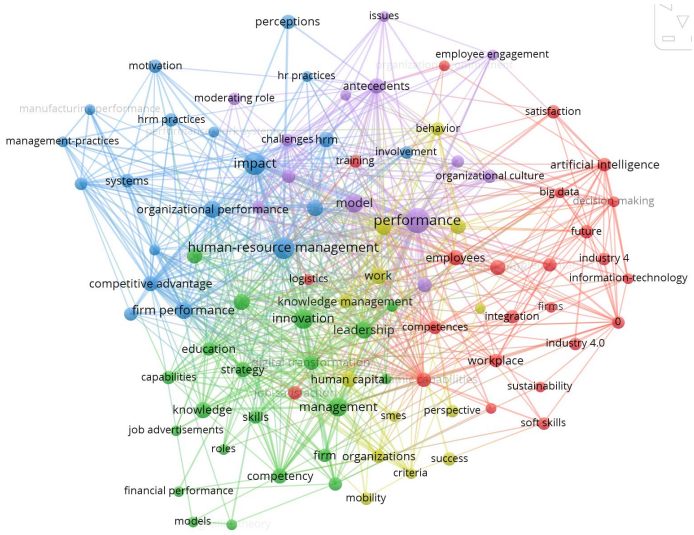

Figure 2. Bibliometric analysis

Source: Authors' processing through VOSviewer.

The bibliometric analysis shows that the topic of competencies and HRM is divided into five main areas. The first (blue cluster) focuses on linking HRM practices with company performance, addressing factors such as competitive advantage, organizational performance and motivational strategies. The second (green cluster) focuses on competency development, leadership and innovation. The third (red cluster) addresses modern technologies, Industry 4.0, AI and big data or soft skills. The fourth (purple cluster) is dedicated to employee engagement, organizational culture and performance. The fifth (yellow cluster) connects knowledge management, human capital, behavior and success. The overall analysis reveals key connections between competencies, HRM and challenges in the modern work environment.

Taken together, the clusters illustrate two dominant directions in the literature. The first focuses on linking HRM practices with organisational performance and the role of technology, including Industry 4.0, AI, and big data. The second highlights behavioural and managerial competencies, such as leadership, innovation, and employee engagement.

This shows that while the technological aspects of competencies are strongly represented, there is a parallel emphasis on interpersonal and managerial skills. Over time, the research has gradually moved from primarily technical considerations towards a more balanced perspective that also includes soft skills and human factors.

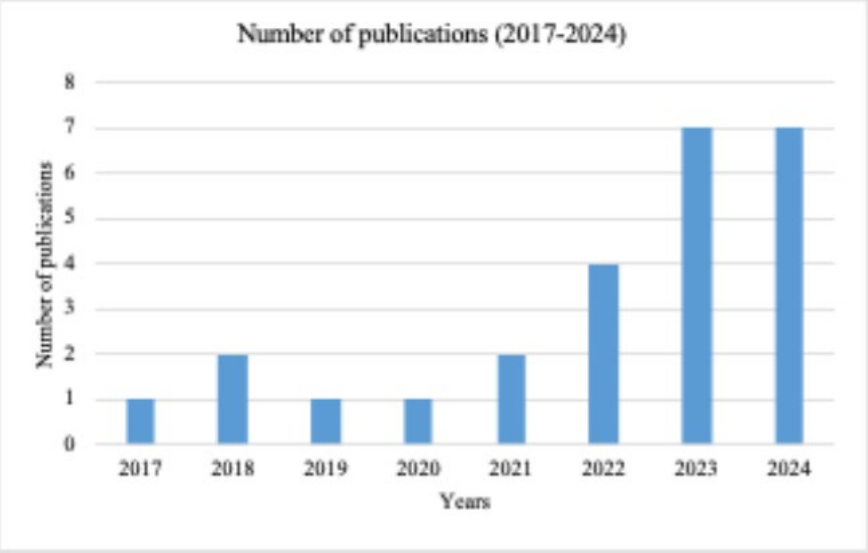

Figure 3. Number of publications from 2017 till 2024

Source: Authors' processing.

The figure presents the distribution of the 25 studies included in the systematic review based on the PRISMA procedure. The number of publica-tions on HR managers' competencies in the context of smart industry has grown significantly over the period 2017–2024. While research activity was relatively limited before 2021, the number of studies increased from 2022 onwards, reaching a peak in 2023 and 2024. This trend reflects the rising importance of digitalisation, Industry 4.0, and Industry 5.0 in shaping HR research agendas, as well as the growing recognition of the need to redefine managerial competencies in response to technological change.

The geographical distribution of the 25 studies included in the PRISMA review shows a strong concentration in China and India (4 studies each) and Germany (3 studies), indicating that these countries are currently the most active in researching HR

managers' competencies in the context of smart industry. Other contributions are scattered, with only one study per country or region, including Finland, Malaysia, the Netherlands, and several Central and Eastern European countries (e.g., Slovakia, Poland, Czech Republic, Hungary).

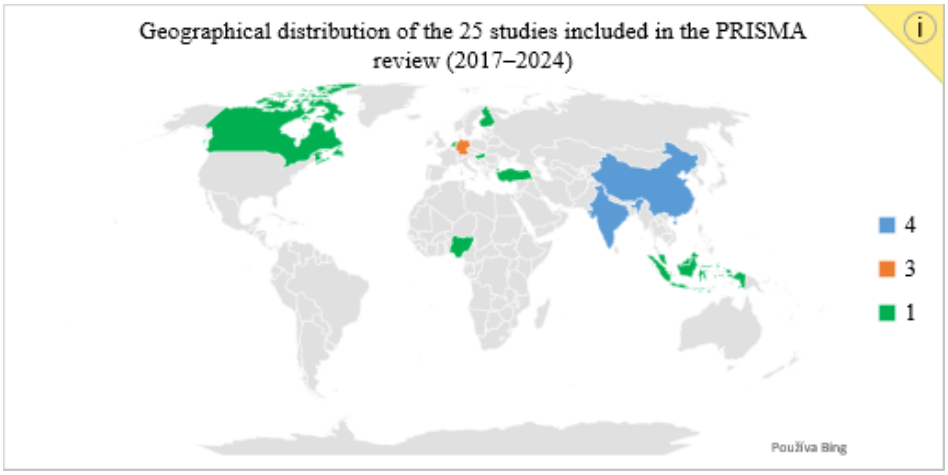

Figure 4. Geographical distribution of the 25 studies included in the PRISMA review (2017–2024)

Source: Authors' processing.

This imbalance highlights a limited geographical diversity in the existing literature, suggesting that future research should broaden its scope to underrepresented regions to capture a more global perspective on HR managers' competencies. This imbalance highlights a limited geographical diversity in the existing literature, with most research coming from Asian and European countries, while contributions from other regions remain relatively scarce.

The following table shows the authors' findings arising from the PRISMA analysis conducted, which presents the key findings and results of the authors' studies, used methodology, and also country or region and sample of the study.

Table 1. Findings of authors

Year	Author's	Findings/ Results	Methodology	Country or region	Sample Size
2017	Chen et al.	Firms using IT to support core competencies achieve greater strategic flexibility and performance.	Quantitative survey	China	148 firms

2018	Floethmann et al.	SCM knowledge and analytical skills are key, three times more important than management skills.	Quantitative survey	Germany	243 managers
2018	Kazancoglu and Ozkan-Ozen	Key criteria for selecting employees in Industry 4.0: the ability to manage complexity and solve problems, the ability to think in overlapping processes and flexibility.	Quantitative modelling (Fuzzy DEMATEL)	Turkey	1 high-tech firm
2019	Caputo et al.	Personal elements such as motivation and social competence influence the economic performance of firms, with Big Data as a mediator.	Survey + SEM modelling	Italy and China	4 758 employees
2020	Poba-Nzaou et al.	Three packages of IT and HR requirements for recruiting HR managers.	Content analysis	Canada	2 065 HR managers
2021	Kong et al.	Positive relationship between AI awareness and job burnout.	Quantitative survey	China	717 hospitality employees
2021	Shet and Pereira	14 key management competencies for Industry 4.0.	Conceptual/ theoretical	India	no sample
2022	Jaiswal et al.	Five critical skills for upskilling employees (data analysis, digital, complex cognitive, decision making and continuous learning skills)	Quantitative survey	India	311 employees from multinational corporations
2022	Lubis et al.	Soft skills training and individual characteristics influence readiness for transformational change.	Quantitative survey	Indonesia	200 bank Indonesia employees
2022	Ogbeibu et al.	Green talent management and leadership competencies influence turnover intention.	Quantitative survey	Nigeria	178 employees

2022	Sergi et al.	The key role of HR is confirmed and the need to combine creative skills and digital competences for a successful transition to Business 4.0 is highlighted.	Conceptual/ theoretical	Eastern Europe	no sample
2023	Bogdany et al.	Communication, problem solving and digital skills are key for HR professionals.	Conceptual/ methodological framework	Hungary	No sample
2023	Boehm et al.	Managers are willing to allocate a relatively high budget to competencies such as complex problem solving, analytical thinking and problem solving.	Case study	Germany	1 manufacturing company
2023	Gilli et al.	Digital leaders need technical skills and a wide range of leadership skills.	Content analysis	Germany	1 600 job advertisments
2023	Chowdhury et al.	AI implementation in HR also requires non-technical factors, not just technical resources.	Conceptual/ theoretical	UK	No sample
2023	Li et al.	Key competences for employees in the maritime logistics sector are entrepreneurial skills, logistics skills, management skills and digitalisation skills.	Quantitative survey	Singapore and China	128 maritime logistics executives
2023	Malik et al.	A strategic framework for HR managers to adopt AI in practice.	Conceptual/ theoretical	Australia and India	No sample
2023	Mei et al.	Data and information processing has become the most important competency of the future workforce for the implementation of digital technologies in higher education.	Quantitative survey	China	409 university students
2024	Deepa et al.	Key managerial competencies for AI adoption in HRM.	Systematic literature review	India	No sample

2024	Kumar et al.	Four ways to improve digital transformation in SMEs.	Fuzzy interpretive structural modelling	India	120 SMEs
2024	Piwowar-Sulej et al.	Employee-centric digitisation supports the development of employees' competences.	Quantitative survey	Slovakia, Poland, Czech republic	1 209 enterprises
2024	Shahruddin et al.	A thematic map for the design of up-skilling programmes with an emphasis on soft skills.	Case study	Malaysia	32 Malaysian architects
2024	Van Beurden et al.	Technological changes affect the organisation of HR work.	Case study	Netherlands	143 educators and students
2024	Voipio et al.	Lack of proficiency in digital problem solving in the hospitality industry.	Quantitative survey	Finland	251 hospitality employees
2024	Yu et al.	High demand for high-tech talent in smart construction.	latent Dirichlet allocation (LDA) model, frequency–inverse document frequency (TF-IDF) algorithm and k-means cluster analysis method	China	1 200 job postings

Source: Authors' processing.

The studies summarised in Table 2 confirm that digital and analytical skills are consistently recognised as crucial for HR managers (e.g., Chen et al., 2017; Jaiswal et al., 2022; Deepa et al., 2024). At the same time, several contributions highlight the importance of non-technical aspects, such as social competence, communication, adaptability, and leadership (Caputo et al., 2019; Bogdany et al., 2023; Gilli et al., 2023). This indicates that effective HR management in the smart industry context requires a combination of both digital expertise and behavioural competencies. However, there are also differences across studies: while some emphasise primarily technical proficiency (e.g., Jaiswal et al., 2022; Mei et al., 2024), others underline the necessity of interpersonal and leadership skills (e.g., Shahruddin et al., 2024; Gilli et al., 2023).

For a successful transition to Business 4.0, it is essential to combine creative capabilities and digital competencies, which are key factors in this process (Sergi et al., 2022). Shet and Pereira (2021) identified 14 key managerial competencies for Industry 4.0. These include agility, business intelligence, technology connectedness, business knowledge, design thinking, problem solving and decision making, collaboration, data analytics, disruptive leadership, research orientation, sustainability, robotic automation, digital intelligence, and project leadership. Kumar et al. (2024) identified ten key factors supporting adaptability to digital change, with managerial competencies, knowledge management, and monitoring and control processes being the most significant.

According to Gilli et al. (2023), successful digital transformation (DT) requires leaders capable of identifying and exploiting digital opportunities to create new business models. In doing so, technical skills play only a secondary role. In particular, strategic thinking, collaboration, leadership, customer focus and communication skills are key. The authors also stress the importance of personality traits such as proactivity and creativity, which are often required in job advertisements. In addition to expertise, digital leaders are expected to have a wide range of leadership skills, and digital transformation is linked to long-term strategic change in organisations. Piwowar-Sulej et al. (2024) conducted empirical research on a sample of 1,209 enterprises from Slovakia, Poland, and the Czech Republic between 2019 and 2021. They examined the impact of digitalization on employees' future competencies and found that employee-centric digitalization positively contributes to the development of future job skills.

Li et al. (2023) emphasise the importance of continuous development of core competencies and expand the framework of business, logistics and management skills to identify and organise new critical competencies. Their research has led to the development of a competency framework that includes four core competencies and eighteen sub-competencies in the areas of business, logistics, management and digitalisation. The results show that in the digital era, business skills are the most important for offshore maritime logistics leaders, followed by logistics, management and digital skills. Yu et al. (2024) focus on smart construction, Shahruddin et al. (2024) on the need for soft skills in architects, and Voipio et al. (2024) highlight the challenges associated with the lack of digital skills in the hospitality industry. These findings point to the need for HR managers to adapt their competencies in the context of technological innovation, as their role in managing employees and adapting organisations is crucial. Competency development is essential for the effective functioning of organisations and therefore managers should invest in education and training, which will promote the long-term success and high performance of organisations.

The higher education sector is expected to adapt to technological change and produce graduates with competencies that match industry requirements (Mei et al., 2023). The curriculum should integrate the knowledge needed to cope with these changes, such as technology change management, data literacy and ethics (Van Beurden et al., 2024). Despite the shortage of IT professionals, universities identify key skills for digital workers such as data processing and the ability to interact with modern interfaces (Mei et al., 2023). Boehm et al. (2023) confirm that investment in education, particularly in analytical thinking and problem solving, is key, while expertise in specific areas remains essential.

The authors of the study Lubis et al. (2022) focused on analyzing the impact of factors that influence Human Resource Competency 4.0 (HRC 4.0) and employees' readiness to embrace transformational change in organizations. The authors found that soft skills training and individual characteristics influence readiness for transformational change. Jaiswal et al. (2022) identify five key skills to upskill employees in AI: data analytics, digital skills, complex cognitive skills, decision making, and continuous learning. Emphasis on developing higher cognitive and technological competencies is key to effective human-AI collaboration. Completely delegating intellectual tasks to machines is neither beneficial nor ethical, given the complexity of the socio-economic environment. The development of collective intelligence supported by techno-cognitive skills is a promising direction for organizations (Jaiswal et al., 2022). Kong et al. (2021) found a positive relationship between AI awareness and job burnout, but a direct relationship between AI awareness and career competencies has not been confirmed. Organizational commitment played a key role in mediating these relationships. Chowdhury et al. (2023) argue that organizations should go beyond technical resources and focus on developing non-technical aspects such as human skills, leadership skills, teamwork, organizational culture, innovative thinking, management strategy, and integration of employees into processes using artificial intelligence (AI). The aim is to take advantage of the benefits of AI adoption not only from a technological perspective, but also from a human and organisational perspective.

AI is impacting human resource management (HRM), changing the nature of work, employees and the work environment. Although AI is considered as a key strategy to increase the productivity of organizations, existing studies have not yet offered a concrete framework for its implementation in HRM (Malik et al., 2023). Deepa et al. (2024) focused on the managerial competencies required for effective use of AI in HRM. These include managers' cognitive proficiency, ethical decision making, problem solving, digital literacy, technical expertise, leadership skills, and the ability to manage change. Social capital refers to the ability to leverage AI technologies, maintain social

justice, and improve the employee experience. The analysis shows that AI is most used in recruitment and selection, where it improves the efficiency of these processes. The authors highlight the need to develop specific managerial skills for successful AI adoption.

According to Poba-Nzaou et al. (2020), organizations identify three main sets of IT and HR competency requirements when selecting HR managers: (1) strategists, (2) technologists, and (3) core competency experts. The authors also point out that IT competencies of HR managers are more intertwined with other HR competencies than previously assumed, offering a new perspective on how to combine them when recruiting HR managers. Bogdany et al. (2023) identified core competencies in human resource management (HRM) that include communication skills, HR expertise and the ability to use digital tools. Other important skills are stress management and the ability for continuous learning. Conversely, competencies in areas such as mathematics, statistics, business ethics and economics were not considered a priority, even though they are key in HR education at university.

Ogbeibu et al. (2022) report that leaders' competencies in smart technology and talent management influence employees' intention to leave the organization. Caputo et al. (2019) examined the relationship between soft skills, IT and Big Data to link the human and technological aspects to improve firm performance. The research, which included 4,758 employees from 72 European high-tech firms, analysed the associations between employee personality traits, Big Data investment and firm economic performance using SEM modelling. The results showed a strong relationship between work motivation, social competence and firm performance, with Big Data investments mediating the relationship between employee behaviour and economic performance.

Chen et al. (2017) found that supporting core competencies through IT increases the strategic flexibility of firms, leading to better performance. This relationship depends on the type of IT infrastructure and the ownership structure of the firm (public or private). An analysis of a survey of 148 Chinese manufacturing firms showed positive relationships between IT support for competencies, strategic flexibility, and performance. IT infrastructure also positively influences the relationship between IT competence support and flexibility. However, SOEs make less use of IT applications to analyze market information, which limits their flexibility and performance. The study by Kazancoglu and Ozkan-Ozen (2018) deals with the selection of employees in Industry 4.0 and the modelling of the competence structure using the Fuzzy DEMATEL method. A high-tech firm evaluated 11 criteria, the key criteria being the ability to solve complex problems, flexibility and analytical thinking. The criteria were divided into a cause group (IT knowledge, cybersecurity, error correction) and an effect group

(adaptability, organizational understanding, interaction with technology). The results highlight the importance of interdisciplinary collaboration and teamwork in the transformation to Industry 4.0, with the Fuzzy MCDM method serving as a roadmap for companies.

Floethmann et al. (2018) addressed the competency requirements of supply chain planners and analysts (SCP&A) and the preferences of managers when selecting candidates. A survey of 243 managers assessed the importance of six competencies: analytical and problem-solving thinking, interpersonal skills, management skills, IT skills, SCM knowledge, and professional experience. The greatest emphasis was placed on SCM knowledge and analytical skills, which were three times more important than managerial skills. The results show that managers are divided into two groups: some prefer candidates with strong SCM knowledge, others with a balanced profile. These findings help companies better match employees to specific roles and improve performance and satisfaction.

Overall, the findings reveal that the literature consistently identifies two main dimensions of HR managers' competencies: technological skills (including data analysis, digital literacy, and AI-related competencies) and behavioural skills (such as adaptability, collaboration, communication, and leadership). Studies across different sectors, from manufacturing and logistics (Li et al., 2023) to construction and hospitality (Yu et al., 2024; Voipio et al., 2024), confirm the necessity of adapting competencies to technological innovations.

5. Discussion

Based on the findings from the conducted bibliometric and PRISMA analyses, we can answer the research questions RQ1 and RQ2.

RQ1: Which key research fields investigate the competencies required for HR managers in the context of Smart Industry? The results show that scientific studies addressing HR managers' competencies in the context of Smart Industry can be divided into two main research areas.

The importance of competencies and the impact of HRM practices on organizational performance - This area focuses on linking HRM with strategic business management, emphasizing the importance of competencies for competitiveness and organizational growth. For example, research shows that the use of IT to support core competencies leads to higher strategic flexibility and performance of enterprises (Chen et al., 2017).

In addition, the role of knowledge management and human capital in achieving organizational success is important (yellow cluster-bibliometric analysis). This thematic area also includes factors such as organizational culture, employee motivation and engagement (purple cluster-bibliometric analysis), which directly affect company performance.

Managerial competencies in the digital era - The second area focuses on specific skills and abilities that are essential for effective human resource management in the digital era/industry 4.0. Studies have identified key competencies such as analytical thinking, complex problem solving, digital skills and team leadership (Boehm et al., 2023; Gilli et al., 2023). In addition, research confirms the need to connect creative and digital competencies for successful business transformation (Sergi et al., 2022). This area also includes the importance of soft skills such as communication skills and social competence, which affect the economic performance of companies (Caputo et al., 2019). Bibliometric analysis shows that this topic is primarily represented in the red cluster, which shows the connection of keywords such as artificial intelligence, big data, industry 4.0 and competencies.

Across these areas, the literature shows both commonalities and divergences. While several studies emphasise primarily technical and digital skills (e.g., Jaiswal et al., 2022; Mei et al., 2024), others highlight the equal or even greater importance of behavioural and interpersonal competencies (e.g., Gilli et al., 2023; Shahruddin et al., 2024). This divergence indicates that there is not yet a unified perspective on which competencies should be prioritised, which opens space for further conceptual development. Moreover, earlier studies were more strongly focused on Industry 4.0 technologies, whereas more recent contributions increasingly address soft skills and human-centric approaches linked to Industry 5.0. The competencies identified in this review can also be interpreted through established theoretical perspectives. For example, several of the managerial and behavioural skills highlighted in the literature (e.g., adapta-bility, leadership, collaboration) correspond with Ulrich's HR competency model (Ulrich, 1995), particularly the roles of change agent and employee champion. At the same time, the findings resonate with the dynamic capabilities theory (Teece et al., 1997), as they reflect managers' ability to integrate, reconfigure, and develop resources in response to the challenges of digital transformation. Linking the observed competencies with such frameworks provides a stronger conceptual grounding and situates the review within broader theoretical paradigms.

RQ2: What are the research gaps that hinder a comprehensive understanding of HR managers' competencies in addressing the challenges posed by Smart Industry? The results of the analysis reveal the following research gaps that hinder a comprehensive

understanding of HR managers' competencies in addressing the challenges posed by Smart Industry.

Geographical diversity of research - Most existing studies focus on countries such as the USA, France, the UK and India. Due to cultural, economic and organizational differences between these countries and other regions, research results may not be fully applicable to different countries such as those in Europe or Asia. There are significant differences in business culture, technological advances and approaches to digitalisation that may affect the competencies of HR managers. Therefore, it would be advisable for research on HR managers' competencies in the context of Smart Industry to include other geographies and take these differences into account when formulating recommendations.

Comprehensiveness and linking of competences - Although many studies (Shet and Pereira, 2021; Li et al., 2023; Mei et al., 2023; Deepa et al., 2024) focus on specific competences of managers in the context of digitalisation, industry 4.0, etc., there is still no sufficiently integrated framework that comprehensively covers all relevant factors influencing these competences and focuses on the competences of HR managers that are influenced by the introduction of different technologies. In order to gain a better understanding, it is necessary to include other factors such as organisations, environments and technologies that are constantly evolving and influencing the dynamics of the labour market.

Challenges related to ethical aspects and competences of HR managers - Malik et al. (2023) highlighted that AI is changing the nature of work, employees and the work environment, but there is still a lack of a concrete framework for its implementation in HRM. Deepa et al. (2024) identified the managerial competencies needed to use AI effectively in HRM, which include ethical decision making and the ability to manage change. Yet, there is insufficient research that systematically examines how these ethical challenges affect HR managers' competencies and what new approaches are needed to develop them. HR managers need to address the issues of fair use of algorithms in recruitment, data protection and ensuring equality of oppor-tunity in the digital environment. Chowdhury et al. (2023) pointed out the need for human skills development, teamwork and organisational culture in the implementation of AI, but there is still a lack of research linking these aspects to the competency development of HR managers. Therefore, future studies should focus on identifying the specific ethical challenges HR man-agers face and designing strategies to manage them effectively within the Smart Industry.

6. Conclusion

This study contributes by systematically synthesising existing research on HR managers' competencies in the context of smart industry, identifying two main thematic areas and highlighting key research gaps.

The findings have several implications: practically, they guide HR managers in developing digital and interpersonal skills for Industry 5.0; socially, they emphasise employee adaptability in the labour market; and educationally, they underline the importance of integrating digital and soft skills into HRM curricula. Higher education and professional programmes should include simulations, project-based assignments, and interdisciplinary courses that prepare future HR managers for the environment of smart industry.

The study is limited by the reliance on a single database (WoS) and restricted keywords, which may have led to the exclusion of relevant studies. Future research should therefore expand to other databases (e.g., Scopus) and adopt interdisciplinary approaches to strengthen the comprehensiveness of the review. In light of these findings, we recommend that future research expand its focus to a broader geographical context and take regional differences into account when formulating recommendations. For a deeper understanding of the issue, other factors such as organizational structures, work environments and technological trends need to be included. Special attention also needs to be paid to identifying the specific ethical challenges that HR managers face in order to design effective strategies to manage them in the context of the smart industry. The dynamic capabilities theory (Teece et al., 1997) has been recognised in the literature as a relevant perspective for analysing how organisations and managers adapt competencies in rapidly changing environments. While this study primarily focused on synthesising existing empirical findings, future research could build on this theoretical lens to further enrich the understanding of HR managers' competencies in the context of smart industry.

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THE CHARACTERISTICS AND IMPACT OF FEMALE LEADERSHIP STYLES IN THE CONTEMPORARY BUSINESS WORLD: AN EMPIRICAL STUDY OF THE INTERNATIONAL BUSINESS WOMEN'S NETWORK

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Abstract

This study examines the characteristics of female leadership styles in the business world, with a focus on their relevance in contemporary managerial practices. The research aims to highlight the advantages of female leadership traits and explore their potential in addressing the limitations of traditional male leadership styles, often viewed as unsuitable for long-term success in today's dynamic business environment. Conducted through a structured questionnaire among members of the International Business Women's Network, the study adopts an empirical approach to identify key leadership attributes exhibited by female managers, including responsibility, loyalty, reliability, creativity, strong communication, and a collaborative mindset. The findings indicate that female leadership is predominantly associated with democratic and participative styles, which foster innovation, enhance problem-solving, and create a

supportive organisational culture. This research contributes to the existing literature by emphasizing the importance of integrating female leadership qualities into contemporary business management. The study's originality lies in its empirical exploration of female leadership within an international business context, offering valuable insights for leadership development programs. Its focus on a specific network limits the research, suggesting broader studies are needed across diverse organizational settings. The implications advocate for a shift towards more inclusive leadership models that leverage the strengths of female leadership for sustainable business success.

Keywords: *female leadership, leadership style, business management, leadership characteristics*

JEL classification codes: *M12, J16, L26*

1. Introduction

This survey investigates whether the common perception of female managers as less effective, a belief often fueled by women's struggle for leadership in male-dominated environments, is supported by evidence from women in business (Bamiatzi et al., 2015). To achieve this, a sample of 36 members from an international networking organisation established in 2017 in Zagreb was analysed using qualitative methods to gain insights into their leadership styles and effectiveness in the business environment. This study examines how these distinctive leadership traits impact organisational dynamics and contributes to the success of women-led enterprises in today's competitive environment. Understanding these traits is essential not only for promoting gender equality in leadership roles but also for recognizing the distinctive approaches that female leaders bring to the corporate environment. These traits often include collaboration, empathy, and effective communication, enhancing team dynamics and improving organizational performance. The discussion presents evidence of what businesswomen believe makes good business leaders. In the early 21st century, only a minority of business leaders were women (Cook and Glass, 2016), raising the question of whether gender affects leadership style, participation, and effectiveness in business. Such a query merits attention, given that women are increasingly participating more equally in the workforce, including at higher managerial levels (Davidson and Burke, 2016). This interest is also justified in the context of political and social pressures to address women's relatively low status in society, as shown by their exclusion from top management positions in some Western societies (Nemoto, 2016). While the growing presence of women in managerial

positions does not necessarily imply a significant challenge to established business practices, it has led to questions. The spectre of women at the top and in charge of corporations that men traditionally manage has raised general uncertainty and anxiety. Male leaders are often perceived as more substantial, influential, goal-oriented, assertive, and practical, whereas female leaders are portrayed as more human, collaborative, non-competitive, and nurturing (Fotophabadi, 2015). This research aimed to identify the styles, or aspects of styles, that are significantly different under female versus male management. Recent contributions by Vallet (2024) emphasize that the rising presence of women in institutions like central banks does not equate to structural change, as many remain excluded from true decision-making roles. Despite growing political and social pressures to address gender disparities in leadership, there is a lack of recent empirical research examining how female leadership styles manifest within international business networks, particularly in underrepresented regions such as Southeast Europe. There is a lack of evidence comparing the effectiveness of female and male leadership styles. The study highlights the need to explore how female leaders confront persistent stereotypes that associate men with stronger leadership traits, such as assertiveness and goal orientation, while portraying women as more nurturing and consensual. This gap suggests a lack of comprehensive research examining how these stereotypes impact female managers' leadership performance and effectiveness in diverse business environments.

2. Literature review

2.1. Conceptual framework of leadership styles

“Leadership,” according to one widely accepted definition, is the influential increment over and above mechanical compliance with the routine directives of the organization. While leadership may be simple, it has been a complex research area for over 40 years. The literature of leadership studies covers a broad range of topics, from distinguishing an outstanding leader (Ligon, 2004) to how leadership styles change in various countries (Jogulu, 2010), how leaders affect their followers, and how leaders may influence the development of different organizations. For a long time, leadership research has considered the role gender may play in adopting different leadership styles (Davidson et al., 2010; Dwiri and Okatan, 2021) and developing alternative leadership characteristics. Most leaders and leadership characteristics are still perceived as male or considered masculine due to gender stereotypes. Leadership research has long examined the role of gender in leadership styles and characteristics, with leader stereotypes generally perceived as masculine (Bamiatzi et al., 2015). The literature has traditionally posited certain traits and capabilities associated with

entrepreneurial success (Ge et al., 2009), which are often attributed to men rather than women. Those traits are competitive, risk-taking, innovative and assertive. In the changing world of entrepreneurship, the organisation of the firm and the requisite skills of leaders began to be questioned. If all characteristics of a leader can be taught or learnt, there appears to be no reason to prioritise male capabilities and interests. Early on, McClelland et al. (2005) noted, 'very early experiences in childhood are still programming men and women differently', leading to societal expectations of appropriate male and female behaviour. More recently, Heilman (2012) found that leaders' attributes relate to the stereotypicality of leadership styles and the gender consistency of the leader role, leading to bias in received perceptions. Consequently, when behaviour does not comply with stereotypical expectations, women are evaluated less favourably, even when they adopt directive leadership styles, such as selling or initiating. Managerial and Mintzberg (2020) emphasise that effective leadership is less about command and control and more about orchestrating complex human systems, where empathy, trust, and informal communication are essential for coherence and performance. They further argue that managers must shift from heroic leadership models toward a more engaged and distributed form of leadership, which aligns closely with the collaborative and participatory traits often attributed to female leaders. This dismissal often occurs despite beliefs that the behaviour under critique may be highly effective in specific contexts. Individual qualities, such as intelligence, adjustment, extroversion, and neuroticism, predict who will be a better leader and anticipate the leader's effectiveness, as evaluated by followers, peers, or superiors. It is noticed that such virtues as high calculation and formidable courage, along with some manly qualities, are critical in following reason and thought and acting with vigour. On the other hand, women are, in general, timid and are accordingly very much inferior to men in all points of just attainment and intellectual strength. This so-called "evidence" shows a bias against female leaders. Female leaders in contemporary business consistently exhibit transformational styles that emphasize interpersonal skills, empathy, and collaboration. Chuang and Eversole (2022) propose that such competencies are vital for navigating digital transformation in Industry 4.0, while Trinidad and Normore (2005) emphasise the importance of emotional intelligence, integrity, and participatory decision-making. In higher education, Kumari et al. (2023) note that characteristics such as balance, systematic thinking, and goal orientation distinguish effective female leadership. In entrepreneurial settings, Bamiatzi et al. (2015) describe a nuanced profile in which transformational leadership may coexist with autocratic tendencies to meet situational demands. The question of how females prove themselves as good leaders is an intriguing issue. Still, it is debated in contemporary literature. Questions persist among researchers: Do females exhibit different leadership styles than males? Do females perform less in leadership roles than males? A strong message in business today is the need for a new style of

leadership that empowers more, instructs less, and identifies and nurtures leadership potential in others (Wehr, 2001). Although various initiatives have sought to articulate the specific competencies and characteristics essential for effective leadership, a definitive consensus remains elusive. This underscores the necessity for more in-depth and systematic research on the subject. As Breda et al. (2020) indicate, while gender-based occupational segregation is indeed amenable to reduction, it does not diminish organically with socioeconomic development alone.

