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AI, SUSTAINABILITY, AND ETHICS IN FUTURE RESTAURANTS: EVIDENCE FROM THE LATEST SCIENTIFIC RESEARCH (2023–2025)

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ABSTRACT

Recent scientific literature published between 2023 and 2025 demonstrates that the global restaurant sector is undergoing a significant transformation driven by the convergence of artificial intelligence (AI), sustainability-oriented operational strategies, and evolving ethical expectations regarding human-centred hospitality. While prior research has primarily focused on technological innovation to improve operational efficiency, emerging studies suggest that integrating predictive analytics, carbon footprint communication tools, and circular gastronomy practices is reshaping not only restaurant workflows but also customer perceptions, staff autonomy, and organisational transparency.

This study aims to synthesise recent peer-reviewed scientific findings on AI-supported decision-making systems, sustainability interventions such as carbon-labelled menus, and the ethical considerations associated with automation in restaurant environments. A structured literature review methodology was employed to analyse research indexed in Scopus and Web of Science databases between January 2023 and January 2025. The reviewed studies were categorised into thematic clusters, including AI-assisted forecasting systems, lifecycle-based ingredient sourcing, zero-waste kitchen workflows, and human–technology interaction in hospitality settings.

The findings indicate that AI-enabled predictive models significantly improve demand estimation and inventory accuracy in high-variability service environments, potentially reducing food waste by up to 20–30%. Sustainability-oriented practices—such as carbon-labelled menu design and regenerative sourcing strategies—were found to positively influence customer trust, perceived authenticity, and behavioural loyalty when transparently communicated by service staff. At the same time, automation technologies introduce ethical challenges related to workforce autonomy, professional identity in culinary practice, and the risk of algorithmic bias in labour allocation and customer profiling.

Particular attention is given to the role of applied R&D restaurant environments embedded within higher education institutions, which may function as experimental "living laboratories" for empirically testing AI-supported operational models and sustainability communication strategies in real-service conditions. In smaller urban ecosystems such as Kaunas, these environments provide opportunities to generate practice-based evidence relevant to both academic research and industry innovation.

The study concludes that future restaurant models must adopt human-centred implementation frameworks in which artificial intelligence functions as an augmentative decision-support system rather than a substitute for professional judgement. Integrating AI, sustainability metrics, and ethical governance within applied hospitality education may enable institutions such as St. Ignatius Loyola College to contribute locally grounded yet internationally relevant insights into the evolving socio-technical architecture of sustainable restaurant operations.

Keywords: *artificial intelligence; sustainable gastronomy; ethical hospitality; R&D restaurant; carbon labelling; circular economy; applied research.*

1. INTRODUCTION

The restaurant sector is increasingly positioned at the intersection of technological innovation, environmental governance, and evolving service paradigms, reflecting broader systemic transformations within contemporary hospitality ecosystems. Recent

scientific literature published between 2023 and 2025 demonstrates a rapid expansion of research examining artificial intelligence (AI)-enabled operational optimisation, sustainability-oriented decision-making frameworks, and customer behavioural responses to environmentally informed service design. Despite this growing body of work, existing studies tend to examine these domains—technological efficiency, environmental responsibility, and ethical service provision—in relative isolation, thereby limiting the development of an integrated theoretical understanding of how AI-driven systems interact with sustainability practices and human-centred hospitality principles in real-world restaurant environments.

Artificial intelligence has emerged as a dominant technological paradigm in hospitality management research, particularly in predictive analytics, automated inventory management, and labour allocation models. Empirical studies indicate that AI-assisted forecasting systems can significantly improve demand estimation accuracy and reduce food waste in high-variability service environments. However, the prevailing emphasis on operational efficiency has been critiqued for privileging techno-centric performance metrics at the expense of socio-organisational considerations, including workforce autonomy, professional identity, and the experiential dimensions of hospitality service delivery.

Concurrently, sustainability-oriented operational strategies—such as carbon-labelled menu systems, lifecycle-based sourcing models, and circular gastronomy practices—have gained prominence as measurable indicators of environmental responsibility in restaurant management. While these interventions are frequently associated with reductions in environmental impact and increased consumer trust, their implementation introduces new communicative and ethical challenges related to transparency, data reliability, and the potential instrumentalisation of sustainability as a reputational asset. As such, sustainability practices must be understood not solely as technical solutions but as socio-material signals embedded within complex service interactions.

The convergence of AI-driven optimisation and sustainability-oriented governance raises fundamental questions concerning the future architecture of hospitality systems. In particular, the increasing reliance on algorithm-supported decision-making processes may alter traditional forms of tacit knowledge, creative autonomy, and emotional labour that underpin culinary professionalism and guest engagement. This tension reflects a broader theoretical dilemma between automation-oriented efficiency models and the preservation of human dignity in service work, underscoring the need for a socio-technical framework that integrates technological augmentation with ethical governance mechanisms.

In response to these limitations, recent scholarship has begun to conceptualise hospitality environments as dynamic socio-technical ecosystems in which technological infrastructures, sustainability metrics, and human-centred service practices co-evolve. Within this emerging framework, applied research and development (R&D) restaurant environments embedded in higher education institutions offer a distinctive methodological context for examining the empirical implications of AI adoption and sustainability communication under real-service conditions.

Institutionally supported R&D restaurants—such as those integrated into applied hospitality education at St. Ignatius Loyola College in Kaunas—may therefore function as experimental “living laboratories” that enable the systematic investigation of AI-assisted operational models, behavioural responses to sustainability interventions, and staff perceptions of automation in practice-based settings. By

bridging theoretical inquiry with operational experimentation, such environments yield locally grounded yet internationally relevant insights into the evolving socio-technical configuration of future restaurant systems.
Accordingly, this study aims to synthesise recent scientific findings on AI-supported decision-making, sustainability-oriented operational practices, and ethical governance in restaurant environments, and to examine their theoretical and applied implications in the context of R&D restaurant infrastructures.

2. MATERIALS AND METHODS

This study employed a structured scoping review methodology to systematically examine recent peer-reviewed scientific literature addressing the integration of artificial intelligence (AI), sustainability-oriented operational practices, and ethical governance in restaurant environments. The scoping review approach was selected due to the interdisciplinary nature of the research field and the relative conceptual fragmentation observed across technological, environmental, and socio-organisational dimensions of hospitality management research.
The review process followed established methodological principles for evidence synthesis in applied social sciences. Relevant academic publications were identified through comprehensive database searches conducted in Scopus, Web of Science Core Collection, and ScienceDirect. The search strategy combined controlled vocabulary terms and keyword-based queries related to artificial intelligence in restaurant management, including predictive analytics and automated inventory systems, sustainability interventions such as carbon labelling, lifecycle assessment and circular gastronomy, as well as ethical considerations associated with automation, including workforce autonomy, algorithmic transparency, and customer data governance.
The temporal scope of the analysis was restricted to studies published between January 2023 and January 2025 to ensure relevance to current technological capabilities and sustainability frameworks in the hospitality sector. Inclusion criteria required that selected publications focus explicitly on restaurant or foodservice environments, examine operational, behavioural, or organisational outcomes associated with AI adoption or sustainability practices, and provide empirical or conceptual insights into workforce or customer-related implications of technological integration. Studies addressing hospitality robotics in accommodation services or in broader tourism contexts, without direct restaurant applications, were excluded from the analysis to maintain conceptual specificity.
Following initial database screening, 62 peer-reviewed journal articles were retained for full-text evaluation. These publications were subsequently categorised into four thematic clusters: AI-assisted demand forecasting and inventory optimisation; sustainability communication strategies, including carbon-labelled menu design, circular gastronomy, and resource-efficiency practices; and the ethical and organisational implications of automation in hospitality labour systems.
Data extraction focused on operational performance indicators, such as food waste reduction and energy consumption; behavioural outcomes, including customer trust and purchase intention; and socio-organisational variables, such as staff autonomy and perceived professional identity. Thematic synthesis was conducted to identify recurring patterns across studies and to assess the extent to which technological optimisation and sustainability interventions interact with ethical considerations in service-oriented environments.
In addition to the literature-based synthesis, this study adopts a practice-oriented analytical perspective by considering the applicability of the identified operational

models in applied research and development restaurant environments within higher education institutions. Such environments provide a controlled yet ecologically valid setting for examining AI-supported decision-making systems and sustainability communication strategies under real-service conditions, thereby enabling the translation of theoretical insights into experimentally testable operational practices.
Generative artificial intelligence tools were utilised solely for linguistic refinement and structural editing of the manuscript. No AI systems were employed in the collection, analysis, or interpretation of research data.

3. RESULTS AND DISCUSSION

While the structured scoping review methodology employed in this study enables a comprehensive synthesis of recent interdisciplinary research related to artificial intelligence integration, sustainability-oriented operational practices, and ethical governance in restaurant environments, several methodological limitations should be acknowledged. First, the review was restricted to peer-reviewed journal articles published between January 2023 and January 2025, potentially excluding relevant industry reports or emerging technological applications not yet represented in the academic literature. Second, the interdisciplinary scope of the selected studies introduces conceptual heterogeneity in research design, measurement frameworks, and operational definitions of sustainability and automation, thereby limiting the comparability of findings across different hospitality contexts. Finally, as the study adopts a synthesis-based analytical approach rather than primary empirical data collection, the applicability of identified operational models within specific localised environments requires further validation through practice-based experimental research.

3.1. AI-Supported Operational Efficiency

The reviewed literature consistently demonstrates that AI-assisted forecasting systems improve operational performance in restaurant environments characterised by fluctuating demand patterns. Predictive analytics tools enable more accurate estimates of customer flow, ingredient utilisation, and menu demand variability, thereby reducing overproduction and improving inventory management. Several studies report measurable reductions in food waste following the implementation of AI-supported procurement and stock-monitoring systems. In addition to resource optimisation, AI-driven labour scheduling models improve staff allocation across service periods, minimising idle time and enhancing workflow coordination in kitchen and front-of-house operations.
However, these performance gains must be interpreted within a broader organisational context. The reviewed studies suggest that increased reliance on algorithm-supported decision-making may shift traditional forms of tacit culinary knowledge toward data-driven operational logic, potentially altering professional autonomy and decision-making authority within restaurant teams.

3.2. Sustainability-Oriented Interventions

Sustainability practices, including carbon-labelled menu systems and lifecycle-based sourcing strategies, were identified as significant drivers of both environmental performance and customer trust. Empirical findings indicate that transparent sustainability communication—particularly when supported by quantifiable environmental metrics—positively influences consumer purchase intention and perceived authenticity of restaurant brands.

Circular gastronomy models, which emphasise the utilisation of by-products, regenerative sourcing, and energy-efficient preparation techniques, further contribute to measurable reductions in environmental impact. Nevertheless, the effectiveness of such interventions depends on their integration into everyday service interactions. Studies highlight that sustainability indicators must be communicated by trained service staff to avoid customer scepticism or perceptions of greenwashing.

3.3. Ethical Implications of Automation

The integration of AI-driven optimisation tools raises ethical considerations regarding workforce autonomy, organisational transparency, and customer data governance. Algorithmic scheduling systems, for instance, may unintentionally reinforce inequitable labour patterns if implemented without participatory oversight mechanisms. Similarly, customer profiling technologies used to personalise menu recommendations may raise concerns regarding data privacy and informed consent.

In restaurant environments where emotional labour and creative expression are central to service quality, excessive automation may undermine the experiential dimensions of hospitality. The reviewed literature, therefore, emphasises the importance of human-centred implementation frameworks that position AI as a decision-support tool rather than a substitute for professional judgement.

3.4. Socio-Technical Implications for R&D Restaurant Environments

Applied research-and-development restaurant environments embedded within higher education institutions provide a distinctive context for examining the interaction between technological innovation, sustainability metrics, and ethical governance in practice. Such environments enable controlled experimentation with AI-assisted menu engineering, carbon-labelled communication strategies, and workflow optimisation models under real-service conditions.

Within institutionally supported experimental settings—such as applied hospitality training restaurants operating in smaller urban ecosystems like Kaunas—practice-based implementation of predictive analytics and sustainability interventions may generate empirically grounded insights into customer behaviour, staff adaptation processes, and organisational trust dynamics. This integrative approach supports the conceptualisation of future restaurant systems as socio-technical ecosystems in which technological augmentation and human-centred service practices co-evolve.

4. CONCLUSIONS

The findings of this structured scoping review indicate that the interaction among artificial intelligence-enabled operational models, sustainability-oriented management practices, and emerging ethical governance frameworks will increasingly shape the future development of restaurant systems. While AI-supported forecasting tools demonstrate considerable potential to reduce food waste, improve inventory accuracy, and optimise labour allocation, their implementation introduces organisational and professional challenges that extend beyond technical performance metrics.

Sustainability interventions—such as carbon-labelled menu systems and circular gastronomy practices—were shown to contribute not only to reducing environmental impact but also to enhancing customer trust and perceived authenticity when transparently integrated into service interactions. However, operationalising such practices requires organisational competencies that bridge technical sustainability assessment with the communicative and experiential dimensions of hospitality service delivery.

Importantly, the reviewed literature underscores a growing tension between automation-oriented efficiency models and the preservation of tacit knowledge, creative autonomy, and emotional labour traditionally associated with culinary professions. This suggests that technological innovation in restaurant environments must be guided by human-centred implementation frameworks that ensure artificial intelligence serves as an augmentative decision-support system rather than a substitutive managerial authority.

From a theoretical perspective, the study contributes to the conceptualisation of restaurant environments as socio-technical ecosystems in which technological infrastructures, sustainability metrics, and ethical considerations co-evolve through service interactions. This integrative framework advances existing hospitality management research by emphasising the relational dynamics between operational optimisation and human-centred value creation.

From an applied research perspective, institutionally embedded research-and-development restaurant environments offer a viable platform for empirically testing AI-assisted operational models and sustainability communication strategies under real-service conditions. Such environments enable practice-based experimentation with predictive analytics, resource-efficiency workflows, and participatory governance mechanisms, thereby facilitating the translation of theoretical insights into operational innovation.

Future research should prioritise longitudinal experimental studies conducted within applied hospitality training environments to evaluate the behavioural, organisational, and environmental outcomes of AI-supported sustainability interventions across diverse service contexts. In smaller urban ecosystems such as Kaunas, institutionally supported R&D restaurants may contribute locally grounded yet internationally relevant empirical evidence to inform the ethical integration of emerging technologies within sustainable restaurant management systems.

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RESPONDING TO THE DEMAND FOR TRADITIONAL LITHUANIAN FOOD IN KAUNAS IN THE CONTEXT OF HOSPITALITY SERVICES

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ABSTRACT
The article aims to reveal the demand for hospitality services for establishments serving traditional Lithuanian food in Kaunas. For this reason, the aim was to examine the application of hospitality service principles in establishments serving traditional Lithuanian food in Kaunas and to evaluate the hospitality services provided in these establishments. To achieve this goal, a qualitative research study was conducted, involving the analysis of scientific literature and comments, as well as two interviews.

Keywords: *hospitality services, Lithuanian traditional dishes.*

1. INTRODUCTION
The development of hospitality services is shaped by societal changes that affect people's lifestyles. The world does not stand still; technological progress advances constantly, promoting greater mobility across all areas. Never before has a person had such wide opportunities, thanks to which he can become more thoroughly acquainted with various, even the most distant, cultures.
Hospitality management plays an important role in the context of the above-mentioned changes, since a specialist in this field, applying his existing knowledge and drawing on accumulated experience, can thoroughly clarify and adequately respond to guests' needs.
The relevance of the topic lies in the idea that, for a long time, Lithuania was almost unknown to the world, sought to spread the word about itself, and, over the past three decades, has become increasingly open to visitors. This Eastern European country has a glorious history and can boast of having a unique culture characteristic of its land. This includes both intangible heritage and specifically tangible things. Since human senses not only allow them to navigate their environment but also to taste, smell, and appreciate food, and to feel comfort in a cosy environment, this provides much greater satisfaction than simply satisfying the need for food. At the same time, providing hospitality services can not only satisfy guests' food needs but also represent their home country.
People who visit establishments serving Lithuanian food do so for different reasons. Some are motivated by a dish familiar to their palates; they want to relive memories, while those arriving from other countries want to get acquainted with Lithuanian food culture. When delving deeper into alternatives to Lithuanian food offerings, problems emerge. To gain the greatest possible popularity, establishments serving Lithuanian dishes must constantly balance quality and price. Material cultural heritage includes more than one Lithuanian culinary tradition. However, the culture of healthy eating shapes eating habits that are contrary to the national cuisine. Thus, we face a dilemma when Lithuanian traditions are compared with a healthy lifestyle, and then the scales tip against Lithuanian food.
After presenting the principles of hospitality services, the importance of Lithuanian food in a historical context, and an overview of the demand for traditional food, the situation of catering establishments serving Lithuanian traditional dishes in Kaunas was studied in depth. For this purpose, feedback from visitors to establishments

serving traditional food was analysed, two customers were interviewed, and information received through public channels was analysed. These methods were used to assess demand for hospitality services and to identify problematic areas within the business.