2.2. Characteristics of female leadership styles

Leadership research has long been preoccupied with examining whether women lead differently or should lead differently from men. Over the past 30 years, empirical research has consistently shown that female leaders are more democratic, participative, interpersonally oriented, and transformational than their male counterparts (Eagly and Johannesen-Schmidt, 2001). These leadership styles are purportedly more effective than the autocratic and task-oriented approaches typically adopted by males; thus, female leaders are generally rated more positively by their followers. Despite this, females inevitably encounter gendered expectations, role conflicts and harassment at work, which could affect their preferences and experiences of leadership style. This is more pronounced in the family context, indicating that businesswomen who combine motherhood and management face a complex and challenging role. Research on female leadership style characteristics suggests that female leaders often exhibit transformational and collaborative leadership styles, emphasising cooperation, engagement, and a holistic approach to decision-making (Alhalwachi, 2018; Silva and Mendis, 2017). Women leaders tend to demonstrate more transformational qualities than their male counterparts, which may help them overcome obstacles to their leadership (Silva and Mendis, 2017). Female leadership characteristics, such as risk aversion and strategic thinking, can contribute to balanced organizational growth (Alhalwachi, 2018). However, women still face challenges in attaining leadership positions, including stereotypes, the glass ceiling phenomenon, and the "male alpha syndrome" (Abdulrahman and Amoush, 2020). Despite these obstacles, female leadership is increasingly recognized as beneficial in today's innovative and flexible business environment (Abdulrahman and Amoush, 2020). A study on womenpreneur leadership found that female leaders tend to exhibit a dominant feminine leadership style, characterised by people-oriented approaches and charisma (Desri et al., 2023). Research on female leadership suggests that women often exhibit transformational, democratic, and participative leadership styles, which are generally viewed more positively than the autocratic styles associated with men. Despite these strengths, women face significant challenges, such as gendered

expectations, stereotypes, and the glass ceiling, which complicate their leadership roles, especially when balancing family and management responsibilities (Eagly and Carli, 2018).

2.3. Impact of female leadership styles

Female leadership styles have been the focus of significant attention in recent years as organizations recognize their potential to influence various aspects of business performance. This section explores the characteristics of successful female leadership styles and their impact on organizational outcomes, including performance, employee satisfaction, and innovation. Empirical research on female leadership styles highlights the correlation between perceptual leadership measures and organizational performance. By examining constructs such as planning, organizing, directing, and control processes, researchers found statistically significant differences in female-led companies, particularly in financial performance (Parrotta and Smith, 2013). These leadership styles are often linked to improved organizational outcomes, suggesting that women-led businesses outperform in financial metrics due to effective decision-making and strategic planning. Moreover, Book et al. (2019) found that female leadership has been associated with enhanced employee satisfaction and engagement. Engaged employees who feel valued and supported by leadership tend to demonstrate higher levels of productivity and commitment. Studies of companies within the International Businesswomen's Network (IBWN) conducted by Margolis et al. (2021) reveal that female-led organizations foster environments that promote active employee participation and motivation, contributing to overall business success. This relationship between leadership and employee engagement underscores the importance of empowering women in leadership positions. Innovation and creativity are also key areas in which female leadership has a notable impact. Leaders who foster a culture of openness, experimentation, and encouragement are more likely to drive innovation within their teams. Often associated with female leaders, transformational leadership is critical in establishing norms that promote creativity, enabling organizations to stay competitive in dynamic markets. Consequently, female leadership styles are associated with improved performance, increased employee satisfaction, and enhanced business innovation and creativity.

3. Research methodology

This study utilizes an exploratory, descriptive research design focused on female members of the International Businesswomen's Network. A total of 36 participants were surveyed using a non-probability, convenience sampling technique, with an

online questionnaire distributed via WhatsApp. The questionnaire was structured around a 5-point Likert scale measuring agreement with statements about leadership traits and perceptions. However, it is essential to note that the research instrument was not formally validated, as it was neither piloted nor tested for reliability metrics, such as Cronbach's alpha. No control variables were introduced, and the study did not apply statistical tests to confirm validity or significance. The analysis was limited to descriptive statistics, including frequencies and percentages. While these offer fundamental insights, the absence of inferential analysis limits the ability to generalise results beyond the study population. In future research, statistical methods such as t-tests, correlation analysis, or ANOVA should be incorporated to enhance the scientific rigour of the findings. Given these limitations, the results of this study should be interpreted as exploratory and indicative rather than conclusive or generalizable. This approach helps illuminate key patterns and perceptions among the sampled women; however, it should not be extended without further validation.

3.1. The research instrument

A survey questionnaire was created for this paper and used for the research. The survey questionnaire consisted of 20 questions, primarily closed-ended, requiring respondents to select one of the answers provided. In the introductory section of the questionnaire, respondents were informed about the purpose of the research, the confidentiality of their participation, and how the results would be utilized. The first eight questions pertained to respondents' sociodemographic data and information about the company where they were employed. The remaining 12 questions examined the respondents' views on the characteristics of female leadership style. The questions were designed so that the respondent could choose one of several answers or indicate the extent to which they agreed or disagreed with a particular statement on a five-point Likert scale. The value 1 represents "I completely disagree", and the value 5 represents "I completely agree".

3.2. Data collection methods

The data was collected through a survey. It was distributed online by the International Businesswomen’s Network's Executive Director. The sampling frame consisted of the International Businesswomen’s Network WhatsApp group, which comprised 70 members in Croatia. The goal was to gather data about the characteristics of firms, industries, and societal attributes that drive successful women's global leadership. The questionnaire consisted of three parts, focusing on the character of female leaders and

their leadership styles. Each question was presented as a statement, and the respondent was asked to tick the most suitable response in the check box. Through convenience sampling, data collection produced a sample of businesswomen representing a range of industry sectors and firm sizes.

3.3. The sample

As noted, 36 women entrepreneurs participated in the study. The sociodemographic data on the respondents are presented in Table 1.

Table 1. The respondents' sociodemographic data

Age	**N**	**%**
from 18 to 21 years	0	0,0
from 22 to 25 years	0	0,0
from 26 to 30 years	1	2,8
from 31 to 35 years	6	16,7
from 36 to 40 years	7	19,4
from 41 to 45 years	10	27,8
from 46 to 50 years	5	13,9
from 50 to 55 years	5	13,9
56 years and more	2	5,6
Marital status		
single	2	5,6
married	23	63,9
extramarital union	6	16,7
divorced	5	13,9
widow	0	0,0
Education		
without primary school	0	0,0
primary school	0	0,0
secondary school	6	16,7
undergraduate studies	4	11,1
graduate studies	18	50,0
doctoral studies	8	22,2
Working experience		
up to 5 years	0	0,0
from 6 to 10 years	6	16,7
from 11 to 15 years	9	25,0
from 16 to 20 years	5	13,9
from 21 to 25 years	7	19,4
from 26 to 30 years	6	16,7
31 years and more	3	8,3
Total	36	100,0

Source: Authors' calculation.

The sample is dominated by respondents aged 41 to 45 (27.8% of the total respondents). This is followed by respondents aged 36 to 40 (19.4%) and 31 to 35 (16.7%). When it comes to marital status, most respondents are married (63.9%), followed by those in a common-law relationship (16.7%), and those who are divorced (13.9%). Regarding the level of completed education, half of the respondents hold a graduate degree, while 22.2% hold a doctoral degree. Regarding years of work experience, respondents with between 11 and 15 years of work experience are in the lead (25%), followed by respondents with between 21 and 25 years of work experience (19.4%). After questions about the respondents' sociodemographic data, the questionnaire contained several questions related to the company where the respondents were employed.

Table 2. Respondents' company size

Size of the company in which the respondents are employed	**N**	**%**
small company (< 50 employees)	30	83,3
medium company (from 51 to 250 employees)	1	2,8
large company (more than 250 employees)	5	13,9
The main activity of the company		
service	35	97,2
production	1	2,8
Respondents' perception of the company's business success		
weaker than the average for the industry/activity in which the company operates	3	8,3
an average for the industry/activity in which the company operates	16	44,4
above the average for the industry/activity in which the company operates	1	2,8
I do not know	3	8,3

Source: Authors' calculation.

Most respondents (83.3%) are employed in a small company (up to 50 employees). Almost all respondents (97.2%) are employed in a company whose activity is predominantly service-oriented. Slightly less than half of the respondents (44.4%) believe that the company's business activity is average for the industry/activity in which the company operates.

The following questions in the survey questionnaire examined the respondents' opinions on female leadership in the business world. Table 3 presents the respondents' views on the extent to which specific characteristics of female leadership in the business world are characteristic.

Table 3. The respondents' views on the extent to which certain traits are characteristic of a female leadership style in the business world

Traits	I completely disagree		Somewhat disagree		Neither disagree, nor agree		Somewhat agree		Completely agree	
	f	%	f	%	f	%	f	%	f	%
Team work	0	0,0	2	5,6	4	11,1	11	30,6	19	52,8
Courage (taking risks)	0	0,0	3	8,3	7	19,4	13	36,1	13	36,1
Enthusiasm	0	0,0	0	0,0	3	8,3	11	30,6	22	61,1
Active listening	0	0,0	2	5,6	6	16,7	11	30,6	17	47,2
Safety (risk avoidance)	1	2,8	3	8,3	6	16,7	16	44,4	10	27,8
Emotional intelligence	0	0,0	1	2,8	2	5,6	13	36,1	20	55,6
Strength (ability to carry out actions)	0	0,0	6	16,7	9	25,0	21	58,3	0	0,0
Peopleoriented	0	0,0	0	0,0	4	11,1	12	33,3	20	55,6
Determination	0	0,0	2	5,6	5	13,9	8	22,2	21	58,3
Aggressiveness	3	8,3	10	27,8	14	36,9	4	11,1	5	13,9
Selfconfidence	0	0,0	5	13,9	10	27,8	9	25,0	12	33,3
Cooperation	0	0,0	1	2,8	5	13,9	16	44,4	14	36,9
Risk taking	1	2,8	6	16,7	8	22,2	15	41,7	6	16,7
Consideration	0	0,0	1	2,8	6	16,7	13	36,1	16	44,4
Openness	0	0,0	0	0,0	5	13,9	16	44,4	15	41,7
Intuitiveness	0	0,0	0	0,0	4	11,1	9	25,0	23	63,9
Results oriented	0	0,0	3	8,3	7	19,4	12	33,3	14	36,9
Information sharing	0	0,0	1	2,8	9	25,0	16	44,4	10	27,8
Independence in performing tasks	0	0,0	2	5,6	2	5,6	16	44,4	16	44,4
Respecting other people's opinions	1	2,8	3	8,3	5	13,9	15	41,7	12	33,3
Empathy	0	0,0	2	5,6	5	13,9	11	30,6	18	50,0

Source: Authors' calculation.

More than half (52.8%) of respondents agree that teamwork is characteristic of a female leadership style in business. The characteristics for which half or more of the respondents stated that they completely agree that these characteristics are typical of a female leadership style in the business world stand out: enthusiasm (61.1%), emotional intelligence, people orientation (55.6%), determination (58.3%), intuition (63.9%) and empathy (50%). Furthermore, 58.3% partially agree that strength (the ability to implement actions) is a characteristic of a female leadership style in business. The share of respondents who partially agree that safety (risk avoidance), cooperation (teamwork), openness, a tendency to share information, and independence in performing tasks are characteristics of a female leadership style is also significant (44.4%), as is the share of respondents who also answered for a tendency to take risks and respect other people's opinions (41.7%). Accordingly, it is interesting that risk-taking is recognized as a characteristic of the female leadership style. At the same time,

safety, or risk avoidance, is also recognized as a characteristic of the female leadership style.

Regarding the activities, the respondents consider characteristic of a female leadership, it was shown that respondents (77.8%) considered organizing an activity of a female leadership style. Furthermore, the respondents highlighted organizing, goal setting, and mentoring as activities characteristic of the female leadership style (55.6%). Organizing can include resource alignment, time management, and coordination among team members, contributing to higher productivity and a better work environment. Goal setting, building a pleasant work environment, and mentoring are also highlighted. The fact that the respondents mentioned goal setting to a significant extent may mean that they believe that female managers emphasize the importance of clear and measurable goals for leading their teams. Setting goals can help direct team efforts, monitor progress, and achieve desired results. Similarly, according to the respondents, female managers create a pleasant work atmosphere so employees feel valued and know they can count on the necessary support. This can affect their motivation, job satisfaction, and productivity. Mentoring is a key activity that refers to transferring knowledge, advice, and support to subordinates or less experienced team members.

The respondents believe that superiors should use a feminine leadership style in business, as they perceive it as a more efficient leadership style. Most respondents (33.3%) neither agreed nor disagreed that the female leadership style is more prevalent in the business world than the male one, followed by respondents who disagreed (30.6%). Furthermore, most respondents (44.4%) partially agreed that there are significant differences between male and female leadership styles in the business world, followed by those who completely agreed with this statement (38.9%). Almost three-quarters of respondents (72.2%) fully agree that superiors should encourage independence and responsibility in their employees through their leadership style. This can also be linked to the statement that superiors should encourage the participation of their subordinates in all types of decision-making and at all levels of decision-making, with which 72.2% of respondents partially agree. Furthermore, 50% of respondents partially agree that superiors should consult their subordinates on proposed actions and decisions. Fifteen respondents, or 41.7%, each partially agreed that superiors should prefer a democratic leadership style and encourage employees to participate in all aspects of the business. The respondents were asked about their satisfaction with their leadership style. More than half of the respondents, 21 or 58.3%, are completely satisfied with their leadership style. Furthermore, seven respondents, 19.4%, are somewhat satisfied with their leadership style, while six respondents, 16.7%, are neither satisfied nor dissatisfied. Only 2.8% of respondents are somewhat

dissatisfied or completely dissatisfied with their leadership style. The respondents were asked to identify what they believed were the obstacles preventing women from advancing in the business world. Most respondents (55.6%) believed that prejudice against women affected women's advancement in business. In addition, a significant proportion of respondents believed that the inability to balance work and private obligations (50%), the lack of support for women mothers (47.2%), and the so-called glass ceiling (44.4%) were obstacles that negatively affected women's advancement in the business world. The respondents mostly prefer a feminine leadership style (this was the answer given by 77.8% of respondents). The remaining respondents prefer a masculine leadership style. Respondents prefer a particular leadership style mainly because they believe it leads to better business results (66.7%) and because they feel more comfortable in the workplace when their superiors use it (52.8%). In addition, half of the respondents stated that such a leadership style motivates them as employees.

4.3. Research results analysis

The research showed that female respondents prefer a feminine leadership style. These results support the findings of previous research. Specifically, a meta-analysis conducted by Akonkwa et al. (2022) revealed that respondents in their study preferred a democratic leadership style. It is well established that women in leadership positions most often employ this leadership style. Democratic leaders encourage employees to express their opinions, contributing to a better work atmosphere, greater motivation and higher levels of trust within the organisation. This leadership style also proved to be more effective in situations that require creativity, teamwork, and innovative problem-solving approaches. The study's results suggest a strong correlation between the preferred leadership style and perceptions of effectiveness, a pleasant work atmosphere, and employee motivation. The respondents believe that the leadership style contributes to increased efficiency and better business results. Additionally, when a supervisor employs a leadership style that aligns with employees' preferences, they feel more comfortable in the work environment. This is associated with a sense of respect and appreciation, as well as a greater level of social and emotional support. If a particular leadership style is motivating, it suggests that the style aligns with their values and approach to work. This can enhance intrinsic motivation, leading to increased engagement and job satisfaction. Since the respondents prefer a feminine leadership style and agree with statements about how superiors should behave. It can be concluded that the respondents believe that superiors should use a feminine leadership style in the business world. The respondents cite the most significant obstacles to women's advancement in the hierarchical structure as prejudice against

women and the inability to balance private and professional obligations. In their research, authors Eagly and Carli (2018) examined gender biases and their impact on women's advancement in the business sector. The authors concluded that prejudice against women can limit their opportunities for advancement. They emphasized that women often face challenges balancing professional and private obligations because they are expected to take on most family responsibilities. Research conducted by Hewllet and Luce (2005) showed that the lack of support for women mothers and the inability to balance family and professional obligations affect women's advancement. The authors noted that women often leave their jobs due to family obligations, and the lack of flexibility and support makes it difficult for them to return and advance in their careers. One of the obstacles is the glass ceiling, or the invisible barrier that women must overcome to be promoted to management positions. Thus, the study by Purcell et al. (2010) analyses the glass ceiling through quantitative data, showing that women often remain at middle and lower management levels despite their qualifications and experience. Therefore, the above represents significant obstacles to the advancement of women in management positions. These barriers can negatively impact women's opportunities for advancement and professional development. Therefore, companies that aim to promote gender balance and equality in leadership positions must work to overcome these challenges. The survey found that most respondents were satisfied with their leadership style. This is consistent with previous research that shows that women often report satisfaction with their leadership style, especially when it is aligned with their values and the culture of the organization where they work, which supports inclusiveness and collaboration. However, women also face challenges and barriers in their roles. Eagly and Carli (2018) investigated how women in leadership positions perceive their leadership style in the context of gender norms. Their research showed that women often use transformational and participative leadership styles, emphasizing collaboration and employee involvement. Women are generally satisfied with their leadership style if the company's values are consistent with their approach. However, the research also highlights that women can experience challenges in companies that prefer an autocratic leadership. A high percentage of respondents believe that superiors should prefer a democratic leadership style and should encourage employees to participate in all aspects of the business. A democratic leadership style emphasizes cooperation, open communication, and respect for employee opinions, which leads to greater satisfaction, productivity, and motivation. A meta-analysis by Eagly and Johnson (2001) revealed that respondents prefer a democratic leadership style because it fosters cooperation, involvement in decision-making processes, and increased job satisfaction. The fact that female respondents recognize organizing as a key activity of female leadership style may indicate that their approach to leadership often emphasizes the importance of organizational efficiency and planning. Women in leadership positions may be more inclined to establish clear

structures and processes within the team, ensuring that all elements of the work function harmoniously and efficiently. The research conducted by Eagly and Carli (2003) showed that women in leadership often emphasize organizational aspects such as planning, coordination, and clearly defined roles in the team, which may be related to their approach to leadership. This leadership style reduces hierarchical distance and improves communication between leaders and subordinates. Therefore, it is unsurprising that individuals prefer a democratic leadership style, as it allows for greater involvement, cooperation and openness in decision-making. Additionally, the respondents believe that superiors should encourage subordinate participation in all aspects of the business. Such employee participation leads to greater satisfaction, increased productivity, and increased loyalty to the company. Namely, a participative leadership style, which includes active consultation of employees and their inclusion in decision-making processes, improves employee engagement, productivity and the quality of business decisions. Likewise, such a leadership style fosters trust between employees and management, ultimately leading to improved business success. Half the respondents agree that superiors should consult their subordinates about proposed actions and decisions. Such behaviour is most often associated with the participative leadership style, which has been repeatedly pointed out as the leadership style preferred by women in management positions. Such a style emphasizes the importance of cooperation, involving employees in decision-making and respecting their opinions, thereby strengthening subordinates' sense of belonging and responsibility. Research conducted by Yukl (2011) supports the idea that participative leadership, which involves consulting with employees, improves the quality of decisions and increases employee motivation. Leaders who consult their teams before making important decisions often receive better information and can consider different perspectives, which leads to better outcomes and greater employee loyalty. Among other things, the respondents believe that superiors should utilize their leadership style to foster independence and responsibility in their employees, as well as encourage the participation of their subordinates in all types of decision-making and at all levels of decision-making. These approaches are associated with participative or transformational leadership, in which leaders provide support but also expect a high degree of autonomy and responsibility from their teams. The George and Jones (2015) study highlights the importance of leadership styles that allow employees to be independent and responsible. Leaders who encourage employees to take control of their tasks encourage greater responsibility and proactive behavior. This leadership style enables the development of competencies and confidence in their abilities. The study results showed that the respondents agreed or strongly agreed that there are significant differences between male and female leadership styles in the business world. These results align with those of other studies. For example, the meta-analysis conducted by Vinkenbur et al. (2011) showed significant differences between men and

women in leadership styles, namely that women practice a transformational leadership style to a greater extent. In contrast, men are more inclined to a transactional or autocratic style. Therefore, it can be assumed that female respondents perceive male leadership as the more dominant leadership style in the business world. The results of other studies can support these findings. Although women are increasingly present in leadership positions, gender stereotypes still play an important role in shaping perceptions of men's suitability for leadership, especially in high-risk and competitive environments. In their study, del Carmen Triana et al. (2024) proposed a theory of gender role congruence, which suggests that individuals are more likely to associate leaders with masculine characteristics, such as determination, authoritarianism, and ambition. The authors claim that the male leadership style is perceived as more natural in the business world. When women assume leadership roles and employ an autocratic leadership style, they often encounter resistance because their approach does not align with the traditional male leader stereotype. The fact that respondents recognize mentoring as an important aspect of women's leadership style may indicate that women leaders often invest effort in developing their employees' careers and encouraging their professional growth. The respondents believe that the female leadership style is associated with the traits and characteristics of a democratic or participative leadership style. Although research often suggests that women are more likely to make safe decisions, avoid unnecessary risks, and prefer sustainable strategies, the results may lead to the conclusion that women in leadership positions are not necessarily passive but skillfully balance safety and risk. Furthermore, although collaboration was recognized as a characteristic of a female leadership style by many respondents, this trait was not recognized by all respondents, which suggests that respondents believe that not all women in leadership positions are focused on collaboration, but perhaps to a greater extent on individual responsibility and independence. On the other hand, openness to communication and information sharing is often associated with participative leadership styles, where information is used for collective decision-making. Similarly, respondents identified autonomy in performing tasks as a characteristic of a feminine leadership style, even though they believe that women foster collaboration. Namely, respondents believe that women in leadership positions value autonomy and the ability to independently complete tasks, which may reflect a more flexible approach to leadership that balances teamwork and personal responsibility. Respecting other people's opinions is also a trait that many respondents partially or fully agree characterizes a female leadership style, and such results are not surprising given that it is traditionally believed that women are inclined to cooperate and respect the opinions of subordinates when they are in leadership positions. However, the partial disagreement with the fact that this trait is characteristic of a female leadership style in the business world shows that, although women often value and seek the opinions of others, there is also a certain threshold of

independence and decisiveness where decisions in leadership positions are made without excessive reliance on the opinions of others. Moreover, the research conducted by Meece et al. (2009), which considered the influence of gender differences in motivation and values on the participation of women in management roles, showed that women managers are more often perceived as those who apply a participative leadership style, which includes cooperation, openness and information sharing, but also that they are ready to show autonomy and independence when necessary. The survey showed that more than half (58.3%) partially agree that strength (the ability to put actions into action) is a characteristic of a female leadership style in the business world. Such results show an interesting pattern in the perception of the characteristics that respondents associate with a typical female leadership style. More precisely, the highlighted results reflect the basic perception of respondents that women are often associated with a transformational leadership style, which emphasizes interpersonal skills, relationships and collective success, which is confirmed by numerous scientific studies. In the research conducted by Zenger and Folkman, women were rated higher than men in 12 out of 16 measurable competencies, including initiative, self-confidence, emotional intelligence and team building. Women are often perceived as better at building relationships and showing empathy, key characteristics associated with a female leadership style. Research conducted by Sharif (2019) which analysed male and female leadership styles, showed that women more often practice a transformational leadership style, which emphasises cooperation, empathy, support for employees and the development of interpersonal relationships to a greater extent. Transformational leaders are perceived as empathetic and are associated with qualities such as teamwork, emotional intelligence, and a people-oriented approach. Furthermore, a meta-analysis on gender differences in leadership styles conducted by Akonkwa et al. (2022) showed that women more often display interactive leadership styles, which include listening, empathy, emotional intelligence, intuition and developing relationships with employees, while men are more often perceived as more authoritative. Therefore, the presented results confirm that the female leadership style is people-oriented and characterised by collective strength and emotional intelligence, while simultaneously showing enthusiasm and determination. It is also interesting that 58.3% of the respondents partially believe that strength (the ability to implement actions) is characteristic of the female leadership style. This result may indicate that there is a perception that women are capable of decisive action, but perhaps less so in terms of physical strength compared to traditional male leaders. However, this does not mean that women are not efficient in achieving their goals; rather, it means that they use different approaches to achieve results.

4. Research limitations

The research conducted has certain limitations that should be acknowledged when interpreting the findings. First, the research employed a non-probability, convenience sampling method, drawing responses from a relatively small group of 36 participants within a specific professional network. As a result, the generalizability of the findings is limited, and the conclusions may not be representative of broader female leadership populations across different regions or industries. Second, the data collection instrument, which is a self-administered online questionnaire, was not formally validated. The absence of pilot testing and psychometric assessments (e.g., reliability coefficients such as Cronbach's alpha) raises questions about the instrument's consistency and construct validity. Third, the analysis was confined to descriptive statistics, which offer only exploratory insights into leadership traits and perceptions. The lack of inferential statistical techniques, such as correlation analysis, t-tests, or regression models, limits the ability to establish causal relationships or statistically significant patterns. Lastly, social desirability bias may have influenced participants' responses, particularly on questions related to gender and leadership.

5. Discussion

The findings confirm that female leadership is strongly associated with participative, democratic, and transformational styles. Respondents emphasized qualities such as emotional intelligence, empathy, and collaboration. These traits align with the existing literature, which defines modern leadership as inclusive, communicative, and people-oriented. Respondents believe that such leadership styles foster trust, motivation, and better business outcomes. Most support the use of a feminine leadership style in the workplace, noting its effectiveness in organizing, mentoring, and goal-setting. These perceptions reflect a broader shift in managerial paradigms that prioritize emotional intelligence and collective decision-making. Interestingly, traits not traditionally linked to feminine leadership, such as risk-taking and determination, were also identified as characteristic. This suggests a nuanced understanding of leadership among respondents, where women leaders combine soft skills with decisiveness and strategic thinking. The results also highlight persistent gender barriers. Respondents cited prejudice, lack of family support, and work-life balance as critical obstacles to women's advancement. These findings support existing research on the glass ceiling and gender bias in organizational settings. The data suggest that female leadership offers significant value in contemporary business environments. Respondents view it as efficient, supportive, and aligned with the demands of today's workforce. However, structural challenges persist in limiting women's full participation in leadership roles.

5.1. Directions for future research

Given the limitations of the conducted research, it would be desirable in future studies to examine respondents' attitudes on the characteristics of female leadership styles in the business world using a significantly larger sample. Additionally, validated instruments and the inclusion of robust statistical techniques are necessary to enhance reliability and deepen analytical rigour. The conducted research, as well as future research, may be helpful to researchers studying gender differences in leadership in the business world and to companies that strive to reduce gender differences and solve the problem of discrimination in management positions in order to show them the advantages of female leadership styles in the business world for the employees of that company, the company itself and its business success, as well as for society itself.

6. Conclusion

The number of women in management positions has increased over the past few decades. However, the representation of women in leadership positions remains unsatisfactory. Gender stereotypes persist, indicating that women are perceived as lacking the ability to lead effectively. Leadership, the most demanding aspect of management, involves directing and motivating employees to accomplish specific tasks. This trait is crucial for progress in today's competitive environment. Management is often stereotypically considered a profession primarily suited to men, which explains why men occupy top and middle management positions. Despite this, the modern business environment requires managers to possess skills that differ from those required for traditional male leadership styles, i.e. these characteristics are essential for female leadership styles. Compared to their male colleagues, female managers have an extraordinary ability to understand problems, a remarkable ability to devise innovative solutions, and the ability to foster a more pleasant environment. Female managers demonstrate characteristics such as responsibility, loyalty, reliability, practical communication skills, creativity, and willingness to cooperate. Although leadership styles are not inherently tied to the manager's gender, the autocratic leadership style still dominates in most male-led companies. Based on this, it is evident that improvements are necessary regarding the role of women in management. Companies that promote a female leadership style and support women will experience numerous advantages, not only for their employees but also in terms of competitiveness and success, which ultimately improve productivity and increase profits, the primary goal of any business. For this paper, a study was conducted in which female entrepreneurs were asked about the characteristics of female leadership

style in the business world. Thirty-six respondents participated in the survey and completed a questionnaire specifically designed for this study. It was shown that the respondents believe the female leadership style is associated with characteristics and traits typically found in democratic or participative leadership styles. Specifically, the study's results support that traits such as teamwork, empathy, emotional intelligence, and people orientation are often associated with a feminine leadership style. At the same time, the study results show that a feminine leadership style is associated with characteristics such as determination and risk-taking, which are not traditionally associated with a feminine leadership style in the business world. Additionally, the study revealed that female respondents believe superiors should adopt a feminine leadership style in the business world. This perception of the respondents may further encourage women's empowerment in leadership positions, given that they have recognized the advantages of a feminine leadership style in a modern business environment.

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INTEGRATION OF SOCIAL PILLAR INTO NON-FINANCIAL REPORTING: CASE OF LARGE BANKS IN CROATIA

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Abstract

Recent achievements in EU regulatory development of sustainable finance have introduced new reporting requirements for market participants. In the banking industry, while the practice of ESG reporting has become the standard, the content of reports may vary significantly among institutions, countries etc., and particularly in developing markets. This paper investigates ESG disclosures by banks, using Croatia as a case study. As large institutions account for approximately 90% of the national banking market, we analyzed a sample of large banks. Within an integrated theoretical framework, we applied content analysis to their non-financial reports for years 2022 and 2023. Additionally, we researched the extent to which social issues are covered in the disclosures, as the social pillar, compared to the environmental one, has recently received less regulatory and practical attention. Our findings reveal significant efforts in integrating all the three ESG pillars among most of the observed banks, including

noticeable increase in the attention given to social issues. However, a comparison of reported quantitative indicators, e.g. ESG investment and/or financing values regarding the distribution between the environmental and social pillar, indicates certain room for improvement. Our findings may be valuable to policymakers and practitioners, that is, bankers and investors, especially considering that more insights are expected for the 2024 reporting period according to the first reports under the Corporate Sustainability Reporting Directive (CSRD).

Keywords: *non-financial reporting, Corporate Sustainability Reporting Directive, sustainability, ESG, social issues*

JEL classification codes: *G15, M14, O16*

1. Introduction

The transition towards sustainability has been accelerating over the last decade, particularly in Europe. An increased interest in sustainable finance has been driven by recent developments in the EU regulatory framework, comprising different international strategies and plans, such as the European Green Deal (EC, 2019) introduced in accordance to the Paris (Climate) Agreement (United Nations [UN], 2015), the Resolution 70/1 - Transforming our World: the 2030 Agenda for Sustainable Development (UN, 2015; UN SDGs), Action Plan: Financing Sustainable Growth (EC, 2018), etc. These regulations are imposing new requirements on market participants. In this context and in this period, non-financial reporting has emerged as the key element in supporting sustainable finance.

New regulations and upgrades of existing regulatory rules introduced in the last few years in the fields of sustainability and non-financial reporting are aligned with the abovementioned strategies and plans. The EU Taxonomy Regulation (EC, 2020) and delegated regulation as a base for sustainable activities, the Corporate Sustainability Reporting Directive – CSRD and delegated regulation (EC, 2022; previously the Non-Financial Reporting Directive - NFRD, EC, 2014), the Corporate Sustainability Due Diligence Directive - CSDDD (EC, 2024), the recently introduced Omnibus package (EC, 2025) and additionally the Sustainable Finance Disclosure Regulation - SFDR (EC, 2019) together establish a comprehensive framework for aligned disclosure requirements. The aim is to ensure transparency and comparability of disclosures on sustainable business in the EU in order to prevent abuses in companies' business activities and to protect investors and European businesses (that have aligned their

operations and reporting practices with related relevant regulations) from different "washing" practices and unfair competition coming from outside Europe.

Sustainability disclosures differ between non-financial and financial corporations, primarily in their focus and reporting requirements. In the banking sector as a crucial part of the financial industry, systemic risk is highly present and banks and also other financial corporations are in general subject to stricter regulatory supervision and reporting requirements due to their relative importance in the economy, the nature of their business and the potential impact on the financial system and broader economy. Both financial and non-financial corporations engage with various stakeholders, however, financial corporations usually have a broader range of stakeholders, including regulators, investors, and customers, who demand more comprehensive environmental, social and governance (ESG) disclosures. While non-financial corporations may see their sustainability efforts as contributing mostly to long-term value creation, financial corporations' disclosures are directly tied to their financial stability and risk management practices. As a consequence, focus in sustainability reporting of financial corporations, and especially banks, strives to be placed on ESG risks and opportunities that could affect their financial performance, including climate-related risks, social risks, and governance risks. Their key areas in the largest part cover climate risk assessments, sustainable finance practices, responsible investment strategies, adherence to regulatory requirements, etc.

The European Commission has recognized the financial sector as the main lever for achieving sustainability of the entire economy (Ahlström and Monciardini, 2022; Claringbould et al., 2019). Given that both sides of their balance sheet have great potential for integrating ESG, sustainability reporting regulations and prudential regulations specifically target their business strategies and management principles to a significant extent. In this context, the financial industry is interesting and important to observe, especially the banks, given their relative importance and economic role.

Additionally, when we dive deeper into the topic, previous non-financial reporting regulation did not deal sufficiently with some of the ESG pillars (S and G), since approaching the issue of climate change, which is included in the largest part of the E issues, has been the focus of most stakeholders. One question that arises among many is related to the justifiability of such an approach. For that reason, S issues were among others to a larger extent also in the focus of newer regulatory framework upgrade, due to the fact that S factors in general may be more difficult to measure compared to the E factors. In that sense new regulation addressed many important aspects of successful ESG integration into business, but at the same time raised issues of its practical implementation.

The structure and relative importance of individual ESG investment and ESG bond issues (The World Bank, 2024), including the banking sector, and the content of banks' non-financial reports, support the thesis that the E pillar has been dominant, while other pillars have been underrepresented. What is now evident, however, is that this focus is slowly shifting to other ESG pillars as well, as reflected in the latest trends in new or improved regulations and delegated acts affecting the field of sustainability.

This paper aims to evaluate sustainability reporting practices in the Croatian banking sector to determine and compare the extent to which banks are prepared for the obligation to report under the CSRD regulation, also taking into consideration Omnibus package, and European Sustainability Reporting Standards - ESRS, with a special reference to the S pillar. By applying an integrated theoretical framework, content analysis of banks' annual reports in the segment of non-financial reporting or consolidated non-financial statements is conducted on the population of large banks (nearly 90% of total banking sector assets) which operated in Croatia in 2022 and 2023. Those banks already had the obligation of non-financial reporting under the previous regulation (Non-Financial Reporting Directive - NFRD) but also become the first obliges, for financial year 2024, under the new sustainability reporting rules, according to the CSRD regulation implementation timeline.

The purpose of our research is to determine similarities and differences in non-financial reporting in the banking sector of a smaller, developing country. The number of companies, including financial ones, within the European Economic Area (EEA) that were obliged to conduct non-financial reporting under the NFRD was relatively small. Despite the expansion of entities covered by the CSRD, this number remains relatively limited under the new regulation. However, the banking sector holds significant relative importance within the overall financial sector, as well as a crucial economic role, especially in bank-oriented financial markets such as Croatia.

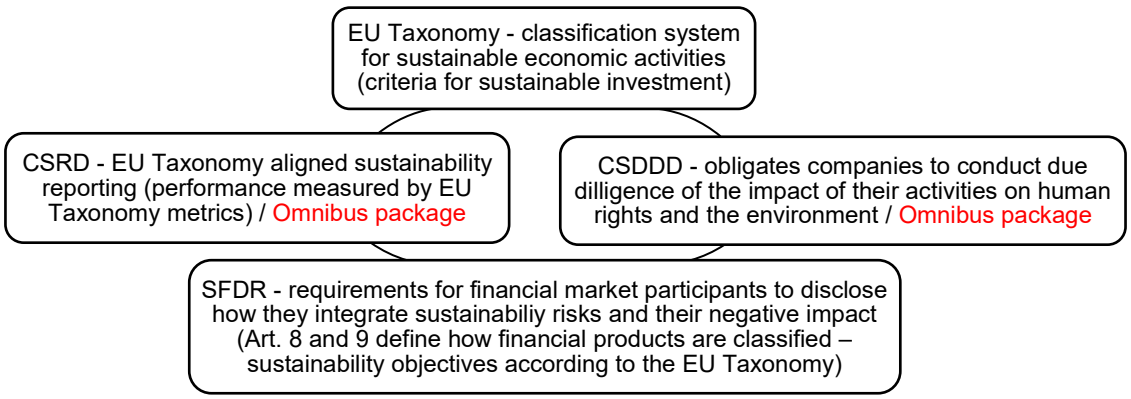
2. Theoretical and regulatory framework

2.1. Non-financial reporting

ESG information, i.e. non-financial information, refers to the three central pillars in measuring a company's sustainability and social performance, which should be covered by non-financial/sustainability reporting. According to related regulation, obliged companies should publish certain types of information on non-financial operations and diversity in their annual reports. The main goal of the sustainable finance and reporting regulation is to enable potential investors, consumers and other

stakeholders to have all the necessary and transparent information, through reliable and comparable ESG data, to decide whether a business is aligned with the values advocated in the context of ESG. Non-financial reporting is therefore crucial for enhancing transparency in the ESG area. Additionally, non-financial disclosures promote and enable third parties to influence large enterprises to adopt more sustainable and socially responsible business practices, and enable stakeholders to make well informed decisions. The CSRD (EC, 2022), the EU Taxonomy Regulation (EC, 2020) and delegated acts, the CSDDD (EC, 2024), the SFDR (EC, 2019), and recent Omnibus package proposal (EC, 2025), are the main documents shaping the EU regulatory package (Scheme 1) that currently supports sustainable finance and/or compliance and transparency of non-financial reporting in accordance with the ESRS - the operational key of the CSRD (EC, 2023). Altogether this framework empowers all stakeholders to make more responsible and informed decisions in the context of sustainability.

Scheme 1. Scope of the sustainability reporting regulatory package



Source: Authors' presentation.

The CSRD rules entered into force in 2023, started to apply in 2024 and will be gradually implemented until 2028 (2029 according to Omnibus package) (Table 1). This document brought many crucial changes in comparison to the NFRD. It extended the scope of obligations and determined more precisely the information within disclosure requirements. The ESRS, representing the most developed and highest standards in sustainability reporting in Europe, became binding sustainability reporting standards that set scope and content, both quantitative and qualitative, and require the inclusion of taxonomy-aligned data in reporting. They cover in detail a range of ESG issues, with the aim of transparent and credible informing investors about the sustainability impact of the companies they invest in (assured by double materiality assessment and value chain approach) and take into account the International Sustainability Standards Board (ISSB) and the Global Reporting Initiative (GRI) to avoid double reporting

obligations. Additionally, the CSRD requires a specific reporting format and reporting on the company's targets, strategies, role of management and connected impacts, risks and opportunities to the company and broader.

However, due to the political climate, competitiveness and concerns about the complexity, cost, and readiness for the CSRD implementation raised by smaller and international businesses, in February 2025 Omnibus package (amendments to the CSRD and CSDD; EC, 2025) was proposed. This proposal reduced the scope of CSRD, postponed, simplified or relaxed the disclosure obligation for some subjects (EU member states are expected to transpose these changes until the end of 2025). As a result, around 80% of companies originally in scope will be excluded - proposal postponed the entry into application of the CSRD requirements for large companies that have not yet started reporting by two years, as well as for listed SMEs, and the transposition deadline and the first phase of the application (covering the largest companies) by one year. The result of the Omnibus package is that EU Taxonomy for companies with less than 450 million EUR turnover in EU became optional and the focus has remained on large companies with significant market impact, with fewer mandatory datapoints in the ESRS and materiality focus in reporting. Additionally, only limited assurance is required (lighter audit process) and development of sector-specific standards has become questionable. The limited aspect relates to maintaining limited assurance for sustainability reporting, while reasonable assurance, requiring a higher level of verification, is not being pursued.

There are numerous standards worldwide for sustainability reporting, and around 15 of them are internationally established. For the financial services sector, however, only a few of them are applicable. In addition to the CSRD/the ESRS standards required for the EU companies, another widely accepted framework and used by any types of organizations, including financial institutions, are the Global Reporting Initiative (GRI) standards. The GRI standards have been continuously developed (including the development of sector standards in addition to universal standards) to represent the global best practice for reporting on economic, environmental and social impact, and for that reason, they have been among the most accepted and used worldwide. Other examples include the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards intended for medium-to-large companies, covering general sustainability accounting, risks and opportunities themes.

Table 1. The Non-Financial Reporting Directive vs the Corporate Sustainability Reporting Directive with Omnibus package amendments

Demands	NFRD	CSRD / Omnibus package proposal's amendments
Timeline	Introduced in 2014; entered into force in 2018; start of implementation in 2018; valid until CSRD takes effect.	Introduced in 2022; entered into force in 2023; start of implementation in 2024.
Reporting obligation	Large companies and public organizations with more than 500 employees (financial sector: banks and insurance companies, additionally all other exchange listed companies; start of disclosure obligation in 2018 for 2017).	Large companies (all financial and non-financial) with more than 500 employees and whose securities are listed at one of the European stock exchanges; start of disclosure obligation in 2025 for 2024. All exchange listed large companies from the EU (including subsidiaries from the EU of parent companies outside the EU) that meet 2 out of 3 criteria (start of disclosure obligation in 2026 for FY 2025 / postponed by Omnibus package (for FY 2027 in 2028): average number of employees ≥ 250, net turnover ≥ 40 million EUR, asset ≥ 20 million EUR (according to Omnibus package only companies with ≥ 1,000 employees, ≥ 50 million EUR net turnover, or ≥ 25 million EUR assets) All exchange listed small and medium-sized enterprises (SMEs) and other undertakings with average number of employees ≥ 10 (micro-subjects excluded); start of disclosure obligation in 2027 for FY 2026 / postponed by Omnibus package (for FY 2028 in 2029). All companies from third countries with a net turnover of more than 150 million EUR in the EU (according to Omnibus package threshold raised to 450 million EUR) if they have at least one subsidiary or subsidiary in the EU that exceeds the previously mentioned thresholds; start of disclosure obligation in 2029 for 2028.

Scope of requirements (topics)	Sustainability, environmental and social impact assessment: ecological aspects (environmental protection), social and employee issues, fight against bribery and corruption, diversity in management structures, human rights.	Information about addressing ESG challenges - all NFRD demands and additionally: strategy, targets and the role of the board and management; the principal adverse impacts connected to the company and its value chain, intangibles (including human, social and intellectual capital) and how they identify the information they report; double materiality approach assessment; future plans disclosure.
Supervision (audit/assurance) requirements	No requirement for third-party (external) verification of reported sustainability data.	The requirement for third-party (external) verification of reported sustainability data - obligation to engage authorized auditors to verify sustainability reports. CSRD foresaw reasonable assurance standard, a possibility to which was removed by Omnibus package to a limited assurance requirement.
Reporting standards	No mandatory reporting standards resulting in lack of comparability - different (voluntary) reporting standards (the most common: GRI, SASB, TCFD, CDP, CDSB, etc.).	Mandatory reporting standards - European Sustainability Reporting Standards (ESRS) that are subject to external audit, considering the technical advices of the European Financial Reporting Advisory Group (EFRAG) which completed and published the ESRS. According to the Omnibus package, standards' implementation approach is simplified and materiality-based.
Reporting format	A reporting format was not defined - no mandatory requirements, mainly in PDF format.	A reporting format is defined. Reports should be published digitized, machine-readable, and in a unique electronic format - XHTML format, adhering to the European Single Electronic Format (ESEF) regulation. The obligation of integration of sustainability reporting with all required management reporting in a singular, digitally accessible format.
Level of regulation and sanctions	Light regulation and sanctions.	Strict regulation and sanctions against offenders.
Number of liable entities	≈ 11,700 companies in the EEA.	≈ 50,000 companies operating in the EU / ≈ 10,000 according to Omnibus package

Source: authors according to European Commission (2014). Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU regarding disclosure of non-financial and diversity information by certain large undertakings

and groups (Non-Financial Reporting Directive – NFRD); European Commission (2022). Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, regarding corporate sustainability reporting (Corporate Sustainability Reporting Directive – CSRD); European Commission (2025). Proposal for a Directive of the European Parliament and of the Council amending Directives 2006/43/EC, 2013/34/EU, (EU) 2022/2464 and (EU) 2024/1760 as regards certain corporate sustainability reporting and due diligence requirements (Omnibus package); KPMG (2025). Corporate Sustainability Reporting Directive. Is your organization ready for the Corporate Sustainability Reporting Directive?

Additionally, the Task Force on Climate-related Financial Disclosures (TCFD), Carbon Disclosure Project (CDP) and Sustainability Accounting Standards Board (SASB) standards, United Nations Sustainable Development Goals (UN SDGs) and Principles for Responsible Investment (PRI) framework, etc. are often used in financial sector (Rudiyanto and Sudrajad, 2024; KPMG, 2023) but their applicability and scope is limited in terms of ESG themes and/or participants, including the banking sector, depending on legislation in different countries.

In conclusion, the CSRD scope and objectives improved the equality and importance of all the ESG pillars in non-financial reporting. The transparency, comparability and credibility of disclosed information is also improved, especially by the „dual approach" demand, which discourages different negative – "washing" practices (e.g. impact washing, greenwashing, social washing, pink washing, blue washing, etc.) by establishing accountability measures. The dual approach, so-called "double materiality", refers to all those issues that represent the impact of people (the S and G issues) and the environment (the E issues), i.e. sustainability issues, on companies' activities and operations, but also vice-versa. Finally, the demand for a standardized reporting format and the introduction of the verification of reported sustainability data (audit) should also contribute to a larger credibility of sustainability reports and strengthen the stakeholders' trust.

The Republic of Croatia, as well as other EU member states, undertook the obligation to transpose the CSRD into national legislation. In Croatia, this resulted in the new Accounting Act (Official Gazette of the Republic of Croatia, 85/2024-1474), the amendments of the Audit Act (NN, 127/17, 27/24, 85/24, 145/24) and, to a smaller extent, the amendments of the Capital Market Act (NN 65/18, 17/20, 83/21, 151/22, 85/24). The new Accounting Act brought an increase in the number of companies obliged to report on sustainability to around 500 from 2025 on (according to the CSRD, with changes to a lower number expected by Omnibus package), while around 70 companies had been affected by the previous (the NSFR) regulation and the CSRD in the first step (0.6 % in total number of nearly 11,700 companies obliged at the EEA

level). In order to provide support for the CSRD-affected companies, several important initiatives have been arising. For example, the Croatian Chamber of Economy upgraded the HGK ESG rating methodology, which can be used by companies to assess the current state of their ESG processes and to monitor their annual progress. The HGK ESG rating is aligned with the ESRS, and the results of a survey filled out by nearly 400 companies indicate a serious approach of the impacted companies (HGK, 2024).

With the presented systematic development of the relevant regulatory framework as a starting point, to further contextualize our research work we apply an integrated theoretical framework with the aim to investigate ESG disclosures by banks. We rely on stakeholder theory, legitimacy theory and institutional theory to gain more insights in the content of non-financial disclosures by banks in Croatia and to research the extent to which specific (especially social) issues are covered in these disclosures.

The stakeholder theory provides a framework for understanding organization's accountability to various stakeholders influencing its operations and value creation, which also involves meeting their information needs (Gesso and Lodhi, 2025). To investigate the quality of information disclosure using non-financial reporting practices, the legitimacy theory, which has traditionally been the primary lens for examining substantive or symbolic commitment to corporate social responsibility (Gesso and Lodhi, 2025), is applied to explore whether non-financial reporting practices of banks align with a substantive approach to sustainable finance. In examining the non-financial banks' disclosure, our study also draws on institutional theory which emphasizes the importance of conforming to established institutional law, norms, practices and cultural values in a context. This includes government policies and disclosure mandates which shape and influence organizations' behavior and structures more than other influences, and hereby banks' non-financial disclosure would be their response to institutional pressures (see e.g. Weber, 2014).

2.2. Literature overview

According to KPMG (2023), financial institutions comprise 16.0% of the N100 (worldwide sample of the top 100 companies by revenue in 58 countries, territories and jurisdictions) and 24.0% of the G250 (the world's 250 largest companies by revenue according to the 2021 Fortune 500 ranking) of which more than 90% have reported on sustainability. The most prevalent sectors in the financial industry were the banking sector and financial services, but also life insurance, non-life insurance, real estate investment and services, real estate investment trusts, equity investment instruments and non-equity investment instruments institutions. However, in 2022, in the E pillar,

54.0% of N100 (30.0% of G250) did not report on climate change as a risk, in the S pillar, 58.0% (45.0%) on social risk and in the G pillar, 56.0% (40.0%) on governance risk.

Previous studies on non-financial reporting in the financial services sector and/or with a focus on the banking sector indicated differences in practices, depending on regulation and standards used, but also in topics covered. The following focus of the literature review is on the banking sector since the banking industry plays a crucial role in supporting sustainable practices.

The research topic of sustainability disclosure in the financial industry witnessed an annual growth rate of publication of nearly 30% in the recent period, with an emphasis on environmental and social sustainability practices, but also a still weak dissemination of knowledge about sustainability in the banking sector (Sebastião, Tavares and Azevedo, 2024). The mentioned authors offered a systematic review of 116 articles from Scopus and Web of Science databases, comprising the period of 2016-2024. In developing countries (e.g. in Latin America and Africa), limitations or a lack of adequate sustainability disclosure regulation were detected as the biggest obstacles in implementing sustainability reporting practices.

Rudiyanto and Sudrajad (2024) analyzed sustainability reporting standards including the POJK 51, the GRI, the SASB, the TCFD, the CDP and the IFRS, in order to identify which standard is the best for the banking industry on the example of an Indonesian bank as a case study, and by using Analytic Hierarchy Process (AHP) technique. Quantitative and qualitative methods were used, and data were collected from literature reviews, interviews, and questionnaire responses from the participants responsible for preparing sustainability reports at Bank ABC. The results pointed out the POJK 51 as the best sustainability reporting standard used for the banking sector in Indonesia, with a priority score of 43%, as a result of compliance with regulatory requirements. The GRI standard received the second priority with a score of 27%, and the SASB standard received the third priority with a score of 9%.

An also interesting recent research was done by Baldissera (2023), who analyzed development of studies on banks' sustainability disclosure practice in the last 30 years and concluded that most of the literature on sustainability reporting is “mostly organized by topics and rarely by periods”, while research in this area lacks historical analysis models, pointing on research gaps. Results from Cosma et al. (2020), using a non-financial disclosure analysis of 262 European banks, were consistent with the findings of other international surveys in the sector of financial services or the banking sector. They showed that the priority goals set by banks, and thus more referred to in

reports, were SDG 8 concerning the quality job and economic growth (91% of banks), SDG 13 on climate change (81% of banks) and SDG 4 linked to quality education (76%).

According to Eurostat (2024), the EU in total achieved satisfactory progress in most of the SDGs up to 2022 (2023), shown in Table 2.

Table 2. SDGs and EU progress towards specific SDGs over the past 5 years; data refer to 2017–2022 or 2018–2023

SDGs	Description of topics (goals)	Progress
SDG 1	No poverty	Moderate progress
SDG 2	Zero hunger	Moderate progress
SDG 3	Good health and well-being	Moderate movement away
SDG 4	Quality education	Moderate progress
SDG 5	Gender equality	Moderate progress
SDG 6	Clean water and sanitation	Moderate movement away
SDG 7	Affordable and clean energy	Moderate movement away
SDG 8	Decent work and economic growth	Significant progress
SDG 9	Industry, innovation and infrastructure	Moderate progress
SDG 10	Reduced inequalities	Significant progress
SDG 11	Sustainable cities and communities	Moderate progress
SDG 12	Responsible consumption and production	Moderate progress
SDG 13	Climate action	Moderate progress
SDG 14	Life below water	Moderate progress
SDG 15	Life on land	Moderate movement away
SDG 16	Peace, justice and strong institutions	Moderate progress
SDG 17	Partnerships for the goals	Moderate progress

Source: Eurostat (2024) Sustainable development in the European Union: Monitoring report on progress towards the SDGs in an EU context.

Debnath et al. (2024) used content analysis techniques to quantify the level of sustainability reporting practice in the Indian banking sector in the post-merger and post-COVID-19 pandemic periods based on GRI standards sustainability indicators reported in responsibility reports and annual reports for 2021 and 2022. Their findings showed that financial inclusion, green technology, and financial literacy are the most important themes, confirming previous evidence that Indian banks only limitedly covered the environmental indicators in sustainability reporting (Mani, 2022). Those findings also pointed to a significant difference in sustainable reporting between public and private sector banks in terms of environmental and governance indicators (Kumar and Prakash, 2019).

A somewhat older research by Ivanisevic Hernaus and Stojanovic (2015) analyzed the social responsibility of banks in Croatia at the individual and industry level by deriving and adapting a bank social responsibility framework from previous studies and applying it to the Croatian banking sector. The study demonstrated that, at the

individual level, bank social responsibility is related to factors of bank size and ownership status, and at the industry level to the structure of granted loans.

In reporting on the ESG implementation from banks in Central and Eastern Europe by e.g. Toth et al. (2024), the dominance of the E pillar is presented. In addition to green lending, in recent years, some banks in the region have also started to provide sustainability-linked loans. While retail green mortgages are offered by virtually all the banks, socially-oriented loans for individual clients are marketed less frequently. Interestingly, such products are seen more frequently in the Balkan countries than in Central Europe. Much of the corporate loans are environmentally-focused. Products targeting the non-profit sector or social enterprises are not the norm in the region.

According to recent research findings in banks' sustainability reporting, with a focus on reporting standards and topics, there is no uniform practice regarding the reporting standards nor the relative importance of reported topics. However, most of the research findings indicated gaps in the literature related to the three ESG pillars, especially regarding the social dimension and diversities - which has received less attention than the environmental and economic dimension (Ribeiro de Amaral et al., 2023).

3. Method

In this study, content analysis techniques are used with the aim to gain more in-depth insights into the practice of non-financial reporting in the Croatian banking sector on the population of large banks.

The relevant non-financial information and data were collected from annual non-financial reports of banks (or groups; consolidated reports) for 2022 and 2023, available at banks' official websites. Some large Croatian banks, as being a subsidiary undertaking, did not publish their own non-financial reports required by the NFRD and allowing an exemption introduced by the local regulation in which disclosure on sustainability is included in the consolidated non-financial report presented by the group. Namely, in 2022 (2023), 7 (7) of 21 (20) credit institutions (of which 20 (19) banks or about 98.0%), were in foreign ownership, as a part of international groups, which took 88.8% (87.4%) of the asset share in total credit institutions assets and which in the biggest part were large banks (CNB, 2025). Large banks, according to a commonly used measure, are those with an asset share in total banking sector assets larger than 5% (medium-sized banks 1% - 5%; small-sized banks < 1%). The population of large banks in Croatia amounted to 6 banks with a total asset share of nearly 90.0% in total

credit institutions' assets in 2022 and 2023 (Table 3); 5 of them were foreign- and private-owned (a subsidiary undertaking), and one was domestic- and state-owned. Other banks were medium-sized (1 bank with an asset share of about 3.0% in total credit institutions assets) and small-sized (12 banks with a total asset share < 7.0% in total credit institutions assets).

Table 3. Basic business indicators of Croatian large banks determining the obligation of non-financial reporting

	Assets in millions of EUR		Share in total assets, in % of total		Profit or (-) loss, in million EUR		Profit or (-) loss, in % of total		Number of employees (average or end of period)	
	2022	2023	2022	2023	2022	2023	2022	2023	2022	2023
B-L1	19,967.2	20,373.2	26.3	25.9	237.7	450.4	33.5	33.2	3,418	3,306
B-L2	15,838.6	16,160.4	20.9	20.6	189.2	314.1	26.7	23.2	3,348	3,343
B-L3	13,614.3	13,257.4	17.9	16.9	129.7	219.2	18.3	16.2	2,400	2,513
B-L4	7,648.2	8,034.6	10.1	10.2	89.6	134.8	12.6	9.9	2,375	2,402
B-L5[1] B-L5*	4,567.3 1,232.8	7,046.1 -	6.0 1.6	9.0 -	17.6 -33.0	80.6 -	2.5 -4.7	5.9 -	1,321 n/a	1,727 -
B-L6	6,354.0	6,599.6	8.4	8.4	37.0	95.9	5.2	7.1	1,689	1,722
B-L1-L6	67,989.7	71,471.2	89.5	91.0	700.9	1,295.1	98.8	95.5	14,551	15,013
KI[2]	75,941.0	78,559.5	100.0	100.0	709.6	1,357	100.0	100.0	18,363	18,196

Note: B-L stands for large banks (1-6); KI stands for credit institutions

[1] Data for Bank, which merged with B-L5* in July 2023

[2] Total credit institutions in Croatia: 20 (19) banks and 1 (1) housing savings bank in 2022 (2023)

Source: Authors' calculations according to CNB (2025) Statistics; Tables SV1-h and SV2-h (available at: https://www.hnb.hr/en/statistics/statistical-data/financial-sector/other-monetary-financial-institutions/credit-institutions/supervisory-indicators/indicators-of-credit-institution-operations) and Credit Institutions Annual reports for 2022 and 2023.

Among all the non-financial information reported, our research focused on material topics and ESG quantitative data related to sustainable financing and investment. In the period before the binding ESRS, the reporting obligation was mostly based on GRI standards and taking into consideration SDGs. Information reported according to those standards were used in our content analysis to observe the banks' preparedness for compliance with the ESRS material topics (available at: https://www.efrag.org/en/projects/esrs-implementation-guidance-documents).
There are three universal GRI Standards that apply to every organization preparing a sustainability report (available at: https://www.globalreporting.org/standards/). An organization then selects from the set of topic-specific GRI Standards for reporting on its material topics, which are organized into three series: economic topics, environmental topics and social topics. Additionally, four sector-specific standards are specified.

4. Results and discussion

The results of our analysis are shown comparatively (in Table 4 and Table 5), in order to gain more precise insights about the similarities/differences of non-financial reporting in selected Croatian banks and to derive conclusions on their preparedness for the CSRD reporting for the financial year 2024 onwards.

Although visually not comparable, all the large banks in foreign ownership (part of international groups) basically had, to a large extent, a similar approach in reporting. However, non-financial disclosure of the only domestic state-owned bank significantly differed when material topics, SDGs and ESG financial indicators were observed. The reason for such results can be found in the advantage of having at disposal a certain level of the ESG implementation know-how from foreign owners (for foreign-owned banks).

Priorities according to SDGs and GRIs reported by all the banks (groups) were seen in green transition (E), social inclusion (S) and gender equality (G) through reported material topics (qualitative data). However, the reporting focus of banks (groups) was on all ESG business principles according to reporting standards used and, in that sense, can be seen as comparable to the ESRS in most/all main topics which this reporting standard covers. The same material topics were covered in both years on an individual level. However, when priorities (SDGs) on an individual level were observed and compared among the banks, somewhat different results occurred. Namely, 5 out of 6 banks reported SDGs priorities, which mostly cover the most relevant ESG topics for their business, according to reporting standards used, and only 1 bank (B-L1) prioritized only S topics.

The reported ESG financial indicators (quantitative data) showed environmental topics as more dominant since environmentally related lending, investment and/or issuance had a larger share than other topics in the S and/or G pillar. Moreover, one bank (B-L4) reported related ESG financial indicators only for the E pillar. This is expected since climate change is the focal point of the E pillar and since efforts in the last decade have been mainly directed towards decreasing the negative consequences of this phenomenon. On the other hand, the S and the G pillar were actualized only a few years ago, when the regulation upgrade in this field had focused on these topics as well.

To further strengthen the link between sustainability and financing strategies and to expand the scope of eligible assets to include social topics, aligned with prioritized SDGs and material topics indicated in non-financial reports that favor social topics -

some banks have created, for example, a new Sustainability Bond Framework, which replaced Green Bond Framework in the observed period (e.g. B-L6). Additionally, one can notice that the S topics started to be (more) prioritized in 2023 reports if they were not already actualized in 2022 reports.

Among quantitative information, the most important metric for financial companies relates to the proportion of taxonomy-eligible economic activities in their financial activities, such as loans or investments, known as the green asset ratio (GAR). This indicator was covered in both observed years by all large foreign-owned banks, either by a reported share of taxonomy-eligible activities in total covered assets (in 2022) or by green asset ratio (in 2023). Additionally, preparation for stricter rules in reporting according to the CSRD and the ESRS is noticeable in 2023. Namely, in 2023, a new reporting approach in all the observed foreign-owned banks (groups) is detected as a start of reporting on environmentally sustainable assets through KPIs.

In conclusion, according to the research results, neither the priorities nor the approach in non-financial reporting among all of the observed banks were the same. Most of the banks (groups) addressed topics within both the E and S pillar, as well as the G pillar. However, some focused only on the S topics in their reporting and business activities, according to reported SDG priorities (e.g. B-L1). Nevertheless, all of them covered a wide range of other ESG issues/, according to reported and observed ESG financial indicators. Exceptions were B-L4, with its orientation only to the E pillar, and B-L5, which in these terms did not disclose the observed information for any of the three ESG pillars in addition to disclosed qualitative information. The same conclusion can be driven based on the value of financial indicators in the non-financial disclosure. Namely, the banks continued to increase lending, investment and issuance towards sustainability goals and all the ESG pillars. In general, banks (groups) directed more funds to the E pillar, but also some of them started to pay more attention to the S pillar.

Table 4. Comparative analysis results: coverage and similarities/differences in 2022 non-financial reporting of large banks in Croatia (Source: Authors' presentation.)

	BANK B-L1	BANK B-L2	BANK B-L3	BANK B-L4	BANK B-L5	BANK B-L6
Standards used in reporting	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (TCFD)	GRI; UNSDG	GRI; UNSDG
Supported SDGs:	*Bank (Group) supports all 17 SDGs but 5 SDGs priorities are* 1, 3, 4, 8, 10:	*Bank (Group) supports all 17 SDGs but 13 SDGs priorities are* 1, 3, 4, 5, 7, 8, 9 ,10, 11, 12, 13, 16, 17:	*Bank (Group) supports all 17 SDGs but 9 SDGs priorities are* 1, 3, 4, 5, 6, 7, 11, 12, 13:	*Bank (Group) supports all 17 SDGs but 13 SDGs priorities are* SDGs 1, 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 16, 17:	*Bank supports all 17 SDGs but 6 SDGs priorities are* 3, 4, 5, 8, 12, 13:	*Bank (Group) supports all 17 SDGs but 8 SDGs priorities are 1, 6, 7, 8, 11, 12, 13, 14:*
Material topics related to SDGs and/or GRI Standards:	Cyber security; Climate and environmental impacts; Positive impact on society; Digitalization and Innovation; Business ethics; Fair business behavior; Political and social changes; Value to clients; Diversity and inclusion; Future of work; Employee empowerment; Bank solidity;	Transition to a sustainable, green and circular economy (*SDGs: 7, 12, 13, 17)*; Group value and solidity (*SDG: 8)*; Climate change (*SDGs: 7, 13, 17)*; Financial inclusion and supporting production (*SDGs:* 1, 3, 4, 5, 8, 9, 11,17); Quality of service and customer satisfaction (*SDG: 3);*Innovation, digital transformation and	*(classified by stakeholders)* • Clients: Responsibility in business (SDG 1, 12; according to GRI 200); Client satisfaction (SDGs: 4, 6, 7, 11); Right to personal data protection; • Employees: Diversity and equality (SDGs: 4, 5); Training and skill development (SDG: 4); Employee work-life balance and	*(classified by strategic priority or principles*): SDGs 1, 7, 8, 9, 11, 12, 13, 16, 17: • E: Climate and environmental impacts of financing; • S: Social impact of financing; Financial inclusion and availability of products and services; • G: Safe Banking, Responsible relations with clients; Prevention of money	Ensure healthy lives and promote well-being for all at all ages (SDG 3); Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all (SDG 4); Achieve gender equality and empower all women and girls (SDG 5);	Two impact areas of strategic importance are Climate stability (SDG 1, 7, 12 and 13) and Circularity (SDG 6, 8, 11, 12, 14), covered by material topics of Compliance; Sustainable financing; Sustainable investment; Societal aspects within the core business; Economic value creation; Employee concerns; Inhouse

	Lean and transparent organization; Responsible tax practices	cybersecurity (*SDGs: 8, 17)*; Integrity in corporate conduct (*SDG: 16)*; Sustainable investments and insurance(*SDGs: 8, 13, 17)*; Retention, enhancement, diversity and inclusion of the group's people (*SDGs: 4, 5, 8, 10 ,17)*; Health, safety and well-being of the group's people (*SDGs: 3, 8)*; Employment protection (*SDG: 8)*; Community support and commitment to culture (*SDGs: 1, 3, 4, 11, 17)*	health (SDGs: 3, 5); (according to GRI 400); • Society (community): Social banking (SDGs: 1, 11); Financial literacy (SDGs: 4, 5, 11), Social responsibility (SDG: 11); (covered by GRI 200); • Environment: Efficient managing of environmental impacts (SDGs: 6, 7, 12, 13); (according to GRI 300) • Suppliers: Responsibility in selecting suppliers (SDGs: 6, 7, 12, 13); (according to GRI 300); • Investors: / (according to GRI 300)	laundering, Contribution to economic stability; Ethical and transparent management; Anti-corruption, Responsibility in the supply chain. SDGs 3, 5, 8, 10: • S: Responsible employer and organizational culture; Diversity, inclusion and human rights. SDGs 3, 4, 5, 7, 10, 13, 16, 17: • E: Environmental footprint and protection; • S: Community engagement and social impact.	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (SDG 8); Ensure sustainable consumption and production patterns (SDG 12); Take urgent action to combat climate change and its impacts (SDG 13)	ecology; Commitment to society and environment
Financial indicators related to ESG:	*Group level* • Lending: green (environmental) lending €11.4bn; social lending €4.8bn	*Group level* • Lending: lending for ecological transition (2021 and 2022 in total) €32bn; loans and services for the	*Group level* • Lending: corporate (environmental objectives) €2.2bn; green (retail) mortgages	*Group level* • Lending: green lending €665mn (bank in domicile country); €75.8mn (group Croatia)	-	*Group level* • Lending: sustainable financing (excl.COVID-19 financing and excl. retail financing)

	• Investment: asset under management €28.7bn • Issuance: sustainable bonds €12.8bn Taxonomy-eligible activities/total covered assets (turnover) 34%; Taxonomy-eligible Activities/total covered assets (CapEx) 36%	green and circular economy – €6.3bn (of which €2.6bn green mortgages); social lending €9.3bn; ESG-linked loans to SMEs €2.2bn • Investment: asset under management €110bn • Issuance: sustainable bonds (social bond €750mln and green bonds €1bn) Taxonomy-eligible activities/total covered assets (turnover) 25.8%; Taxonomy-eligible activities/total covered assets (CapEx) 25.6%	(outstanding) €4.3bn • Investment: asset under management: €15bn • Issuance: €8.2bn of green, social or sustainable bond (for corporates, financial institutions, governments and supranational organizations) Taxonomy-eligible activities/total assets (turnover) 30.6%; ESG asset: 21.7% Taxonomy-aligned activities /total GAR asset 7.1%;	• Investment: ESG funds €171mn • Issuance: green bonds €400mn (bank in domicile country) Taxonomy-eligible activities/total assets 10.79% (Group consolidated) 2.54% (Bank Croatia);		€8.2bn; green financing €4.4bn; social financing €1.1bn; new green mortgage & unsecured green & social retail loan sales €466mn • Investment: sustainable funds €20bn • Issuance: green bonds almost €2bn • Investment: assets under management (retail customers) approx. €1.2bn (CEE level) Taxonomy-eligible activities/total assets: 13.7% (€28.9bn)
Inclusion in indices (selected data):	MSCI, Sustainalytics, CDP, S&P Global, Bloomberg, Standard Ethics, FTSE4Good, ISS ESG, Moody's ESG Solutions, Refinitiv	FTSE4Good, MSCI ESG, CDP, Euronext ESG, Morningstar ESG, Refinitiv, Solactive, DJ Sustainability, ECPI, Standard, Ethics	n/a data	Croatian Sustainability Index (HRIO)	n/a data	ISS ESG, Sustainalytics, MSCI ESG, FTSE4Good, Vonix, Moody's ESG Solutions, CDP

Table 5. Comparative analysis results: coverage and similarities/differences in 2023 non-financial reporting of large banks in Croatia (Source: Authors' presentation.)