1. LITERATURE REVIEW

1.1. Disclosure of hospitality service delivery principles

There are many cultures around the world, each with its own customs. This includes the culture of mutual communication, encompassing relationships with people in one's immediate environment and with those in more distant environments.

The Lithuanian language dictionary, which analyses the meaning of the concept "guest", describes this word as a person who has been invited and has come to entertain or visit someone, with a purpose for that visit; this term also describes a person who is rarely seen, who has arrived and stays for a certain, usually short period of time, who is not one's own, but a stranger [1]. According to this definition, a guest is a person who has temporarily arrived in one environment from another.

The term "hospitality" is derived from the adjective "hospitable". A hospitable person is defined as someone who is positive towards guests and welcomes, receives, and feeds them in a benevolent manner [1]. Thus, hospitality should be understood as the act of properly welcoming a visitor, providing them with services, and responding to their needs.

One element of the hospitality service complex is catering services. Food is one of the basic needs, the satisfaction of which is vital for a person. The satisfaction of a lower level of physiological need is based on the theory that the human body, to maintain its life, must eat [2]. For this reason, catering establishments can play a role in the initial step toward satisfying human needs.

A person who has left his permanent place of residence faces different needs, so the function of hospitality is to receive a guest and meet his needs, providing him with his vital functions, that is, food, rest, support, ensuring his safety, and at the same time providing a feeling of satisfaction with the service received.

To meet the needs of the arriving person, extensive preparatory work is required. In present-day usage, hospitality has acquired a broader meaning and includes more services than just food or accommodation. The ability to anticipate a guest's arrival and prepare to receive them properly is an important part of the entire hospitality service complex.

The possibility of a wider range or a package with more services allows the recipient of the hospitality service to create a service package that best meets their needs and is more attractive than those offered by other establishments with fewer options. However, an overly wide range of services can significantly increase the price of the basic service, making it unaffordable.

Another problem faced by a company offering many services, or a too wide range of services, is the risk of managing service quality so that it does not suffer from overly fragmented services or a lack of specialists capable of providing them at a high level.

Looking at changes in the hospitality services market, several factors can be identified that affect this sector. One change affecting hospitality services is that customers are increasingly uninterested in the basic service package and prefer experiential experiences. Today's guests, with a wide range of options to choose from, have higher expectations than just receiving service; they want service that interests them. They expect to experience satisfaction with the service through a personal, unique experience intended only for them, to feel unique, the only ones, they want their needs

to be looked at individually, with the accumulated experience specially adapted to them. Thus, treating customers as exceptional allows them to feel greater satisfaction with the service and increases its value.
Technological innovations change perceptions of hospitality services and expand the possibilities for their provision. Innovations in the hospitality sector can significantly increase service efficiency, thereby improving the satisfaction of the people served [3]. The ability to adapt to change and absorb technological innovations helps better understand consumer expectations and position oneself more effectively in the hospitality market.
The ability to combine diverse areas, such as tradition, culture, and values, with new technologies, artificial intelligence, and other innovations is particularly relevant for establishments operating in cultural heritage-based hospitality services. This also includes establishments that provide catering services with traditional Lithuanian food.

1.2. The need for traditional food in Kaunas

Each culture has its own traditions. These traditions span a range of areas, including music, clothing, and architecture. Food dishes can thus be considered part of the culture of a particular country or a separate region within it.
Lithuania has long been an agricultural land with four seasons: spring, summer, autumn and winter. It is obvious that Lithuanian cuisine depended on both the region's geographical location, which influenced its flora and fauna, and the time of year when dishes were prepared, according to seasonal rules [4]. Due to the country's agrarian nature and product storage conditions, traditional dishes developed based on the availability of the ingredients needed to prepare them.
The second reason for the establishment of traditional dishes is holiday customs, during which specific dishes were prepared. This can include both family holidays (christenings, weddings) and customary gatherings (harvest, midsummer fest), as well as other religious holidays (Ash Day, Christmas Eve, Easter) [4]. Since the life of a Lithuanian revolved around the cycle of the year and the transformations of nature, it was accompanied by rites of birth, marriage, and death, and the food culture that developed over time refined certain dishes that can be considered traditional Lithuanian. Some dishes were formed not only by seasonality but also by the calendar of religious holidays. Lenten or Advent fasting meals with mushrooms or herring, Shrove Tuesday’s pancakes, Christmas Eve cookies with poppy seeds - these are meals that had a specific meaning and their own traditions, which have reached our days.
Lithuanian dishes were formed over a long period of time. Traditions were influenced not only by the listed conditions but also by the customs of neighbouring territories in the immediate vicinity. Recipes can vary, but the main ingredients of any dish are used throughout much of Europe. Borscht (beetroot soup), often with boletus mushrooms, is on the menus of most establishments serving Lithuanian dishes, both because of its name and its earliest mentions. Nevertheless, it cannot be considered an authentic Lithuanian dish. By common agreement, borscht originated in the Eastern Slavic lands; it is distributed from Latvia to Romania. The intensity of flavours, colour, transparency, and the additional products added may vary, but the soup with this name is cooked on a beetroot base [5]. This example shows once again that the concept of Lithuanian dishes cannot be defined with much precision.
The history of Lithuania as a separate state dates back to 1009, when the name Lithuania was first mentioned in Saxon sources [6]. The glorious times of the Grand

Duchy of Lithuania, invasions of other lands, the formation of court customs, and Lithuanian cuisine's friendship with other European kingdoms through marriages brought about certain changes. The personality of Bona Sforza shows that a single, but influential person can bring more than one innovation to an established environment, for example, this queen “discovered” white flour or increased the amount of vegetables [7]. Other historical periods also brought their own changes, forming new food traditions.

The dishes of different social classes varied. For example, in medieval times, a lot of meat was served during meals in palaces, and various spices were used in abundance, so the dishes often did not differ much from the food of Western European rulers; later, some dishes were taken over by nobles, then nobles, until they finally reached the townspeople and peasants [8]. However, the preparation of dishes was dominated by products from their own environment, since only some products reached Lithuania due to transportation time and the large quantities required. Alcoholic beverages in the Lithuanian state also had their own history. Soups were replaced by beer, which was so popular in the Middle Ages that it was even recommended for children. Mead was replaced by wine, which reached the Duchy of Lithuania from Western Europe, and the custom of making vodka and drinking it spread among the Slavic peoples [8].

Sweets in Lithuania were made based on honey, and only the rich could afford sugar, which they used to sweeten even wine [8]. Later, when the possibilities of transporting goods improved, and their affordable prices became established, traditions of sweet dishes also developed in Lithuania, which intertwined with the cuisine of ethnic minorities living in Lithuania, such as Jewish-baked**,** Fried Pastry Strips**,** Tatar “Hundred Layer Cake”, various other sweet pastries, and, of course, Lithuanian Tree cake. Lithuanians borrowed this pastry from German lands, perfected it, and made it the pride of their land [9].

Potato dishes, now considered Lithuanian national favourites, were not eaten during the Lithuanian state's prosperity for a simple reason – potatoes were “discovered” only in the 17th century, and their spread began in the 19th century [8]. However, the popularity of potato dishes has outstripped that of other Lithuanian dishes. This suggests that extremely exotic local dishes have not become popular due to their cost, the use of endangered animals, and nature protection. In contrast, other dishes have very similar counterparts in many European countries and cannot be considered national dishes.

Lithuanian cuisine is part of regional culinary culture; therefore, the client can be offered a wide range of catering services in the hospitality sector, with a separate dish representing Lithuanian culinary traditions.

2. METHODOLOGY OF THE STUDY OF THE EVALUATION OF HOSPITALITY SERVICES FOR TRADITIONAL LITHUANIAN FOOD IN KAUNAS

The study aimed to highlight the need for traditional food in Kaunas and to evaluate the hospitality services provided by catering establishments offering Lithuanian dishes. To achieve this goal, feedback from visitors to establishments serving traditional food was analysed, two customers were interviewed, and information from public channels was analysed. During the qualitative study, interview and data analysis methods were combined. These methods were used to assess the need for hospitality services and identify problematic areas of this business.

Since the study's methodology is qualitative, it allows for the revelation of the essential points of the phenomenon under study through the experiences, emotions,

values, and attitudes of the participants. This is based on the view that qualitative research, unlike quantitative research, is not focused on the quantitative results of analysing the obtained indicators, but on a deeper understanding of the manifestation of a specific situation, revealed through the experiences of the research participants [10].

A small number of respondents were selected to confirm the positions of service recipients expressed online. The small number of respondents can also be justified by the goals set for qualitative research. After all, the quality of the results is determined not by the number of participants in the research, but by the content of the information they provide and the data saturation indicator. The choice of research methods helps ensure the reliability of the research results, and data analysis provides answers to the questions raised about the phenomenon under study.

3. RESULTS

Among establishments offering Lithuanian dishes, two main directions of Lithuanian food presentation can be distinguished. One group of establishments offering catering services provides a variety of food. However, it has also included dishes attributed to Lithuanian national cuisine on its menu (e.g., capellini, kugelis, borscht with boletus mushrooms, cold borscht), when these dishes are presented in a traditionally established format, or the recipes are diversified with ingredients or spices not characteristic of the particular dish. The purpose and scope of this work defines the separation from the latter establishments offering catering services and does not examine them.

As for the second group, it includes establishments that identify themselves as offering exclusively Lithuanian traditional dishes. This narrows the research field and allows for a deeper dive into the topic.

According to the data provided in the online space, the following establishments focused on Lithuanian dishes currently operate in the catering services sector in Kaunas city [11]:

1. *Bernelių užeiga* in the Old Town, M. Valančiaus g. 9,
2. *Bernelių užeiga Smuklė*, K. Donelaičio g. 11,
3. *Bernelių užeiga* in the Akropolis, Karaliaus Mindaugo pr. 49,
4. *Etno dvaras*, K. Baršausko g. 66A,
5. *Bernelių užeiga* in Šilainiai, Baltų pr. 81.

After analysing the collected information, it can be stated that the concept of Lithuanian cuisine traditions, as reflected in the menus and interior customisation, is offered by the service providers in the *Bernelių užeiga* and *Etno dvaras* network.

Food is intended to give a person vital energy. Another function of it is to provide satisfaction through the act of eating, as people taste food and experience other positive feelings. For this reason, establishments providing catering services thoroughly evaluate their operations and strive to meet consumer needs as effectively as possible.

To analyse the activities of an establishment providing hospitality services in the field of catering, it is necessary to cover the following areas:

- food quality, portion size and compatibility;
- aesthetic appearance of dishes;
- interior design, interior details and layout, staff clothing, music, etc.;
- location, parking options;
- speed of service provision, flexibility in resolving atypical situations, and feedback;

- qualification of service personnel;
- price ratio compared to the service received;
- availability of additional services (e.g., home-delivered food, education, spaces for children, pet-friendly options, etc.).

When providing hospitality services to establishments that offer food, as well as during each service, the recipient's opinion of the service is very important. For this reason, two people were interviewed who visit various catering establishments in their free time and therefore have an opinion on establishments that serve traditional Lithuanian dishes. The interviewees' names are coded in accordance with the principles of anonymity and confidentiality.

For the first respondent, A15, the *Bernelių užeiga* in Šilainiai left a good impression: "*quite large food portions and I like that, the prices are adequate compared to other cafes, the food quality is high, I really liked the interior, because it reminds me of ancient Lithuanian times, the staff is helpful, understanding the expectations of customers, the music is not overwhelming and harmonizes with the environment*", *Bernelių užeiga Smuklė,* Donelaičio g. "*very similar experiences as in Šilainiai, but that's how it should be, since it's the same retail chain*". The second respondent J29 described the *Bernelių užeiga* in Šilainiai in a similar way: "*a beautifully old-fashioned, aesthetically decorated Lithuanian-style space, there is a children's playground, there is a lot of space outside where you can also eat, the food is quite tasty, there is a parking lot, out of all the inns in this chain, I liked it the most, because there is a lot of space and separate rooms*", the *Bernelių užeiga* in the Old Town had the advantages of being quiet: "*there are several floors, you can choose the desired place, where there are fewer people and you can eat more quietly, in all sections of the chain the food is presented aesthetically, beautifully arranged on plates, not scattered, music may be playing, but it did not disturb or interfere with communication, as in other sections of the inn, they give children something to draw and colour so that they have something to do*", similar to the *Bernelių užeiga* in the Akropolis Shopping Centre, where "*I liked it because there were not many people during the visit, so you could choose the desired place*".

The *Bernelių užeiga* network in Kaunas has a long tradition. These catering establishments are frequently visited by both local visitors and guests from abroad. The most frequently expressed positive opinions in their reviews include: appropriate or low prices, good, tasty, balanced food, good, fast service, a cosy environment, an interior adapted to traditional dishes, and servers' national costumes. In addition, visitors to *Smuklė* noted free parking, soft background music, separate seating areas, an extensive illustrated menu, and vegetarian options. Attention was drawn to the possibility of communicating in English; customers mentioned a flexible approach to spice requests. In the Old Town, the main highlights were good service, tasty food, and a cosy atmosphere, as well as the ability to communicate in English and the children's corner. In addition to the already listed advantages of the Akropolis restaurant, due to delicious food, attentive service, cosy atmosphere, affordable prices, large portions, and service time, the menu in English and the variety of offers adapted to different dietary needs were also mentioned. The quiet environment was emphasised, and a separate menu was prepared for children, along with opportunities to draw, colour, and solve crossword puzzles. The Šilainiai restaurant was also named a great place with a great team, offering traditional Lithuanian food, and the following advantages were highlighted: convenient parking, a spacious courtyard, live music on weekends, a children's area, a good price-quality ratio, and dishes reminiscent of

grandmothers' cooking. For each unit, specific dishes and drinks that were liked were excluded.

Similar strong points of *Etno dvaras* were also mentioned by customers who wrote online reviews. They mostly mentioned good, tasty food, large portions, a pleasant atmosphere, and fast, polite staff. Other points highlighted were the continuation of cultural - Lithuanian traditions, descriptions of dishes in an easy-to-understand language, the ability to accommodate large groups, a combination of traditional and modern food, food from different regions of Lithuania, a large selection of potato dishes, 3-hour free parking, a children's menu and a high chair, that the restaurant is suitable for vegans, a children's menu, a large selection of dishes, that it is prepared fresh, from non-frozen products, it is possible to leave a tip when paying by bank card, good feature of the stability of the main service team, and evaluation of the pleasing dishes.

Respondent A15 described "Etno dvaras" as follows: "*the food portions are really huge, after eating the first course you do not even want dessert, <...> the prices are not too bad, they are really low, <...> the environment resembles a rustic hut, because it looks interesting and is in keeping with Lithuanian feature, there are all kinds of interesting decorations around, reminiscent of old times, <...> the staff is extremely polite and smart, helping you choose dishes from their wide range*." The above-mentioned observations of the respondent coincide with the comments submitted by the restaurant's visitors on the Internet.

When assessing guests' opinions of hospitality establishments offering traditional Lithuanian food, it can be stated that traditional food is understood as a value that conveys the nation's culture. As in any similar establishment, the quality of the food, the price level, and the service are important here. An appropriate interior must reinforce the idea of spreading the Lithuanian spirit. Additional value is added by a flexible approach to clients who visit with children, have menu preferences, or arrive by car.

When developing an activity, difficulties inevitably arise; eliminating them improves service quality and makes it more competitive with other service providers. For this reason, it is appropriate to identify problem areas, examine them as fully as possible, and finally eliminate them.

Along with positive feedback, complaints about the quality of hospitality services were also recorded. According to respondent A15, "*there were quite a few people at Etno dvaras, so we had to wait longer than usual for food*". In online comments, customers mostly complained about the service taking too long. A lot of criticism was directed at the service staff - they lacked smiles, were dissatisfied with the service, ignored, arrogant, did not greet, were inhospitable, unfriendly, unpleasant, did not maintain eye contact, did not speak English/Russian, there were too few of them, indifferent, did not pay attention, did not respond to complaints, were rude, did not accept orders based on pictures. There were comments that some complaints were not made for the first time.