	BANK B-L1	BANK B-L2	BANK B-L3	BANK B-L4	BANK B-L5	BANK B-L6
Standards used in reporting	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (e.g. SASB)	GRI; UNSDG; other key international initiatives (TCFD)	GRI; UNSDG	GRI; UNSDG
Supported SDGs: Material topics related to SDGs and/or GRI Standards (changes):	Same as in previous year. *Reduced list of material topics; from 14 to 10:* Cyber security; Climate and environmental impacts; Positive impact on society; Digitalization and Innovation; Business ethics; Political and social changes; Value to clients; Diversity, inclusion and employee; Lean and solid bank; Responsible tax practices. *(the Bank solidity and Lean and*	Same as in previous year. *Changed ranking:* Transition to a sustainable, green and circular economy (SDGs: 7, 12, 13, 17); Group value and solidity (SDG: 8); Climate change (SDGs: 7, 13, 17); Integrity in corporate conduct (SDG: 16); Financial inclusion and supporting production (SDGs: 1, 3, 4, 5, 8, 9, 11,17); Quality of service and customer satisfaction (SDG: 3); Innovation, digital transformation and cybersecurity (SDGs:	Same as in previous year. *classified by stakeholders:* same as in previous year. *classified by strategic priority or principles*: • E (green transition – climate and environment: financed emissions, sustainable finance and investment, ecological impacts of banking operations); • S (social inclusion: diversity and inclusion, employee work-life balance and health,	Same as in previous year. *(classified by strategic priority or principles*), changed composition: *SDGs 1, 7, 8, 9,11, 12,13,16,17:* • E: Climate and environmental impacts of financing; • S: Social impact of financing; • G: Safe Banking, Responsible customer relations and availability of financial products and services; Ethical management, transparency and compliance; Prevention of money laundering,	Same as in previous year. -	Same as in previous year. • E: sustainable financing and investment (Climate change); Inhouse Ecology (Emissions, Energy, Business Travel) • S: sustainable financing and investment (Human rights, Circularity); Societal Aspects within the Core Business (Financial Inclusion,Data Protection,Responsible Sales Practices and Marketing); employee concerns (Employment, Diversity, Health,

	transparent organization topics have been merged as Lean and solid bank; Employee empowerment, Diversity and inclusion and Future of work have become Diversity, inclusion and employee engagement; Business ethics and Fair business behaviour have been merged as Business ethics)	8, 17); Sustainable investments and insurance (SDGs: 8, 13, 17); Retention, enhancement, diversity and inclusion of the group's people (SDGs: 4, 5, 8, 10 ,17); Health, safety and well-being of the group's people (SDGs: 3, 8); Employment protection (SDG: 8); Community support and commitment to culture (SDGs: 1, 3, 4, 11, 17).	talent attraction and retention, customer satisfaction, financial inclusion and capacity building); • G (good governance and compliance: data security, business ethics).	Contribution to economic stability; Responsibility in the supply chain. SDGs 3, 5, 8, 10: • S: Diversity, Inclusion and Human Rights; Responsible employer and organizational culture; Development and promotion of a culture of sustainability. SDGs 3, 4, 5, 7, 10, 13, 16, 17: • E: Emissions from operations and environmental impacts • S: Community involvement and social contribution.	-	Employee Development, and Involvement); Commitment to Society and Environment (Donations and Corporate Volunteering, Commitment to sustainable framework conditions, Financial Literacy) • G: Compliance (Combating money laundering, terrorism and corruption, Tax Compliance, Political Engagement); Commitment to Society and Environment (Donations and Corporate Volunteering, Commitment to sustainable framework)
Financial indicators related to ESG:	*Group level* • Lending: green (environmental) lending €7.6bn;	*Group level* • Lending: lending as a part of the National Recovery and Resilience Plan	*Group level* • Lending: corporate €2.95 bn; households €10.8 bn;	*Group level* • Lending: corporate green loan €1.2bn; (green lending		*Group level* • Lending: sustainable financing (excl. retail financing)

	social lending €3.9bn • Issuance: sustainable bonds €12.6bn; green, bonds €5.6bn, social bonds €0.2bn • Investment: asset under management: €10.7bn • ESG volumes supporting clients in their transition towards more sustainable business in 2022 and 2023: €82 bn (+€26bn in 2023 only) Green Assets Ratio (GAR) stock €5.9bn; Green Assets Ratio (GAR) flow: €1.2bn; KPI turnover based 1.2% (of total GAR assets €551bn); KPI CapEx based 1.8%	€45bn (2021-2023); disbursements in the field of environmental sustainability €3.7bn (6.2 % of total loans); green mortgages €1.7bn; social lending €5.5bn; ESG-linked loans to SMEs €1.7bn • Issuance: sustainable bonds (social bond €903.6mn; green bonds €5.2bn) • Investment: asset under management €33 bn. Green Assets Ratio (GAR) stock €15.0bn; Green Assets Ratio (GAR) flow: €3.8bn. KPI turnover based 2.7%; KPI CapEx based 3.3%	• Investment: asset under management: €31bn • Issuance: €17.5 bn of green, social or sustainable bond issuances for corporates, financial institutions, governments and supranational organizations; Taxonomy – eligible activities/total assets 31.7%. ESG asset: 22.2%; Green Assets Ratio (GAR) stock: €1.3bn; Green Assets Ratio (GAR) flow: €0.3bn; *KPI turnover: 0.5% of total GAR assets (€1.25bn);* KPI CapEx based 0.8%	€60mn) (Croatia group) • Investment: €4.7mn • Issuance: - Taxonomy – eligible activities/total assets 2.7%; Green Assets Ratio (GAR) stock €32.5mn; Green Assets Ratio (GAR) flow: /; KPI turnover based 0.05%; KPI CapEx based 0.09%		€11bn; green financing €5.5bn; social financing €1bn; new green mortgage & unsec. green & social retail loan €738.5mn • Investment: sustainable funds €24.6bn • Issuance: green bonds €2bn (placed in domicile country; green and sustainable €2.9bn in CEE); €4.9bn (issuance for clients) • Investment: assets under management (retail customers) €1.47bn (CEE level) Taxonomy-eligible act./total assets: 14% Green Assets Ratio (GAR) stock €528mn KPI turnover based 0.42%, KPI CapEx based 0.71%; Green Assets Ratio (GAR) flow: /; KPI (turnover) 0.43%; KPI CapEx based 0.78%

5. Concluding remarks and recommendations for future research

Our research suggests that the E pillar of ESG was and still is in the focus of business according to the banks' non-financial reports in the observed qualitative terms (reported material topics), but also quantitative ones (reported ESG-related financial indicators). What was evident was the continued strong influence of the previously relevant NFRD (up to 2024), as well as the EU Taxonomy's orientation on environmental issues, reflecting the priorities at the time of the regulation's creation. However, when we observed the EU Taxonomy upgrade, the CSRD harmonized non-financial reporting standards and demand for material topics disclosure, which took a direction of equalizing importance of all the ESG issues, a large step forward was obvious in the context of the S pillar, issues to which were previously, according to quantitative data, underestimated. The CSRD, including the recent Omnibus package, and especially the ESRS standards in reporting, are expected to bring more transparency, measurability and comparability in non-financial reporting. The content of non-financial reports of large banks in Croatia for financial years 2022 and 2023, under their previous obligation of non-financial reporting by implementing the NFRD and a preparation for the upcoming CSRD implementation, was in those years already to a large extent modified towards the CSRD reporting standards. This could be seen in the reported facts and by a continuous promotion of "equal weighting of the E and the S issues". The topic will benefit from further research in terms of inclusion and analysis of the reports for the financial year 2024 onwards. It would be interesting and important to investigate how those reports will change in content, but also in financial measures and results of the ESG implementation in the banking business. In addition, in order to acquire a broader picture of ESG integration into business practice in general, it would be a worthwhile endeavour to observe whether other financial and non-financial sectors in Croatia, but also wider, demonstrate a similar disclosure behaviour.

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JOURNEY WITH PURPOSE: THE INTERSECTION OF PILGRIMAGE AND VOLUNTEER TOURISM

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Abstract

This paper explores the underexamined concept of pilgrimage volunteer tourism, addressing a gap in the existing literature on both pilgrimage motivations and volunteer tourism. While much attention has been given to the altruistic and heroic narratives surrounding volunteer tourism, less focus has been placed on the influence of religious beliefs. This may be due to concerns about potential controversy between secular and non-secular perspectives. However, recent studies have started to incorporate spiritual elements into the discourse. Building on this momentum, this paper investigates the case of pilgrimage volunteerism at Lourdes, a site renowned for its themes of miracles and hope. Volunteers accompany disadvantaged and disabled individuals searching for spiritual healing, merging pilgrimage and volunteerism. Both forms of tourism share common motivational factors, with altruism playing a central role. By examining the intersections of these concepts, the study contributes to a deeper understanding of pilgrimage volunteer tourism. It highlights the need for further academic exploration of this unique niche within the tourism sector.

Keywords: *volunteer tourism; pilgrimage; spirituality*

JEL classification codes*: L83,* Z32, Z12

1. Introduction

Volunteer tourism has emerged as a significant phenomenon within the tourism sector, experiencing notable growth in recent years (Wearing and McGehee, 2013). This burgeoning interest has paralleled increased academic literature and research on this contemporary form of tourism (Tomazos and Butler, 2009; Wearing and McGehee, 2013; Callanan and Thomas, 2005). Modern tourists increasingly seek alternative forms of engagement, driven by various motivational factors (Wearing and McGehee, 2013; Mustonen, 2005). A particularly specialised subset of volunteer tourism is 'pilgrimage volunteer tourism'.

Pilgrimage, a form of religious tourism, involves visiting holy sites and seeking spiritual transformation. The pilgrimage to Lourdes, a place renowned for its heritage, miraculous healings, and divine apparitions, illustrates this. These stories motivate young volunteer tourists to assist pilgrims, drawn by the site's history and faith in the miraculous.

While existing literature extensively explores the motivations behind pilgrimage, the concept of pilgrimage volunteer tourism remains underexamined. Volunteer tourism adds another dimension to this experience, offering participants the chance to serve those in need, often in alignment with their religious or spiritual values (Tomazos, 2024). This gap underscores the need for further research to explore this micro-niche in the tourism sector. Volunteer tourism offers a new context where the desire to serve others merges with religious principles, inspiring journeys to sacred sites for external service and internal spiritual growth. This paper is unique because it offers a case where religion and spirituality are deeply linked to episodic volunteer engagement in a tourism setting.

This paper explores how faith-based volunteer tourism and pilgrimages blend spiritual growth, religious motivation, and the pursuit of miracles, using the pilgrimage to Lourdes as a case study. This site was chosen due to its significance as one of the few authenticated Marian sites and also its symbolic significance as the most visited pilgrimage site in Europe, with over 5 million annual visitors (Sacredsites, 2024). The number of pilgrims has grown exponentially in recent decades turning the site into a place where despite the Catholic Church's efforts to emphasise pilgrimage (Reader, 2007), it has also become a shrine where pilgrims and secular tourists come together, putting pressure on the site creating phenomena of overtourism and threatening its sustainability (Chaney and Seraphin, 2021).

The story of Lourdes dates back to 1858 when a young girl, Bernadette Soubirous (later Saint Bernadette), had multiple apparitions of Our Lady and experienced the first documented healing at Lourdes. Turner and Turner (1978, in Eade 1992, p. 20) describe Lourdes as embodying a sense of living communitas, where pilgrims and tourists share a deep communal spirit. Many sick individuals travel to Lourdes, hoping to be miraculously cured by the shrine and its sping water, which is said to have miraculous properties. While there are over 7,000 reported cases of healing since the apparition, only 70 cases have been verified and recognised as miraculous by the Church (Catholic News Agency, 2019).

Although there are no precise statistics on the number of volunteers who visit each year, various organisations, charities, and dioceses converge at this sacred site to offer disabled and disadvantaged individuals hope and an unforgettable experience. Notably, while Catholicism is the primary religion practised by pilgrims visiting Lourdes, it is not a prerequisite for participating in these groups.

In the context of this paper, young volunteer tourists play a crucial role in the Lourdes pilgrimage, providing essential support and enriching the experience for pilgrims who visit this sacred site. Their contributions go beyond logistical assistance; they embody the values of service, compassion, and community deeply rooted in the pilgrimage's rich heritage. Lourdes' history of miraculous healings and divine apparitions draws millions of visitors each year, making it a place of spiritual significance and a key destination for faith-based tourism.

The paper employs a qualitative methodology to a) examine the unique case of the Faith Based Volunteer Tourism, where pilgrim volunteer tourists accompany disadvantaged and disabled young individuals, aiming to offer support and foster potential miraculous healing, and b) to contribute to a deeper understanding of the complex dynamics of religiously motivated tourism and the personal transformations that emerge from these experiences. Combining pilgrimage and volunteer tourism presents an intriguing concept, as both forms share significant similarities in expectations, motivations, and satisfaction, with altruism being a central motivator for participants in both contexts. This paper investigates these intersections, contributing to understanding this unique form of tourism and highlighting the need for more comprehensive academic exploration.

2. Literature overview

2.1. Religion and spirituality: connecting to the supernatural

Religion is a significant motivator for volunteer tourism and a primary factor driving individuals to participate in pilgrimages. The meaning of religion varies globally across numerous faiths. Pilgrimage tourism is "...a journey resulting from religious causes, externally to a holy site, and internally for spiritual purposes and internal understanding" (Barber, 1993, in Collins-Kreiner, 2010, p. 440), highlighting the link between religion and spirituality. Where religion is present, spirituality often follows (Willson et al., 2013). However, the degree to which individuals incorporate deep spirituality into their lives depends on personal practice. Canda and Furman (1999) define religion as an "...organised structured set of beliefs and practices shared by a community related to spirituality" (Canda and Furman, 1999, p. 54 in Moss, 2005), while Brunton's exploration of spirituality and its connection to tourism revealed that spirituality is a fundamental driver of tourism (Brunton, 1934).

The concept of spirituality is complex, with varied academic definitions over time. Peng-Keller describes it as having an "ambiguous metaphorical matrix" (Peng-Keller, 2019). It is often considered a vague notion with different meanings in different contexts (Carrette and King, 2005), carrying diverse connotations and emotions. Lepherd (2015) describes spirituality as a component of human experience that lacks a consistent societal meaning (Lepherd, 2015 in Hills et al., 2019). Horan (2011) argues that spirituality's elusive definition complicates measuring its impact on pilgrims and its relationship with religion. Achieving a universally accepted definition is challenging, as spirituality is subjective and continuously evolving (Willson et al., 2013). Carrette and King (2005) suggest that spirituality, celebrated by traditional religions, serves as a force for healing, personal wholeness, and transformation—motivations for spiritual tourism.

Religious belief often involves the supernatural and its influence on daily life. This interplay between the ephemeral and the spiritual is central to contemporary religious practice. In an age of secular empiricism, defining the supernatural remains complex. Moss (2005) describes the supernatural as "...a divine being or beings or spiritual forces which to some extent influence the behaviour of human beings" (Moss, 2005, p. 08), while Robertson (1970) notes that "...religion refers to the existence of a supernatural being that has a governing effect on life." Historically, authors have avoided using the "supernatural" in defining religion due to underlying motives within various faiths, but its usage has recently increased (Hultkrantaz, 1983). Individuals often let the idea of a higher power guide their religious or spiritual journey, sometimes unconsciously. The

supernatural concept initially evoked inspiration and fear as ancestors formed relationships with these entities (Rossano, 2010). The deep connection to the supernatural was so novel that it felt almost 'unnatural.' Today, the supernatural is commonly discussed in religious contexts, with Rossano asserting that religion "signifies a supernaturalising of life" (Rossano, 2010). The relationship between religious individuals and supernatural beings is as crucial as their relationship with God or spirits.

This link to the supernatural is particularly pertinent to this study, as the pilgrims to Lourdes traditionally journey to ask the Lady for a miracle or some form of intervention. This paper does not have the remit to comment on miracles, but 70 reported cases of miraculous healing have been assessed initially by the Bureau des Constatations Medicals de Lourdes and confirmed later by the Catholic Church, the latest one being in 2018.

While the literature on miracles and tourist behaviour is scarce, there are studies in patient care that shed light on the expectations of patients who find hope in the supernatural or the divine. There is still a gap in our understanding of how the subconscious mind works. Recent studies in manifestation explore the power humans possess to influence our realities through our subconscious beliefs (Proctor, 2016; Kuhn, 2013). This notion became widely known through the work of Byrnes (2006) in her book, the Secret, which discussed how our mindset directly affects our lives; how far does this go? Can our mind heal the body? Can miracles happen? One would assume that miracles are rarely discussed in the world of science. Medicine and psychology, however, evidence shows that miracles are a significant constant in daily hospital experiences and patient care (Ellington et al., 2017; Saad and Medeiros, 2018; Shinall et al., 2018; Bibler et al., 2020; Gradick et al., 2020). This is specifically true for cases where patients have been told that there is no hope of a medical cure, and in this case, studies have pointed out that there is strong resistance and discomfort in handling such questions by the experts who care for them (Green, 2015; Ellington et al., 2017; Freitas et al., 2017). What is proposed by some scholars is that the belief in miracles can be understood mainly as a spiritual/religious coping mechanism (Pargament and Hahn, 1986; Pargament et al., 1990). The evidence also shows that scholars view the belief in miracles as a means of avoiding confronting the reality of a gloomy diagnosis (Carlsson et al., 2019; Borges and Petean, 2018) or as mere wishful thinking (Vasconcelos and Petean, 2009).

The mind can wonder, especially when faith is strong and one visits a place associated with miracles. This understanding underlines the challenging task facing the volunteers in this study; especially when dealing with tough questions about being

human, God and spirituality; a heavy burden for a young volunteer tourist, both pilgrim and volunteer.

2.2. The volunteer tourism context

In recent years, volunteer tourism has transformed the landscape by merging travel and leisure with community service and labour (Tomazos, 2020; 2024). Although this sector is characterised as a mass niche form of tourism, its precise scale remains elusive (McGehee, 2014). Hernandez-Maskivker et al. (2018), drawing on Biddle's (2019) research, estimate that the industry generates $2 billion annually and involves around ten million volunteers globally. Estimating the industry's size and scope is complicated by the various definitions used, leading to inconsistencies (Cousins, 2007).

Critics argue that volunteer tourism represents a neoliberal commodification of development volunteering (McGloin and Georgeou, 2016; Wearing and McGehee, 2013). Coghlan and Noakes (2012: 123) note that "money" and "mission" have become trade-offs in this context, with legitimate organisations needing to use their profits to fulfil their social missions (Coghlan and Noakes, 2012; Devereux, 2008). One major criticism is the difficulty in measuring the positive impact of volunteer tourism on development (see Atkins, 2012; Lyons et al., 2012; Lyons and Wearing, 2008; Mostafanezhad, 2013; Palacios, 2010; Simpson, 2004; Sin, 2009; Tomazos and Cooper, 2012; Vodopivec and Jaffe, 2011). It is crucial to differentiate between development volunteering and volunteering for development. The former employs sophisticated techniques and experts to address identified needs or crises, while the latter involves young, untrained volunteers who believe they can make a difference. Volunteer tourism differs from development volunteering or volunteering for development; it represents a unique category.

This ambiguity and overlaps have led prominent researchers to advocate for further segmentation of the industry into micro-niches (Wearing et al., 2020), which could help capture its rapid growth and expansion (Wearing and McGehee, 2013). Faith-based volunteer tourism and by extension pilgimage volunteer tourism is one of them. This paper builds on this momentum by examining Faith-Based Volunteer Tourism (FBVT) (Tomazos, 2024) in the context of pilgrimage volunteers to contribute to the expanding body of literature that suggests volunteer tourism has a more existential and esoteric foundation (Kontogeorgopoulos, 2017; Mostafanezhad, 2013; Noy, 2004).

2.3. Volunteer tourism and pilgrimage motivations

Tourists are often motivated by each religious site's unique local identity and history (Norman, 2011). This is exemplified by the context of this study, the pilgrimage to Lourdes, where pilgrims aim to 're-enact' Bernadette's story of being cured by the Lourdes water (Catholic News Agency, 2019). Pilgrimage, akin to volunteer tourism, is regarded as an 'authentic' form of travel (Greenia, 2018) and is a cultural phenomenon with deep roots in the world's major religions, one of the oldest forms of tourism (Mustonen, 2005). Barber (1993) defines pilgrimage as "...a journey resulting from religious causes, externally to a holy site, and internally for spiritual purposes and internal understanding" (Barber, 1993 in Collins-Kreiner, 2010, p. 440). It is an act of profound faith and spirituality to enhance the religious knowledge of the individual undertaking the journey.

One of the core principles of the Christian faith, helping one's neighbor, manifests through volunteering. The parable of the Good Samaritan exemplifies the essence of being a good Christian (Arli and Lasmono, 2015; Yeung, 2004). Lutheran theology teaches that a person is not deemed righteous by God based on their actions but is instead freed by God's grace to answer the call to serve and volunteer (von Essen et al., 2015). Expanding circles of responsibility and care—from oneself to family, community, nation, and the world—is integral to many religious traditions. For example, Judaism emphasises "Tikkun" (healing) and "Tzedakah" (charity) in its teachings, while the Quran extols the virtues of generosity. These and other religious traditions collectively and individually inspire and motivate religious individuals to volunteer (Arli and Lasmono, 2015; Cnann et al., 1996).

In their analysis of volunteering and Christian travel, Ron and Timothy (2018) identify four categories of activities undertaken by Christian volunteers: short-term missions, solidarity visits, long-term missions, and volunteering at biblical archaeological sites. This research focuses on a specific micro-niche within short-term mission Christian volunteer travel, which aligns with the definition of volunteer tourism—purpose-driven, episodic travel (Wearing, 2001) involving work engagement for a specific organisation or cause without financial compensation (Tomazos, 2009).

Clerkin and Swiss (2013) discovered in their study of Christian volunteers that religious motivations were the primary driving force, with adults showing a stronger inclination than youth volunteers. They identified two specific types of religious motivations: (1) personal religious motives, such as "I volunteer because it makes me feel closer to God," and (2) institutional religious motives, like "I volunteer because my faith

encourages me to do so." The study revealed that personal motives drove 83% of respondents, while 75% were motivated by institutional motives.

Littlepage et al. (2007) determined that spirituality was the strongest predictor of volunteer motivation, with volunteers often adopting a "love thy neighbor" mindset. They categorised religious activity into two distinct groups: (1) those with an individualistic worldview, focused on addressing social issues by changing individuals with inadequacies, and (2) those with a communal worldview, believing that solving social problems requires changing social institutions, as individuals are influenced by social, economic, and political factors (p. 15), including altruism.

As highlighted by Coghlan and Gooch (2011) and other scholars, altruistic motives are believed to be central to volunteer tourism. Wispe (1978 in Tomazos, 2009, p. 34) defines altruism as sacrificing one's time for the benefit of others without expecting personal gain (Unger, 1991). Despite variations in its definition across the literature, Unger argues that altruism invariably results in positive outcomes, as it revolves around the desire to assist others. Consequently, altruism is predicated on the volunteer's inclination to meet the needs of others, devoid of personal gain.

In addition to altruism, volunteers are driven by the inherent human inclination to aid others (Tomazos, 2009), a principle central to the context of this study. While altruism entails sacrificing personal time for the benefit of others, volunteers participating in the Lourdes pilgrimage harbour a particular desire to support the cause at hand. The entirety of the pilgrimage is centred on assisting those less fortunate (children with terminal illnesses) and providing them with care throughout the journey. Thus, in addition to altruism, a fervent dedication exists to aiding others and advancing the cause within which the individual volunteers.

Vukonie (1996, 53-7), as cited in Norman (2011), endeavours to bridge the gap between religion and tourism by asserting that tourists are motivated by their religious beliefs to volunteer or visit sites. They contend that a distinct correlation exists between religious beliefs and the inclination to visit or volunteer at specific sites. Both volunteer and pilgrimage tourists may be spurred to engage in volunteer tourism due to its cathartic nature (Zahra and Mcintosh, 2007) and its profound transformative effect, offering "psychological relief through the expression of strong emotions." Individuals are motivated to partake in these volunteer experiences to cultivate positive feelings and potentially experience life-changing effects (Soanes and Stevenson, 2005 in Zahra and Mcintosh, 2007). Pilgrimage tourism revolves around this notion, aiming to make an impact and touch lives through faith, belief in the efficacy of religion, and camaraderie among pilgrimage participants. In the case of Lourdes, volunteers aspire

to positively influence the lives of young people facing disabilities or disadvantages, buoyed by their belief in Lourdes's miracles and apparitions (Collins-Kreiner and Kliot, 2000).

Blackwell (2010) delves into pilgrimage-specific motives, acknowledging that pilgrims may not always disclose their motivations or articulate them clearly. Nonetheless, Mustonen (2005) posits that traditionally, individuals partake in pilgrimages to accrue merit or seek absolution from sin—a perspective that varies among pilgrims in the contemporary context (Mustonen, 2005 in Blackwell, 2010). Pilgrims embark on these journeys as acts of contrition, seeking repentance and genuine reconciliation. Pilgrims participating in spiritual or penitential journeys anticipate personal transformation and spiritual healing. Similarly, all volunteers harbour expectations before their endeavours, contingent upon their motivations and the anticipated benefits they will either receive or facilitate for others.

2.4. Spiritual tourism and pilgrimage: bridging pilgrimage and volunteer tourism

Spiritual tourism represents a niche distinct from religious or pilgrimage tourism (Kujawa, 2017). While pilgrimage is defined as a journey based on one's religion (Collins-Kreiner and Kliot, 2000; Collins-Kreiner, 2016), spiritual tourism is driven by a personal quest for spiritual experience and growth, with growth being a common factor between the two forms of tourism. Hall (2006) describes spiritual tourism as centred around 'religious experience.' This form of tourism is seen as a manifestation of the alternative and contemporary spiritual movement, which explores various spiritual paths (Besecke, 2014 in Cheer et al., 2017). This ambiguity is underlined by the prolific nature of spiritual pursuits and capitalist market offerings that fills the void left by the retreat of religion in the lives of the people in the West (Carrette and King, 2004), a very mouldable humpty dumpty, that means whatever the speaker wants it to mean (Rowe, 2001: p. 41), more akin to a "…brand label that signals values, transcendence, hope and connectedness in advanced capitalist societies" (Carrette and King, 2004: p. 32). Spiritual tourism is part of this powerful commoditisation movement that reflects the status quo and is seen as a force for wholeness, healing and inner transformation. Under a deluge of alternative solutions to the alienating effect of life, religion is in danger of becoming "…no more than a service sector to the global civilisation, no longer shaping the values, but merely repairing the spiritual damage it inflicts" (Cox, 2003: p. 24).

There is a growing curiosity about diverse cultures and experiences in the contemporary world, blending premodern and postmodern tourism into new,

alternative travel forms (Mustonen, 2006). Sociological analyses and tourism studies suggest significant similarities between volunteer tourism and pilgrimage (Eade, 1992; Zahra and McIntosh, 2007). Just like in the case of volunteer tourism and helping others, the literature reflects the ongoing debate and controversy surrounding religion, which remains subjective and influences individual perceptions (Gokariksel, 2009). Moss (2005) posits that individual and societal beliefs define religion and, by extension, becoming a pilgrim. The same applies to altruism, helping others, and volunteering (Tomazos, 2020). While motivations for pilgrimage and volunteer tourism vary, a common thread is travelling for a purpose (Wearing, 2001). Regardless of the motive, participants in both cases typically experience lasting impacts on their values, behaviour, and feelings toward the location, people, and purpose they served (Zahra and Mcintosh, 2007). Both can, at least in theory, strengthen personal beliefs, though the experience is subjective and varies by individual interpretation and impact (Tomazos, 2024; Tomazos and Murdy, 2023).

Upon reviewing the literature on the motivations for both volunteer tourism and pilgrimage, it becomes evident that the draw of the site and the expectation of rewards from the supernatural is significant. Whether for personal fulfilment or religious devotion, the anticipation of rewards is a substantial motivation for participation. Moreover, participants may perceive rewards as tangible, intangible, real, imagined, or even extended to the afterlife. This notion parallels the psychological approach to the placebo effect, where participants convince themselves of expected benefits, such as experiencing miracles at sites like Lourdes or deriving personal benefits from their altruistic acts.

The concept of manifestation, where individuals believe they can attract desired outcomes through focus and energy, is pertinent to pilgrimage and volunteering. This concept may subconsciously motivate participants, unaware they are engaging in psychological processes (Proctor, 2016). The law of attraction, a similar notion, posits that individuals can attract positive or negative outcomes through their thoughts and energy, a concept often unconsciously applied in daily life. This phenomenon may explain how individuals attribute positive occurrences to their altruistic deeds, unknowingly participating in the law of attraction (Byrnes, 2006; Kuhn, 2013). However, while intriguing, there is limited empirical evidence to support these concepts in the context of volunteer tourism and pilgrimage.

Applying these theories to pilgrimage may spark controversy, particularly in religious sites like Lourdes, where pilgrims seek spiritual healing or connection like those who came before them. The discussion raises questions about the authenticity of reported miracles and supernatural experiences, prompting reflection on the interplay between

religion and psychology (Carlsson et al, 2017; Borges and Petean, 2018). While empirical evidence is scarce, these concepts offer an intriguing foundation for exploring the complexities of religious belief and its intersection with volunteer tourism.

2.5. Emerging research questions

Building a bridge between pilgrimage and volunteer tourism in the context of the examined case requires answering the following four questions:

- How does Faith-Based Volunteer Tourism function in the context where pilgrim-volunteers accompany disadvantaged and disabled young individuals, and what roles do support and beliefs in potential miraculous healing play in this experience?
- What are the underlying motivations, expectations, and perceived outcomes for participants in religiously motivated volunteer tourism, particularly for personal transformation and spiritual growth?
- How do pilgrimage and volunteer tourism intersect, and how do shared elements such as altruism, satisfaction, and spiritual motivation inform participant experiences in Faith-Based Volunteer Tourism?
- How can the study of Faith-Based Volunteer Tourism contribute to a broader academic understanding of the dynamics of religiously motivated travel and its psychosocial impacts on both volunteers and recipients?

3. Materials and methods

The interviews conducted for this study took place in the summer of 2023. They were one-on-one sessions between the researcher and selected participants. The research instrument was specifically tailored to explore volunteer motivations and understand what factors influenced their decision to participate. By delving into motivations, the study also aimed to uncover participants' expectations.

The interview questions were structured to prompt detailed responses, allowing a deeper exploration of the subject matter. As highlighted in the theoretical section, several previous studies, such as those by Wearing and McGhee (2013) and Coghlan and Gooch (2011), informed the design of the research instrument, influencing the selection of questions and overall approach.

The interviews in this study adopted an open-ended structure, allowing participants to be prompted with additional questions during the interview process. This approach,

influenced by Baker and Foy (2012), facilitated higher-quality data gathering by encouraging participants to provide more detailed responses beyond the set questions. Moreover, the interviews were personalised to elicit raw data influenced by participants' emotions and opinions on volunteer tourism, pilgrimage, and related sub-themes.

These interviews were conducted face-to-face to ensure real-time data collection without the risk of low response rates, as Langkos (2014) noted. While the interviews followed a structured format to ensure comparable data aligned with the study's original aims and objectives, they also allowed flexibility to probe further into specific topics or explore additional subjects. This balance between structure and flexibility enabled collecting relevant and comprehensive data pertinent to the research.

The raw qualitative data from the unstructured interviews was transcribed and analysed. These interview transcripts were meticulously examined, with the researcher coding the data line-by-line to identify themes emerging from the responses. This coding process organised the collected data into thematic categories directly related to the study's aims and objectives, facilitating analysis relevant to the research. The resulting 74 codes were further filtred into 20 subthemes before using the literature to break the subthemes into five key categories: a) Religion and spirituality, b) Passion and Connection, c) Personal Benefits, d) Challenges and Self Growth, and e) Catharsis. Notably, the coding process remained flexible, allowing for the emergence of new themes that may not have initially been anticipated.

Relevant quotations from the interview transcripts were included to support the identified themes. It's important to note that the researcher interpreted the themes based on their perception of the data. However, the respondents were invited to comment on the identified themes after the analysis (Coleman, 2022).

Any extraneous or irrelevant parts of the interviews were omitted to streamline the analysis and focus on the most significant content, following the guidance of Stuckey Heather (2015). Anything that the writer found personally intriguing, disturbing, or surprising from the research was removed to remove bias and emotional reaction (Tomazos, 2009).

4. Findings and discussion

4.1. Profile of participants

The study involved 12 participants (n12) who participated in interviews to discuss their volunteer tourism and pilgrimage volunteer tourism experiences and motivations for participation. All volunteers came from the UK and participated in the pilgrimage to Lourdes with a well-known charity. The participants' ages ranged from 18 to 25, and they possessed varying levels of involvement, roles, and expertise within the pilgrimage and the organisation. This sample size was considered sufficient as it allowed for in-depth interviews, ensuring ample time for data collection and comprehensive responses. Table 1 outlines the profiles of the participants at the time of the interviews, outlining their age and occupation.

Table 1: Profile of participants

Participants	Age Range	Occupation/Education
Participant 1	18-25	Event Manager.
Participant 2	18-25	Apprentice software developer for a business engineering company.
Participant 3	18-25	Full-time student studying law.
Participant 4	18-25	Spina Bifida support worker, studying Midwifery
Participant 5	18-25	Studying Spanish and Marketing.
Participant 6	18-25	Part-time retail worker and full-time student.
Participant 7	18-25	Freelance graphic designer and full-time student
Participant 8	18-25	Social media manager for small business and full-time student
Participant 9	18-25	Part-time barista and full-time student
Participant 10	18-25	Hospitality worker and full time student
Participant 11	18-25	Full-time fitness trainer and part-time student
Participant 12	18-25	Intern at an NFP organisation and full time student

Source: Author's presentation.

Zahra and MacIntos's (2007) study found that volunteers often tend to be younger rather than older. This study found that it is common for individuals to first participate during their youth as they are encouraged by schools, families, or religious backgrounds to fundraise and join.

Regarding occupation, the participants were all employed by an organisation or themselves. In terms of education, each participant either went through higher education to some extent or was still participating in higher education; hence, it can

be assumed that the participants are knowledgeable and educated. This reflects work that found that those with higher education are much more likely to volunteer than those with lower education levels (Fényes and Pusztai, 2012, p. 13). It is said that education intensifies one's awareness of the world's problems, increasing one's empathy towards others and further developing a more prominent desire to volunteer (Wilson, 2000).

4.2. Types of volunteering

Each of the individuals took part in the same pilgrimage to Lourdes during Easter. It involved taking disabled, disadvantaged and terminally ill young people and adults on a chaperoned trip.

Often, individuals may feel motivated to volunteer to develop or enhance one's career (Clary et al., 1998). Volunteering may interest participants in relation to career development as a personal benefit. As discussed in the interviews, "it was initially good for the CV" (Participants 1,3), so it could be assumed that the interviewees were positioning themselves for employment opportunities in the future. Although most of the study's participants did not mention that this was a direct motivation, most interviewees suggested indirectly that it was a motivation for participation. Not only is it motivating for the volunteers, but it can also be beneficial in leading them to the career path they desire; creating new career prospects for individuals (Akintola, 2011). All of the participants used the services of a single sending organisation for their pilgrimage volunteer work. The organisation was a profoundly religious, Catholic organisation that had headquarters in Lourdes. It had strong links to the pilgrimage and is a well-known organisation that has been organising the same pilgrimage experience for years. That includes screening and preparing the volunteers.

> "*They have to undergo GDPR basic training, produce a police disclosure certificate, and undertake child protection training to work with children who are potentially vulnerable. There is also a lot of safeguarding for young people who may have a difficult background and school setting. There is also training for working in a team and then progressing to working with other young people*". **(Participant 10)**

Although all participated through the same religious organisation, only one had taken on more volunteering within their faith community.

"*Again, the opportunity was offered to me through the church. I hadn't heard of anything like it, so I don't know if there is any similar charities but I hadn't heard of it before, so I just took the chance*". **(Participant 8)**

4.3. Motivations for participation

One of the main objectives of this study was to investigate why individuals wanted to participate in pilgrimage volunteer tourism and then further what their motivations were to participate in pilgrimage work. As discussed earlier, there is a vast amount of academic literature and research into the motives of volunteer tourists (Tomazos and Butler, 2009; Wearing and McGehee, 2013; Callanan and Thomas, 2005); however, there are very few studies explicitly based on the motivations of pilgrims (one of the few examples is Vukonie (1996, pp. 53-7) in Norman (2011). Interestingly, finding a study that looks into the motivations of pilgrimage-related volunteer tourists is nearly impossible.

The results of this study run similarly to those motivations outlined by Clary et al. (1998), developing and enhancing the individual's career; enhancing personal development; conforming to the norms for significant others; escaping the negative; developing new skills and abilities and lastly, expressing values related to altruistic beliefs (Clary et al. 1998) and the main identified themes of a) Religion and Spirituality; b) Passion and connection to the cause; c) Personal Benefits; d) Challenges and Self Growth; e) Catharsis.

4.3.1. Religion and spirituality

This study found that religion and spirituality are critical motivations for participants to volunteer in pilgrimage, particularly Catholicism for the pilgrimage to Lourdes, as previously discussed. The interview results show that the individuals would consider religion their most significant motivation for pilgrimage for multiple reasons. All of the participants, to some extent, were motivated by faith, whether it was the outcome they were expecting, the idea of growth within their religion, their connection to the supernatural/spirituality or their hereditary religious background, briefly discussed previously. Faith is subjective to the individual, so each participant was expected to see their religious motivation slightly differently (Gokariksel, 2009). The findings from this research reiterate previous literature that defines pilgrimage as being a result of religion and personal spiritual fulfilments (Barber, 1993, in Collins-Kreiner, 2010); with one of the participants stating;

> "*Religion and spirituality is definitely a key motivator. One of the most memorable moments was during a candlelight procession. A little girl, who had been very quiet and reserved, suddenly started singing along with the hymns. Her face lit up with such joy and her parents were moved to tears. It was a beautiful reminder of the power of these shared experiences".* (Participant 2)

Mustonen's (2005) study reveals that pilgrims often partake in pilgrimage to remove sin and feel merited after the 'journey', which benefits their mind and conscience. Participants mentioned that there is a "spiritual therapeutic outcome" (Participant 2) from participating in the pilgrimage to Lourdes. The idea of an event being therapeutic suggests having had a treatment and experienced healing as a result. The study's findings further suggest that the pilgrimage is that treatment; it allows the individual to feel personal healing, whether of their mind and conscience or feel cleansed of sin by being closer to religion. It is expected that before volunteering, the volunteer will come away from the experience with their values and behaviours being affected, and their feelings will shift (Zahra and Mcintosh, 2007). This was demonstrated when one of the participants informed me that they were motivated to participate as "*...it's a rewarding experience, mentally and spiritually*" (Participant 4).

The results of this study show a relationship between the volunteer pilgrims' level of motivation and the fact that the pilgrimage is Catholic. Each of the interviewed participants practices Catholicism, and the pilgrimage they travel on is mainly of that religion; however, it is not a requirement to travel with the particular organisation in which they do. One of the interviewees stated that "I would say religion and practising is a key motivator for me" (Participant 3), which would suggest that their ability to practise while involved in volunteering further motivated their participation, allowing them to grow and continue to experience that spiritual connection with the supernatural and their religion while volunteering. This underlines the hybrid nature of their participation as both volunteers and pilgrims.

Another volunteer indicated "personally I don't know if I would be as motivated to go to a different religious site" (Participant 5). This suggests that the individual is not only motivated by the religious aspect but also the fact that it is their religion; the individuals would not feel as motivated to participate in a pilgrimage in which they did not follow the religion and could not participate in the practice. This touches on the idea that faith and supernatural relationships are a driver for participation.

Specifically, with the pilgrimage to Lourdes, the pilgrims and volunteers are driven by the idea of the supernatural and gaining a more profound connection within their religion. According to Rossano (2010), individuals' relationship with supernatural

beings is as meaningful as that with God. During the study, one of the participants commented that the supernatural is a "...really important connection to have ... if I ever needed anything that connection would keep me safe" (Participant 8). Individuals are motivated to make this connection to feel satisfied with their journey and to continue feeling assured and closer to God.

Often, motivations will cross paths with volunteers, and multiple motivations can create a stronger urge for participation. As discussed, it is often the case that individuals will follow family traditions or take inspiration from family for what they aspire to achieve, with one of the individuals stating their "...nana has always been close to Mary in her beliefs ... that has always brought me closer [to the idea of supernatural]" (Participant 11), which further had an impact on the participant's relationship with these supernatural figures. This confirms Rossano's idea that our ancestors and previous generations believed these figures to guide the lives of the believers and have a governing effect on believer's lives (Rossano, 2010; Robertson, 1970). Pilgrimage allows individuals to build upon these relationships and strengthen them through faith.

4.3.2. Passion and connection

This study found that another motivation for participation in pilgrimage volunteer tourism is feeling passion or a connection to the cause in one way or another. During the research, all participants stated that they felt a connection to the idea of pilgrimage, but individually, they felt passionate about the pilgrimage they went on to Lourdes and what it represented- hope and helping others. Each participant stated that they were motivated by the cause and helping those less fortunate than them; with one saying "my main motivation is to help others" (participant 6), and another stating "you are taking a child who needs a holiday or a week away from home, that could change their life" (Participant 1). Participant three stated that they were motivated by their "Passion for the cause" (Participant 3). However, most importantly, as previously discussed, pilgrims travel to Lourdes in the hope of miracles or that they can leave feeling less burdened by their circumstances in more ways than one.

> "*I expected the charity work to be a bit of a laugh, quite relaxed and not have to do much and not a big responsibility. But when you realise what you are saying is impacting on another young person's life then it does matter. Volunteering to go to Lourdes has probably changed my life, because you are taking a child who needs a holiday or a week from home away, that could change their life*". **(Participant 12)**

The pilgrimage volunteers are facilitators for the pilgrims, motivated to assist them so that they return home happy and feeling at peace. What makes this experience different is that the volunteers had to face questions from children that conventional volunteers do not have to answer;

> "*The children often ask heartfelt and deeply moving questions about getting better. They might ask, "Will the water make me better?" or "Can I be healed like Saint Bernadette?" These questions are both hopeful and challenging. I always try to respond with honesty and compassion. I explain that Lourdes is a place of faith and miracles, and while we pray for healing, the most important thing is the love and support we share with each other. I reassure them that they are not alone and that their courage and spirit are incredibly powerful*". **(Participant 9)**

The above quote underlines the feeling of discomfort and even powerlessness that young volunteers expressed when dealing with such questions. In general, how one responds to a question about their belief in miracles would be linked to faith and the extent of their religiosity- but offering a religiosity-meter does not fall within the remit of this study. Still, the findings highlight the exceptional circumstances under which these young people find themselves as both pilgrims and volunteer tourists.

The individuals participate for a selfless reason and to help the cause, relating to the idea that altruism is central to pilgrimage. It was their duty to do all they could to make the experience unique for the pilgrims and change their life; with one of the participants confirming;

> *"[it is about] making their time special and unforgettable; many children seem to find a sense of peace and comfort during their time in Lourdes. Participating in the rituals, such as the candlelight procession and visiting the Grotto, often brings them a lot of joy and spiritual fulfillment. Even if their physical condition doesn't change, there's a noticeable uplift in their spirits. They often express feeling more hopeful and connected, not only to their faith but also to the community of pilgrims who share in their journey*". **(Participant 3)**

It appears that the participants feel a connection to the children they are looking after, almost a responsibility for ensuring they have a good time. Not only is the pilgrimage unique for the pilgrims, but it is also unique and unforgettable for the volunteers, with one stating there is "...a wee buzz about it like ... just a feeling that I can't explain" (Participant 4). This feeling understandably motivates the pilgrims to return to Lourdes with this specific organisation.

> "*If the people in Lourdes... weren't so welcoming and weren't so happy that the pilgrimage was taking place it wouldn't go ahead like it does and it goes well. If they weren't happy about it, it probably wouldn't be as easy since they are happy to have us in hotels and restaurants in large numbers*". **(Participant 8)**

Most of the pilgrims had hereditary influences, through their family traditions and encouragement to participate, with participant 1 stating that "...[motivation] for pilgrimage it would have been my family and religious background" while another mentioned, "...my dad was already going to Lourdes" (Participant 2). The volunteers were influenced by their families and encouraged through family beliefs to participate in the pilgrimage. Not only did the participants' families encourage them to volunteer, but Participant 2's father was already a member of the specific pilgrimage to Lourdes, so understandably, this individual felt a strong connection to the pilgrimage and, hence, took part and continues to do so in line with the family tradition, but also a long heritage of catholic pilgrims that took on the same journey. This motivation is heavily discussed in academic literature, where researchers found that family and tradition heavily influences volunteers (Bang and Ross, 2009; Khoo and Engelhorn, 2007; Farrell, Johnston and Twynam, 1998).

4.3.3. Personal benefits

This study found that the individuals received personal benefits from participating, successfully meeting their expectations and continuing to be motivated to return. A number of the participants discussed the benefits they expected to achieve going into their volunteering, and the experiences they had that motivated them to go back, evidenced in one of the participants stating, "I was surprised how many benefits you actually get out of it" (Participant 5). For some of the volunteers, there was a motivation of "...what experience I could get from it" (Participant 1), and they were keen to gain this experience, hoping it would be good for their CV or to say that they had taken part in a unique experience (Wearing et al., 2016).

However, this raises some doubt about whether all volunteers are in it for the right reasons: selfless volunteering, with a religious expectation, involving spiritual growth, understanding, and like-minded individuals, rather than volunteering through selfishness and the desire for personal benefits (Unger, 1991). Or is the motivation irrelevant as long as one participates and helps the cause? (Tomazos, 2009). Another motivation expressed was the idea of positive social outcomes, like making friends and widening their social circle. This aspect of the experience was stated as the key motivating factor for return trips. Social facilitation is a key motivator for volunteer

tourism that is discussed extensively in academic literature (Coghlan and Gooch, 2011; Stebbins, 2001; Pearce 1993; Mustonen, 2005; Tomazos and Butler, 2009; Wearing and McGehee, 2013). Almost all of the participants said social benefits were a key motivator for them, saying, "I have met loads of new friends during volunteering" (Participant 1) or "I loved the people" (Participant 4). Just like any event, volunteering is no different. Individuals are always more inclined to get involved in any situation when they get on with the other people there, so, understandably, all participants were encouraged by the social side of pilgrimage volunteering.

> "*I have made connections through people for work and more volunteer work. Definitely, opens your eyes to a whole new world. No matter how privileged you don't believe that are you are always in comparison to someone else. The young people we work with, the conditions they operate and live in that is their life and it would shock you. But it is how some people live without choice*". **(Participant 11)**

Not only does it allow the participants to mix and work with people similar to them, but it also allows them to become culture-dotes by interacting with different cultures and nationalities (Ooi and Laing, 2010). Although often the results of the pilgrimage are positive and encourage the individuals to return, it is unrealistic to believe that there are no negative experiences.

4.3.4. Challenges and self-growth

All participants revealed that they experienced different challenges throughout their experience, each having a different idea of the difficulties pilgrimage volunteers face. Often, there is a gap in academic literature regarding the specific challenges volunteers and pilgrims can face before, during or after their participation. This study confirms a variety of different problems that the participants faced.

The most prominent hurdle volunteers had to overcome was a mental one, and linked to the responsibility of the tasks undertaken "...it is challenging getting over the mental worry that you are in charge of someone's child for the week" (Participant 5) and "...especially since they are going to need additional support" (Participant 8). The anticipation and expectations of the week ahead for the volunteers travelling to Lourdes made them question their personal abilities and have self-doubt. Having this level of responsibility seemed daunting for all participants when partaking in pilgrimage volunteering. However, once they were there and the volunteering had begun, the worries faded, and they felt comforted by their fellow volunteers.

This can further reflect the benefits of formal volunteering, where one can benefit from the organisational support and the cycle of volunteers (Holmes and Smith, 2009; Tomazos and Butler, 2012). Volunteering through an organisation provides a safety net for others and guidance that allows them to feel more confident to take on their role. Moreover, this sense of camaraderie and learning together encourages them to return and continue learning and taking on more challenges each year, as expressed by Participant 6, "...this year I am opting to do something that is even more challenging". Evidently, this suggests growth in the individuals and that formal volunteering is much more manageable and reassuring for young volunteers who are still learning (Holmes and Smith, 2009).

To some extent, volunteering is commonly a result of altruism. In theory, at least, participants give up their free time with no expectation of specific personal rewards or benefits to benefit others, i.e. those vulnerable, disabled and disadvantaged young people that they are helping (Unger, 1991; Wispe, 1978 in Tomazos, 2009, p. 34). Each participant in this study confirmed that this was a key motivation for them to volunteer in general, but specifically within pilgrimage due to the type of individuals they supported. The week-long trip allows the individuals to see the impact they are having on these young people, who may never have had an opportunity like this; "It is more the enjoyment of the kids you get from it; you can see you are making a difference" (Participant 5). However, this can still pose challenges for volunteers in the long run. Volunteers can visibly see their impact on the individual in Lourdes and the bond they have created over the week; making the end of the pilgrimage difficult to accept (Ungur, 1991). One of the participants stated that "the hardest part is saying goodbye" (Participant 2). This is especially relevant to this form of volunteering in pilgrimage, where the individuals may be going home with a disadvantaged lifestyle. The volunteers are unable to get involved in the child's personal life after the trip ends, and this feeling of helplessness prevails (Tomazos, 2020).

4.3.5. Catharsis

Every individual who participated in this study gained life-changing experiences through volunteer work; this can also be described as a cathartic experience. Participants are motivated to continue volunteer work in the future due to its cathartic nature (Zahra and Mcintosh, 2007), with one volunteer stating that "...it [volunteering through pilgrimage] has changed my life" (Participant 2); confirming previous academic literature that individuals' views change through volunteering. The volunteers' lives were changed in a variety of ways. Some participants discussed the

idea that they had gained more everyday knowledge that they will now always carry with them, while others mentioned the life-changing lessons and experiences gained surrounding specific disabilities and being able to have this unique quality that they can carry into the future with them. A few participants mentioned that it made them re-evaluate their home situation and how much they had taken for granted. It allowed them to reflect and make changes to their personal life; with one participant commenting that "Lourdes has probably changed my life" (Participant 1) and "it changed my outlook on people… how you live your own life when you come home" (Participant 1). The participants were left questioning their self-values before volunteering, and each recognised its real impact on their life. One participant revealed that the pilgrimage made them change their life and career after realising the path they were meant to follow. Participant 4 is an example, they were studying Zoology at university and, through their volunteering, realised that this was not the career they wanted to pursue and wanted to dedicate their life to being a midwife, adding a road to Damascus moment to their participation (Tomazos, 2009). The pilgrimage volunteering may only temporarily disrupt the individual's life, but this transformation can have long-lasting benefits (Hudson and Inkson, 2006). These results echo previous studies, which concluded that volunteering experiences impact careers, study paths, and the general direction an individual aims to go in life (Pan, 2014; Brown, 2005).

4.4. The pilgrimage volunteer tourism model

As a result of the study's findings, a model has been developed for the emerging main motivational factors for pilgrimage volunteer tourism. The graph captures the motivations as three interconnected circles. Although this graph draws on the motivations of the 12 respondents, it gives a starting point for understanding this new form of tourism.

The Pilgrimage Volunteer Tourism model comprises of three primary motivations: Religion & Spirituality (Vukonie, 1996), Personal Benefits and Selflessness & Altruism (Smith et al., 1995; Tomazos, 2009). These three motivations all overlap, developing motives that manifest where the circles overlap. As the three circles come together, they bring to the fore the three key drivers that underline the participation. Accordingly, passion and connection are where religion and spirituality meet selflessness and altruism. This underlines the power of what these pilgrim volunteers have in common, their faith and their cause.

Growth and social connection emerge where religion and spirituality meet the personal benefits from participation. The study of volunteer tourism and volunteering accepts that volunteers should and can draw benefits from their participation. The pilgrim volunteer tourists in this study were not different as they drew strength from each other and forms friendships in the spirit of working together for a good cause.

Finally, catharsis comes to the fore at the crosssection of selflessness, altruism, and personal benefits. The cathartic nature of volunteer tourism has been identified in the volunteer tourism literature underlining the transformational nature of such experiences. The participants in this study, as both piglims and volunteer tourists reflected on this as illustrated in the findings.

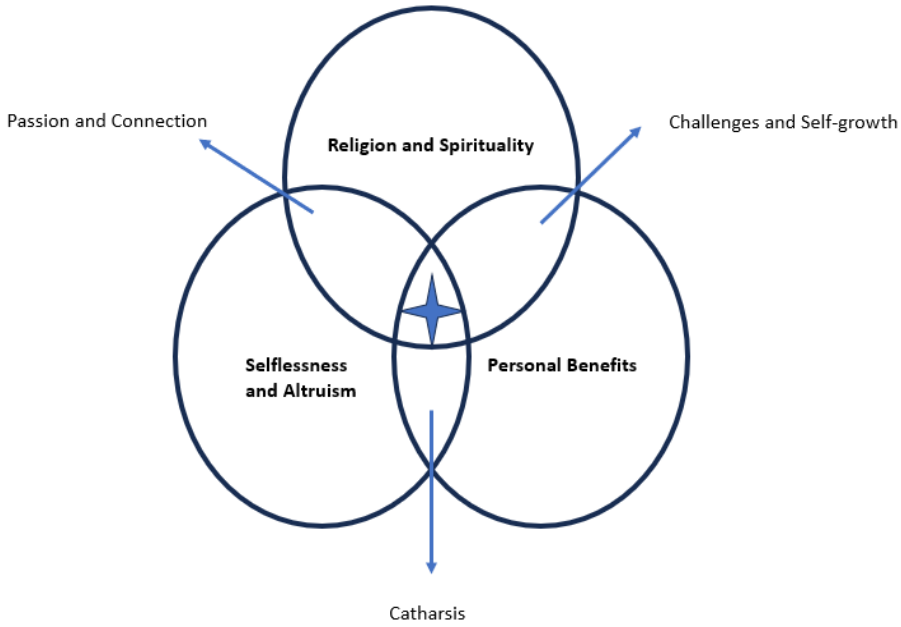

Figure 1: The Heart of Pilgrimage Volunteer Tourism
Source: Author's presentation.

Taking a closer look, the three key motivations overlap where the three circles meet where catharsis, personal growth, passion, and connection to their faith and volunteering come together. This illustration cements the understanding that in the context of this study the particpants were both pilgims and volunteer tourists. They found themselves in a new setting that became their home for a few days, and they had an important job. They supported a good cause and perceived that they made a difference in the lives of young individuals travelling with the hope of a miracle. This 'hopeful travel' element is what underlines the exceptional nature of this case study- a volunteer tourism setting like no other- where pilgrims, volunteers and tourists

interact in an environment that is both religious and secular but with clear common ground, helping children and hoping for a miracle- and that is at the heart of pilgrimage volunteer tourism.

4.5. Contribution and managerial recommendations

4.5.1. Contribution to theory

This study makes a significant theoretical contribution to the limited and emerging body of literature on pilgrimage volunteer tourism by offering nuanced insights into the complex interplay of motivations—religious, altruistic, and personal—that drive individuals to participate in this unique form of travel. The study extends existing theoretical frameworks in religious tourism and volunteer tourism scholarship by conceptualising pilgrimage volunteer tourism as a hybrid space where spiritual devotion, service to others, and personal transformation converge. It challenges conventional distinctions between the sacred and the secular in tourism studies, positioning faith-based volunteerism as a deeply embodied practice that is simultaneously spiritual, social, and self-reflective. Furthermore, the study presents a motivational model that illustrates how interconnected drivers—such as spirituality, altruism, and the search for meaning—create a dynamic and transformative travel experience. This contributes to a more holistic understanding of how individuals use tourism not only for leisure or service, but as a mode of spiritual engagement, identity formation, and personal renewal.

4.5.2. Managerial implications

a) Develop structured pilgrim volunteer programs

Tourism Boards and Faith-Based Organizations (e.g., diocesan offices, religious tour operators) should create or enhance structured programs that integrate volunteering opportunities with spiritual pilgrimage experiences. These programs should provide clear roles, expectations, and spiritual preparation, helping volunteers balance service with their religious journeys.

In the process, they should promote such FTVT opportunities through targeted outreach campaigns for youth and young adults, emphasising spiritual growth, social connection, and altruistic fulfilment, leveraging existing youth networks (e.g., parishes, Catholic schools, universities, youth ministries).

b) Training and support for volunteers

Providers should offer pre-departure training and on-site support for volunteers to better equip them emotionally and spiritually for serving individuals with special needs. A key part of this preparation would incorporate reflective sessions or spiritual guidance that help volunteers process their experiences, fostering deeper personal transformation.

c) Partnerships between tourism and religious organisations

Encourage collaboration between secular tourism providers and religious institutions to support logistics, accommodations, and meaningful itineraries that respect the journey's spiritual and service aspects. These partnerships can ensure that ethical standards, inclusivity, and cultural sensitivity are maintained throughout the volunteer experience.

d) Marketing that emphasises transformational experience

Promote pilgrimage volunteer tourism as transformative and purpose-driven travel, appealing to individuals seeking more meaningful tourism experiences. Use storytelling and testimonials from past participants to showcase how the combination of faith, service, and travel leads to lasting impact.

e) Diversify destinations beyond Lourdes

Explore potential for replicating the Lourdes model in other pilgrimage destinations (e.g., Fatima, Santiago de Compostela, Assisi, Jerusalem) where spiritual service and volunteering can be integrated. Adapt programs to different cultural and denominational contexts while preserving core elements of religious motivation, altruism, and personal growth.

f) Align with broader trends in purposeful tourism

Position pilgrimage volunteer tourism within broader trends like FBVT, wellness travel, and healing tourism, increasing its visibility and appeal to a growing segment of values-driven travellers.

5. Conclusion

This study examined the unique case of Pilgrim Volunteer Tourism in the context of young volunteer tourists travelling to Lourdes to support pilgrims with special needs. The study's aim was two-pronged: to explore this under-researched segment of the volunteer tourism market and to contribute to a deeper understanding of the complex dynamics of religiously motivated tourism and the personal transformations that emerge from these experiences.

While this study offers valuable insights into the emerging phenomenon of pilgrimage volunteer tourism, it is not without limitations. The research focused specifically on young volunteer pilgrims traveling to Lourdes. This unique and spiritually significant destination may limit the generalizability of findings to other pilgrimage sites or cultural contexts. The participant sample was relatively homogenous regarding age and religious background, potentially excluding diverse perspectives from other demographics or faith groups. Additionally, data were primarily self-reported through interviews and reflective accounts, which may be subject to bias, including retrospective interpretation and social desirability. The study captured experiences within a limited time frame and did not assess long-term personal or spiritual transformation. Furthermore, the research centred on volunteer perspectives, with limited input from organising institutions, religious authorities, or host communities. As illustrated in this study, combining pilgrimage and volunteer tourism presents an intriguing concept. Both forms share significant similarities in expectations, motivations, and satisfaction, with altruism being a central motivator for participants in both contexts.

The study shows that pilgrimage volunteer tourism is a unique form of tourism that combines religious devotion, altruism, personal growth, and social interaction to offer immediate and long-term rewards for participants. In this context, the participants in this study were found to be both pilgrims and volunteer tourist.

The model developed in this study outlines the three primary motivations—religion and spirituality, personal benefits, and altruism- and provides a clear framework for understanding the motivations behind pilgrimage volunteer tourism. This model highlights the interconnectedness of these motivations and suggests that while religion and spirituality may be the primary drivers, the personal and social benefits of volunteering are also integral to the overall experience. The study underscores the importance of recognising the complex interplay between these motivations and how they work together to create a meaningful and transformative volunteer experience.

This research contributes to the limited literature on pilgrimage volunteer tourism by providing new insights into the motivations that drive individuals to participate. It highlights how religion, spirituality and tourism combine to offer a unique and powerful way for individuals to engage with their faith, help others, and experience personal transformation. As such, it is a form of tourism with significant potential for continued growth and development in academic research and practice. Future studies could further explore the long-term impacts of pilgrimage volunteer tourism on the volunteers and the communities they serve and their evolving motivations as volunteer tourism becomes increasingly popular across different religious and cultural contexts. Finally, future work should incorporate longitudinal approaches and comparative analyses across different faith-based and secular volunteer tourism models, which could deepen understanding of this complex and evolving form of tourism.

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THE POSSIBILITY OF APPLYING SOCIAL MARKETING IN THE CATHOLIC CHURCH AND CHURCH ORGANIZATIONS IN BOSNIA AND HERZEGOVINA

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Abstract

There is an increasing growth of believers leaving the church and the question arises of how the church can "restore" lost believers, attract new ones and to keep the tradition, doctrine of faith and the purpose of its existence. Based on secondary data and primary research conducted in Bosnia and Herzegovina via a questionnaire, the aim of this paper was to investigate the possibilities of applying social marketing in the activities of the Catholic Church and related organizations, to investigate the opinions of the respondents on the moral aspect of applying marketing in the church, the opinions and attitudes of believers about the Catholic Church, to investigate the level of religiosity of the respondents and to investigate which marketing activities are most appropriate in church activities according to the respondents' assessment and responses. The results of the research showed that the majority of respondents believe that certain marketing activities can be applied in the field of church activities and that there are no ethical and moral dilemmas for the application of certain marketing elements. The respondents recognized the use of certain marketing elements in existing church activities, but assessed that they are used insufficiently and unsystematically. When asked about the importance of religion, the respondents mostly answered that religion is important to them and that it is important to live in

accordance with religious principles. The results showed that the church has a good image and a positive perception by the respondents and that they do not have a negative attitude towards other religions in Bosnia and Herzegovina.

Keywords: *social marketing, church marketing, attracting church members, Bosnia and Herzegovina (BiH)*

JEL classification codes: *M31, M37, M39*

1. Introduction

In today's postmodern and consumerist world, more and more people are leaving the church, and the question arises as to how the church can "return" lost believers and attract new ones, while maintaining the fundamental teachings and not violating the tradition that has lasted for two millennia. All of the above indicates that the church no longer has the option of choosing or not to use marketing elements in its activities, but rather the question arises as to which elements and to what extent to use if it wants to grow and spread the Catholic faith and the activities of the church organization itself (Balog, 2012). According to Wrenn (2011), there are numerous controversies regarding the use of marketing in the church, from traditionalists who believe that the church does not need any marketing activities because such a practice implies mixing the secular with something sacred, such as the church and religion, to those who have long believed that the church already uses many elements of marketing and that marketing as a process could certainly help the growth of religion, such as Dunlap and Rountree (1982), Wrenn (1993), Clinton (1996) and Hines (1996). The media are very important and influential informants, although authors such as Herceg (2013) believe that today's media are more oriented towards a consumer society, and not doing what they should be – "informants of society and transmitters of truth in the world". The words of the late Pope John Paul II, "Do not be afraid of new technologies, for they are among the wonderful things that God has placed at our disposal to discover, use, and know the truth (...)" certainly confirm that both the church and church leaders perceive the media as important transmitters of truth in the world. The Pontifical Council (2000) states that the media, as a means of information for people, can produce positive and negative effects, and that people themselves choose how they will use these media, "for good or for bad".

The aim of this paper is to investigate the possibilities of applying social marketing in the activities of the Catholic Church in Bosina and Hercegovina (BiH) and related organizations, to investigate the opinions of the respondents (with an emphasis on the

younger population) on the moral aspect of applying marketing in the church, the opinions and attitudes of believers about the Catholic Church, to investigate the level of religiosity of respondents and to investigate which marketing activities are most suitable for the needs of the church. The importance of the Catholic Church in Bosnia and Herzegovina will be presented in terms of preserving the cultural heritage, identity and the very existence of Croats, who are a minority in relation to Serbs and Bosniaks in the total population of BiH. The purpose of evangelization carried out by the Catholic Church is to reach every person, offering them salvation. Mass media and the Internet as a means of marketing communication today can particularly contribute to this mission of the Catholic Church, while also responding to criticism, name-calling and mockery of the basic values of the Catholic Church in all media (Herceg, 2013). The relevance of this research can be viewed from two aspects, namely from the perspective of people involved in marketing and clergy who are responsible for running the church, as well as believers and all interest groups who want to participate and assist in the activities of the church and church organizations.