There were also complaints about different portion sizes depending on whether customer eat in or take away, reduced portions, lack of vegan dishes, long waits to get the bill, food that was too greasy, too raw or of average/low quality, dishes that were too expensive, reheated food, dry, too hard, overcooked, reheated, rubbery, not fresh, not chewy, cold, undercooked, bitter, not tasty, and inability to provide dishes from the menu because they were out of stock. Capellini are stuffed only with pork; there is no cottage cheese or poultry filling, and Samogitian pancakes are absent as well.

Service users did not like specific dishes due to their taste characteristics - chicken, capellini, Kiev cutlets, beef steak, mushroom soup, ribs, dumpling filling, sauce with crackers and sour cream, no sauce or mouldy salad, sauce for capellini too salty, mashed potatoes diluted, old cooking oil, water-flavoured coffee, kvass old or with a burnt smell, a screw was found in the soup, hair in the dumplings, old lard was used.
Due to the large number of people, the establishment resembled a tourist destination, the music was very bad or too loud, the dishes were presented in a tasteless way, the tables with benches do not have the right distance, it is uncomfortable to sit, there is little decor, the food is brought to people who came together at very different times, after reserving a place for a celebration, people were seated in the busiest place near the kitchen door, misunderstandings regarding seat reservations and the presence of empty tables, showing a lack of communication between the service staff and other employees of the establishment, no warning about the long wait after ordering a dish, it is inconvenient to eat from the pot, priority is given to those who ordered online, not to those who arrived in person, there are not enough portions for those who want to order from the lunch menu of the day. Even when ordering from it, customers have to wait a long time for service. Another drawback is that pets are not allowed.
Despite the abundance of complaints, when examining customer comments, some received an apology from management, an explanation of the situation, a promise to address the expressed shortcomings, and an invitation to contact them again through the specified channels to resolve the issue peacefully.
Respondents, speaking about the Šilainiai restaurant of the *Bernelių užeiga*, singled out several points that bothered them. In the opinion of respondent A15, "*In Šilainiai, food is prepared for a very long time, there could be more parking spaces, the parking lot would be expanded", "Parking spaces in Bernelių užeiga on Donelaičio Street are very limited*". Respondent J29, when asked to name the shortcomings of individual branches of *Bernelių užeiga*, shared that "*The price in Šilainiai is high, there are often a lot of people, so it takes a long time to prepare food, often something from the menu is not available, and you cannot prepare the desired dish, the same is true in Akropolis. In addition, in the Akropolis, although parking is convenient because it is next to a shopping centre with many parking spots, the parking areas are not very large. In the Old Town, parking is more difficult to enter, and in addition, the Old Town is paid, and at the time I was there, there were a lot of people, and it took a long time to prepare food*".
There are fewer negative reviews from service recipients about the *Bernelių užeiga* network on the internet.
In the restaurant "Smuklė", dissatisfaction was expressed with the service (unfriendly, even terrible, few smiles, indifferent, showing no initiative for feedback, discriminating, interrupting the conversation, slow to the point that some customers even left without receiving their dishes), high prices, tasteless food (clients did not like the stew, dry food, raw steak, undercooked potatoes, too salty, too fatty, overcooked, crumbling capellini, too much oil in the sauce, cold baked bread, soup without sour cream), the environment (stuffy inside), there were no more capellini, misunderstandings about free and reserved tables, closing well before the official opening hours were announced. 12 glass shards were found in the rabbit stew, but the dish had to be paid for. Complaints were also submitted that the respondents had food poisoning, vomiting and diarrhoea from the meal. It was mentioned that similar complaints from the same individuals are made after repeated visits to this establishment.

Similar problems were raised in the Old Town restaurant – food was served at different times to individuals in the same group, staff who were uncomfortable, dissatisfied with the service in English, unhurried, unfriendly, unadvisable, sullen, impolite, rude, inflexible, uncommunicative, irritated, inattentive, only responding to raised voices, long-lasting service, having to search the menu yourself, small selection of vegetarian dishes, small portions, too expensive, even if tap water cost 3 euros, dirty tables, inappropriately selected music, dishes were cold, overcooked, too greasy, sticky, green, and had been in the freezer for a long time.

Some customers have had negative experiences at this restaurant for a long time, so they no longer plan to return. There was a proposal to change the national costumes to other, more comfortable attire, to buy hearing aids for the service staff, and to organise training on compliance with service standards, but some were even fired altogether. When asked for a phone charger, he said no without even asking for the model or explaining his answer.

Personal requests that can be easily fulfilled and would provide the guest with greater satisfaction are not addressed.

At the Akropolis restaurant, the quality of hospitality service for customers was reduced by the staff - slow, strange, not maintaining eye contact, not responding to comments, unprofessional, unfriendly, evasive, rude, disrespectful, inattentive, mocking customers among themselves, not accepting complaints, the personnel manager - rude, humiliating customers, not setting an example for those providing hospitality services, service - prolonged both in terms of bringing food and preparing the bill, low culture, unpleasant, dishes - tasteless, very greasy, overcooked, half-raw, dried out, hard, cold, unchewable, too little seasoning, meat with a pasty texture, cocktail with a watery taste, portions too small, finished by the end of the work day. According to customers, in critical situations, they were called liars, forced to pay for poor-quality, unprepared food, and, when the restaurant closed too early, the food was delivered in takeout packaging.

A customer complained of food poisoning after ordering and receiving food from a courier service. Private individuals complained that they could not eat their food at the available tables and left without receiving the ordered dish. Dishes are brought to visitors who arrived at very different times. After a long wait, one person is served, and another who arrived together and ordered the same dish is informed that the second portion is no longer available. When asked not to add some condiments to the main dish due to allergies, there is no response. The actual working hours do not correspond to the officially stated hours; the establishment closes without warning. The need for a vegetarian menu was expressed. The tables are untidy, and a hair was found in the bun. The customer recommended paying attention to communication culture and service ethics.

In the Šilainiai department, customers complained about similar issues that caused a feeling of dissatisfaction with the hospitality service provided: the closing time of the establishment did not correspond to the officially stated one, and customers were asked outside regardless, pressuring them to finish eating the ordered food as quickly as possible, high prices and small portions, the taste and quality of the dishes were often unsatisfactory, including vegetarian food, there were obvious discrepancies between the food brought and the ingredients of the dish presented on the menu, and the menu did not change. The speed of service often caused great dissatisfaction, it even seemed that they forgot to serve, the knowledge of the service staff about the dish was insufficient, they made mistakes when fulfilling the order and calculated the price accordingly without giving any discounts, they were impolite, rude,

unprofessional, unhelpful and inflexible to atypical but fulfilled customer requests, they were tired, did not have knowledge of English, did not bring an ashtray even after asking four times, even though it was not peak season and there were not many people, it was felt that customers were ruining the life of the service staff just by visiting this restaurant, sometimes the service did not resemble service in the true sense of the word, one particular waitress even seemed to hate her job, the people in charge of the service staff were also impolite, not responding to the complaints expressed.

Dissatisfaction stemmed from a situation in which customers were not informed that they could not bring their own cake, so they left and chose another catering establishment that accepted it. Another unpleasant situation involved an accident at a children's playground: a child was not offered ice or other assistance after being injured on metal steps, even as preparations were made to go to the emergency room for examination. The security guard's behaviour, which woke a four-year-old child who had fallen asleep on a bench, was unpleasant because it violated the institution's internal rules.

The poorly designed parking lot was not satisfactory. Many customers disliked the music, which was either too loud or too low; they wanted a quieter background. Lithuanian folk music would have suited the environment. According to customers, the interior has not been renovated for decades, the place is neglected, the toilet tiles are slippery, and the toilets themselves do not meet hygiene requirements. Payment for events is made only in cash, which the customer found to be tax fraud.

There were suggestions to improve the card reader to allow tips to be left for the waiter. For a variety of vegetarian dishes, potato pancakes can be fried in vegetable oil instead of animal fat. The managers were asked to make greater efforts to work with the staff and to set higher expectations for customer service.

Complaints expressed by customers receiving hospitality services in catering establishments most often concern the service itself, including its duration, as well as the staff's negative qualities and the quality of the food, both in specific cases and in general. Attention was also drawn to the discrepancy between the price and quantity ratios; specific situations are discussed, while topics related to the environment, interior, and infrastructure are discussed significantly less.

4. CONCLUSIONS

Meeting a traveller's needs includes supporting his vital functions and aligns with the satisfaction he derives from the service provided. The phenomenon of hospitality as part of culture is based on receiving a guest by feeding him and providing him with rest and security. In the modern world, the traditional principles of hospitality established over many years must be combined with new technologies. Openness to innovative solutions does not depend on whether the hospitality service is focused on traditional food provision. Even though this service seems inflexible in the face of environmental changes, the search for harmony between the modern world and heritage is an inevitable direction for improving the quality of hospitality services.

When assessing the need for traditional food in Kaunas, it is necessary to consider Lithuanian culinary traditions and the region's variety of dishes. Having examined the city of Kaunas' food culture in its historical context, it is possible to identify a set of dishes that vary with the seasons, holidays, and historical events. The developed national food culture allows us to convey traditions that encompass not only food but also other aspects of hospitality-related customer service. The ability to offer a service through exclusivity and originality sets this establishment apart from other catering

establishments and meets the needs of both local customers and guests arriving from abroad.

In Kaunas, two groups of service providers offer exclusively traditional Lithuanian food – *Bernelių užeiga* and *Etno dvaras*. By offering traditional food, the hospitality service also conveys the nation's culture to the client; therefore, it is very important to emphasise the service's strengths and minimise its negative aspects. The cultivation of Lithuanian traditions is reflected in food culture, the environment, and broader symbolism. Still, it is also closely related to hospitality, which reveals the host's attitude towards the guest. For this reason, it is not enough to focus solely on food quality or pricing policy, or to try to meet individual customer needs; it is necessary to pay special attention to the selection, training, and motivation of service personnel.

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THE EXISTENTIAL ATTITUDE OF A (NON)BELIEVER

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ABSTRACT

Western Christian tradition, from the early Church Fathers (St. Augustine) to the great medieval theologians (Thomas Aquinas), constantly speaks of the fundamental difference between two forms of faith: "believing in God" and "believing God." In our day, this relationship reveals the specific attitude of the believer towards God: "to believe in God (Christ) means to acknowledge the fact that God exists; [...] to believe in God (Christ) means to surrender oneself completely to God, to become one with Christ, to become a member of his mystical Body, to accept the Christian faith in its fullest sense. Such faith is not merely an act of the mind. Still, it also requires the involvement of the will, the whole person's devotion to God."1 By believing in God (*credere Deum*), a person only theoretically acknowledges that God exists. However, by believing in God (*credere in Deum*), he professes Him with his whole life.

"Believing in God" as a theoretical aspect of faith and "believing in God" as a practical aspect of faith can also be distinguished in the case of unbelief. A person who considers himself an unbeliever may, on the one hand, deny God with scientific or philosophical arguments, i.e., decide the question of (un)belief on the level of knowledge, but live as if God existed. On the other hand, a person may theoretically acknowledge God but deny Him in their own life, i.e. resolve the question of (un)belief on the level of life.

Objectively, reality is the same for both believers and non-believers. However, subjectively, believers and non-believers experience their relationship with the world differently. This divides the same reality into different worlds – the world of meaning and the world of absurdity. By saying their *fiat* with believing love, Christians accept the world as a gift. Meanwhile, non-believers do not accept the world as a gift. The world remains foreign to them, just as they remain foreign to the world.

The purpose of this article is to discuss how people living in Western culture seek to give meaning to their existence.

Keywords: *Faith in God, Credere in Deum, Theoretical and practical aspects of faith, World of meaning and absurdity, Western Christian tradition*

1. THE EXISTENTIAL ASPECTS OF "BELIEVING IN GOD" AND "BELIEVING IN GOD"

People give meaning to their earthly existence in various ways – in one way in Buddhist culture, in another in Islamic culture, and in yet another in Christian culture. One or another religious system, with its characteristic ethical and metaphysical structure, is the common foundation on which a person builds their individual project of existence. So, although this is not always the case, it can be said that people living in Western culture give meaning to their existence, or at least should, in a way that is essentially characteristic of this culture, i.e., from the perspective of the Christian faith. However, what constitutes the ethical metaphysical basis of this Christian perspective? Moreover, what does it mean to give meaning to existence through faith?

Western Christian tradition sees a fundamental difference between two forms of faith: "believing God" (*credere Deum*) and "believing in God" (*credere in Deum*). These two forms of faith correspond to two different existential attitudes towards faith:

"Believing in God (Christ) means acknowledging the fact that God exists; believing in God (Christ) means turning to God with one's whole being, becoming a member of the mystical Body of Christ, and fully accepting the Christian faith. Such faith is not merely an act of the mind, but it also requires the involvement of the will, the whole person's devotion to God. By believing in God (*credere Deum*), a person merely acknowledges God's existence in theory. However, by believing in God (*credere in Deum*), he professes Him with his whole life. According to Thomas Merton, "a person may have heard a great deal about God and, agreeing with what they have heard, consider themselves a person of faith. Such believers are likely to be recorded in sociological surveys. However, who and how will count those who have fallen silent to listen in silence to the secret vibrations of the heart, which teach us to trust unconditionally in the invisible God, who revives the fleeting time of earthly existence with generous gifts" (*Life and Holiness*, p. 97). From the earliest centuries, Western Christian tradition has regarded this secret vibration of the heart, which hears the Word of God and devotes its whole life to Him, as the fundamental form of "faith in God" (*credere in Deum)*. Following Thomas Merton, the secret vibration of the heart that is essential to this form of faith can be called "primordial intuition," in which, in believing in God, a person relies on a primal, deeper sense of the mystery of Pure and Absolute Being, the foundation of human existence. This is not a matter of knowledge about Absolute Being, but of its immediate experience.

The distinctive aspects of "faith" ("believing in God" and "believing in God") do not cover the entire theological meaning of this word. The theological meaning of this word can be discussed at length. Nevertheless, here we are concerned not with theoretical but with practical matters, i.e. the conditions for the possibility of realising faith in God as a certain project of existence, or more precisely, the presuppositions for this realisation, which lie not in the deductions of logical reason but in the secret stirrings of the heart. Interestingly, these heart vibrations can be found not only in the existential attitude of a believer but also in that of a non-believer. Thus, this problem can also be approached from the opposite side, i.e. through the position of non-belief in God, which is revealed in the literary works of 20th-century French existentialists Jean-Paul Sartre (1905-1980) and Albert Camus (1913-1960) (Sartre in his novels Nausea (1938) Words (1964), Camus in The Stranger (1942), The Plague (1947), etc.). They described the attitude of disbelief and the greater or lesser desolation of the human heart that this attitude revealed. These thinkers expressed not only the mood of despair that pervaded French thought at the time, but also European thought as a whole, linking their own ontological existentialism with phenomenological philosophy. As is well known, this philosophy rejects theoretical speculation and undertakes a meditative description of the immediate connection between consciousness and existential reality. Sartre and Camus do this persuasively in their literary works, including the question of the possibility of belief and disbelief across the range of topics they address. So, based on the insights of these thinkers, we may ask: what are the premises of unbelief? Or, in the words of Juozas Girnius, “how does a person without God perceive themselves in the world"? This question is concerned not only with the position of unbelief, but also because the unbeliever "in a way testifies to God even when he denies him” (*Žmogus be Dievo*, p. 27).

The previously discussed distinction between "believing in God" as theoretical and "believing in God" as practical can also be applied to the position of unbelief. A person who considers himself an unbeliever may, on the one hand, deny God with scientific or philosophical arguments, i.e., decide the question of (un)belief on the level of knowledge, but live as if God existed. On the other hand, a person may

theoretically acknowledge God but deny Him in their own life, thereby revealing the question of (un)belief in the realm of life. Unlike in modern times, with their emphasis on rationalism, as Girnius observes, today the question of belief and unbelief "manifests itself not in the form of a conflict between belief and knowledge, but between belief and life. Today's unbelief is no longer expressed in the theoretical denial of God through logical arguments, but in the practical denial of God in life itself, in the factual confirmation of life without God" (p. 548). The characters in Sartre's and Camus' novels (almost all of whom are intellectuals) convincingly testify to what it means to deny God in life itself and to exclude Christianity from life effectively.