2. Catholic Church in Bosnia and Herzegovina – history, structure, organization, peculiarities and trends

Catholics in Bosnia and Herzegovina currently represent a minority compared to the other two religions represented in BiH, namely Islam and Orthodoxy. Historically, the Catholic Church in these regions dates back to apostolic times when Titus (a disciple of the Apostle Paul) traveled to Dalmatia, which included the southern part of present-day Bosnia and Herzegovina. The oldest diocese in the territory of present-day BiH is the one in Trebinje, founded more than a thousand years ago. Catholics in BiH have gone through and are still going through difficult times that began with the fall under Ottoman rule in the 15th century. A significant contribution to the reduction in the number of Catholics and great suffering and expulsions occurred after the war in Bosnia and Herzegovina in the 1990s, where many parishes completely disappeared, and almost entire dioceses, such as the Banja Luka diocese, where the number of believers decreased by two-thirds compared to the time before the war (Konferencija viših redovničkih poglavara i poglavarica Bosne i Hercegovine (1), n.d.). After the breakup of Yugoslavia, in 1994, a special Bishops' Conference (an association of dioceses in a particular state) of Bosnia and Herzegovina was established, which includes the Vrhbosna Archdiocese with its headquarters in Sarajevo and three dioceses: Mostar-Duvno, Trebinje-Mrkan and Banja Luka, as well as the Military Ordinariate, which was established in 2011. Today, in the Vrhbosna Archdiocese, half the number of believers than before the war living in 153 parishes. Numerous religious communities operate within this archdiocese, most notably the Franciscans of Bosna

Srebrena. There are also two theological academies and seminaries, schools and many other institutions. The Mostar-Duvno Diocese was established in 1881, when the Banja Luka Diocese was also established. Geographically, it covers the southern part of Bosnia and Herzegovina, together with the Trebinje-Mrkan Diocese. It consists of 66 parishes inhabited by diocesan priests and Franciscans, and its center is in Mostar. The Trebinje-Mrkan Diocese is, as previously mentioned, the oldest diocese in Bosnia and Herzegovina, consisting of 15 parishes. In this diocese, pastoral service is performed only by diocesan priests. The Banja Luka Diocese was founded in 1881. It consists of 48 parishes where pastoral service is performed by diocesan priests and Franciscans, and one parish is also led by Trappists. In addition to the above-mentioned dioceses, there is also a Military Ordinariate which is "authoritative for all Catholic believers in the Armed Forces of Bosnia and Herzegovina and their families". It was founded by Pope Benedict XVI in 2011. Several dioceses can be linked into one metropolis, so we can cite the example of the Vrhbosna Metropolis, which is composed of: the Vrhbosna or Sarajevo Archdiocese; the Mostar-Duvno Diocese; the Trebinje-Mrkan Diocese and the Skopje Diocese (Biskupska konferencija Bosne i Hercegovine (2), n.d.).

There are several churches and religious communities operating in Bosnia and Herzegovina, which are regulated by the "Law on Freedom of Religion and the Legal Status of Churches and Religious Communities" from 2004. This law classifies religious communities into three groups: historically established religious communities (Catholic Church, Serbian Orthodox Church, Islamic Religious Community and Jewish Religious Community); religious communities that were recognized as legal entities before the enactment of the Law on Freedom of Religion and the Legal Status of Churches and Religious Communities from 2004; and religious communities that may be established in the future. Religious communities in BiH are, according to the aforementioned law, accepted as legal entities in the civil legal sphere, therefore, as such, they have become public law institutions. Religious institutions as such can establish: companies, institutions, acquire, dispose of and manage property, then produce, procure, import and disseminate religious literature and other means used in the practice of religion and religious life. It is important to note that religious communities are separate from the state, which means that no religious community has the recognized status of a "state religion" nor can the state recognize it, and the state has no right to interfere in the affairs of religious communities or their internal structure and organization. Likewise, religious officials cannot have special privileges from the state in relation to other recognized religious communities and their officials (Biskupska konferencija Bosne i Hercegovine (3), n.d.). When it comes to religious freedoms, which are also defined by the "Law on Freedom of Religion and the Legal Status of Churches and Religious Communities in Bosnia and Herzegovina", the teaching of the Catholic Church has paid big attention to the issue of religious freedom

than any other religious community in the world, and the Catholic Church, through its teachings and advocacy, has contributed greatly to the drafting and adoption of international documents that proclaim and guarantee the right to religious freedom as one of the fundamental human rights (Biskupska konferencija Bosne i Hercegovine (3), n.d.).

The number of Catholics in Bosnia and Herzegovina, who are mostly people of Croatian ethnicity, continues to decline, and according to the latest available data, there are around 330,000 in that country, which is 94,000 fewer than immediately after the war in 1996. In 2024, the Bishops' Conference of Bosnia and Herzegovina published consolidated data, collected during the last blessing of homes, from which it follows that the exact number of Catholics in all three dioceses was 331,266. The largest number of believers, 181,456, was registered in the Mostar diocese, while in Vrhbosna, which is the territorially largest, there were 119,833.

In the Banja Luka diocese, which was hardest hit by the wartime suffering of Catholics, there were only 29,927 Catholics at the end of 2023. The number of baptized persons in relation to the number of deaths was higher only in the Mostar diocese, but even there the positive increase was modest with only 229 more baptized persons in relation to the number of deaths. Those familiar with the situation in BiH warn that official church statistics should be taken with a slight reservation because during the blessing of homes, at the insistence of the families, those persons who do not actually live in their home parishes, but only come there occasionally, are sometimes listed. However, the trend of a gradual decrease in the number of Catholics in BiH has been constant for almost two decades. Statistical indicators on the population of Bosnia and Herzegovina, except for church statistics, are mostly outdated and unreliable. The last census in the country was conducted in 2013, and due to political disputes, there are no indications that a new census will be conducted soon. According to these data, there were slightly more than 3.5 million inhabitants in Bosnia and Herzegovina, of whom slightly more than 544 thousand were Croats, slightly more than 1.7 million were Bosniaks, and slightly more than 1.0 million were Serbs. Statisticians estimate that BiH, faced with a large population outflow and unstable situation, currently has no more than 2.9 million inhabitants, and some believe that the real number of inhabitants is actually barely two million (Jutarnji list, website). The total number of priests in the last ten years ranged from 388 priests in 2005 to 310 priests in 2024. As for nuns, the total number ranged from 549 nuns in 2005 to 467 nuns in 2024 (Redovnistvo, website).

The survival and cultural heritage of Croats as a nation in Bosnia and Herzegovina is closely linked to religious identity and thus to the Catholic Church, which is the main religion of members of the Croatian nationality. According to Markešić (2010), the main

religious communities in Bosnia and Herzegovina – the Islamic community, the Catholic Church and the Orthodox Church – were and remain an inseparable part of the history and present in Bosnia and Herzegovina. The Croatian national identity was shaped and developed by the area in which it dominated, by the population that shaped it and the culture that defined it, but also by the institutions that preserved it from various historical threats throughout history, primarily referring to the Catholic Church, which played a very important role in this (Sršen, 2014).

There are three constitutive nations living on the territory of BiH, namely Croats, Serbs and Bosniaks. The territory of BiH is divided into two entities - the Federation of Bosnia and Herzegovina and the Republika Srpska. As nationality is largely linked to religious affiliation, we can say that Bosnia and Herzegovina is a multi-religious country with three major religions represented, namely Islam, Orthodoxy and the Catholic Church. A very important step forward in the improvement of interreligious dialogue was expressed by the joint efforts of the supreme leaders of four religious communities, who founded the Interreligious Council in Bosnia and Herzegovina in 1997.

The main goals of this council's activities in the coming time are (Interreligious council in Bosnia and Herzegovina, n.d.): (1) reducing prejudices and raising awareness of the importance of interreligious dialogue and cooperation through improving relations between churches and religious communities in Bosnia and Herzegovina; (2) improvement of relations between churches and religious communities with the state through joint efforts; (3) connecting IRC BiH with regional and international initiatives. Everyone is aware that dialogue between these four religions has no alternative and that efforts should be focused on creating and maintaining long-term peace and prosperity between members of all religions in Bosnia and Herzegovina. Some authors such as Markešić (2010) believe that "confessional nationalisms (Islamic, Catholic and Orthodox) greatly complicate the adoption of a final political solution in Bosnia and Herzegovina" because, as the author points out, "no political solution could hope for success and a longer duration if it was not supported by religious leaders, that is, national churches". This emphasizes even more the need for interreligious dialogue between the most represented religions in BiH, because only in this way will it be possible to establish a favorable political solution that will contribute to Bosnia and Herzegovina being a country of peace and true multiculturalism.

3. Application of social marketing in church organizations – church marketing

Christian religious communities tend to have a traditional way of working, rigid and difficult-to-change organizational structures, and are slower to adapt to

contemporary social changes. They are slower to accept scientific knowledge and practical knowledge from other fields, such as many social, technical, and humanities sciences. The main reason for this is that any new ideas and knowledge from other scientific fields must undergo a thorough "check" of their compatibility with the teachings and practices of Christian churches, which are based on the Holy Scriptures, and Christian religious communities are too slow to adapt (Balog, 2012). Authors such as Dobocan (2013) believe that there is some confusion and misconception among those who have not studied economics that marketing is essentially just selling and advertising products and services. Because of all of the above, he believes that there is a certain reluctance among members of the clergy and laity due to “the fear of transforming religious service and activity from something very important for the spiritual life of believers and the truth that the church has taught and transmitted for millennia into something that will tend toward materialism and the pursuit of financial gain.” Reising (2007) writes in his book about the different possibilities of applying church marketing that can represent a big turn in the growth of the church community by offering simple marketing techniques and instruments that are in line with biblical teaching, and it can be concluded that the author considers the use of church marketing extremely useful and applicable in the activity of the church and religious communities. Religiously oriented marketing literature continues to grow continuously and there is a growing interest in this area. Controversy about the application of marketing in religious communities will not be dismissed lightly, nor will empirical research on the benefits of marketing for church organizations, as was the case with other non-profit sectors. This was concluded by studying many articles and books in which authors (predominantly theologians) oppose the adoption of marketing, finding that almost all studied authors have an accurate perception of marketing and action, but disagree due to philosophical differences (Wrenn and Mansfield, 2001). Ultimately, the conclusion is that future attention should be focused on research from a marketing perspective about these philosophical differences, as well as the continuation of "sowing marketing fruits on the fertile soil of religious communities". Considine (2001) highlights the advantages of applying the marketing concept for religious organizations compared to traditionally "product" oriented ones and believes that church leaders are reluctant to consider using marketing tools and techniques or concepts primarily because they believe they already offer solid "programs" of worship, prayer, counseling, and sermons. In a study conducted by Tsarenko et al. (2011) in Australia, they found that marketing orientation was positively related to perceived benefits and indirect effects on participation in church activities. Appiah et al. (2013) investigate the impact of church marketing as well as its impact on (growth of) church attendance. They found that there is a positive correlation between church promotion and increased church attendance.

Burilović and Tanjić (2013) in their professional paper analyze the impact of the Internet on the Christian community, stating that it has a strong influence on people and their meaning of life. They believe that Christian communities must be more open to new technologies. Gazda and Kulla (2013) also show the importance, influence and use of new media (websites, social networks, etc.) in the Catholic Church, emphasizing that "new information and communication technologies enable a person to access information anytime, anywhere and in the simplest way, regardless of whether he or she is at work or relaxing." Some believe that religious congregations are under increasing pressure to strategically use social media platforms to stay engaged in their community and expand their influence. Otherwise, if they do not take advantage of the opportunities that are presented to them, it can cost the congregation its membership and even its survival (Lee, 2018). In their research conducted by Skoko and Gusić (2013), they reveal that for example in 2013, only 40% of parishes in the Zagreb Archdiocese were even present on the internet, and they conclude that the enormous evangelization opportunities provided by new media are not being used sufficiently.

Authors from many other fields not directly related to marketing, such as Labaš (1993), Peran and Mataušić (2013), emphasize the importance of social communication and the right to information, and authors such as Mazza (2002), Šaško (2000), Trstenjak (1998), Valković (2011), who emphasize communication and the media, clearly confirm that the need for the Church to communicate with existing and potential future members through various means of communication is of exceptional importance. Special attention should be paid to those who consider themselves and declare themselves to be believers, but are not practical believers, to investigate the behavioral patterns of such believers using the "Theory of planned behavior" because there is a link between the intention to participate in religious activities and the current perception of non-religious or non-practical believers (Dobocan, 2013).

In his national survey conducted long ago, McDaniels (1989) lists 43 marketing activities that were intended to investigate the suitability of the listed marketing activities that could be used or are already used in church activities. Marketing activities are divided into three parts, namely: marketing activities directed at those who are not members of the church community; marketing activities directed at church visitors; marketing activities directed at church members. Activities directed at church members were rated as the most suitable by both the clergy and the public. Joseph and Webb (2000) conducted an analysis and review of the effectiveness of promotional and advertising tools in retaining members and attracting new members of religious organizations. Based on a literature review, Wrenn (2011) concludes that churches that engage in the exchange process (offering members of their church community certain benefits and value) tend to increase the number of members of the

community and that there is a long tradition of using marketing tools to influence this exchange. As examples of non-profit activities that church communities offer and to which marketing tools and activities can be applied in the process of successful exchange with the general public, the author cites the following: food warehouses; home delivery of food to people with disabilities; clothing donations to those in need; foster care services; disaster relief (disasters, etc.); storing and collecting blood supplies for those in need; summer camps; legal aid; "safe houses" for victims of abuse; home construction and repair; rehabilitation programs for addicts; job training and workplace care programs; family and marriage counseling; HIV/AIDS counseling; day care; prison visits.

There are two most important motivating factors for going to church: it helps me to give thanks for everything I have received in my life (life blessings); it gives me personal spiritual fulfillment (McGratch, 2009). Both of these motivational factors are of an internal nature, i.e. motives, which means that respondents are mostly motivated for personal, spiritual reasons to go to church. Of the external motivational factors that influence going to church, respondents rated the following two factors: it gives me strength in "difficult times" – it belongs to the external-personal motivational factor; it sets a good example for our children – it belongs to the external-social factor.

Webb (2012), in a national survey conducted on the clergy of the Protestant Church, shows and proves a number of effective tools that can be used to retain members, attract visitors and convince them to become church members. The solution for the church to grow in terms of the number of believers is primarily the use of adequate types of marketing communication media. In addition to personal recommendations and monthly newsletters, the author believes that the church can no longer rely on traditional print media and once again emphasizes the advantages of applying or using marketing in its activities, especially those marketing activities that are based on Internet technologies, whether those are websites or social networks.

There are clear and specific benefits that are believed to result from adopting a marketing concept and implementing marketing activities in church organizations, and these are, according to Considine (2001): clearer vision; segmentation and sharper focus; more effective communication; increased member engagement and participation; positive public image; growth in membership. Directing activities towards building and recognising the brand (brand-orientation) is significantly associated with perceived benefits and participation in church activities. Church leaders should strive to engage in activities that contribute to building and recognising the brand in order to relevantly address and appeal to selected segments or target audiences. The alignment of spiritual and social benefits with recognising and building

the brand will lead to active participation of believers in church activities (Mulyanegara 2011).

Despite the fact that for-profit, non-profit and public organizations contain the same elements of the marketing mix, there are significant differences between them, and the marketing mix of for-profit organizations cannot simply be transferred to non-profit and public organizations without major adjustments and respect for the specifics of the organizations. The starting point of religious products is the fundamental religious teaching that constitutes the core or complex of dogmas, values and ideas, salvation goods" that characterize and distinguish religious organizations from all others and cannot be changed without seriously compromising their own mission (Angheluta et al. 2009). In considering the products offered by Christian religious communities, the product will be, from the perspective of the believer, the message of the gospel contained in worship, then from the perspective of society, the contribution to general culture, and from the perspective of the religious community itself, the believers. As the main "competitor" for Christian religious communities in our areas, Balog (2012) highlights the general secularization of society, which is increasingly having an impact on members of Christian religious communities, and not other religious communities, since he believes that such a form of competition almost does not exist because "religious and national identities most often overlap".

In the case of religious organizations, the price usually represents an indirect non-monetary form that is reflected through devotion to the church teachings of a certain religious organization and the desire and willingness of parishioners to allocate time, energy, volunteer work and money. We can talk about four price categories that could appear in the "user" of church services and products, namely: renunciation of material (economic) goods; renunciation of old ideas, values and opinions; renouncing the old form or pattern of behavior and accepting the new teaching; giving up free time and activities (Angheluta, 2009). In terms of financing, Christian religious communities are financed from various sources: alms from believers; their own activities (tuition fees); donors and sponsors; income from property (rents, interest, dividends), the state budget, local government and self-government; other income such as income from the sale of property (Balog, 2012). In the context of transmitting ideas, teachings, services and products of religious organizations, according to Angheluta et al. (2009), direct distribution is extremely important or the only possible method of distribution, but which distribution method (channel) will be used depends primarily on the type of product (idea, service, etc.) that is to be distributed to the target public. Balog (2012) emphasizes the importance of distribution in Christian communities primarily because it is through this that these communities carry out their fundamental mission, which is evangelization and the transmission of the Christian message to all people, as well

as "bringing" believers closer to the church and vice versa, and therefore it is very important to choose and make the right decisions regarding the distribution mix, especially "newer" channels such as the internet. In designing and implementing the promotion of products of the Catholic Church and church organizations, Balog (2012) defines the most important components of the promotional mix as: personal selling (forms of communication can be between laypeople, priests or laypeople and priests); sales promotion (business cards, brochures about religious events, religious items, etc., and most often presentations of the Christian faith at various organizations and gathering places); public relations and publicity (creating a favorable public opinion about the religious organization and its activities); advertising.

4. Research results

In order to carry out this research, data was collected on a sample of 254 respondents through a formalized written questionnaire. During the creation of the questionnaire, questions/assertions were used that will enable the acceptance or rejection of given hypotheses and additional recommendations and research on the use and possibilities of appropriate marketing in church activities. Of the total number of respondents, 149 are female and 105 are male. The largest number of respondents is in the age group of 19 to 26 years (46.85%), followed by 27 to 34 years (10.63%) and up to 18 years, which represent 9.84% of the total number of respondents. The majority of respondents are of younger age (67.32% of respondents are younger than 35 years), while only 32.68% of respondents are 35 years and older. The largest number of respondents has completed secondary education (40.94%), followed by university education (38.19%). The majority of respondents have a college, university or master's degree (51.58%), while 48.42% have primary and secondary education. The largest number of respondents is not married (63.39% or 161 respondents), while the number of married people is 84 or 33.07% of the total number. According to the structure of the population in the place where the respondents live, the largest number of respondents (62.20%) lives in a place with a population between 10,001 and 50,000 inhabitants. If we look at the overall structure, the largest number of respondents, 228 or 89.76%, lives in a place with a population of 50,000 or less, while only 10.24% of respondents live in a place with over 50,000 inhabitants. After presenting the general characteristics of the sample and applying descriptive statistics, the paper continues with an analysis of hypotheses.

H1 -There are significant moral and ethical obstacles to the use of elements of social marketing in the church and church organizations in Bosnia and Herzegovina.

The assumption for this hypothesis is based on existing indications and secondary data about a certain degree of non-acceptance of any form of "secular" elements in the activities of the church by clerics and believers.

Table 1. Descriptive statistics of selected statements for the H1 hypothesis

H1 Descriptive Statistics							
	Mean	Median	Mode	Min	Max	Standard deviation	Variation coefficient
1. I believe that there are significant moral and ethical obstacles in the use of marketing in church activity	3,4803	3	3	1	5	1,23	35,46
2. I believe that elements of marketing (e.g., surveys of believer satisfaction, promotion of church events, etc.) can be applied to some extent in church activities.	3,7992	4	4	1	5	0,99	26,10
3. I believe that marketing activities would make it easier for believers to participate in religious activities and bring them closer to the faith and teachings of the Catholic Church.	3,7007	4	5	1	5	1,17	31,66

Source: Authors' calculations.

For the first statement, the median value is 3, which shows that half of the respondents do not think that there are significant moral and ethical obstacles to the use of marketing in church activities or have an indifferent opinion. For the second and third statements, at least half of the respondents agree with the statement.

Table 2. Response frequency distribution for the Statement 2

Frequency table: Statement 2			
	Number of respondents	Struktura (%)	Cumulative frequency "more than"
1	6	2,36	100,00
2	14	5,51	97,64
3	77	30,31	92,13
4	85	33,46	61,81
5	72	28,35	28,35
Total	254	100,00	-

Source: Authors' calculations.

It is evident from Table 2 that 61.81% of respondents agree with the statement to a greater or lesser extent. An interval estimate of the proportion tests whether the proportion of respondents represents a statistically significant majority.

From the interval estimate of the proportion, it can be seen that the proportion of respondents who agree with the statement will range from 55.53% to 67.81%. Since the

lower limit of the proportion estimate is greater than 0.50, the assumption that the majority of respondents agree with the statement can be accepted. Based on the frequency distribution of the answer to statement 3, it was determined that 57.87% of respondents agree with the statement to a greater or lesser extent. From the interval estimation of the proportion, it was determined that the proportion of respondents who agree with the statement ranges from 51.54% to 64.02%. Since the lower limit of the proportion estimate is greater than 0.50, the assumption that the majority of respondents agree with the statement can be accepted. *Hypothesis H1,* which assumes that there are significant moral and ethical obstacles to the use of social marketing elements in the church and church organizations, is rejected as untrue, which we substantiated with three statements in which respondents confirmed to a greater or lesser extent that certain marketing elements can be used effectively in the church and church organizations, although only slightly more than half of the respondents believed that there were no significant moral and ethical obstacles or had an indifferent opinion.

Table 3. Interval proportion estimation for the Statement 2

Interval Estimation One Proportion, Z (or Chi-Square) Test	
	Value
Sample Proportion p	0,6181
Group Sample Size (N)	254
Confidence Level	0,95
Confidence Limits:	
Pi (Exact):	
Lower Limit	0,5553
Upper Limit	0,6781

Source: Authors' calculations.

H2 - The church and church organizations in Bosnia and Herzegovina already use elements of social marketing in their activities, but unsystematically and to an insufficient extent.

Descriptive statistics for the statement "I believe that the church at all levels (local, parish, diocesan, etc.) uses its resources optimally" showed that the average value is 3.437008 with an average deviation from the arithmetic mean of 32.02%. From the values of the median and mode 3, it can be concluded that the distribution is approximately symmetrical, from which it cannot be concluded that the majority of respondents believe that the church at all levels uses its resources optimally.

Table 4: Response frequency distribution for the statement "I believe that the church at all levels (local, parish, diocesan, etc.) uses its resources optimally"

Frequency table			
	Number of respondents	Structure (%)	Cumulative frequency "less than" (%)
1	13	5.11811	5.1181
2	33	12.99213	18.1102
3	88	34.64567	52.7559
4	70	27.55906	80.315
5	50	19.68504	100
Total	254	100.00	-

Source: Authors' calculations.

Therefore, a larger number of respondents are indifferent or disagree with the statement that the church at all levels uses resources optimally. Observing respondents' attitudes towards the applicability of advertising church events and activities on TV and radio, the following results are obtained in Table 5.

Table 5. Response frequency distribution for the statement "advertising of church events and activities on TV and radio"

Frequency table		
	Number of respondents	Structure (%)
Never applies	24	9,45
Rarely applies	63	24,80
Sometimes applies	80	31,50
Frequently applies	28	11,02
Regularly applies	29	11,42
Don't know	30	11,81
Total	254	100,00

Source: Authors' calculations.

That the mentioned activity is insufficiently implemented shows that advertising of church events and activities on TV and radio is applied sometimes, rarely or not at all (65.75%). The share of respondents who believe that advertising of church events and activities is rarely applied is tested by interval estimation of proportion. From the interval estimation of proportion, it was determined that at a confidence level of 95% the proportion of respondents will range between 59.56 and 71.57%. Since the lower limit of the estimation is above 50%, it can be concluded that this is also the position of the majority. *Hypothesis H2* aims to prove that the church and church organizations in BiH already use elements of social marketing in their activities, but unsystematically and insufficiently, which was confirmed by the analysis of the respondents' responses to the mentioned statements, and the hypothesis is accepted as true.

H3 - Believers are well informed about the events and marketing activities of the local (parish) church as well as the diocese and archdiocese in BiH.

If the hypothesis is rejected or it turns out that they are not well-informed enough, it will be considered how it is possible to improve the current situation by using elements of social marketing and how to help clerics and believers who are active in church activities to see how marketing can help in even better and higher-quality communication with believers, as well as informing believers about church activities and actions important for their religious life.

Table 6. Descriptive statistics of selected statements for the H3 hypothesis

H3 Descriptive Statistics							
	Mean	Median	Mode	Min	Max	Standard deviation	Variat. coeffic.
1. I consider myself well acquainted with church activities and activities in the local church.	3,893	4	5	1	5	1,12	28,80
2. I consider myself well acquainted with church activities and activities at the level of the diocese and archdiocese.	3,059	3	3	1	5	1,09	35,72
3. I believe that the church needs new or improved communication methods in informing believers about church activities.	3,944	4	5	1	5	1,02	25,95
4. I believe that the church at all levels (local, parish, diocesan, etc.) uses its resources optimally.	3,437	3	3	1	5	1,10	32,02

Source: Authors' calculations.

The table shows that the average value for all the statements ranges from 3.06 to 3.89. The most common rank value of the degree of agreement is 3 or 5. Based on the interval estimate of the proportion for the selected statements related to the H3 hypothesis with a sample size of 254, in order to accept the assumption that the attitude expressed through the survey is also the attitude of the majority in the population (more than 50%), it is necessary that the proportion of favorable responses is greater than or equal to 55.51%.

The table shows that 3 out of 4 statements are dominated by unfavorable responses (the share of favorable responses is less than 50%), from which it can be concluded that the respondents are not well informed about the work of the church. *Hypothesis H3* - is rejected as false because the results showed that the respondents are not well informed about the events and activities of the church in Bosnia and Herzegovina, which certainly opens up space for the systematic application of marketing activities and tools in order to reduce the gap between the information of believers and the work of the church.

Table 7. Frequency distribution of response rank for the selected statement

		1	2	3	4	5	Total
1. I consider myself well acquainted with church activities and activities in the local church.	Number of respondents	10	21	51	76	96	254
	Structure (%)	3.94	8.27	20.08	29.92	37.80	100.00
	Cumulative frequency "more than"	100.00	96.06	87.80	67.72	37.80	
2. I consider myself well acquainted with church activities and activities at the level of the diocese and archdiocese.	Number of respondents	22	51	98	56	27	254
	Structure (%)	8.66	20.08	38.58	22.05	10.63	100.00
	Cumulative frequency "more than"	100.00	91.34	71.26	32.68	10.63	
3. I believe that the church needs new or improved communication methods in informing believers about church activities.	Number of respondents	7	13	59	83	92	254
	Structure (%)	2.76	5.12	23.23	32.68	36.22	100.00
	Cumulative frequency "less than"	2,76	7,88	31,10	63,78	100,00	
4. I believe that the church at all levels (local, parish, diocesan, etc.) uses its resources optimally.	Number of respondents	13	33	88	70	50	254
	Structure (%)	5.12	12.99	34.65	27.56	19.69	100.00
	Cumulative frequency "more than"	100.00	94.88	81.89	47.24	19.69	

Source: Authors' calculations.

Table 8. Descriptive statistics for selected statements for the H4 hypothesis

Descriptive Statistics							
	Mean	Median	Mode	Min	Max	Stand. deviat.	Variat. coeffic.
I have a positive opinion of the Catholic Church and its activities	4,43	5	5	1	5	0,94	21,27
I support the doctrine and teaching of the Catholic Church	4,60	5	5	1	5	0,85	18,50
I respect the church hierarchy and have a positive opinion of the church clergy (priests, deacons, bishops)	4,26	5	5	1	5	0,98	23,09
I believe that the church advocates well for "burning" issues such as advocacy for the poor and adequately responds to the spiritual needs of its members	3,92	4	5	1	5	1,08	27,67
I believe that the Catholic Church, through its activities, leaves a good impression on potential believers and cultivates a good image in the public	3,80	4	4	1	5	1,08	28,41
I believe that the Catholic Church acts transparently and rationally with material resources	3,44	4	4	1	5	1,24	36,11
I believe that the church clergy live and prove through their actions what they teach	3,57	4	4	1	5	1,21	33,92
I support the activities of church organizations such as Caritas and the like.	4,51	5	5	1	5	0,99	22,01

Source: Authors' calculations.

H4 - The public has a positive perception of the church, clergy and church activities in BiH.

The table shows that the average value for all questions asked ranges from 3.44 to 4.60. The most common rank value for the degree of agreement is 4 or 5. In 8 out of 9 questions, the positive attitude expressed by respondents to statements about the perception of the church, clergy and church activities in BiH is also the attitude of the majority in the population (lower limit of the proportion estimate > 0.50%), which is why *hypothesis H4*, which assumes that the public has a positive perception of the church, clergy and church activities in BiH, is accepted as true.

H5 - Respondents in BiH believe that religion is important and that it is important to live in accordance with religious principles.

Descriptive statistics for the statements "I am familiar with the basic teachings of the Catholic Church" and "living in accordance with the teachings of the Catholic faith and belonging to the Catholic Church is very important in my life" showed that the average value for all questions asked ranges from 4.50 to 4.52. The most common rank value for the degree of agreement is 5. Based on the frequency distribution of the rank of responses to the statements related to the H5 hypothesis for both questions about the importance of faith, the majority of the population (with a sample size of 254 = 55.51% and more) agrees with the statements.

Table 9. Structure of responses to the question about attitudes towards religious organizations

Frequency table:		
	Number of respondents	**Structure (%)**
I think religious communities are very important because they give people hope	204	77,57
I think religious communities do good to a certain extent, but they also cause a lot of unnecessary division in the world	53	20,15
Religious communities are a traditional legacy that brings more harm than good	3	1,14
Other	3	1,14
Total	263	100,00

Source: Authors' calculations.

Table 10. Structure of answers to the question about attitude towards religion

Frequency table:		
	Number of respondents	**Structure (%)**
Faith is very important to me, without faith I would have no hope	199	72,10
Faith is something like optimism – sometimes it's good to believe that things happen for a reason	73	26,45
There is no evidence for faith, so I don't practice it or find it useful	1	0,36
Other	3	1,09
Total	276	100,00

Source: Authors' calculations.

Table 10 shows that 72.10% of respondents stated that faith is very important to them, and that without faith they would have no hope. Whether this is also the majority in the population is tested by an interval estimate of the proportion. From the interval estimate of the proportion for the answer "faith is very important to me, without faith I would have no hope" it was determined that at a confidence level of 95% the proportion of respondents will range between 66.10 and 77.50%. Since the lower limit

of the estimate is above 50%, it can be concluded that this is also the position of the majority.

The relationship between beliefs about God and practical expressions of faith is tested using the Spearman correlation test. So, if the answers to the question "How often, on average, have you prayed to God in the last year?" exist in the following modalities: several times a year, once a month, several times a month, once a week, and more often, every day; it can be seen that each subsequent answer indicates a higher degree of piety. The modality "once a week" is a qualitative characteristic. If we want to obtain a numerical value from it, each of the answers is ranked, and as a result we obtain an ordinal rank characteristic. A higher rank value indicates greater piety.

Table 11. Spearman's correlation test on the relationship between attitudes about faith in God and practical expression of faith

	Frequency table: How often do you go to church (to Holy Mass and religious ceremonies) on a calendar year basis, not including weddings and similar special events?		Frequency table: How often do you participate in events organized by church organizations and/or the church (apart from attending Holy Mass)?		Frequency table: How often, on average, have you prayed to God in the last year?	
	Number of respondents	**Structure (%)**	**Number of respondents**	**Structure (%)**	**Number of respondents**	**Structure (%)**
Not once a year	5	1,97	79	31,1	3	1,18
A few times a year	23	9,06	109	42,91	5	1,97
A few times a month	11	4,33	9	3,54		
A few times a month	55	21,65	25	9,84	18	7,09
A week or more	152	59,84	27	10,63	52	20,47
Every day	8	3,15	5	1,97	176	69,29
Total	254	100,00	254	100,00	254	100,00

Source: Authors' calculations.

From the correlation matrix it is evident that the relationship between the observed statements is positive, weak but statistically significant, which means that the values of piety in all tested groups of questions are related, that is, an increase in piety measured by the first question is followed by a decrease in piety measured by the second question and vice versa. *Hypothesis H5 is accepted as true and* respondents in BiH believe that religion is important and that it is important to live in accordance with religious principles.