Be that as it may, in the case of Sartre, who developed a humanistic worldview, we see something interesting. Sartre's Nausea can be called the antithesis of the Christian worldview, but one that could only have arisen in Western Christian culture. On the one hand, the author of the novel arbitrarily undermines the ethical and metaphysical principles of the Christian worldview; on the other hand, in doing so, he inevitably reveals what a humanistic worldview becomes when the Christian perspective is removed. Sartre describes this ambiguous and, to him, obvious situation in his autobiographical novel Words: "I grew up like a weed in the soil of Catholicism, my roots sucking its juices, which flowed through my veins. Because of this, I suffered for thirty years, seeing nothing. In Nausea, I described – and, believe me, very sincerely – the unjustifiable, miserable lives of people like me, as if I myself had nothing to do with it. I was Rokanten, through whom I showed the fabric of my life without any concessions. At the same time, I was myself, the chosen one, the chronicler of hell, a glass and steel photomicroscope examining my own protoplasmic fluid" (*Words*, p. 266). It is unlikely that today's non-believer would describe his life as miserable or unjustifiable, let alone as Sartre described his own: "I grew up like a weed in the soil of Catholicism." At the time when Nausea was written (in the fourth decade of the last century), Sartre testified that non-believers were viewed as "rebels" or "arrogant originals."

Meanwhile, the existential project of faith seemed natural and self-evident. Sartre writes about the unnaturalness of unbelief in "Words": "I was taught the Holy Scriptures, the Gospels, the catechism, but I was not allowed to believe: there was disorder, which became my own special order" (p. 263). According to Sartre, the attitude of unbelief is an inner disorder that the person himself accepts and lives as a special order. In other words, a person who does not believe lives in a special inner disorder, which he considers to be a real order. Today, this special inner disorder of unbelief is considered a self-evident and indisputable norm of life. On the contrary, those who seek God are often viewed as originals or misfits who do not fit into the framework of life.

Although there have always been people for whom God meant little or nothing (in the Bible we read about the godless cities of Sodom and Gomorrah being turned to ashes (2 Peter 2:6), about the flood sent upon the godless world, from which only Noah, the herald of truth, was saved (Genesis 6:1-22), it is only in our time that unbelief has become a mass phenomenon. We live in a Christian Western culture, but most people today, consciously or unconsciously, no longer identify themselves with the Christian tradition. In this age of sensualism, scientism, pragmatism, liberalism, etc., Christian values no longer play a decisive role in personal, social, political or cultural life. These areas of life have become clearly secularised. This is a phenomenon Girnius describes as the increasingly widespread "de-Christianisation". According to the philosopher, the roots of this phenomenon should be sought not in external factors,

but in people's hearts, i.e. in their inner distancing from Christianity. It is precisely this inner distance – a certain disorder of the heart – that determines the forms of both personal and public life in various ways. Let us explore what this inner distance from Christianity means.

Merton's term "primary intuition" is the first thing to discuss. Primary intuition, as indicated by the etymology of the word, would mean the act of insight that is essentially characteristic of a person (cf. Latin *intuitio* - to look carefully, to look with the eyes of the soul). A believer strives to look carefully, with the eyes of the soul, at that which is not clearly visible. Meanwhile, a non-believer does not perform this action, and therefore exists differently from a believer. This difference can be explained by Viktor Frankl's image of a "theatre stage". Frankl says: "If you have ever stood on a stage, you should remember how, blinded by the spotlight, you saw a large black hole instead of the audience. Nevertheless, at that moment, you probably did not doubt that there were spectators in that big black hole". A person of faith sees something, or more precisely, someone, in that big black hole in front of them. What they see, in Heideggerian terms, can be described as "Nothingness". In the Heideggerian sense, "Nothingness" means: *Nothingness is no-thing-ness* ("Nothingness" = non-existence as a thing) [1]. This Nothingness is the Pure and Absolute Being mentioned earlier by Merton. In other words, God, who is not a Thing among other things. A person of unbelief would differ from a person of faith, described by this image of a "theatre stage," in that, standing on the stage, he would see only a "big black hole." He does not imagine that in that hole there is what, guided by his primary intuition, a person seeking God imagines there to be – an immaterial (Absolute and Pure) being hidden beyond material reality, or, in other words, a hidden, invisible God (*Deus absconditus*). It is therefore not surprising that a person who does not believe projects his own existence solely onto the plane of material existence. However, this plane is not the only plane of existence.

On the other hand, did not the existentialism of Sartre and even Camus emerge as a philosophical movement that sought ways out of the materiality that leads to the oblivion of being? By calling for us not to limit ourselves to material existence, do these thinkers not lead us to a non-material existence that was previously associated with the divine sphere?

2. (NOT) TO BE FROM THE WORLD

When reading the novels of Sartre and Camus, one discovers the authors' efforts to convey a sense of hostility towards the world to readers. This is not surprising: not only atheistic but also theistic 20th-century existentialism emerged as a protest against consumerist culture and Western modernism, which was sinking into alienation. Here, people began to protest against a world which, in Camus' words, had been invaded by "the masses that had become powerful", a world with its "consumer society", "uncontrollable technology" and "dead ideologies"; a world which, in Sartre's words, had entered a new age devoid of traditions and values. It was no coincidence that Camus called his work "rebellious literature" during one of his lectures. In his words, it is literature that, although it seems angry and frenzied, is neither a complete rejection nor a complete acceptance of what is happening in the world – rather, it is a painful struggle against the destructive course of demoralised history (*Krytis*, pp. 9-24).

If we return to the existential project of faith, we could say that a person seeking God lives in a kind of dialectical tension between hostility towards the world and engagement with it. According to Girnius, the Christian relationship with the world,

with world history and culture, is characterised by one truth: *to be in the world but not of the world*, i.e. not to be lost in the cares of everyday life, but to preserve one's spiritual freedom in them (p. 521). The attitude of faith, described as not being of the world, is not negativism. Man does not deny the world because, as the Gospel of John proclaims, the world is what God so loved that he gave his only Son (Jn 3:16). The path of faith is not a path of escape from the world. It is a path through this world. However, it is a narrow path that leads through the narrow gates of being not of this world. In Scripture, we read that Christ's followers should not follow this world but, with a renewed spirit, seek God's will and do it (Rom 12:2). Faith is victory over this world (1 Jn 5:4). So, how does faith overcome this world?

The New Testament proclaims that, on an ethical level, being not of the world means renouncing the worldly outlook, i.e., the inert habits of action, thought, and evaluation that usually guide human society. In explaining what this renunciation means, Merton, like the early Christian thinker Origen, draws our attention to two forms of faith (non-religious and religious). The first (non-religious) faith is "human, limited, external belief in human society with all its inert heritage of superstitions and assumptions, a belief based on the fear of loneliness and the need to "belong" to a group and passively accept its norms, reluctantly agreeing. The other is belief in what we "cannot see," in a transcendent and invisible God, transcending all evidence, requiring an inner revolution, a reorientation of one's existence in the opposite direction to that held by the superstitions of the world. Such faith is a complete recognition of God's existence [...] as the meaning and centre of all being, and especially of our own lives" (p. 97). The first form of faith mentioned here, i.e. external faith in the inert superstitions of society, is what Sartre rejects, offering his own project of human existence without God. However, unlike the person who seeks God, Sartre's person creates his own existence by rejecting the second (religious) form of faith, i.e. by not performing the inner reorientation towards God as the centre of all life. In the words of the Bible, such a person, although not of the world, is not in the world.

The limited external faith mentioned by Merton, i.e., being guided by the world's perspective and inert habits of thinking and evaluation, is what Edmund Husserl attributes to the "natural attitude of consciousness" in his phenomenology. This is the attitude with which a person immersed in banal everyday life — Heidegger's *das Man* — lives, unaware that such a life, in Martin Heidegger's words, is nothing more than "the oblivion of being." It was precisely the establishment of this "natural attitude of consciousness" that Husserl used to explain the process of alienation taking place in contemporary Western culture. He saw a way out of this process in a certain transformation of the meaningful orientation of consciousness. Husserl associated this transformation, in Spiegelberg's words, with an ascetic ideal, i.e., the phenomenological reduction, which means the rejection of all meanings that have lost their obviousness, as well as of all supposedly obvious truths. Only by “purifying” his individual consciousness in this way can man restore the lost meaning of authentic being to the world and to his own human existence. The works of Sartre and Camus depict precisely what happens when an unbeliever attempts to restore the authentic meaning of his existence through this ascetic method of phenomenological reduction (*The Philosophy of Existence: History and Present*, p. 74).

It is no coincidence that Sartre's Nausea is full of scenes depicting the rejection of a society of believers and its inert superstitions. One of them is Roquentin’s visit to the Bouville Museum. Here hung paintings of the entire elite of the town – flawless men and women who had lived happy lives, earned respect and, ultimately, were immortalised in portraits. In life, they adhered to generally accepted views and were

guided by the wisdom of making as little noise as possible, living modestly and not standing out from the crowd. Standing in the middle of the hall, the centre of serious gazes, Roquentin began to wonder about his own existence – perhaps he himself was just an illusion? This irony, mixed with Roquentin's surprise, hid an inner rebellion against the banal wisdom of universal views. The plot of Camus's novel The Stranger also features scenes of rejection by a society with rigid, external beliefs. The protagonist of the novel, a simple company employee named Meursault, is sentenced to death not only for accidental murder, but also for a whole series of seemingly insignificant violations of social norms (for example, drinking a cup of coffee, smoking a cigarette, and dozing off at his mother's coffin). At the moment of his death sentence, Mersault remains indifferent to everything - having defied social standards, he has lived his independent life. However, when reading Sartre's Nausea or Camus' The Stranger, the question arises: did Mersault and Roquentin really become authentic people by rejecting routine externalities? Was their individual consciousness truly phenomenologically (ascetically) purified so that their existence could regain its lost authentic meaning? The characters in the novels testify to something else: they remain essentially alien to others, to the world and to their own human essence.

On the other hand, as the Bible says, a person seeking God "is a stranger and a sojourner among you" (PR 23:4). But does being a stranger or a sojourner mean the same thing in the existential project of faith and unbelief? If we recall Merton's second form of faith—the reorientation of existence toward God as the centre of all life—then we could say that a person seeking God is a stranger to the world in which the centre of life is usually considered to be the natural consciousness with its false "I." By overcoming the natural attitude of consciousness with its false "I", a person of faith turns to God as the centre of meaning in his life. Thus, he becomes close to the reality of the world in which one lives with God.

The tension between reality without God and with God is evident in Camus' novel The Plague. Before our eyes unfolds the symbolic city of Oran, the site of the plague that began there. The people here, although they were engaged in trade, prepared for journeys or enjoyed pleasures, lived in boredom. Moreover, they had only occasional premonitions that something else was there. However, life did not change because of this — it remained as dull as the city, lulling people into a stupor. Catching them unprepared, "the plague forced the inhabitants of Oran to tear away the illusory veil of 'certainty' that was held in place by traditional truths, duties, and norms of behaviour [...]; disrupted people's normal activities, their understanding of the 'significance' of their daily work, and left their entire existence and being to the mercy of their own experiences" (pp. 174-175). The plague turned the individual fates of the inhabitants into a shared collective history, one of the most painful experiences of which was separation from loved ones who remained outside the city walls and separation from the usual interests of everyday life. However, it was precisely this separation that temporarily freed them from the alienation from themselves and the world in which they had lived until then. Unlike Mersault, the hero of The Stranger, the heroes of The Plague (Dr Rieux, journalist Rambert, etc.) overcame their alienation not by indifferently distancing themselves from the situation, but by engaging with the course of history and seeking effective salvation from evil within it.

From a religious perspective, Camus's "The Plague" is an important moment. The inhabitants of Oran, shaken by the plague, sank deeper and deeper into indifference and apathy, and began to long for their lost homeland, i.e. the banal everyday life from which the plague had torn them away and to which they returned after the plague had passed. This lost homeland was not the promised land to which, like the

Israelites travelling through the desert from Egyptian slavery, a person seeking God journeys. The inhabitants of Oran did not experience that inner reorientation of existence towards God as the centre of all life, which Merton speaks of as a condition for the possibility of salvation. If the plague became an effective means sent by God himself to the Christians of Abyssinia to attain eternity, the inhabitants of Oran remained oblivious to the light of eternity. When asked why he was sacrificing himself if he did not believe in God, Dr Rieux replied: "I am in darkness, and I am trying to think clearly." To think clearly is to recognise that the fight against the plague, like the fight against any evil, is a never-ending fight, but that does not mean that one should stop fighting. This is the Sisyphean or stoic greatness of a man without God, different from the greatness of one who seeks God. The latter arises from unconditional devotion to the grace of the invisible God, even in the darkest night of history, and in belief in the future victory of good.

However, perhaps precisely because he is determined to engage with the course of history, it is difficult to place one of the most tragic heroes of Camus' The Plague, Dr Rieux, within the stricter framework of a man without God. Even though he sees no trace of God in the plague-stricken environment and feels abandoned by everyone, Rieux strives to do what is necessary at that moment and, perhaps without realising it, carries out God's will. In this case, we can recall the concept of "non-religious Christianity" developed by the German theologian Dietrich Bonhoeffer. According to this theologian, who experienced the darkness of the concentration camps during World War II, the Christian God is not only the God of believers, but also the God of non-believers. When a non-believer conscientiously fulfils the duties imposed on him by a specific historical situation, he bears witness to Christ without even knowing it. According to Bonhoeffer, being a Christian means living a full life in this world and, despite the awareness of the hopelessness of one's situation, remaining in the whirlwind of goals, duties, successes and failures. It is then that one finds oneself in the embrace of God, who dies and rises again with man in this world that crucifies Him [2]. Be that as it may, his engagement with the historical situation, his respect for human life (here we can recall Camus' opposition to the introduction of the death penalty, which he considered to be the legalisation of murder), and the proclamation of humanistic individualism—all this prevents Camus from being considered an anti-Christian thinker like Sartre, as claimed by the aforementioned French theologian.

Sartre's "Nausea" hardly has any connection with the aforementioned concept of "non-religious Christianity". Rocanten's position as a man without God is quite radical here. He is a man who rejects any system of objective values, believing they level a person's life and lead directly to complete nihilism. Both nihilism and the rejection of objective values are based on Sartre's idea of absolute freedom without God. He explains this idea as follows: man stands before nothing higher than himself; even though he is limited, he is absolutely free, like God, to choose himself and to project his existence as he wishes. There is nothing that awaits the non-believer from the realm beyond. By denying God as Absolute Being, the non-believer absolutises his own conditional being and thus transforms his partial freedom into absolute freedom. The project of absolute freedom without God leaves no room for any autonomous categorical imperative that would, in one way or another, motivate human morality.

Sartre's project of absolute freedom without God leaves no room for an autonomous categorical imperative that would, in one way or another, motivate a person's moral choices. Every categorical imperative derives its imperative character only from transcendent reality, i.e., from Absolute Being. Rejecting this ontological reality leaves only immanence, which cannot confer a categorical character on any

imperative. Such a project of absolute human freedom without God is akin to the Indian rope trick Frankl mentions. The fakir performing this trick wants to convince the audience that a boy can climb onto the rope he throws up into the air. However, this is only an illusion created by the fakir, because there is no solid foundation on which the rope is attached. It is not difficult to imagine what would happen if the child actually started climbing the rope. Such is Sartre's project of absolute freedom: a person without God hopes to regain the lost possibility of authentic existence and thinks to do so by climbing the rope of absolute freedom, which is not attached to any stable foundation of values. Such "absurd freedom" provides no basis for human choices and leads to the absurdity of freedom itself.

What is more, absolute freedom creates moral chaos, as evidenced by Roquentin's actions in *La Nausée*. For example, overcome by a fit of nausea in a café, he grabs a cheese knife lying nearby, intending to stab it into the eye of a self-taught man sitting opposite him. Roquentin's decision not to do so is not determined by any categorical imperative or respect for human life and its incomparable value, but rather by random moods or nihilistic metaphysical reasoning: "Then all these people would trample me, kick my teeth out. However, that is not what stops me (it makes no difference whether it's the taste of blood or cheese in my mouth). One would have to take the initiative, provoke an unnecessary incident – after all, the self-taught man's scream, the blood that would spill down his cheek, and the flinch of those present would be unnecessary. The things that already exist are enough." Perhaps what can be said about Sartre's Roquentin can also be said about Camus's protagonist Meursault in "The Stranger", as stated by another character in the same novel, the prosecutor: he tried to look into Meursault's soul, but found nothing; this man is soulless, lacking anything human, and the moral principles that guide the human heart are alien to him; in Meursault's heart, he saw an abyss capable of destroying society. If Camus, who wrote these words at the time, was shocked by this real possibility of human emptiness without God and the moral chaos it creates, today it no longer shocks us. With the attitude of unbelief becoming self-evident, so does this emptiness. It is therefore not surprising that nowadays there is so much talk about life crises, the frustration of man's innate desire for meaning, inner emptiness, boredom or indifference, existential vacuum and other negative states (*La Nausée*, pp. 141–142).

3. THE DEFICIT OF MEANING

During World War I, when the meaning of life seemed to be turning into meaninglessness before our very eyes, Ludwig Wittgenstein wrote: "To believe in God means to see that life has meaning." As we can see, meaning is not an objective given but rather depends on a person's ability to see and hear, i.e., on their "primary intuition". If we were to translate Wittgenstein's idea in the opposite direction, i.e., the language of disbelief, we could say: not believing in God means not seeing that life has meaning. Moreover, the fault here lies not in life or its meaning, but in the person's own relationship to what they are experiencing, i.e., a diminished "primary intuition" that fails to see the meaning that could be lived. Gabriel Marcel, a representative of Catholic existentialism, says: "If a person believes, there is no place in his life for absurdity or meaninglessness". Conversely, it is precisely with atheistic existentialism that the concepts of "absurdity" and "meaninglessness" have become established in Western intellectual life, and with them, an awareness of these concepts.

The relationship of a person of faith to what he experiences can be described as "metaphysical concern," i.e., a concern that, at the deepest depths of the soul, resolves

the mystery of life's ultimate meaning. The consciousness of a non-believer is a consciousness free from "metaphysical concern". Therefore, it is frivolous and superficial. This is confirmed by Rocquentin, the hero of Sartre's Nausea: "I have never felt so strongly that I have no secret depths of the soul, that I am limited to my body, to the superficial thoughts that rise from it like bubbles" (*Nausea*, p. 45). If a person of faith, guided by "primordial intuition," listens in silence to God speaking in the depths of the soul, a person of unbelief limits himself to thoughts bubbling on the surface of consciousness, thoughts that certainly do not arise from the source of divine being. Perhaps this is why the humanity of Sartre's Roquentin and Camus' Mersault is so frighteningly bleak and impoverished. Their poverty and gloom conceal a consciousness of meaninglessness, i.e. the realisation that life is "given just like that", that it is based on the "great absurdity of existence", that it begins in darkness and returns to darkness. The awareness of the meaninglessness of an unbeliever is expressed in these words of Roquentin, the hero of Sartre's *La Nausée*: "In fact, I have always realised that I have no right to live. I came into being by chance. I lived like a stone, like a plant, like a bacterium. My life grew haphazardly in all directions. Sometimes I received some vague signs; sometimes I heard only meaningless noise" (p. 101). And if, through some action or idea, a person without God tries to cover up the "great absurdity of existence," in the end, they must admit that they are only deceiving themselves. That is why Roquentin gives up writing a historical study about a political figure – creative activity, like any other activity, cannot justify his unjustifiable existence. The existence of a person without God is based on darkness, boredom, absurdity, and meaninglessness.

The greatness of a person who has adopted a position of unbelief is to realise the meaninglessness of existence in the world, to have no illusions that life can have meaning. Moreover, despite this, to live. Girnius calls this realisation the "passion of disillusionment," which supports human existence as it sinks into darkness like a flash of lightning. According to Girnius, this "passion of disillusionment" makes a person feel two things: darkness and sobriety. A dark disposition is the rejection of any hopes cherished by a person living with a "natural state of consciousness". A sober disposition is the awakening of natural consciousness to a harsher reality ("the great absurdity of existence") than that in which a person living according to the inert habits of society lives (p. 325). Awakened to a harsher and darker reality, a person of disbelief lives in different ways – with indifferent indifference to the world (as in Camus' novel The Stranger), with nihilistic and cynical contempt for the world (like Rocquentin, the hero of Sartre's *La Nausée*), or, in the best case, by engaging in historical events (like Rieux in Camus' novel The Plague). Be that as it may, life here is based on a fundamental metaphysical conviction - man is "thrown" into the world and forgotten in it; every moment of life allows him to feel the absolute loneliness of his existence anew [3].

In that absolute loneliness of existence, there is something that could transform it into a positive connection with the world. These are the situations in which the heroes of the novels find themselves: the plague that strikes the inhabitants of Oran in Camus' The Plague, the death of Meursault's mother, which begins Camus' The Stranger, or the small situations that Roquentin finds himself in in Sartre's Nausea, visiting taverns, the library or sitting on a bench in the park. The point is that these situations do not develop into events that could give human existence a unified meaning. It is no coincidence that Sartre's Roquentin repeats the same phrase "nothing new" in his diary, as if knowing in advance that the new day, like all the previous ones, will pass in vain: "I have neither Mondays nor Sundays: only days jumbled together in disorder

and sometimes such unexpected moments" (p. 68). Ani, a character in *La Nausée*, also experiences no events, because what she longs for are not events but "perfect moments," i.e., special, stylish situations in which everything should depend on the person, whether they want to extract the perfect moment from the situation. This is a consciousness representing Sartre's concept of absolute freedom, seeking to become the unquestionable author of events. However, from the perspective of faith, the author of an event is never the person himself. Ani longs for perfect moments, the author of which would be the person himself, while Camus' hero, Mersault, in The Stranger, ignores any situationality altogether. The death of his mother — what Karl Jaspers calls a "liminal situation," immersing human empirical existence in eternal meaning — touched only the surface of his consciousness with its bubbling thoughts, but did not become a deeper experience of reflection on the ultimate meaning of life. According to existentialists, humans are not free from situations, but, as creators of themselves, they are always free to choose one situation over another. It seems that Mersault does just that, denying with indifference any situation that could develop into a sequence of meaningful events.

Neither by seeking to extract the perfect moment from an exceptional situation, nor by completely denying that situation, is it possible to experience the authentic meaning of being. This meaning is experienced differently – through what Merton called "primary intuition," looking at the requirement or challenge inherent in each situation and responding to it. Accepting a situation as a call or challenge and responding to it becomes an event that gives meaning to the existence of a person seeking God. Numerous stories in the Bible speak of this: Abraham's "Here I am!" uttered when God commanded him to go to Mount Moriah (Genesis 22:10-13), Mary's "Behold, I am the handmaid of the Lord" spoken to the angel Gabriel at the moment of the Annunciation (Luke 1:26-38), or Christ's words on the Mount of Olives, "Not my will, but yours be done" (Luke 22:39-44). In the same way, standing in the presence of the invisible God (as in the theatre scene depicted by Frankl in front of the "big black hole"), the believer, with uncertainty and risk, decides to act and acts as if the situation in which he finds himself and acts as if the situation in which he finds himself has an infinite meaning that transcends his powers of comprehension.

Furthermore, only on the way to some mountain of life will the dark uncertainty of this infinite meaning become bright clarity. In Merton's words, the foundation of a Christian's entire life is not his own, but "the search for God's will with loving faith and the fulfilment of that blessed will with believing love" (p. 56). To recognise God's will, which points the way to the meaning of life, a person needs an alert "primary intuition", i.e., an alert conscience. Today's man, living in an information society where the education system is more oriented towards the transfer of knowledge than the cultivation of conscience, is moving even further away from this foundation of Christian life. That is why Frankl emphasises that, in an era of meaninglessness, human education should not be limited to the transmission of knowledge but should also cultivate human conscience; only then will people become sensitive enough to hear the demands inherent in every situation (pp. 78-79).

4. THE WORLD AS A GIFT

For both believers and non-believers, objective reality is the same. However, subjectively, believers and non-believers experience their connection to the world's reality differently. This divides the same reality into different worlds – the world of meaning and the world of absurdity. By saying their *fiat* with believing love, Christians accept the world as a gift. Meanwhile, a non-believing consciousness does

not accept the world as a gift. The world remains alien to it, just as it is alien to the world. Reading Sartre's Nausea or Camus' The Stranger, we see that a sense of alienation accompanies the characters' relationships with people, objects, and nature. The authors of the novels even emphasise certain details to convey to the reader the characters' sense of hostility towards the world. The absence of human unity with the world is expressed in Sartre's Nausea and Camus' The Plague through various details of the landscape or city: rusty buildings, rotten fence boards, the sparse light falling on them, thick fog covering the sky, streets of plastered walls, dusty shop windows, dirty yellow trams, etc. In Girnius' words, "even in the gentlest landscape, the world remains impenetrable and hostile [...]. Meaninglessness lies neither in man nor in the world, but in their coexistence – in the clash between the human longing for unity and absoluteness and the world's meaningless silence" (p. 288). However, is what a person who looks at the reality of the world with the eyes of faith, with all its unique concreteness, also the meaningless silence of the world?

From a phenomenological perspective, it can be said that a person living in the world encounters not "things in themselves," but the structures of meaning of those things that depend on human consciousness. Things in the world do not have meaning in themselves, but rather by entering human history, by entering into a relationship with humans. They reveal their meaning only through human subjectivity, i.e. through the most immediate experience of the self-identity of the object. The goal of Husserl's phenomenology, followed by the French existentialists, was to point the way to this immediate experience of being. This is a pre-logical perception of being, the essential feature of which is that, instead of resorting to theoretical speculation, man seeks to return "to the things themselves" (*zu den Sachen selbst*), i.e. to their pure and unarticulated direct experience.

Sartre's Nausea is precisely an existential analysis of the perception of immediate existence. According to researchers, it depicts the possibility of an "artificially hypertrophied" experience of immediate existence, which may be interesting because it is the possibility of immediate existence for an unbelieving consciousness, or, in Girnius' words, a meaningless consciousness. Unlike Husserl, Sartre's development of the possibility of experiencing immediate existence is clearly destructive. The immediate connection with reality is expressed here as a morbid, extremely destructive state of nausea that denies any obvious givenness of things. In "Nausea," Sartre describes the following situation: one Saturday at the seaside, where children were playing by throwing pebbles into the sea, Rocquentin also wanted to throw a pebble. Holding it in his hand, he suddenly felt a repulsive sense of disgust for the pebble. This disgust was an immediate, pre-reflective experience of the stone's existence, ontologically before reflective thought about it. In Roquentin’s words, "being does not yield to thinking from a distance: it catches you by surprise, clings to you, weighs on your heart like a fat, clumsy animal." Pre-reflective immediacy reveals the "naked World," which appears as rich, dense, heavy, i.e., absurd, like a disease that destroys man himself.

A similar, but fundamentally different case of experiencing immediate existence is described in the philosophical poem Daniel (1913) by Martin Buber, a representative of the philosophy of dialogue. It goes like this: "Once, on a foggy morning, I was walking down the road and saw a piece of glitter lying in the distance. I picked it up from the ground and looked at it for a long time. And suddenly the day was no longer so gloomy – so much light was concentrated in that little stone. [...] In my gaze, the piece of glitter and my 'I' were one; in that gaze, I experienced the taste of the One" (pp. 146-147). Sartre's Rocquentin, holding the stone, experienced the taste of disgust,

while Buber's narrator, holding a piece of glitter in his hand, experienced the taste of the One. Moreover, what determines everything here is not the different material properties of the objects held in the hand (the piece of quartz and the pebble), but the different inner attitudes of the people who picked up the pebble or the piece of quartz. Both Sartre's Roquentin and Buber's narrator have overcome the material opposition between subject and object. However, only Buber's narrator, who, incidentally, is a man of faith, experienced the pebble as something that drew his pre-reflective consciousness into a participatory union with the pebble's being. This was the experience of the One, which arose not from a denial of the situation or an attempt to construct it in one way or another, but from a respectful attentiveness to the events of the world, in which the knowing will of man coincided with the world-creating will of God. This constructive, immediate experience of being can be linked to Merton's aforementioned "primary intuition," which forms the basis of the act of faith. In the context of faith, primary intuition would mean the pre-reflective "I" that transcends the limits of human reflective consciousness, i.e., pure and transparent consciousness that opens itself not to its own contents, but to God's love. This love fills human consciousness through the presence of objects or people.

Sartre's "Nausea" presents a different kind of consciousness, one that has overcome the subject-object distinction of the main character, Roquentin. Having reached the level of empty consciousness, this consciousness does not venture into any transcendent centre of being beyond it, i.e. it does not venture towards any invisible Other. This empty consciousness is perfectly illustrated by Roquentin's words: "When I say 'I', the word sounds empty. [...] Transparent, frozen, empty consciousness, enclosed within walls, continues to exist, but nothing lives in it anymore. [...] Consciousness is like a tree or a blade of grass. It slumbers, it is bored. [...] Forgotten consciousness, left between walls under a cloudy sky. This is the meaning of its existence: to realise that it is unnecessary" (pp. 191-192). This empty, closed-in and slumbering consciousness of Rokanten is enveloped by the primordial immediacy of the existence of things, like sweet marmalade. Instead of experiencing the immediacy of things' existence as Unity, the unbelieving consciousness experiences it as disgusting. More precisely, the pre-reflective connection between "I" and "not-I" reveals "not-I" here only as an opposite that negates me; therefore, this connection is always associated with anxiety about the possibility of losing oneself in the world. This anxiety is considered the beginning of the sense of one's own value, the need for freedom [3]. Therefore, the pre-reflective connection with the existence of things in the world is experienced by the non-believing (Roquentin) consciousness as hatred and disgust toward the reality of things that negate it. On the other hand, it is precisely this hatred and disgust that forces the unbeliever to exist, i.e. to pull himself out of the desired non-existence and push himself into existence.

Thus, Sartre not only de-poeticises life, but also, according to Girnius, destroys the fundamental category of "being" with which Western metaphysics associated the meaning of the world, man and things. This destruction of the category of "being" leads precisely to nihilism – a radical rejection of the value and meaning of things in the world. This rejection gives rise to naturalistic cynicism, characteristic not only of Sartre's Roquentin, who views life with nausea, but also of various aspects of contemporary postmodern society. This distorted manifestation of consciousness, living in a state of extreme inner disorder, shapes the cynicism of our times: political, media, medical, military, and so on. It seems that Sartre was a good prophet of the spiritual trends of the near future.

5. INSTEAD OF CONCLUSIONS

For a believer who seeks to overcome the false, deceitful "I" of his consciousness and thus cultivate inner order, all created things reflect their Creator. They become traces of God, testifying that God has passed through here. This is the aforementioned "belief in God" (*credere in Deum)* as the sphere of life in the presence of the living God. A person who projects their existence into this sphere encounters God as being "here and now". As the One whose visible traces (a piece of glitter, the sound of the sea, or the face of a loved one) do not reveal Him, but conceal Him, allowing us to sense eternity. Through this daily reading of God's traces, a person's conversion takes place, a reorientation of their consciousness from the false "I" to the true "I", from inert habits of thinking to God as the centre of the unified meaning of life. According to Merton, in this life, a person of faith is not "converted" once and for all, but is converted many times, and this endless series of large and small "conversions" ultimately transforms him in Christ (p. 138). In the era of meaninglessness, moral chaos, value relativism, nihilism, and cynicism in which we live, to regain the lost ability to believe, a person, Frankl observes, should first seek to "hear the tens of thousands of commands encoded in the tens of thousands of situations that life presents to him. Then not only will his life become meaningful again (meaningful means full of tasks), but he himself will be immunised against conformism and totalitarianism, because only an alert conscience allows a person to resist, not to succumb to conformism and not to bow down to totalitarianism" (p. 79). Only an alert consciousness touches upon eternal questions and answers them with life itself. Only an alert consciousness touches upon eternal questions and answers them with life itself.

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REGENERATIVE POWER OF EDUCATION: THE INVENTION OF POSITIVE PEACE

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ABSTRACT
The contemporary world is experiencing the most significant crisis of state conflicts since World War II, generating immense economic losses and societal instability. This study addresses the urgent need for a new peace paradigm by analysing Margaret Mead's concept of war as a flawed social invention, in contrast with the scientifically grounded Positive Peace framework. The research employs a qualitative content analysis integrated with a multiple case study strategy, examining structured responses from 37 Institute for Economics and Peace (IEP) ambassadors across diverse geopolitical regions. The results reveal that education is a regenerative force, with a global network of over 7,000 experts serving as "system architects". The study identifies a "Halo" effect[2], demonstrating how one empowered individual triggers a chain reaction of peace-building within their community, effectively transforming theoretical knowledge into systemic resilience. It is concluded that Positive Peace is a superior social invention that enables societies to mitigate the costs of conflict and enhance stability through decentralised, knowledge-based leadership. This regenerative educational model provides a strategic leverage point for addressing modern hybrid threats and fostering long-term global security.