Table 12. Spearman's correlation test on the relationship between the stated statements

Spearman Rank Order Correlations MD pairwise deleted Marked correlations are significant at p <,05000				
	Valid - N	Spearman - R	t(N-2)	p-value
Rank [How often on average have you prayed to God in the last year?] & Rank [How often do you go to church (to Holy Mass and religious ceremonies) on a calendar year basis, not including weddings, etc.	254	0,466902	8,3815	0,00000
Rank [How often, on average, have you prayed to God in the last year?] & Rank [How often do you participate in events organized by church organizations and/or the church (other than attending Holy Mass)?]	254	0,269955	4,4506	0,00001
Rank [How often do you go to church (to Holy Mass and religious ceremonies) on a calendar year basis, not including weddings and similar special events?] & Rank [How often do you participate in events...	254	0,455047	8,1122	0,00000
Rank [How often do you go to church (to Holy Mass and religious ceremonies) on a calendar year basis, not including weddings and similar special events?] & Rank [How often do you pray to God on average?	254	0,466902	8,3815	0,00000
Rank [How often do you participate in events organized by church organizations and/or the church (apart from attending Holy Mass)?] & Rank [How often, on average, have you prayed to God in the last year?]	254	0,269955	4,4506	0,00001
Rank [How often do you participate in events organized by church organizations and/or the church (except attending Holy Mass)?] & Rank [How often do you go to church (to Holy Mass and religious ceremonies)	254	0,455047	8,1122	0,00000

Source: Authors' calculations.

H6 - There is interest among clergy and laity in attending seminars on the application of social marketing in church activities in BiH.

The system of higher education for priests lacks courses in the field of social marketing, especially specific topics such as branding. Theological faculties do not conduct a part of the course that would prepare and/or specialize priests for such activities (Ignatowski et al. 2020). The average attitude of respondents about their interest in attending church marketing to help the local church spread the gospel is 3.17 with a mode and median value of 3. Therefore, the distribution of rank responses is approximately symmetrical. Since the proportion of respondents who agree with the statement that they are interested in attending church marketing to help the local church spread the gospel is less than 50% and is equal to 40.94%, it can be concluded that this is not a characteristic of the majority in the population. *Hypothesis H6* is rejected because according to the results of the responses to the statements, the majority of respondents did not show a willingness to attend such seminars.

H7 - Believers, members of the Catholic Church in BiH have a negative perception towards the other two religions in BiH – Islam, the Orthodox Church.

The research found that the average value for all questions asked ranges from 2.51 to 4.16. The most common rank value of the degree of agreement is 1 and 5. From the frequency distribution of the rank of responses to the selected statements from the H7 hypothesis, it is evident that only 25.98% of respondents agree with the statement that they have a negative opinion of Islam and the Orthodox Church in BiH, while the majority of respondents believe that religion is an integral part of national identity. It can be assumed that the proportion of individuals who believe that religion is an integral part of life in the population is greater than 50%, or the majority (the proportion among respondents is greater than 55.51%). Hypothesis H7 is rejected as false because the majority of respondents do not have a negative perception of Islam and the Orthodox Church in BiH and believe that religion is an integral part of national identity.

5. Conclusion

Respecting the specific characteristics of religious institutions such as the Catholic Church, which is the focus of this paper, the main goal was to show and explore the possibilities of applying special customized marketing in the activities of the church and church organizations, that is, to recognize the possibilities of applying social marketing in church activities. Although people often perceive marketing as something negative or identify it only with advertising and sales, hypothesis H1 proves that the majority of respondents believe that adapted marketing activities can also be applied in the field of church activities. This is an important indicator for church leadership that believers are accepting new scientific knowledge that has a proven footing in practice and believe that it would greatly help bring the church closer to believers and vice versa, as well as spread the gospel, which is the basic mission of the Catholic Church. What is worrying for the church and church activities in BiH is that the results of the research have shown that believers are not well informed about the events and activities of the church in BiH, which certainly opens up space for the systematic application of marketing activities and tools so that the church, on the one hand, leaves a good image and becomes more transparent in its activities, because the impression is gained in the public through some media that the church is too rich and insensitive to the social problems of believers. On the other hand, believers will be better informed about the activities of the church and will be able to become more involved in the activities of the church community, which is certainly supported by the research that was conducted, and the results show that faith is important to the

respondents and that it is very important for them to live in accordance with religious principles, which can be a motivating factor for church leaders to stand up for believers even more.

The research found that the public has a positive perception of the church, clergy and church activities in BiH. The relationship between attitudes about God and practical expression of faith was also tested, which is statistically significant and shows that an increase in piety measured by a certain statement is followed by an increase in piety measured by another statement and vice versa. The research established that the Catholic Church in BiH has a positive image and that respondents to a certain extent adhere to religious life and religiosity, but the application of adequate marketing activities would certainly bring many additional benefits for the faithful as well as for the church and clergy. The majority of respondents did not show a willingness to attend a seminar on the application of social marketing in church activities. It is considered very important to realize the importance of this form of education, which will benefit the church as a community and all members associated with the church and church activities. It is particularly interesting in the results of the survey that respondents did not negatively evaluate the other two major religions in BiH) despite some widespread opinion that there is great intolerance between believers of these three religions in BiH. This is certainly a positive step towards establishing lasting peace and dialogue between the population of members of these three different religions, as well as numerous other less represented religions, and paves the way for true multiculturalism as an asset for Bosnia and Herzegovina.

Additional research has established that there is a statistically significant difference in the frequency of praying to God with regard to gender. Respondents also responded to claims about the appropriateness of applying marketing in church activities, and it was determined that the most appropriate marketing activities were those of a social nature, which are most often associated with social services such as food collection, donations, social lobbying and advocacy for poor and needy people to be given certain privileges, free transportation. The respondents rated the advertising of church events on a large poster in the church yard and the broadcasting of religious programs on TV and radio as appropriate.

This research focused only on Bosnia and Herzegovina is important, taking into account the specificities of BiH throughout history and today, with an emphasis on the importance of preserving stability, both for BiH itself, for the region and the whole of Europe. In this context, religion is an extremely important factor. Future research tasks could be focused and connected to broader discussions about the role of religion in post-secular societies or the use of marketing in other religious communities across

Europe. This research was focused more on the younger population, so it is recommended that through future research, a greater coverage of all age groups of respondents through smaller settlements, but also a larger number of respondents in the largest cities. Also, future research could focus more on how do clergy themselves perceive the legitimacy of using marketing tools. Limitation of the research is that the formalized written questionnaire used closed-ended questions, which reduced the freedom of response to a certain extent and limited the number of responses, although some responses allowed for adding one's own opinion or response. However, the research made an effort to comprehensively cover the area being researched in this form of questions. The majority of respondents who responded to the survey were from urban areas limited to the region of Herzegovina and Central Bosnia (where most catholics in BiH live) although some respondents were from larger cities such as Sarajevo and also from the rest of Bosnia and Herzegovina where Catholics live.

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PSYCHOLOGICAL NEEDS AND BURNOUT IN THE HOTEL INDUSTRY: A CASE OF FOUR AND FIVE-STAR HOTELS

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Abstract

The primary aim of this study is to deepen the understanding of hotel workers' satisfaction with psychological needs in the workplace and how these perceptions influence their behavioral intentions, particularly in relation to varying levels of burnout. To examine these relationships, data collected from 108 participants were analyzed using SPSS software, with a one-way ANOVA employed to identify significant differences in responses. The analysis revealed notable variations across several key factors, including satisfaction with relatedness needs, psychological safety, intention to leave, and intention to recommend. These findings underscore the importance for hotel managers and HR professionals to proactively support employees' psychological needs, as doing so can help mitigate burnout, increase job satisfaction, enhance retention, and ultimately improve service quality. In addition, the study contributes to the relatively underexplored area of psychological needs in the hospitality sector by offering new insights into how these needs differ depending on employees' burnout levels.

Keywords: *psychological needs, burnout, hotel workplace, behavioral intentions, workers*

JEL classification codes: *J63, J28, C83*

1. Introduction

One of the key characteristics of the hotel industry is the high-touch nature of services. Throughout the entire customer journey, from the initial point of contact to

the final interaction, guest expectations are centered on personalized, human-centric service. This approach relies on the collective effort of all workers, who work together to deliver an authentic service experience that aligns with the promises made through marketing communications prior to the guest's arrival. However, the successful performance of this high-touch services heavily relies on employee well-being (Laškarin Ažić, 2025). As front-line employees play a crucial role in delivering customer satisfaction, their physical and emotional well-being is increasingly important for both management and the employees themselves. This issue has gained even greater relevance as hoteliers today face growing challenges, not only in retaining satisfied staff, but also in attracting qualified professionals. According to the European Accommodation Barometer (2025), the recruitment of skilled workers across Europe has become significantly more difficult, primarily due to rising salary expectations and concerns over poor work-life balance.

Prior research grounded in Self-Determination Theory (SDT) has shown that the fulfillment of basic psychological needs such as autonomy, competence, and relatedness is essential for employee motivation, engagement, and well-being (Broeck et al., 2008). When these needs are unmet, employees may experience disengagement and burnout (Fernet et al., 2013; Lee, 2023). Burnout among hotel employees has also been linked to high job demands, emotional labor, lack of organizational support, and poor work-life balance (Kloutsiniotis et al., 2022; Ayachit and Chitta, 2022). What remains insufficiently explored, however, is how hotel employees' satisfaction with their psychological needs differs across different levels of burnout. While the relationship between burnout and individual workplace factors has been studied, few studies have examined how psychological need satisfaction changes depending on employees' emotional exhaustion in hospitality business. In particular, there is limited empirical research that analyzes psychological needs and behavioral intentions (e.g., intention to leave, recommend, or disengage) in a single framework while accounting for burnout levels.

Therefore, this study aims to:

- assess differences in psychological need satisfaction among hotel employees experiencing varying levels of burnout;
- examine how behavioral intentions (intention to leave, intention to recommend) differ across burnout levels; and
- explore the relationship between psychological need satisfaction and behavioral intentions within the context of employee burnout in the hotel industry.

By addressing the stated aims, this research contributes to both academic literature and professional practice. It bridges three important streams of research (psychological need satisfaction, burnout, and behavioral intentions) within a single empirical framework specific to the hospitality context. In doing so, it enhances our understanding of how burnout influences the fulfillment of psychological needs among hotel employees. From a practical standpoint, the study highlights how employees' perceptions of key psychological needs vary according to their level of burnout, offering valuable insights for human resource management. These findings can inform targeted interventions to support employee well-being, reduce burnout, and improve key organizational outcomes such as retention, employee satisfaction, and service quality.

2. Literature review

2.1. Burnout

Burnout is becoming more and more important topic in modern workplaces mostly affecting employees who work in high touch organizations. It is characterized by emotional exhaustions reduced feeling of belonginess and motivation to perform daily tasks. In previous studies emotional exhaustions, physical and cognitive fatigue are the predominant symptoms of burnout. Burnout syndrome as psychological response to long-term exposure to occupational stressors is evident among workers who are in direct contact with people (Khammissa, 2022; Klein, 2020). A study in the healthcare sector by Khammissa (2022) confirms the relationship between psychological needs and burnout. In particular, experiencing emotional values such as autonomy, competence, and relatedness is crucial for fulfilling key psychological needs in the workplace and meeting these needs fosters a sense of self-fulfillment and purpose in work activities, ultimately reduce the risk of burnout.

Burnout in the hotel industry, as in other sectors, is largely driven by high job demands, emotional labor, and a lack of organizational support. Research suggests that job complexity—particularly during crises such as the COVID-19 pandemic—further intensifies burnout (Li et al., 2023). Hotel employees frequently navigate demanding tasks, high-pressure work environments, and the need for constant multitasking, all of which contribute to emotional exhaustion and diminished organizational commitment (Harjanti and Charistianty, 2024). Additionally, workaholism has emerged as a critical factor, with studies indicating that it heightens burnout and turnover intentions, particularly among younger generations like Generation Z (Jung et al., 2023). Emotional labor, which requires employees to regulate their emotions to align

with customer expectations, has also been strongly linked to increased stress and burnout (Ponting and Ponting, 2023).
Since burnout arises from a negative work environment and organizational culture (Panagioti, 2018), it should be viewed as an organizational issue rather than a personal one. Thus, it is crucial for managers to identify the root causes of burnout and gain a deeper understanding of their employees' needs. This highlights the need for further research on organizational factors contributing to burnout, enabling the development of more effective prevention and intervention strategies.

2.2. Psychological needs

According to self-determination theory (SDT), a motivational theory that views psychological needs as universal human necessities, these needs are categorized into three core components: competence, autonomy, and relatedness (Deci and Ryan, 2000). Previous studies have confirmed the importance of satisfying basic psychological needs in fostering autonomous motivation (Ryan and Deci, 2000; Lynch et al., 2005), promoting psychological health and well-being (Nix et al., 1999), enhancing performance (Baard et al., 2004), and improving motivation, job satisfaction, commitment, and overall positive work-related outcomes (Forner, 2020), as well as engagement (Meyer and Gagné, 2008). Conversely, when these needs are not met, individuals are more likely to experience ill-being and shift their focus toward extrinsic goals (Behzadnia et al., 2020).

In addition to the three basic psychological needs, an emerging workplace need psychological safety—has also been recognized as a key factor influencing employee performance and productivity (Харченко et al., 2024). In contrast to the three innate psychological needs: 1) autonomy, the sense of choice and volition at work; (2) competence, the need to feel effective and capable; and (3) relatedness, the need for connection—*psychological safety* can also be viewed as a "work-related need" within organizations. Employees must feel safe, fearless, and open in their interactions to thrive. According to Westover (2024), teams with high psychological safety experience greater innovation, collaboration, and learning.

Given the importance of basic psychological needs in enhancing work motivation, previous authors have also emphasized that negative experiences such as burnout and stress directly result from the frustration of unmet psychological needs (Nunes et al. 2024). To date research indicate inversely proportional relationship between psychological needs and burnout. For instance, a study on physicians found that higher satisfaction of basic psychological needs significantly predicted lower levels of

burnout and higher job engagement (Ying, 2012). Similarly, a study on dentists revealed that the satisfaction of autonomy, competence, and relatedness needs negatively predicted burnout experiences, explaining 28.6% of its variance (Molina-Hernández and González-García, 2020). Conversely, the frustration of psychological needs exacerbates burnout. A qualitative study on job burnout highlighted that the frustration of primary psychological needs contributes to the psychological processes involved in burnout (Shi, 2024). Another study on teachers found that need frustration, particularly in terms of autonomy and competence, uniquely increased psychological burnout, even after accounting for general need unfulfillment (Lee, 2023). To the best of the author's knowledge, no research has yet explored the intersection of these two concepts within the hotel industry.

Building on insights from previous research, it can be hypothesized that there is a significant difference in the satisfaction of psychological needs across diffrent levels of burnout.

3. Methodology

In this study, a project team conducted a structured survey to gather responses from hotel employees. The survey questionnaire, used as an instrument for collecting employee opinions, was distributed in 4- and 5-star hotels along the Opatija Riviera. Random stratified sampling was selected as the most appropriate data collection technique to ensure a representative target group. According to Marušić et al. (2019), stratified sampling generally yields more accurate results than simple random sampling.

The first step of the research was selecting the key characteristics essential for achieving the research objective. These characteristics included the workplace location (only hotels in the Opatija Riviera, Croatia, were included in the sample) and job position (only employees with direct guest contact in non-managerial roles). After obtaining management approval for conducting an anonymous field study, the selection of individuals within the defined groups was carried out randomly. Out of 180 distributed questionnaires, 124 were returned, of which 108 (60%) were fully completed and processed for further analysis.

The measurement instrument for research variables was based on a 5-point Likert scale, where 1 indicated "strongly disagree" and 5 indicated "strongly agree." The need for autonomy was measured using six questions adapted from Van den Broeck et al. (2010), with an example variable: "I feel that I can be myself at work." The same authors provided the factors for the need for competence, which consisted of six variables,

such as "I am good at my job." Similarly, the need for belonging was assessed using statements like "I feel like a member of the organization at work." Furthermore, psychological safety was adapted from Garvin et al. (2008). While intention to leave and intention to recommend were measured using an adapted scale from Kang et al. (2018).

4. Results

To analyze statistically significant differences between the mean values of the defined groups (Satisfaction with Autonomy - SA, Satisfaction with Competence - SC, satisfaction with relatedness - SR, Psychological Safety- PS, Intention to Leave -IL, and Intention to Recommend -IR) concerning burnout levels, the author applied bivariate statistical analysis using ANOVA (Analysis of Variance). After analyzing significant differences, Morgan et al. (2004), suggest applying the Tukey post hoc test if group variances are equal. This test helps identify where the differences lie by comparing multiple pairs of means, specifically examining how different levels of burnout influence responses related to psychological aspects of the workplace.

To confirm reliability of measurement scales Cronbach alpha coefficient was calculated in Table 1.

Table 1. Cronbach Alpha values

Factors	Cronbach alpha
Autonomy - SA	0.700
Competence - SC	0.718
Relatedness - SR	0,918
Psychological safety -PS	0,724
Intention to leave - IL	0.875
Intention to recommend – IR	0.888

Source: Author's calculation.

The results indicate acceptable Cronbach's alpha values ranging from 0.7 to 0.92, demonstrating a reliable level of internal consistency. By confirming internal consistency, the measurement quality is ensured, enhancing the reliability of the results.

To simplify the interpretation of the analysis and identify significant differences between factors with regard to burnout levels, all factors were transformed into a single variable by calculating the mean value of their items. Homogeneity of variances

is assessed using Levene's test, with a p-value greater than 0.05 indicating that there is no significant difference in variances.

Table 2. Test of Homogeneity of Variances

	Levene statistic	Sig.
mSA	0.373	0.773
mSC	1.298	0.279
mSR	0.540	0.656
mPS	0.659	0.579
mIL	0.307	0.820
mIR	2.955	0.063

Source: Author's calculation.
Note: M- based on mean.

Levene's test for equality of variances showed no significant difference between group variances ($p > 0.05$), indicating that the assumption of homogeneity of variances was met. Therefore, a standard One-Way ANOVA was conducted.

Table 3. ANOVA results

Variables	Sum of squares	F	Sig.
mSA	324.303	0.098	0.961
mSC	1.089	0.868	0.460
mSR	12.609	4,341	0.006
mPS	11.828	6.203	0.000
mIL	56.417	18.806	0.000
mIR	33.335	11.496	0.000

Source: Author's calculation.
Note: Significance level p=0,05.

The ANOVA test results (Table 3.) indicate a significant difference in the average scores of the four factors concerning burnout levels. Notably, significant differences were observed in satisfaction with relatedness needs, satisfaction with psychological safety needs, intention to recommend, and intention to leave.

To identify which specific groups differ significantly while controlling for multiple comparisons, pairwise comparisons were conducted to pinpoint these differences. Since variances were confirmed to be equal, Tukey's HSD post hoc test was applied. The results of post hoc test are shown in graphs.

This graph indicates that employees who give higher scores to satisfaction with psychological safety do not experience burnout, and vice versa—those who experience burnout tend to give lower scores to satisfaction with psychological safety. This

implies a negative relationship between burnout and satisfaction with psychological safety: as burnout increases, satisfaction with psychological safety decreases.

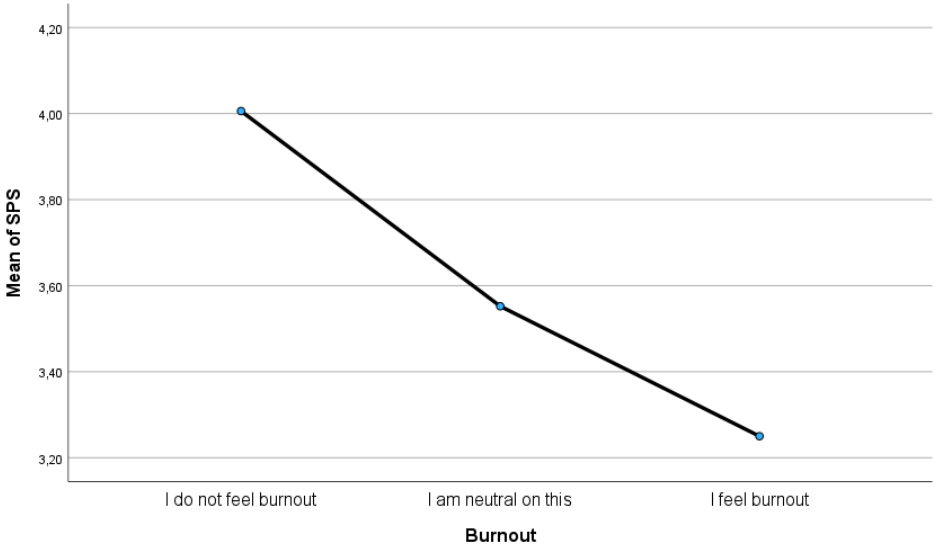

Figure 1. Satisfaction with psychological safeness - burnout level

Source: Author's calculation.

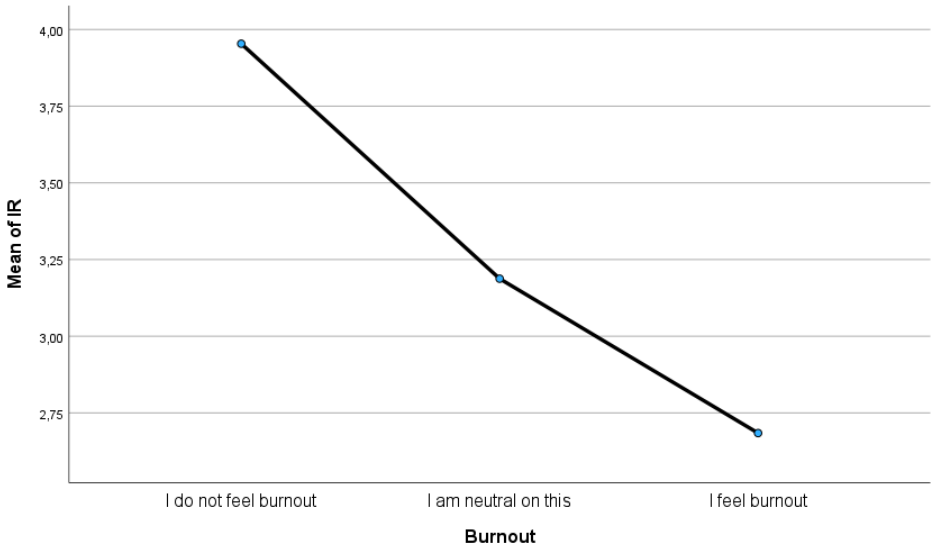

Figure 2. Intention to recommend the company – burnout level

Source: Author's calculation.

Figure 2 shows a negative relationship between intention to recommend and burnout levels, indicating that employees experiencing burnout are less likely to recommend the company to others. Conversely, those with higher intention to recommend tend to be the employees who do not experience burnout.

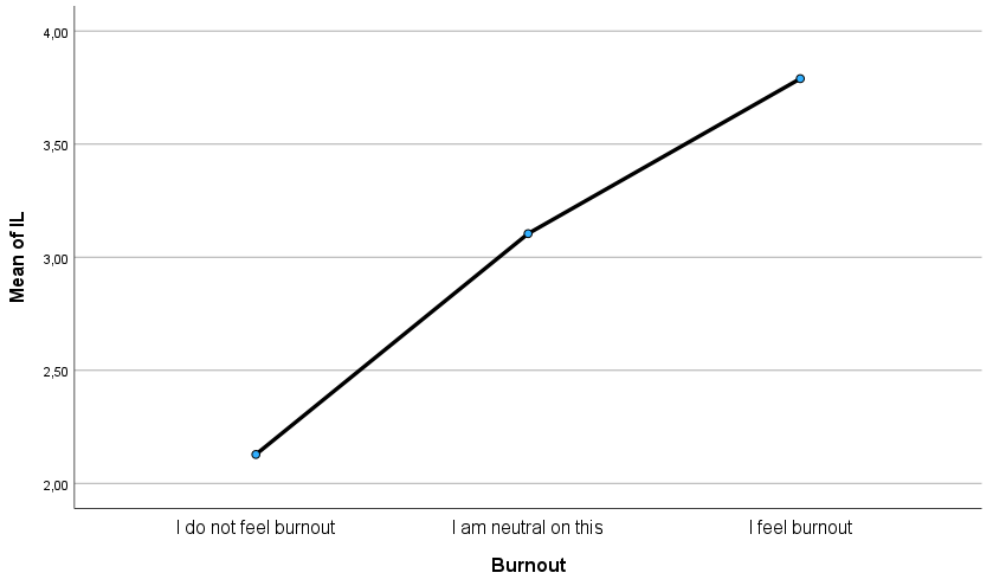

Figure 3. Intention to leave the company – burnout level

Source: Author's calculation.

Figure 3 clearly shows that the presence of burnout increases the intention to leave the company. In other words, employees experiencing burnout tend to give higher ratings to their intention to leave the company.

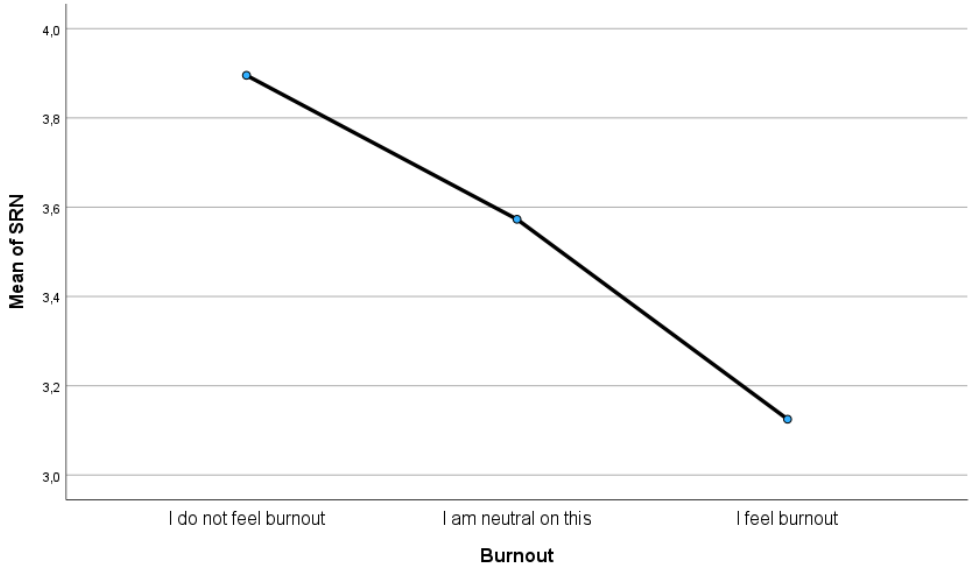

Figure 4. Satisfaction with meeting relatedness needs in the company – burnout level

Source: Author's calculation.

Figure 4 shows a negative correlation between burnout levels and satisfaction with meeting relatedness needs. Employees who are less satisfied with their sense of relatedness to the company are the ones who experience burnout, and vice versa.

5. Discussion and conclusion

The primary aim of this study was to examine significant differences in satisfaction with key workplace needs in relation to the experience of burnout among hotel employees. According to the ANOVA results, there is a clear and significant difference in burnout levels concerning satisfaction with relatedness needs, psychological safety needs, and behavioral intentions (intention to leave and recommend). This study is the first to explore such differences with regard to burnout in the hotel industry, providing valuable insights for managers seeking to retain their front-line employees and keep them engaged with the company.

A significant difference was confirmed in satisfaction with relatedness and psychological safety concerning the presence of burnout, aligning with previous studies in healthcare and education. According to Azrieli and Panaccio (2024), satisfaction with relatedness contributes to lower burnout, while Lee (2023) found that satisfaction of basic psychological needs, particularly competence, significantly influences psychological burnout among teachers. Intention to leave and recommend are widely studied topics across various industries. Previous research indicates that work fatigue significantly increases the likelihood of employees leaving their organization (Alifah and Indiyati, 2023; Difaputra and Sawitri, 2024). Additionally, burnout has been previously identified as a mediator in organizational settings, influencing employees' behavioral intentions (Laškarin Ažić et al., 2024). Compared to previous studies, the current research expands the understanding of satisfaction with psychological needs, which has not been insufficiently explored in the hotel industry.

The findings of this study are particularly significant for HR managers of four and five stars hotels seeking to improve working conditions and employee retention in the hotel industry. The results highlight the necessity of addressing psychological needs alongside burnout, as employees experiencing burnout are more likely to perceive the work environment negatively and struggle to meet their psychological needs. Strengthening workplace connections through teamwork and mentorship can enhance relatedness satisfaction and help reduce burnout. Additionally, HR managers should encourage creative problem-solving through brainstorming sessions, allowing employees to identify solutions they believe would best enhance their psychological

well-being. Indirectly, these solutions could also help mitigate burnout levels in hotels, fostering a healthier and more supportive work environment.

To deepen the understanding of how burnout affects the psychological aspects of employees, future studies should focus on qualitative research methods such as brainstorming techniques and interviews. These approaches could provide deeper insights into why burnout occurs and how companies can develop effective intervention strategies to address it. Additionally, the role of leadership, hotel type, and employee demographic characteristics should be further examined in relation to satisfaction with psychological needs and burnout levels.

Since the current study has certain limitations that may affect the generalizability of the findings—primarily due to the small sample size—future research should aim to include a larger and more diverse sample across various hotel types and regions to enhance the robustness and applicability of the results. Furthermore, as this study was conducted at a single point in time, it does not capture how psychological needs and burnout levels fluctuate over time, particularly in response to seasonal variations. Longitudinal research would be beneficial in addressing this gap and providing a more comprehensive perspective on these dynamics.

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THE IMPACT OF SOCIAL MARKETING CAMPAIGNS ON MENTAL HEALTH AWARENESS AND THE DESTIGMATIZATION OF MENTAL DISORDERS

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Abstract

Mental health has become a critical issue in modern society, significantly affecting everyone's personal and professional lives. Thanks to numerous public campaigns, public awareness of mental disorders is nowadays growing while the frequency of mental disorders is increasing. Nevertheless, stigma is very much present, despite efforts to promote education and reduce it. Although research on social media as well as public health marketing campaigns is increasing, existing knowledge is still limited. Marketing campaigns can raise awareness of mental health and reduce the stigmatization of people with mental disorders. The main goal of this study is to investigate the impact of social marketing campaigns and narrative strategies on mental health awareness and attitudes towards people with mental disorders. The empirical study was conducted with a sample of 220 participants. The results indicate that people who had received information through social media had more positive attitudes towards mental health. The results did not show a significant decrease in stigmatizing attitudes. The main limitations of the study and recommendations for future studies are given. The originality of this study lies in its focus on the intersection of marketing and mental health. By highlighting the role of social marketing in promoting positive perceptions and attitude change, it provides guidelines for future

research analyzing the complex relationships between marketing and mental health. In this way, more effective approaches to reducing stigma can be developed.
Keywords: *social marketing, social media campaigns, mental health awareness, stigma*

JEL classification codes: *M31, M39, L39*

1. Introduction

Mental health is an increasingly important issue in global public health, taking a central place in the health policies of many countries (Herrman and Jane-Llopis, 2012). Although progress has been made worldwide, Croatia still differs in its approach to mental health (Novak and Kravić, 2018), especially in early prevention, which remains underdeveloped (Novak and Petek, 2015). World Health Organization report (2014) indicates that countries with lower economic status, mental health is less than $2 per capita (Chisholm et al., 2016). Mental health can be defined as a state of well-being that enables individuals to cope effectively with everyday stressors and work productively (Fusar-Poli et al., 2020). Impaired mental health covers a wide range of disorders, including depression, anxiety and eating disorders, which negatively impact mood, cognition and daily activities (Kim, 2022). The World Health Organization (2022) emphasizes that various factors, from individual to structural, can influence the development of mental disorders, but can also play a crucial role in protecting mental well-being.

Although the symptoms of mental disorders are not immediately visible like those of physical illnesses, recognizing the symptoms is the first step in addressing mental health issues (Kim, 2022; Fusar-Poli et al., 2020). People with mental health problems often face social stigma associated with public prejudice and lack of understanding (Kim, 2022). The public often does not fully understand mental disorders, leading to prejudice against people with mental health problems (Walsh and Foster, 2021). According to Petak et al. (2021) stigma is not just an individual attitude, but a social phenomenon that can delay help-seeking and reduce quality of life. Various factors such as age, gender and ethnicity shape attitudes towards mental disorders (Henderson et al., 2021), and education is key to reducing stigma, especially among younger generations (Petak et al., 2021).

Social marketing offers an innovative approach to planning program for public health, by providing a structure and tools for the effective implementation (Donovan, 2011). In this sense, marketing tools and activities can play a key role in reducing stigma, encouraging help-seeking behavior, and promoting values that support better mental

health in the community. In other words, marketing can be a critical tool for improving health outcomes by highlighting its importance in promoting positive behaviors, including physical and mental health (Donovan, 2011; Gordon et al., 2006; Niklasson and Tornqvist, 2022).

Social marketing is process that uses marketing techniques to promote social ideas (Kotler and Zaltman, 1971) or the application of commercial marketing techniques to achieve social goals (Andreasen, 1995). The main purpose of social marketing is focused on positive behavior change and should be recognized as an effective tool to achieve desired outcomes (Gordon et al., 2006). Donovan (2011) highlights that social marketing purpose is to achieve social goals, such as promoting healthy behaviors, rather than making a profit. The key to success in social marketing lies in combining marketing techniques to promote social change (Donovan and Henley, 2010). Appropriate use of social marketing can lead to reduced stigmatization of people with mental disorders and improved perception (Petak et al., 2021). Authors, in general, agree that social marketing plays an important role in social change. Differences can be seen in their focus, varying from general social goals to specific areas such as mental health.