Keywords: *Positive Peace; IEP Ambassadors; regenerative education.*

1. INTRODUCTION
Human history is frequently interpreted through a sequence of wars and conflicts, often treating violence as an inevitable companion of civilisation. However, Steven Pinker [1] has demonstrated that, in the long term, violence has actually declined as education, critical thinking, and mutual understanding have evolved. Despite this historical trend, the third decade of the 21st century marks a critical turning point. While humanity possesses advanced technologies, it continues to employ obsolete and violent methods of conflict resolution. Data from the 2024–2025 Global Peace Index (GPI) reveals a dramatic reality: global peacefulness is deteriorating, and the number of state conflicts has reached its highest level since the end of World War II, imposing an astronomical $19.97 trillion burden on the global economy [2]. These figures indicate that the traditional concept of "negative peace," defined simply as the absence of armed conflict [3], is no longer sufficient to meet modern challenges. As Galtung

[1] IEP – Institute for Economics & Peace. Headquartered in Sydney, Australia, with offices in New York, Mexico City, Brussels, and The Hague, the Institute was founded in 2007 by IT entrepreneur and philanthropist Steve Killelea. Its mission is to shift the world's focus to peace as a positive, achievable, and measurable metric of human well-being and progress. The Institute annually compiles and publishes the Global Peace Index (GPI), the Global Terrorism Index (GTI), and the Positive Peace Report.

[2] The "Halo" Effect (Thorndike, 1920) is a psychological cognitive bias where an overall impression of a person, organisation, or brand influences how we evaluate the specific characteristics of that entity. In the context of this article, it is a phenomenon in which a single ambassador's success generates trust in the entire peace program. Witnessing the positive actions of one individual leads those around them to place greater belief in the very concept of Positive Peace.

[4] emphasises, without fundamental structural and cultural changes, peace remains fragile; thus, a new paradigm is required in which peace is perceived not as a static state but as a dynamic social justice that requires continuous creativity and cooperation.

The core scientific problem lies not only in violence itself but in the entrenched belief that war is inevitable. Contrary to the view that conflict is inherent in human nature, anthropologist Margaret Mead [5] formulated the revolutionary thesis that war is not a biological instinct but a flawed "social invention." In this context, the essential question arises: how can this obsolete social invention be replaced? While our technological capabilities grow exponentially, human trust and the ability to coexist are weakening [6]. Therefore, there is a scientific need to justify education as a strategic regenerative lever capable of deconstructing outdated social models and of empowering society to generate a sustainable Positive Peace ecosystem systematically.

The scientific novelty of this study lies in conceptualising education as a "regenerative force." Drawing on Freire's [7] ideas, education is understood here as an empowering process that enables individuals to create their own environment. This theory is integrated with the experience of the IEP Ambassador program, analysing how a network of over 7,000 specialists creates a "Halo" effect—a chain reaction in which the success of an individual ambassador legitimises the Positive Peace methodology. This research connects Mead's [5] insights with contemporary systems theory [8] and evolutionary organisational models [9], demonstrating that peace is achieved not through rigid, top-down management but through collective knowledge and values.

The main aim of this work is to analyse the concept of Positive Peace as a superior social invention and to reveal the role of regenerative education in empowering a global network of experts to implement this model. The principal conclusion highlights that by shifting the focus from military deterrence to the pillars of Positive Peace, societies can transform systemic violence into sustainable development.

2. MATERIALS AND METHODS

This study employs a qualitative content analysis, integrated with a multiple-case study strategy, to examine the practical application of peace-building methodologies. The theoretical framework is grounded in systems theory [8], which enables each Institute for Economics and Peace (IEP) ambassador to be evaluated not as an isolated unit but as a strategic "leverage point" initiating regenerative change within the social ecosystem.

Empirical data were collected between November and December 2025. The research sample consists of structured qualitative responses from 37 participants of the IEP Ambassador program. To identify patterns in the applicability of the Positive Peace model, representative cases were selected from diverse geopolitical regions, including Italy, Spain, Syria, the USA, Japan, and Kenya. This geographical diversity underscores how the eight pillars of the Positive Peace model are translated into local solutions across regional cultural and economic contexts.

The collected data were systematised using deductive coding guided by the eight pillars of Positive Peace. The analysis identified how theoretical concepts are translated into practical interventions (e.g., environmental conservation in Kenya or legal empowerment in Indonesia).

In accordance with scientific ethical standards and to ensure participant confidentiality, the identities of all 37 respondents were anonymised. An

alphanumeric coding system (D1–D37) was utilised for data analysis and presentation. Representative cases illustrating the practical adaptability of the Positive Peace pillars are presented in the tables within the Results section. Generative artificial intelligence was not used for data generation or analysis; its use was limited to superficial text editing and formatting.

2.1. The evolution of peace education: from an idea to a regenerative system

In scientific literature, peace education is understood as a broad field that combines ancient wisdom with modern scientific methods. It is an ancient yet constantly renewing process: primary records of peace philosophy are found in the teachings of Buddha, Jesus Christ, Muhammad, Moses, or Lao Tzu, who emphasised inner peace and compassion as the foundation of societal stability, a perspective further developed in Gittins' [10] collaborative approach to peace education." However, academic peace studies, as a structured discipline, emerged only in the 20th century in direct response to the catastrophic experiences of the World Wars, which forced scholars to seek alternatives to violent conflict resolution.

A fundamental shift in this thinking was made by anthropologist Margaret Mead [5], who advanced the revolutionary thesis that war is neither a biological instinct nor an inevitable part of human nature. By studying communities that had no concept of war, she proved that war is a social invention—just as writing, marriage, and the judicial system are. Mead argued that any social invention can be rejected only when humanity creates a superior tool that achieves the same goals. In this context, Positive Peace can be treated as that "better invention" envisioned by Mead. It is no longer an abstract idea, but a scientific system developed by the Institute for Economics and Peace, presenting eight specific pillars: well-functioning government, low levels of corruption, good relations with neighbours, high levels of human capital, free flow of information, sound business environment, equitable distribution of resources, and acceptance of the rights of others [2].

Figure 1. The 8 Pillars of Positive Peace Model [2].

These pillars are not merely theoretical indicators describing what a society "should" be like. The essence of the IEP model lies in its functional applicability. Unlike utopian projects, these pillars serve as a diagnostic tool: they allow communities to identify their weakest points (e.g., the free flow of information or corruption) and direct resources precisely where change can yield the greatest return in terms of

stability in practice. The role of education in this process became essential after 1945 with the adoption of the UNESCO Constitution. It enshrined a fundamental thought: "since wars begin in the minds of men, it is in the minds of men that the defences of peace must be constructed" [11]. This statement changed the direction of peace education—moving from the simple urge "not to fight" (so-called "negative peace") [3] toward the creation of “positive peace”. De Rivera [6] adds that true peace in a country arises only when a specific “culture of peace” is formed, where people feel safe, respected, and included in community life. This means that education must not only stop conflicts but also actively cultivate society's ability to create justice, prosperity, and mutual trust. In contemporary Europe, where the old maxim[3] *si vis pacem, para bellum*[4] (if you want peace, prepare for war) still dominates, this transformation is critical: the education system must choose whether to prepare youth for armed resistance or to foster critical thinking and creative strategies for peaceful coexistence, as analysed by Thwe and Kalman [12].

Modern theory emphasises that peace education must be holistic. Harris [13] identifies five essential directions—international education, human rights, sustainable development, environmentalism, and conflict resolution—that form the basis of Reardon's [22] definition of comprehensive peace education: a framework for global responsibility. New concepts, such as critical peace education [14], call not only for learning about peace but also for a bold analysis of the causes of injustice. Meanwhile, post-humanist education, as analysed by Duoblienė [15], and indigenous knowledge, as explored by Kester [16], teach us to see peace as a harmonious relationship among humans, technology, and nature. Finally, pedagogical anthropology [17] reminds us that no single theory can encompass the full complexity of human knowledge; therefore, the evolution of peace education must remain an open, ongoing process of inquiry. This is where the regenerative power of education emerges: a process in which knowledge is not only transmitted but also constantly renewed through live human connection. This system, realised through a global network of 7,000 IEP ambassadors (which is constantly growing), allows theoretical concepts to become an active force—ambassadors "install" the new invention of peace in their communities, gradually replacing obsolete and violent social models.

2.2. The global peace index (GPI) and its links to education

The Global Peace Index (GPI) serves as a primary analytical tool, allowing the transformation of the abstract concept of peace into measurable data. The Institute for Economics and Peace (IEP) compiles this index using 23 quantitative and qualitative indicators, organised into three dimensions: societal safety and security, ongoing domestic and international conflict, and the degree of militarisation [2]. Although the GPI methodologically measures "negative peace"—the absence of violence and the fear of violence [4]—a deep analysis of the data reveals that these indicators depend directly on the foundations of "positive peace," at the centre of which education plays a vital role. One of the most staggering indicators in modern conflictology is the

[3] Maxim (Lat. *maxima propositio* – the greatest proposition) – a briefly formulated fundamental rule, moral principle, or subjective law of action guided by an individual or group. In philosophy (especially in the works of I. Kant), a maxim is considered a behavioural guideline. In this article, the term is used to emphasise the transition from the old logic of military deterrence (*si vis pacem, para bellum*) to the new rule of building Positive Peace.

[4] Lat. “If you want peace, prepare for war”. This maxim is derived from the 4th-century work *Epitoma Rei Militaris* by the Roman military theorist Publius Flavius Vegetius Renatus [31]. It reflects the classical realist principle that strong military power is the primary means of deterrence and the guarantor of peace.

economic impact of violence on the global economy, which, according to 2024 data, amounted to $19.97 trillion, or approximately 13.5% of the world's Gross Domestic Product (GDP) [2]. This means that violence "costs" the average global citizen approximately $2,418 per year. Collier [18] argues that these funds represent a "lost development opportunity," as countries caught in cycles of conflict experience a "conflict trap," where military spending directly drains resources from education and healthcare systems; therefore, in this context, education must be perceived not as a burden-generating expense but as a regenerative investment capable of reducing the cost of violence and redirecting funds toward the cultivation of human capital.

In the Positive Peace framework, education is identified through the "High Levels of Human Capital" pillar, and research by Hanushek and Woessmann [19] confirms that cognitive skills developed through quality education are a fundamental driver of long-term economic growth and social stability. Education within the context of the GPI operates across several critical levels, starting with ensuring structural stability and reducing polarisation, where developed critical thinking helps society recognise propaganda and avoid internal conflicts. However, history also reveals a darker side of this process. In regions of ethnic conflict, the education system can be manipulated to incite hatred and deepen divisions—a phenomenon famously described by Bush and Saltarelli [20] as the 'two faces of education.' This dual nature explains why simply having schools is not enough; the *content* and values of that education are what determine whether a society moves toward stability or collapse. Simultaneously, civic education programs directly strengthen institutional trust and align with another pillar of peace—low levels of corruption—because, according to UNESCO [21], an educated society demands greater transparency, thereby increasing overall social cohesion. This is further supported by the insights of Acemoglu and Robinson [33], who argue that nations prosper when their institutions are inclusive of all citizens rather than just a select few. This principle directly aligns with the "Well-Functioning Government" pillar of Positive Peace, which IEP ambassadors strengthen through their activities. Furthermore, education provides economic empowerment and the tools to participate in the labour market, which reduces marginalisation and poverty—key risk factors for individuals joining violent groups [22].

Ultimately, education becomes a primary instrument for changing cultural norms and deconstructing the "image of the enemy," thereby reducing religious or ethnic extremism, as argued by Harris and Morrison [23]. Historical examples, such as South Africa's post-apartheid reforms or Rwanda's efforts to integrate peace education into national curricula, confirm that purposeful education can transform the attitudes of entire generations toward conflict. Bajaj [14] adds that critical peace education not only provides knowledge but also empowers learners to become agents of change. This is directly linked to the activities of IEP ambassadors, as data analysis shows that states where peace education is integrated into formal and non-formal systems (e.g., Scandinavian countries) consistently rank at the top, not because of military power but because of high social resilience. Thus, education in the context of the GPI is not only an indicator but also a strategic lever for replacing the flawed "invention of war" with a sustainable peace system.

3. RESULTS AND DISCUSSION: HOW THE PEACE AMBASSADOR NETWORK FUNCTIONS

After conducting the study and analysing responses from the October 2025 graduates of the IEP Ambassador program, a fundamental insight emerged: education is a force that, in practice, changes the world through people, empowering them to become

conscious "system architects." The research revealed four main areas illustrating this transformation.

3.1. The first area: the individual as a "leverage point" in systemic transformation

Scientist D. Meadows [8] stated that in complex systems, one need not try to change everything at once; it is enough to find a place where a small shift can move the entire structure. The study revealed that each of the more than 7,000 IEP ambassadors acts as such a "leverage point," shifting the paradigm of societal functioning from passive to active. They cease to be passive observers and become "system architects," translating peace theory into concrete action within their environments. The table below presents research data illustrating how specialists from various fields transform IEP methodology into practical changes.

Table 1. Ambassador activities are a systemic "leverage point".

Participant (Code)	Represented Field / Region	Positive Peace Pillar	Nature of Activity and Quote
D29	Law (Indonesia)	Rule of Law	Uses legal knowledge as a tool for peacebuilding.
D30	Environment (Kenya)	Good Relations with Neighbours	Reduces inter-tribal conflicts through shared environmental conservation.
D21	Data Analysis (Italy)	Free Flow of Information	Disseminates Positive Peace Index data in communities to ensure people understand the real situation.
D36	Activism (Kenya)	Social Cohesion	Unites people through shared activities, such as tree planting.
D37	Business (Dubai)	Sound Business Environment	Combines business logic with peacebuilding principles.

While observing the ambassadors' activities, an "empowerment effect" becomes evident. For instance, a participant from Spain (D7) states: "I feel empowered to work so that peace prevails in the world." This indicates that science here functions as a psychological engine. The program serves as a kind of "digital laboratory" in which an individual progresses through three stages: diagnosis, integration, and restoration. Participants (D21 and D20) use IEP indices (the Positive Peace Index and the Ecological Threat Report) as a scanner—they identify the root causes of conflict rather than merely alleviating pain. This confirms Meadows' [8] idea that understanding the system's structure is the first step toward changing it. Instead of fighting consequences, ambassadors act where the change provides the greatest benefit.

Participants from Dubai (D37) and Nigeria (D5) demonstrate that peace is not just a beautiful idea—it can be "installed" into business, banking, or law. As Killelea [6]

noted, peace is the foundation without which no other human activity can flourish. Interestingly, even when faced with technical obstacles (e.g., system glitches), the participants did not give up. Their desire to obtain the certificate shows that they seek not just a piece of paper, but the recognition that grants them the authority to act. This recalls the "critical consciousness" described by Freire [7]—when a person realises their power to change the world. A participant from Kenya (D36), where peace is built through shared environmental protection, confirms Mead's [5] thought—war will disappear only when we find a better "social invention". In this study, that invention is the "human lever". Equipped with scientific data and official status, the individual becomes a force capable of transforming even the most complex conflicts into sustainable development. This proves that education is the cheapest and most effective defence, allowing society to heal and strengthen itself.

3.2. The second area: leadership, the "halo" effect, and economic rationality

This area explains why investing in peace leaders is not only a value-based choice but also a prudent financial decision. The study demonstrated that a single empowered ambassador triggers a chain reaction known as the "Halo" effect. This means that the authority the leader naturally acquires naturally spreads further, positively influencing an additional 5–15 individuals in their environment.

Table 2. The link between leadership and economic impact.

Analysis Level	Mechanism	Research Insight (Participants' Experience)	Economic Value
Institutional	Authority	Participants from Spain (D7) and the USA (D14) state that the certificate provides legitimacy to build alliances with police and universities.	Reduces expenditures on combating violence through stronger institutions.
Psychological	Trust	Participants from Syria (D6) and Somalia (D13) emphasise that restoring community trust is the first step toward stability.	Growth in trust helps avoid up to 25% of GDP losses in crisis zones.
Global	Investment	IEP data shows that countries that strengthen peace pillars attract more capital.	3 times higher flows of foreign direct investment.

Leadership within this network functions as an economic engine. An analysis of participants' experiences shows that an ambassador's status becomes a kind of "currency of trust". Social capital theorist R. Putnam [24] argues that community trust has a direct value for a country's economic efficiency. When participants (D6 and D15) persistently pursue certification, they are effectively seeking to acquire the social capital described by J. S. Coleman [25]. This recognised status creates an "expert halo," enabling the leader to persuade local politicians and businesses to support peace projects more easily.

This process is economically rational. Today, the cost of violence to the global economy is estimated at $19.97 trillion (approximately 11.6% of global GDP). IEP founder S. Killelea [6] emphasises that prevention through education is the most cost-effective alternative. The participant from the USA (D14), who integrates peace

science into law enforcement work, applies economic logic in practice: countries with strong Positive Peace pillars attract up to 3 times more foreign direct investment than conflict-ridden regions.
The restoration of trust, mentioned by participants from Somalia or Syria, is directly correlated with societal wealth. According to research, in post-conflict zones, a lack of trust can burn through up to a quarter of a country's GDP. The activities of the ambassadors create a so-called "peace dividend"—funds that were not lost to violence but remained available for societal innovation and education. This scientifically demonstrates that investing in a single "system architect" is more profitable than financing costly, often unsuccessful mitigation efforts later.

3.3. The third area: ecological resilience and digital citizenship

This area emphasises that modern peace depends not only on human relationships but also on how we protect nature and manage information online. The research revealed that IEP ambassadors act as "early warning systems"—they utilise technology and environmental conservation to stop conflicts before they even begin.

Table 3. Use of environmental conservation and technology for peacebuilding.

Direction	Tool	Participant Activity (Research Insight)	Why is this important?
Environmental Conservation	Ecological Threat Report	Participants from Kenya (D20) and Somalia (D31) use data to predict droughts.	Reduces disputes over water and land.
Internet	Information Flow	Participants from Nigeria (D33) and Indonesia (D4) combat fake news.	Prevents lies from dividing society.
Data	Mapping (GIS)	Participants from Ecuador (D10) and Italy (D21) mark high-risk areas.	Allows precise knowledge of where help is needed most.
Unity	Tree Planting	A participant from Kenya (D36) mobilises people toward a common goal: protecting forests.	Shared work brings even enemies together.

The research shows that today's peacebuilders require not only diplomacy but also smart tools. Analysing the participants' experiences, we observe a transition toward "data citizenship." According to Gürsoy and Eğinli [8], digital peace education is essential in the information age because it teaches people to critically evaluate what they see online and create a secure digital environment. For instance, a participant from Kenya (D20) works with communities that disagree over dwindling resources. This scientifically confirms the insight of geographer J. Diamond [26] that civilisations often collapse due to improper management of natural resources. By teaching people to protect nature, ambassadors simultaneously teach them to live peacefully, as the reasons for fighting disappear.
Another crucial aspect is online security. Participants (D33, D4) emphasise that fake news (disinformation) functions today as a weapon that turns people against one another. The IEP model promotes strengthening the "Free Flow of Information," which, in scientific terms, echoes R. Kaplan's [27] warnings that chaos arises when informational and ecological order collapses. A participant from Ecuador (D10) mentions that the use of mapping systems allows peace to be "seen" in numbers and images. This changes the entire logic: aid is sent not to where it is most loudly

requested, but to where the data indicate the highest risk. In this way, education provides ambassadors with a technological advantage—they become professional analysts who extinguish the sparks of conflict before a fire breaks out.

3.4. The fourth area: systemic resilience and Lithuania's strategic security

This section demonstrates how the entire ambassador network functions as a "living organism." It does not merely survive a crisis; it learns from it and becomes even stronger. Scientist N. Taleb [28] refers to this quality as the ability to thrive during volatility (antifragility), while C. S. Holling [29] defines it as an ecosystem's capacity to absorb shocks and maintain its integrity.

Table 4. Network self-regulation and its application to Lithuania's security.

Object of Analysis	Key Principle	Research Insight (Participants' Experience)	Significance for Lithuania
Crisis Management	Resilience with Growth	When the learning and administration system of the IEP Ambassador program stalled (D21, D6, D13), participants did not stop; instead, they formed self-help groups.	The ability to operate independently, even if official governance is disrupted.
System Restoration	Self-regulation	Participants from Yemen (D28) and Nigeria (D33) personally calmed others and helped solve problems.	A society that finds its own solutions and does not succumb to panic.
Cost of Security	Peace Dividend	Analysis of how to intelligently allocate funds between weaponry and human education.	A strong, united society is the most cost-effective and efficient form of national defence.
Global Connection	Collective Power	Participants (D15, D18) emphasise the desire for worldwide cooperation.	Lithuania's ties with global experts strengthen our national influence and security.

The research shows that this network is exceptionally resilient because it lacks a single central point of failure. Analysing how participants responded to technical obstacles (e.g., delayed certificates), an interesting phenomenon emerged: instead of complaining, they began assisting one another. This scientifically proves that education creates a "social armour." As N. Taleb [28] observes, some systems benefit from stress—they become smarter and more flexible. For Lithuania, this implies that, in the event of a hybrid threat or disinformation, an educated society can stabilise itself without top-down instructions.

This insight is crucial for planning Lithuania's future. While we currently invest heavily in the military, the study serves as a reminder: weapons are of little value without a united society. If a nation trusts its citizens and state institutions (the so-called Pillars of Positive Peace), it becomes a "hard nut to crack" for any aggressor. As C. S. Holling [29] stated, true resilience is the ability to change and adapt without losing one's essence. For Lithuania, investing in IEP ambassador programs and community strengthening is the most prudent way to build security. This would allow for savings that would later return as a "peace dividend"—funds dedicated to science,

innovation, and a better quality of life, rather than merely covering losses. In this way, ambassadors become true "system architects," protecting not only their communities but also the country's overall stability.

4. CONCLUSIONS

The results of this study demonstrate that peace is not merely the absence of weapons—it is a functional system that can be constructed through education. While it is common to assume that security is ensured solely by the military, the experiences of 37 ambassadors prove that the true foundation of a country lies in public trust, knowledge, and the ability to recognise disinformation. As emphasised by Gursoy and Eginli [32], digital peace education has become a fundamental requirement in the information age to counteract such threats and promote global stability. This confirms anthropologist Margaret Mead's [5] insight that war is merely a flawed social "invention" that can be replaced with a superior tool: Positive Peace. This model is economically advantageous, as it transforms the immense costs of violence into investments in societal well-being. Investing in a single specialist creates a "Halo" effect, spreading peace ideas to dozens of others. For Lithuania, this is particularly vital; in the face of hybrid threats, a united and educated society is the most cost-effective and efficient form of national defence.

Ultimately, education transforms peace from a distant dream into a tangible force protecting the stability of our state. This is the true regenerative power of education—the invention of Positive Peace. However, in closing, it is worth asking ourselves: if war is indeed only a flawed social invention, why are we still afraid to replace it with a better one? Moreover, what would happen to our world if even a fraction of the trillions currently spent on weaponry were invested in education that teaches us not how to fight but how to build a shared future?

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AGEING OF MATURE SKIN AND THE RELEVANCE OF THE APPLICATION OF SUCCINIC, LACTIC AND MANDELIC ACIDS IN COSMETOLOGY

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ABSTRACT

Skin ageing is a complex biological process determined by internal factors (genetic and hormonal) as well as external influences such as ultraviolet radiation, environmental pollution, and lifestyle. As society ages rapidly, demand for safe and effective cosmetic treatments that reduce age-related skin changes is increasing. These changes include loss of moisture, decreased elasticity, wrinkle formation, and alterations in pigmentation.

This study aimed to determine the effects of succinic, mandelic, and lactic acids, and their combinations, on mature facial skin. A qualitative research strategy was applied in the study. Empirical data were collected using skin diagnostics, photo-visualisation, and systematic observation. The participants of the study were five Lithuanian female artists aged 65-80 who actively participate in cultural and artistic life.

The study demonstrated that after a course of 5 procedures using succinic, mandelic, and lactic acids, significant improvements in facial skin hydration and elasticity were observed. Transepidermal water loss decreased, while skin texture and overall complexion tone improved. Minor changes in pigmentation and fine wrinkle indicators were also recorded. In addition to improvements in physical skin parameters, positive changes in emotional well-being were observed, including increased self-confidence and greater motivation to engage in creative activities.

The results suggest that combinations of succinic, mandelic, and lactic acids may serve as an effective and safe approach for the care of mature facial skin, improving both physiological skin parameters and overall well-being.

Keywords: *mature skin; succinic acid; lactic acid; mandelic acid; skin hydration; elasticity; wrinkles; pigmentation.*

1. INTRODUCTION

Skin ageing is a complex biological process characterised by structural and functional changes, including wrinkle formation, skin dryness, decreased elasticity, and alterations in pigmentation [1]. These changes lead not only to aesthetic but also to functional alterations of the skin, associated with a weakened epidermal barrier function and slower tissue regeneration [2]. Although skin ageing is a natural process, maintaining a youthful appearance is associated with better psychological well-being and social welfare [3].

The scientific literature emphasises that both intrinsic and extrinsic factors influence skin ageing. Intrinsic factors include genetic and hormonal changes, while extrinsic factors include ultraviolet radiation, air pollution, and lifestyle-related influences [4]. The interaction of these factors promotes the degradation of collagen and elastin, increases oxidative stress, and slows cellular renewal. In recent years, cosmetology has increasingly focused on bioactive substances that can slow skin ageing. Among these, lactic, mandelic, and succinic acids stand out for their milder effects compared to some other exfoliants, making them suitable for mature skin care. Studies indicate that lactic and mandelic acids promote epidermal exfoliation and skin renewal, while succinic acid possesses antioxidant and anti-inflammatory properties [5,6]. However,

scientific research examining the combined effects of these acids on mature skin remains limited. In Lithuania, data on the effects of combinations of lactic, mandelic, and succinic acids on skin hydration, elasticity, wrinkle depth, and pigmentation are very scarce. Therefore, the results of this study may contribute new insights into the application of these substances in cosmetology and in mature skin care protocols.

Skin ageing is a complex biological process influenced by both genetic and environmental factors. In recent decades, the ageing of society has become increasingly evident, leading to a growing demand for effective, safe skin care measures to reduce age-related skin changes [7]. Promising active substances in this field include lactic, mandelic, and succinic acids, which, due to their biological properties, may have beneficial effects on mature skin. However, scientific data on the combined effects of these acids on physiological skin parameters remain limited. Therefore, the following research question is formulated: What is the effect of succinic, mandelic, and lactic acids, as well as their combinations, on mature facial skin?

The empirical study employs a qualitative research strategy. Data analysis is carried out using methods of scientific literature analysis and systematisation. Empirical data are collected using a skin diagnostic device, a photo-visualisation method, and systematic observation.

2. LITERATURE REVIEW

The skin is the largest organ of the human body and performs essential protective, metabolic, and sensory functions [8]. It acts as a physical barrier protecting the body from ultraviolet radiation, pathogens, toxic substances, and mechanical damage. In addition, the skin participates in thermoregulation, immune response, sensory perception, and vitamin D synthesis (see Fig. 1).

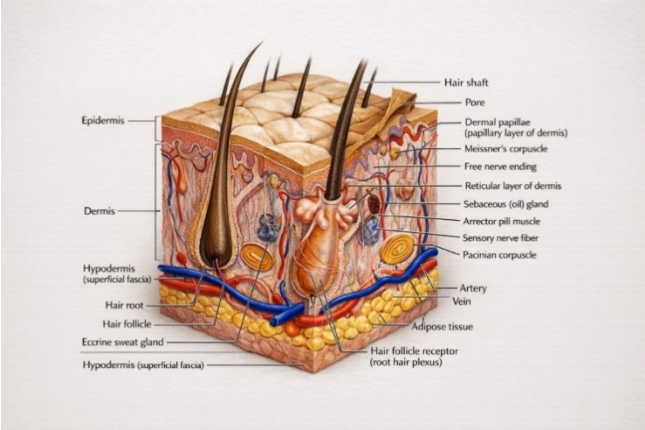

Figure 1 Skin Structure

Structurally, the skin consists of three main layers: the epidermis, dermis, and subcutaneous tissue [9]. The epidermis is the outermost layer, forming a protective barrier against external factors. Continuous cell regeneration takes place in this layer, and keratinocytes constitute the main cell population of the epidermis. Melanocytes located in the epidermis produce melanin, a pigment that protects the skin from ultraviolet radiation [10].

The dermis, located beneath the epidermis, is composed of connective tissue rich in collagen and elastin fibres. These structures provide the skin with strength and elasticity. The dermis also contains blood vessels, nerve endings, sweat glands, and

sebaceous glands [11]. The subcutaneous tissue, also known as the hypodermis, consists of adipose and connective tissues and performs protective and thermoregulatory functions [12].

2.1. Factors of Skin Ageing

Skin ageing is a complex process influenced by chronological ageing, hormonal changes, and environmental factors [13]. With ageing, fibroblast activity and collagen synthesis decrease in the skin, leading to a thinner, less elastic skin that is more prone to wrinkle formation [14].

Skin ageing is generally classified into intrinsic and extrinsic ageing. Intrinsic ageing is a natural physiological process related to genetic and metabolic changes. It is characterised by thinning of the epidermis, dryness, fine wrinkles, and a gradual decrease in skin elasticity [4]. Extrinsic ageing results from environmental influences. The main external ageing factors include ultraviolet radiation, air pollution, smoking, poor nutrition, and chronic stress [15]. These factors promote oxidative stress, collagen degradation, and changes in pigmentation.

2.2. Photoageing and Environmental Impact

Photoageing is considered one of the most important causes of extrinsic skin ageing (see Fig. 2). Long-term exposure to ultraviolet radiation stimulates the formation of reactive oxygen species, which can damage cellular structures and promote collagen degradation [6].

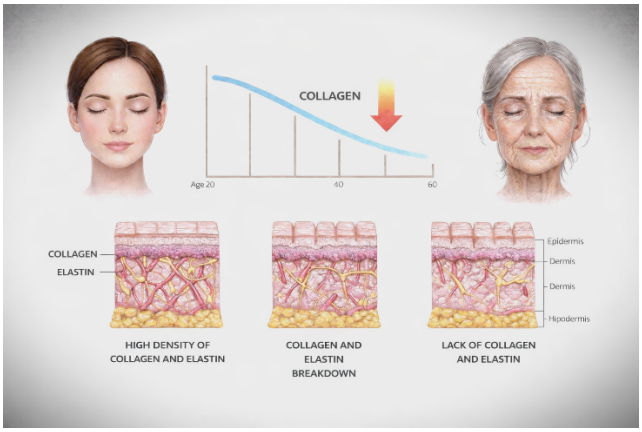

Figure 2 Skin Ageing Process (generated by ChatGPT based on the author's text).

In addition to ultraviolet radiation, air pollution also significantly impacts skin ageing. Continuous exposure to environmental pollutants, such as ozone, particulate matter, and polycyclic aromatic hydrocarbons, can accelerate skin ageing and impair the skin's barrier function [16]. Moreover, studies indicate that air pollution may contribute to the formation of wrinkles and pigmentation disorders [17]. Climatic conditions also influence the condition of the skin. Dry air and low temperatures can reduce skin hydration and intensify skin irritation [18].

In summary, the skin is a complex biological organ that performs important protective and physiological functions. Skin ageing is a multifactorial process influenced by both intrinsic biological and external environmental factors. The most common signs of ageing include reduced elasticity, wrinkle formation, pigmentation changes, and skin dryness. These changes encourage the search for effective cosmetic solutions that can improve the condition of mature skin and slow the ageing process.

2.3. Classification of Facial Skin Ageing Types

Mature skin is generally characterised by structural and functional changes that distinguish it from younger skin. With ageing, the skin becomes thinner, more fragile, and less elastic. In clinical practice, mature skin is often described as blotchy, yellowish, rough, and sagging. One characteristic change is the thickening of the superficial epidermal layer, due to impaired shedding of cells from the stratum corneum. As a result, corneocytes accumulate on the skin surface, leading to uneven skin texture and reduced radiance.

Fibroblasts play an important role in maintaining the structure of the skin. These cells are responsible for synthesising collagen, elastin, and hyaluronic acid, which help maintain skin firmness, elasticity, and moisture retention. With age, fibroblast activity decreases, resulting in reduced levels of collagen, functional elastin, and hyaluronic acid in the skin. These changes lead to skin thinning, loss of elasticity, and wrinkle formation [19].

Knowledge of skin type and its characteristics is an important factor when selecting appropriate skin care products and planning aesthetic or medical procedures. Improperly chosen cosmetic products may cause skin irritation, disruption of the barrier function, or undesirable reactions. Therefore, before performing cosmetological or dermatological procedures, it is essential to evaluate the individual characteristics of the skin in order to select the most appropriate treatment or care strategy [20].

The classification of skin types is complex, as skin characteristics may change over time due to biological, environmental, or lifestyle factors. In addition, globalisation and the interaction among diverse ethnic groups increasingly expose practitioners to a range of skin phenotypes with specific care requirements. Therefore, accurate assessment of skin type and condition is essential to ensure the effective and safe application of cosmetic and medical procedures. Incorrect determination of skin type may lead to inappropriate decisions that can cause physiological changes in the skin or undesirable reactions [21].