A good example of social marketing is well-designed campaign that aims to motivate people to respond to key health challenges, remove barriers and provide opportunities for active participation. According to Donovan (2011) social marketing in healthcare increases the effectiveness of public health programs by using tools that target specific audiences. Marketing can be effective in reducing mental health stigma, leading to open conversations, and encouraging people to seek help when needed (Parkinson and Davey, 2023). In this sense, marketing strategies can significantly influence attitudes and behaviors related to mental health (Mirabito et al., 2022) and result can be seen in reducing stigma and raising awareness. It can be concluded that marketing plays a crucial role in promoting understanding, empathy and seeking help for people with mental health issues, contributing to improved percepcion of mental health (Donovan, 2011; Parkinson and Davey, 2023; Mirabito et al., 2022).

Public policy that includes health promotion strategies and that are focused on creating enabling environment, empowers communities, developes personal skills and refocuses health services (Kobau et al., 2011). Promotion of mental health is about empowering both individuals and communities to take control of their own health and create a supportive environment (Jane-Llopis and Barry, 2005). Increasing use of social media might be effective way to rapidly spread mental health information. In addition to its global use, social media is cost-effective alternative to traditional communication channels to raise awareness (Latha et al., 2020). Social media interventions decrease negative attitudes and increase the acceptability of mental health counseling (Niu et

al., 2020). Therefore, social media could play a crucial role in changing attitudes towards mental health, with positive impact on reducing stigma (Sampogna et al., 2017). Still, the impact depends on the credibility of information sources (Kobau et al, 2011; Jane-Llopis and Barry, 2005; Latha et al, 2020; Niu et al, 2020; Sampogna et al, 2017).

Social media and social networks must be used with caution as any content shared can have different outcome (Engel et al., 2023). Social networks enable data analysis on mental health as users openly share their thoughts and feelings (Yang et al., 2024). Large data sets can be used to identify issues such as anxiety, depression and stress so that professionals can intervene in a timely manner and provide specialized resources. In addition, social networks bring people with similar problems together, fostering a sense of community and reducing the stigmatization of mental illness.

Examples of social marketing in the field of mental health include encouraging open conversations about mental health issues and providing accessible resources for people with mental health issues (Petak et al., 2021). Digital storytelling via social media can help reduce stigma and increase understanding (Sampogna et al., 2017). However, Nycyk and Craig (2019) warn about the danger of exploiting vulnerable people, which requires a cautious approach to such campaigns. Narrative storytelling humanizes people with mental disorders (De Vecchi et al., 2017), but Eriksson (2023) highlights the risk of sensationalizing issues and losing critical analysis of the mental health system. Therefore, social media should be used in a “healthy” and critical way (Herrera-Peco et al., 2023) to avoid situations in which users are reduced to passive objects of marketing strategies (Eriksson, 2023).

Recent research shows that familiarity with mental illness through personal contact or exposure via media and education can significantly reduce stigma (Corrigan and Nieweglowski, 2019). However, the relationship is not strictly linear, as both limited and extensive familiarity combined with fear or perceptions of risk, inadvertently reinforce stigma. Li et al. (2024) found that increased familiarity was associated with reduced social distance; but not mediated by fear or perceptions of dangerousness.

Social marketing and social media are widely recognized as valuable tools to educatation and raising awareness about mental health. The relative effectiveness of narrative storytelling compared to traditional message formats is still insufficiently examined, particularly among younger, digitally active, and psychologically vulnerable populations. Nevertheless, further research is needed so the existing knowledge base can be expanded and relationships between social marketing techniques and mental health is yet to be explored.

Therefore, the aim of this paper is to investigate the impact of social marketing campaigns on mental health awareness and destigmatization of people with mental disorders, focusing on the role of familiarity and the persuasive power of narrative communication.

2. Literature review

Mental health promotion programs refer to activities for improvement of mental well-being and prevention of mental health issues. Programs are delivered through manuals, assistant training and educational materials development (Barry et al., 2005) whereas quality of program delivery is critical in achieving positive outcomes. In this sense, media campaigns are one of the most important elements in reducing the stigma associated with mental illness. Their effectiveness is measured by factors such as increased awareness, changes in attitudes and behaviors toward people with mental disorders, and greater tolerance (Sampogna et al., 2017). Farrell et al. (2024) believe that marketing experts can help improve the understanding of mental illness and enhance the lives of people affected by it in the marketplace. In this context, social media has become an important tool for mental health promotion as it reaches many people and is cost-effective, making it particularly valuable for spreading awareness widely and efficiently (Plackett et al., 2024). Educational websites, informative messages and personal stories from people with their own experiences have been shown to reduce stigma and encourage help-seeking behavior. In addition, media campaigns are recognized as effective tools for raising public awareness and influencing attitudes towards personal health and well-being (Tam et al., 2024).

Campaign messages should be tailored for target audience based but take a broader perspective to achieve impact in reducing stigma. Focus (Meyer et al., 2020) in this process should be on mental illness severity. Stigma can also be reduced by addressing discrimination and social injustice. It is important to emphasize social and economic justice, including equal access to services, education, and jobs (Stuart, 2016). As previousliy mentioned, success of campaigns should be measured with metrics that include changes in attitude, behavior and awareness. Sampogna et al. (2017) focus on changing tolerance and support, Meyer et al. (2020) focus on tailoring messages to the target audience, while Stuart (2016) emphasizes the need to address social and economic inequalities.

Narrative storytelling and participation in the creation of digital content can also have a positive effect on mental health (De Vecchi et al., 2017), by providing support, empowering individuals, and encouraging an open dialogue about mental health

within the community (ibid.). Positive effects of narrative storytelling are reflected in expressing emotions, understanding personal experiences, connecting with others, educating, and empowering. De Vecchi et al. (2017) include several variables in their research, namely, the number and diversity of participants involved in digital storytelling, the quality and extent of digital stories, context, participant satisfaction, potential risks, limitations, and benefits.

By telling authentic stories, people can raise awareness of the importance of mental health and promote understanding and empathy for those struggling with mental health issues. It is important to emphasize that personal experiences should only be used to promote positive change and support people with mental health issues. Eriksson (2023) examined the effects of narrative storytelling to promote mental health including following variables: commodification of personal experiences, changing perceptions, reducing stigma, and empathy and understanding. Okoro et al. (2024) analyzing safety aspects of sharing personal experiences online and their impact on help-seeking users highlight privacy as construct that needs to be considered in research dealing with the impact of sharing personal experiences on social media to promote mental health. Riboldi et al. (2024) also emphasize privacy and anonymity as key benefits of digital tools for mental health promotion. Engel et al. (2023) claim that influencers play an important role in promoting the importance of mental health based on their ability to use personal stories to help normalize conversations about mental health and associated stigma. Lind and Wickstrom (2024) examine the role of influencers in promoting mental health via social media, focusing on their interactions with audiences and analyzing how content is interpreted. Their model includes empathetic responses, indifference, or the perception of content as attention-seeking.

Eriksson (2023) examines how sharing personal experiences and narratives can reduce stigma related to mental health by measuring the outcomes of narrative storytelling on stigma reduction and contribution of this effect on mental health promotion. According to Kim (2022) the use of personal stories in social media can be a promising tool to reduce stigma related to mental health issues. It can encourage compassion and emotional engagement, especially when the efforts of the characters in the stories are emphasized. There is ample evidence that narrative storytelling can be a powerful tool for destigmatizing mental health, promoting understanding and support, and encouraging positive attitude change toward mental health issues. According to Riboldi et al. (2024) digital tools, like podcasts, can help remove barriers to seeking help and contribute to reducing stigma. The same authors believe that digital tools can have a positive impact on users' self-confidence. These tools also play an important role in prevention, as they are seen as useful in "battle" against mental health stigma.

The variables used by most authors include education, empathy, stigma reduction, and normalization of conversation. This can lead to the conclusion that narrative storytelling influences both raising awareness about mental health and destigmatization. In other words, variables are connected, according to existing research.

The use of narrative storytelling on social media to raise awareness of mental health is a logical approach given the stigma surrounding mental health. Furthermore, narrative storytelling by users is conducted privately by users, meaning that the information can be accessed without the presence of a physical person. This is a convenient solution for people with mental health issues as they can access information in a 'silent' way and be encouraged to take action.

On the other hand, a person with mental health issues can expose themselves publicly but still decide how much to openly share. The person should be aware of both the positive and negative consequences. Ultimately, the goal remains the same: to raise awareness of mental health and reduce the stigma associated with mental health issues.

3. Empirical research

3.1. Research objective and hypotheses

The main objective of this study is to investigate the impact of social marketing campaigns and narrative storytelling on mental health awareness and destigmatization of people with mental disabilities. In this study, the construct of mental health awareness is operationalized following Black et al. (2021), while the construct of stigma was adapted from Docksey et al. (2022). This study explores respondents' familiarity with mental health campaigns on social media and the practice of sharing personal experiences online to understand their awareness of these communication forms.

It also measures respondents' attitudes towards mental health campaigns, including their perceptions of the campaigns effectiveness and personal relevance.

In addition, the study explores attitudes towards people with mental health disorders to identify existing prejudices or stereotypes.

Overall, the research aims to assess knowledge, attitudes, and perceptions related to mental health and the campaigns designed to promote it.

In order to meet research objectives, following hypothesis were proposed:

H1: Familiarity with social media marketing campaigns for mental health impacts awareness about the importance of mental health (H1a) and reduce stigmatization (H1b).

Social media has the power to influence attitudes and behaviour (Niu et al., 2020), especially among younger generations. The aim of mental health campaigns is to normalise communication, raise awareness and change behaviours (Parkison and Davey, 2023, Tam et al., 2024). According to Ridout and Campbell (2018), exposure to mental health campaigns raises awareness of mental health issues. Increased awareness and participation in mental health marketing campaigns on social media can spread the messages of the campaigns further, leading to a greater understanding and awareness of mental health issues (Gough et al., 2017). Accordingly, familiarity with marketing campaigns on social media can be expected to influence awareness of the importance of mental health.

Familiarity could also contribute to the destigmatisation of mental health issues. Destigmatisation is also influenced by a change in attitude and requires an emotional shift (Placket et al., 2024). According to Robinson et al. (2015), social media campaigns can contribute to destigmatisation by promoting anti-stigma narratives and sharing experiences of mental health. Campaigns that portray mental health problems as important, treatable and common can reduce stigma (Meyer et al., 2020). Alvarado-Torres et al. (2024) emphasise that destigmatisation or reduction of stigma is related to the level of engagement, while low levels of exposure and familiarity do not have a significant impact on deep-rooted prejudice against people with mental health issues. It can be argued that higher levels of familiarity with social media marketing campaigns may contribute to destigmatisation.

H2: Familiarity with narrative storytelling of personal stories impacts awareness about the importance of mental health (H2a) and reducing stigmatization (H2b).

Narrative storytelling or sharing personal experiences can be an effective way to raise awareness of mental health (Conner et al., 2023) and reduce stigmatisation (Zhuang and Guidry, 2022). Familiarity with narrative storytelling in the mental health field can develop a sense of empathy and understanding (Gupta and Jha, 2022). The effectiveness of narrative storytelling in reducing stigma and improving treatment seeking is supported by a growing body of evidence (Davidson et al., 2018). Nevertheless, there is a lack of research in this area (De Vecchi et al., 2016). According

to McCall et al. (2021), narrative storyteling reveal insights and serve as an intervention to raise awareness of mental health in public health policy.

Fong and Mak (2022) point out that stigma-related content in narrative storytelling is more important for stigma reduction than interactivity, although interactivity might enhance the effect of stigma reduction, which is particularly important in mental health social media campaigns. Zhuang and Guidry (2022) confirmed the effect of narratives on stigma reduction, with stories constructed from the personal point of view being more effective in reducing stigma. In this sense, familiarity with narrative storytelling could be expected to influence awareness of the importance of mental health and destigmatisation.

3.2.Sample and questionnaire

The study was conducted in July 2024 using a questionnaire distributed via social networks. The questionnaire consisted of three parts, the first of which related to the general characteristics of the respondents. The second part included questions on social network usage behavior, familiarity with mental health social marketing campaigns and narrative storytelling. The third part examined mental health awareness and stigma. The items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). By completing the questionnaire, participants gave their informed consent and had the option of withdrawing their participation at any time.

A total of 253 respondents participated in the study. After analyzing the responses, 33 respondents who described themselves as non-users of social networks were excluded from further analysis. The final sample size was 220 respondents, majority female (69.5%), in an age range of 18-35 years (80.5%), with an almost equal ratio of high school graduates (35%), undergraduates (28,2%) and graduates (34.1%). The majority of participants are employed (76.8%) and use social networks multiple times a day (64.1%) or once a day (35.9%). The results also indicate that participants are relatively familiar with social media campaigns for mental health (mean=3.58) andthe practice of sharing their own experiences on social media (narrative storytelling) (mean=3.76).

3.3.Research results

The results of the descriptive analysis for the mental health awareness (MHA) and stigmatization (STIG) constructs, presented in Table 1, suggest that this method of

raising awareness of mental health and destigmatization may be effective and stimulating. The MHA6 mean score of 3.89 and the MHA8 mean score of 3.87 indicate the aforementioned conclusion. The lowest mean score in the MHA construct is for MHA5, which expresses indifference in reflecting on a particular campaign. To summarize, the average mean score for all items, MHAm (3.57), indicates a positive opinion about mental health promotion campaigns. For the construct stigmatization (STIG), the mean scores range from 1.91 to 2.32, indicating that respondents disagree with the proposed statements, which corresponds to a positive opinion or destigmatization of people with mental health issues. An exception is STIG5 or the attitude that people with a disorder should seek help, for which the mean score is the highest (4.47). In accordance with the nature of the STIG scale, the last item values were recoded (inverted) in the further analysis. The mean value of all items in the STIG construct (STIGm) is 2.58, which also indicates a slightly negative attitude towards the stigmatization of people with mental disorders. Nevertheless, it can be assumed that some prejudices exist, although there is openness to change. For further analysis, the Cronbach Alpha (CA) coefficient was calculated for the proposed constructs. The CA value for MHA (.924) was acceptable, while for STIG it was below the cutoff value of 0.7 (0.652). Considering the recommendation for CA if item deleted (exclusion of STIG5-inverse), the new CA value was 0.733, which was acceptable for further analysis.

Table 1. Desctiptive statistics for MHA and STIG constructs' items

Variable	Coding	n	M	SD
I'm thinking about what the message of the mental health campaign is.	MHA1	220	3.48	1.07
I'm thinking about how mental health campaigns can apply to my life.	MHA2	220	3.38	1.13
I am thinking about how I would react if I found myself in the same situation described in the campaign.	MHA3	220	3.51	1.07
I connect the content of mental health campaigns to real life.	MHA4	220	3.69	1.03
I spend time thinking about the campaign in question.	MHA5	220	3.02	1.17
Campaigns are effective in raising awareness about mental health issues.	MHA6	220	3.89	0.86
Campaigns provide credible and reliable information about available resources and support.	MHA7	220	3.70	0.87
Campaigns encourage support for family and friends with mental challenges and participation in activities to promote mental health.	MHA8	220	3.87	0.91
Social marketing campaigns for mental health awarenes (CA= 0.924)	**MHAm**	**220**	**3.57**	**0.82**
People with mental health disorders are not actually sick.	STIG1	220	1.91	1.21
People with mental health disorders don't really accept reality.	STIG2	220	2.32	1.16
People with mental health disorders are weak.	STIG3	220	2.05	1.11

People with mental health disorders cannot live good and fulfilling lives.	STIG4	220	2.15	1.12
People with the disorder should seek help from a mental health professional. (inversed in further analysis)*	STIG5	220	4.47	0.94
Stigmatization (CA = 0.733)	**STIGm**	**220**	**2.58**	**0.70**

Source: Authors' calculation.

To test the hypotheses and assess the impact of social marketing campaigns and narrative storytelling strategies on mental health awareness and attitudes towards people with mental disorders, the sample was divided into groups based on their responses to familiarity with mental health social media campaigns (H1) and familiarity with narrative storytelling strategies (H2). The criteria for categorization into groups were based on responses, where Group 1 consisting of participants who were unfamiliar with a) mental health social media campaigns and b) narrative storytelling, Group 2 being partially familiar, and Group 3 being very familiar. The assessment of mental health attitudes for each group is presented in the following tables, with an analysis of statistically significant differences between groups (based on familiarity with a) campaigns and b) narrative storytelling) using the Kruskal-Wallis H rank-based non-parametric test, as the normality assumption of the sample was not met.

Table 2. Descriptives and Kruskal Wallis test significance results for MHA and STIG based on Familiarity with mental health campaigns groups

Familiarity with mental health campaigns	Group 1 not familiar			Group 2 partially familiar			Group 3 very familiar			Kruskal Wallis
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Mental health awarenes										
MHA1	35	2.743	1.1718	42	3.19	1.2923	143	3.741	0.8616	0.000
MHA2	35	2.629	1.1653	42	2.976	1.1367	143	3.678	0.9972	0.000
MHA3	35	2.714	1.1523	42	3.262	1.1275	143	3.783	0.9049	0.000
MHA4	35	3	1.2127	42	3.333	1.203	143	3.965	0.7998	0.000
MHA5	35	2.543	1.2682	42	2.738	1.2109	143	3.217	1.0821	0.002
MHA6	35	3.457	1.0939	42	3.762	0.9321	143	4.035	0.7259	0.009
MHA7	35	3.143	1.1152	42	3.667	0.9283	143	3.839	0.7282	0.002
MHA8	35	3.2	1.0516	42	3.595	1.1056	143	4.112	0.6828	0.000
MHAm	35	2.927	0.991	42	3.32	0.889.	143	3.796	0.640	0.000
Stigmatization										
STIG1	35	1.914	1.1973	42	2.143	1.2986	143	1.846	1.1886	0.333
STIG2	35	2.629	1.1398	42	2.381	1.2288	143	2.231	1.1426	0.157
STIG3	35	2.629	1.1903	42	2.024	1.2589	143	1.909	1.0064	0.004
STIG4	35	2.314	1.1317	42	2.19	1.2145	143	2.091	1.0871	0.543
STIGm	35	2.37	0.772	42	2.185	1.016	143	2.0192	0.8174	0.060

Source: Authors' calculation.

The data shown in Table 2 indicates that people who are more familiar with mental health campaigns on social media are more aware of the importance of mental health. With regard to destigmatization, a similar conclusion can be drawn, as the mean scores of the stigmatization items are highest in the group not familiar with mental health campaigns. Determined differences are statistically significant at 5%, for all items in the MHA construct and MHAm, based onthe results of the Kruskal Wallis test. With regard to the STIG construct, a significant difference was only found for one item, STIG 3. To better explain the differences found, an additional analysis of the differences between specific groups for MHAm was carried out using the Mann Whitney test. These results and the details of the Kruskal Wallis test for STIGmare shown in Table 3.

Table 3. Kruskal-Wallis and Mann Whitney test results for MHAm and STIGm based on Familiarity with mental health campaigns groups

Familiarity with mental health campaigns		N	Mean Rank
MHAm (χ^2=7.174; df=2) Sig. 0.000	1 not familiar	35	65.40
	2 partially familiar	42	89.83
	3 very familiar	143	127.61
	Total	220	
MannWhitney test Group 1 and 2			
MW U 538,50; Z=-2.015, sig. 0.044	1 not familiar	35	33.39
	2 partially familiar	42	43.68
MannWhitney test Group 1 and 3			
MW U 1120,50; Z=-5.070, sig. 0.000	1 not familiar	35	50.01
	3 very familiar	143	99.16
MannWhitney test Group 2 and 3			
MW U 1938,50; Z=-3.496, sig. 0.000	2 partially familiar	42	67.65
	3 very familiar	143	100.44
Familiarity with mental health campaigns		N	Mean Rank
STIGm (χ^2=5.629; df=2) Sig. 0.060	1 not familiar	35	132.66
	2 partially familiar	42	112.45
	3 very familiar	143	104.50
	Total	220	

Source: Authors' calculation.

The results of the Mann Whitney test confirm the positive influence of familiarity with mental health campaigns on mental health awareness. Mean ranks are highest for group that declared as very familiar with the campaigns and lowest for the group indicating they are not familiar. The comparison of the group pairs showed that even partial familiarity has a significant positive influence on awareness. Therefore, hypothesis H1a is accepted. In contrast, familiarity with campaigns has no significant impact on destigmatization, as the differences found in mean ranks are not significant. Hypothesis H1b is therefore rejected.

In the next step, analysis of impact of familiarity with narrative storytelling on mental health awareness and destigmatization was conducted. The results are presented in Table 4.

Table 4. Descriptives and Kruskal Wallis test significance results for MHA and STIG based on Familiarity with narrative storytelling groups

Familiarity with narrative storytelling	Group 1 not familiar			Group 2 partially familiar			Group 3 very familiar			Kruskal Wallis
	N	Mean	St. Dev	N	Mean	St. Dev	N	Mean	St. Dev	p (sig.)
Mental health awarenes										
MHA1	**26**	**2.769**	**1.1066**	**24**	**3.25**	**1.2938**	**170**	**3.618**	**0.9915**	**0.000**
MHA2	**26**	**2.731**	**1.2184**	**24**	**3.167**	**1.1293**	**170**	**3.506**	**1.0838**	**0.003**
MHA3	**26**	**2.808**	**1.1668**	**24**	**3.208**	**1.1413**	**170**	**3.665**	**0.9908**	**0.000**
MHA4	**26**	**3.038**	**1.1826**	**24**	**3.542**	**1.1025**	**170**	**3.812**	**0.9607**	**0.002**
MHA5	26	2.654	1.1981	24	2.833	1.3077	170	3.1	1.1339	0.116
MHA6	**26**	**3.346**	**1.1642**	**24**	**3.667**	**1.0495**	**170**	**4.006**	**0.7338**	**0.008**
MHA7	**26**	**2.923**	**1.0554**	**24**	**3.667**	**1.1293**	**170**	**3.818**	**0.7352**	**0.000**
MHA8	**26**	**3.115**	**0.9931**	**24**	**3.625**	**1.0959**	**170**	**4.018**	**0.8029**	**0.000**
MHAm	**26**	**2.923**	**0.986**	**24**	**3.369**	**0.9401**	**170**	**3.692**	**0.727**	**0.000**
Stigmatization										
STIG1	26	2.269	1.3728	24	1.875	1.2619	170	1.865	1.1764	0.358
STIG2	26	2.692	1.087	24	2.292	1.0826	170	2.271	1.1806	0.186
STIG3	**26**	**2.615**	**1.2026**	**24**	**1.917**	**1.1389**	**170**	**1.976**	**1.0767**	**0.022**
STIG4	26	2.346	1.231	24	2.208	1.1413	170	2.106	1.0989	0.622
STIGm	26	2.480	0.877	24	2.073	0.8549	170	2.054	0.847	0.074

Source: Authors' calculation.

The results suggest that familiarity with narrative storytelling has a positive impact on mental health awareness. The mean scores are highest for the group that is very familiar with narrative storytelling and lowest for the group that is not familiar, for all items. In terms of destigmatization, the highest mean scores for the stigmatization items are observed in the group that is not familiar with narrative storytelling. The identified differences are statistically significant at the 5% level for all items in the MHA construct and MHAm, with the exception of MHA5, based on the results of the Kruskal-Wallis test. For the STIG construct, a significant difference is again only found for STIG 3. To further clarify these differences, an additional analysis was performed using the Mann-Whitney test to compare specific groups for MHAm. The results of this analysis, as well as the details of the Kruskal-Wallis test for STIGm based on familiarity with narrative storytelling are presented in Table 5.

Table 5. Kruskal-Wallis and Mann Whitney test results for MHAm and STIGm based on Familiarity with narrative storytelling groups

Familiarity with narrative storytelling		**N**	**Mean Rank**
MHAm (χ^2=18.748; df=2) Sig. 0.000	1 not familiar	26	65.00
	2 partially familiar	24	93.48
	3 very familiar	170	119.86
	Total	220	
MannWhitney test Group 1 and 2			
MW U 210,50; Z=-1.978, sig. 0.048	1 not familiar	26	21.60
	2 partially familiar	24	29.73
MannWhitney test Group 1 and 3			
MW U 1128,50; Z=-4.022, sig. 0.000	1 not familiar	26	56.90
	3 very familiar	170	104.86
MannWhitney test Group 2 and 3			
MW U 1530,00; Z=-1.985, sig. 0.047	2 partially familiar	24	76.25
	3 very familiar	170	100.50
Familiarity with narrative storytelling		N	Mean Rank
STIGm (χ2=5.197; df=2) Sig. 0.074	1 not familiar	26	136.98
	2 partially familiar	24	108.69
	3 very familiar	170	106.71
	Total	220	

Source: Authors' calculation.

The data again showed some interesting results. The results of the Mann-Whitney test confirm the positive influence of familiarity with narrative storytelling on mental health awareness. The highest mean scores are observed in the group that reported being very familiar with these campaigns, while the lowest scores are in the group that is not familiar. Pairwise group comparisons show that even partial familiarity has a significant positive effect on awareness compared to no familiarity. Consequently, hypothesis H2a is accepted. As previously with familiarity with mental health campaigns, familiarity with narrative storytelling does not have a significant impact on destigmatization, as the differences in means are not statistically significant. Hypothesis H2b is therefore rejected.

4. Conclusion, limitation and recommendation for future research

The results of the research show how marketing activities, particularly exposure to mental health social marketing campaigns, can help raise awareness of the importance of mental health. The results suggest that respondents who were more familiar with mental health campaigns on social media had significantly more positive attitudes and perceptions towards mental health than those who were not familiar with these campaigns. This could be an indication of the importance of information and education on social networks to improve the perception of mental health in society.

Furthermore, the results suggest that there is a clear link between familiarity with campaigns and mental health importance awareness. Respondents who come into contact with information via social networks tend to develop a more positive attitude, which can, among other things, reduce stigmatisation and encourage an open dialogue about mental disorders.

However, the research conducted in relation to the influence of respondents' attitudes on the reduction of stigmatization through social networks in the context of social marketing campaigns did not yield positive results. The results suggest that while there is a tendency towards a lower perception of stigma among respondents who are better informed about mental health campaigns, this difference is not pronounced enough to be considered significant in this sample. This situation may suggest that there are other factors influencing the perception of stigma that were not considered in this research. For example, individual characteristics of respondents, such as personal experiences of mental health, social support or cultural context, could play an important role in shaping respondents' attitudes.

Exposure to personal storytelling has a similar impact on raising awareness of the importance of mental health and reducing the stigma associated with people with impaired mental wellbeing as exposure to mental health social marketing campaigns. Essentially, personal storytelling is seen as part of social marketing campaigns on social media. The results obtained in terms of p-value and mean ranks suggest that there is a significant difference between groups in mental health according to how familiar they are with the practice of sharing personal experiences on social media, while there are no such differences in stigma. This may suggest that the practice of sharing experiences may have a positive effect on mental health awareness, but not on perception of stigma.

One of the limitations of this study is the relatively small sample of participants. Another limitation can be seen in the demographic characteristics of the sample and cultural adaptation. The majority of the participants were female and between the ages of 18 and 25, who are probably not concerned enough with mental health, even though it is of great importance to them. The honesty of responses may have been limited due to the sensitive nature of the topic, as participants might not have felt comfortable fully sharing their true opinions or experiences. There is also a possibility of social desirability bias, where participants may have responded in ways they thought were more acceptable or favorable to others. In addition, the focus is on attitudes and perceptions rather than directly measuring actual behaviors, such as help-seeking or real-life reactions. Familiarity constructs operationalization based on self-reported recognition of and interaction with content related to mental health campaigns or

personal narratives on social media, can also be seen as limitation. Finally, another limitation is that general attitude towards mental health campaigns was investigated without using a specific case as a starting point, making the responses more general.

In view of the limitations described, recommendations for future research should include a larger number of respondents, specific age groups (generations) and a representative population sample. Since this research was conducted in Croatia, it could be beneficial to include participants from different countries with different levels of economic development. In addition, the research could include collaboration with influencers, with the aim of creating educational content and encouraging interaction between users to create a supportive environment for conversations about mental health on a specific topic. Moreover, future studies could involve implementing a specific campaign and examining its impact on mental health awareness and stigma reduction. Also future research should develop and test new measures for behaviors, not just attitudes, investigate the impact of different social media platforms, analyze the long-term effects of campaigns, and examine how campaigns influence broader societal attitudes beyond individual levels. Regarding familiarity construct, future studies could include more complex measurement of familiarity and interaction types based on eWOM (likes, shares, comments) to explore different levels of exposure and engagement.

In conclusion, the work has both scientific and practical contribution. The findings suggest that mental health campaigns and narrative storytelling have an impact on raising awareness of the importance of mental health, but not on perceptions of stigma, which simultaneously points to the complexity of attitudes towards mental health and the need to adapt campaign approaches. The way in which mental health campaigns are designed and delivered should be explored further, particularly in relation to the use of social media as a platform to raise awareness and support. Understanding subtle nuances can help to develop more effective strategies to raise awareness of mental health and reduce the associated stigma. Campaign designers should also focus on segmented message strategies that combine awareness-raising activities with direct, stigmatising content. This includes the use of trusted influencers to enhance relatability and engagement and deepen the impact of narrative storytelling strategies. This research contributes to existing body of knowledge and results help in building comprehensive picture of attitudes towards mental health through social marketing. The findings can also be useful for future strategies in designing campaigns that not only raise awareness but actively work to reduce the stigma associated with mental health. Finally, the findings highlight the importance of targeted interventions that go beyond raising awareness and actively combat stigma,

potentially through more direct engagement, personal stories, or community-based programs.

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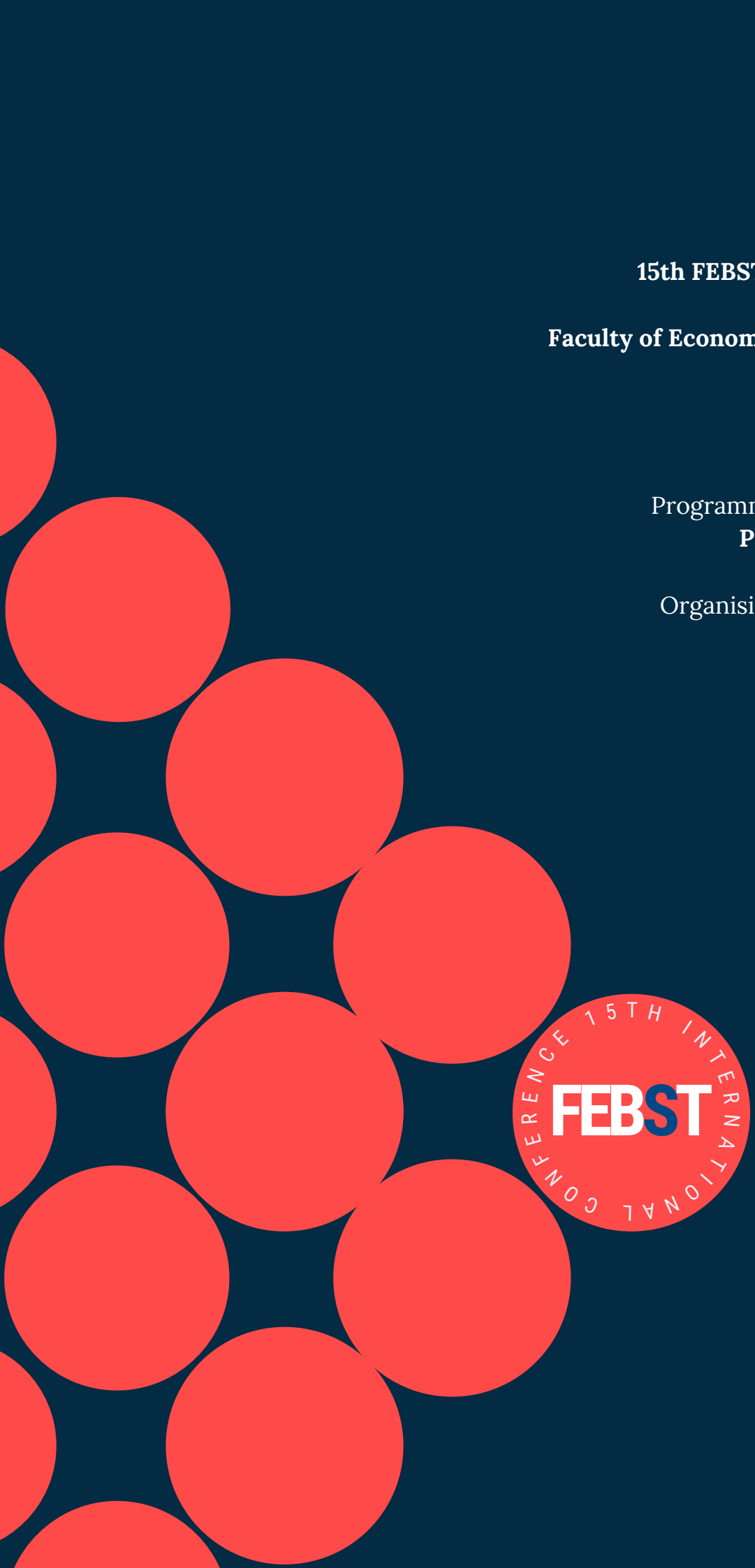

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