In clinical practice, facial skin ageing is evaluated using various methods, including clinical assessments, standardised scales, imaging analysis systems, and histological studies. Most often, the initial assessment is carried out during a clinical examination using specially developed classification scales that allow a more objective evaluation of skin ageing signs.

One of the most widely used classification systems is the Glogau Photoaging Scale. This scale is used to assess the degree of photoageing and the severity of wrinkles, while accounting for structural changes in the skin. According to this classification, four types of photoageing are distinguished. The first type is characterised by early photoageing, with minimal wrinkles and minimal pigmentation changes. The second type includes wrinkles during facial expression, early pigment spots, and mild keratosis. Visible wrinkles at rest, clear pigmentation changes, and visible capillaries characterise the third type. The fourth type describes severe photoageing, characterised by deep wrinkles, a yellowish-grey skin tone, and possible precancerous skin changes (see Fig. 3).

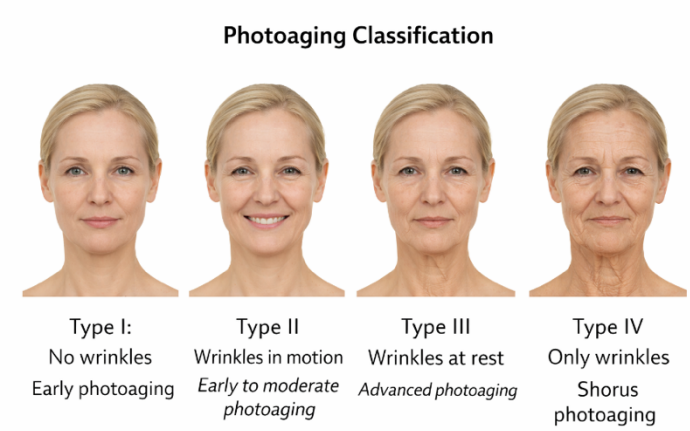

Figure 3 Glogau Photoaging Classification (generated by ChatGPT based on the author's text).

Photoageing is one of the most significant factors of extrinsic skin ageing. It results from long-term exposure to ultraviolet radiation, which promotes collagen degradation, oxidative stress, and structural changes in the dermis. As a result of these processes, wrinkles develop, pigmentation disorders appear, and skin elasticity decreases. To more accurately assess the extent of skin damage and select the most appropriate treatment strategies, various classification systems are used in clinical practice [22].

However, the Glogau scale has certain limitations, as the assessment may be subjective and dependent on the clinical evaluator's experience. Furthermore, this scale does not always accurately reflect photoaging signs in individuals with different racial or ethnic skin types. Recent studies aim to reduce this subjectivity by combining clinical evaluation scales with digital skin analysis systems. For example, in a study by Oesch et al. (2022), the Glogau scale was integrated with the VISIA® digital skin analysis system, which allows a more objective assessment of photodamage. Such methods help determine the influence of lifestyle factors, such as smoking, alcohol consumption, and stress, on skin ageing.

Another widely used assessment system is the Fitzpatrick Wrinkle and Elastosis Scale. This scale allows the evaluation of the depth of facial wrinkles and the degree of elastosis resulting from the degradation of elastic fibres in the dermis. According to this classification, the severity of wrinkles is divided into several categories, ranging from fine superficial wrinkles to deep structural skin changes. First-degree changes include fine wrinkles and minimal texture changes. The second degree is characterised by moderately deep wrinkles and more pronounced irregularities of the skin surface, while the third degree describes deep wrinkles and marked elastosis [23].

To more precisely evaluate wrinkle depth and progression, a modified Fitzpatrick wrinkle scale was developed. This scale provides a more detailed assessment by including additional intermediate severity categories. According to this system, several wrinkle levels are distinguished, ranging from the complete absence of wrinkles to deep furrows exceeding 3 mm in depth. Such a classification allows a more accurate quantitative evaluation of skin ageing signs and enables the monitoring of the effectiveness of cosmetic or dermatological procedures [24].

Studies indicate that the modified Fitzpatrick scale demonstrates high inter-rater reliability and can be effectively used to assess wrinkles in various facial areas, including nasolabial folds and changes in the lip region (see Fig. 4).

Figure 4 Modified Fitzpatrick Wrinkle Scale (generated by ChatGPT based on the author's text).

In summary, evaluating facial skin ageing is a complex process that involves clinical examination, standardised assessment scales, and modern digital analysis technologies. Classification systems such as the Glogau and Fitzpatrick scales enable a more objective assessment of the degree of skin ageing and help in selecting the most appropriate therapeutic or cosmetological interventions. The application of these methods in clinical practice creates the conditions for a more accurate evaluation of skin condition and for monitoring the effectiveness of applied procedures.

2.4. Application of Acid Combinations in Mature Skin Care

In addition, during cosmetology courses at "Oda Akademija," studying acid combination methodologies, theory and practice-based training indicated that combining different acids in mature skin care procedures may yield positive results. Data from the scientific literature also suggest that properly selected chemical peels can improve skin texture and moisture balance and reduce signs of photoageing.

2.5. Characteristics of the Acids Used

Succinic acid is a naturally occurring dicarboxylic acid with the chemical formula $C_4H_6O_4$. It is an important component of cellular metabolism and participates in the Krebs cycle, one of the main energy-generating pathways in the mitochondria of eukaryotic cells [25]. This acid is naturally found in plants, animal tissues, and minerals such as amber.

In cosmetology, succinic acid is valued for its antioxidant, anti-inflammatory, and regenerative properties. It may improve microcirculation, stimulate cellular metabolism, and enhance skin tone [26]. Studies indicate that succinic acid may modulate the expression of ageing markers, suggesting that it may influence cellular ageing processes [27]. Succinic acid also exhibits antioxidant activity, helping to neutralise free radicals—one of the main factors contributing to skin ageing [28]. Furthermore, it has a mild exfoliating effect that helps remove dead epidermal cells and improve skin texture [29].

According to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), succinic acid is not classified as toxic or highly irritating and is therefore considered a safe active ingredient for use in cosmetic products. However, higher concentrations may cause temporary skin irritation, redness, or a burning sensation, particularly in individuals with sensitive skin [30].

Lactic acid is an alpha-hydroxy acid (AHA) with the chemical formula $C_3H_6O_3$. It is naturally produced during fermentation and during anaerobic glycolysis in the human body [31]. In dermatology and cosmetology, lactic acid is widely used as a chemical exfoliant that helps remove dead epidermal cells and stimulate skin regeneration. In addition, this acid has humectant properties—it attracts and retains moisture in the epidermis, thereby helping to strengthen the skin barrier function [32].

Clinical studies show that long-term use of alpha hydroxy acids can promote epidermal thickening, improve dermal structure, and reduce signs of photoageing such as hyperpigmentation, uneven skin texture, and fine wrinkles. Due to these properties, lactic acid peels are often used in mature skin care procedures.

Mandelic acid is an aromatic alpha-hydroxy acid with the chemical formula $C_8H_8O_3$. It is derived from bitter almonds or synthesised in a laboratory. Due to its larger molecular structure, this acid penetrates the skin more slowly than other AHA acids, leading to less irritation [33]. Mandelic acid has keratolytic, antibacterial, and depigmenting properties. It stimulates epidermal regeneration, improves skin texture, and reduces hyperpigmentation. Because of its milder action, this acid is often used to treat sensitive or photoaged skin [34].

Phytic acid (inositol hexaphosphate) is a naturally occurring plant-derived compound found in grains and seeds. In dermatology, it is used as a mild chemical peel component with antioxidant and depigmenting properties. Phytic acid can inhibit the activity of the enzyme tyrosinase, which is involved in melanin synthesis, thereby helping reduce hyperpigmentation and improve uniformity of skin tone [35]. In addition, this acid exhibits a chelating effect and helps neutralise free radicals.

2.6. Principles of Chemical Peels

Chemical peels are procedures in which acidic solutions are applied to the skin, causing controlled exfoliation of the epidermis. During this process, dead skin cells are removed, while the proliferation of new cells and collagen synthesis is stimulated.

Based on their depth of effect, chemical peels are divided into three main categories: superficial, medium-depth, and deep. Superficial peels affect the epidermis and are most commonly used to improve skin texture and reduce pigmentation. Medium-depth peels may reach the upper dermis and are used to correct more pronounced skin changes. Deep peels target deeper dermal layers and are used to treat significant skin damage.

The effect of a chemical peel depends on several factors, including the acid concentration, pH, exposure time, and skin condition. Therefore, the procedure protocol must be selected individually, taking into account the patient’s skin type and condition.

3. RESULTS AND DISCUSSION

In consultation with specialists from Skin Academy, several acid-combination protocols for mature skin care were developed. A practical study was conducted with one patient (JS), who underwent a course of five procedures over seven weeks (2026-01-12 – 2026-02-27).

Before the procedures began, a medical history was collected to assess possible contraindications, including cardiovascular disease, hypertension, diabetes, allergies, and medications being used. The skin's condition was also evaluated, including hydration level, elasticity, wrinkle depth, pigmentation, and skin texture. During the procedures, combinations of three acids, succinic, lactic, and mandelic acid peels

were applied, supplemented with phytic acid and other regeneration-promoting components.

After determining the client's skin type (dry, combination) and condition (moisture level, tone, circulation, wrinkles, sensitivity, pores, comedones, milia, acne, skin thickness, color, and flaking), and after listening to the client's expectations, five procedures combining three acids were performed: two procedures for mature skin, two procedures for mature, dull, and elasticity-loss-affected skin, and one procedure aimed at optimal skin renewal.

Protocol 1

Procedure for mature skin. Performed twice for the client

Products used:

Active cleanser with succinic acid (Pre-Peel 2-4 ml);

Succinic acid peel (2-4 ml, 1-2 min);

Neutralising agent.

After completing the first stage of the procedure, the main skin peeling is performed with 2.5% succinic acid and a prolonged-action mask base, followed by a 3% retinol peel and a brightening and whitening concentrate. The mixture, prepared in equal proportions in a container, is poured into the prepared amber mask. The mask is left until it hardens. It is then rinsed off with water, and the skin is gently dried. If the skin is sensitive, it is recommended to neutralise the skin with a neutralising agent after the peel.

After neutralising the acid peel, a hyaluronic acid serum is applied. This is followed by the application of a stimulating alginate mask with spirulina and menthol. Once the mask hardens on the skin surface, it is gently removed with warm water.

After removing the mask, the face is covered with a nourishing cream containing hemp oil. Subsequently, the face is protected with a facial sunscreen with SPF 30.

One of the main components of the procedure is succinic acid. According to Theunissen and Courbes (2018), this substance is not yet widely used in cosmetic and personal care products, although its biological properties have already been discussed in the scientific literature. Research indicates that succinic acid may modulate the expression of ageing and pluripotency markers, suggesting that it may influence cellular ageing processes.

Levy (2022) notes that succinic acid possesses antioxidant properties that help neutralise free radicals and reduce oxidative stress, one of the most important factors contributing to skin ageing. As a result, fine lines and wrinkles may decrease, and the skin may appear more youthful. In addition, this acid has anti-inflammatory properties and may help soothe irritated, sensitive skin.

Saxena et al. (2017) state that in cosmetics, succinic acid is also valued for its mild exfoliating effect. It helps remove dead skin cells, improves skin texture and tone, and enhances skin radiance. This is particularly relevant for mature skin, which is often characterised by dullness and uneven pigmentation.

According to the Globally Harmonised System of Classification and Labelling of Chemicals (Globally Harmonised System, 2017), succinic acid is not classified as toxic, corrosive, or strongly irritating to the skin. Therefore, cosmetic products are considered relatively safe and generally well-tolerated across various skin types.

Nevertheless, side effects are possible. The most common reactions include skin irritation, such as redness, itching or a burning sensation, especially in individuals with sensitive skin or when higher concentrations are used. Contact with the eyes

should be avoided, and succinic acid should be combined cautiously with other acids, as this may increase the risk of irritation (Hartwig et al., 2018; Saxena et al., 2017).

Protocol 2

Procedure for mature, dull, and elasticity-loss-affected skin. Performed twice for the client

Products used:

Active cleanser with 15% lactic acid (Pre-Peel 2-4 ml). During the procedure, an ultrasonic spatula is recommended.

40% mandelic acid peel (2-4 ml, 1-2 min). Recommended exposure time: 1-2 minutes;

Neutralising agent.

After completing the first stage of the procedure, the main skin peel is performed using a 40% mandelic acid peel and a 40% phytic acid peel (2-4 ml, up to 10 minutes). After the peel, it is recommended to neutralise the skin with a neutralising agent.

After neutralising the acid peel, a hyaluronic acid serum is applied. Next, a restorative serum with vitamin C and reHeal is applied, followed by a stimulating alginate mask with spirulina and menthol. Once the mask hardens on the skin's surface, it is gently removed with warm water.

After removing the mask, the face is protected with a facial sunscreen with SPF 30.

Protocol 3

Procedure for optimal skin renewal. Performed once for the client

Products used:

Active cleanser with 15% lactic acid (Pre-Peel 2-4 ml). During the procedure, an ultrasonic spatula is recommended.

40% lactic acid peel (2-4 ml, 1-2 min). Recommended exposure time: 1-2 minutes;

Neutralising agent.

After completing the first stage of the procedure, the main skin peel is performed using a 40% mandelic acid peel and a 40% phytic acid peel (2-4 ml, up to 10 minutes). After the peel, it is recommended to neutralise the skin with a neutralising agent.

After neutralising the acid peel, a hyaluronic acid serum is applied. Next, a restorative vitamin C serum is applied, followed by a stimulating alginate mask with spirulina and menthol. Once the mask has hardened on the skin's surface, it is gently removed with warm water.

After the mask is removed, the face is treated with a 3% retinol peel, which is washed off after 2-4 hours. After rinsing off the 3% retinol peel, the face is protected with a facial sunscreen with SPF 30.

An important component of the procedures analysed in this study is the use of lactic, mandelic, and phytic acids in cosmetology, owing to their ability to stimulate skin renewal, improve skin structure, and reduce signs of ageing.

Lactic acid stimulates glycosaminoglycan synthesis and may improve dermal collagen structure, thereby increasing skin elasticity and reducing the visibility of fine wrinkles (Barel, Paye & Maibach, 2014). Clinical studies indicate that the use of alpha-hydroxy acids (AHAs), including lactic acid, can improve the condition of mature skin by promoting epidermal thickening, enhancing dermal structure, and reducing signs of photoageing, such as hyperpigmentation, uneven skin surface, and fine wrinkles (Ditre et al., 1996). In addition, lactic acid has moisturising properties, acting as a humectant and helping maintain optimal epidermal hydration (Baumann, 2009). Due to these properties, lactic acid peels can improve skin texture and tone,

promote regeneration, and reduce uneven pigmentation. Although this procedure is considered safe, temporary redness, a burning sensation, or mild flaking may occur after treatment (Draelos, 2016).

Mandelic acid is an aromatic AHA acid which, due to its larger molecular structure, penetrates the skin more slowly than other acids of this group. As a result, it causes less irritation and is suitable for sensitive and mature skin (Barel, Paye & Maibach, 2014). Chemical peeling induces controlled epidermal exfoliation, stimulates keratinocyte proliferation, and may promote collagen synthesis (Draelos, 2016). Mandelic acid peels have keratolytic, antibacterial, and depigmenting effects, thereby improving skin texture and reducing hyperpigmentation and fine wrinkles. Due to its milder action, it is often used to treat signs of photoageing, melasma, or post-inflammatory hyperpigmentation (Rendon & Gaviria, 2005). Possible side effects usually include temporary redness, a burning sensation, or mild flaking.

Phytic acid is a natural plant-derived compound found in grains, legumes, and seeds. In dermatology, it is used as a mild component of chemical peels due to its antioxidant and depigmenting properties (Baumann, 2009). Phytic acid inhibits the activity of tyrosinase, an enzyme involved in melanin synthesis, thereby helping reduce pigmentation spots and improve skin tone uniformity (Serup, Jemec & Grove, 2017). In addition, this acid neutralises free radicals and reduces oxidative stress, which may help reduce the signs of photoageing. After such procedures, a more even skin tone, reduced pigmentation, improved skin texture, and a brighter complexion are usually observed. Possible side effects are generally limited to temporary redness or mild flaking.

Acid masks and serums are gentle skincare products that moisturise, brighten, smooth the skin, and reduce fine wrinkles. They can be used both at home and in beauty salons. Acid masks are typically applied to clean skin and left on for a specified period before rinsing off. Serums have a lighter consistency and are applied after cleansing, before a moisturiser or a facial sunscreen with SPF.

Evaluation of the Research Results

The condition of the skin was assessed using the A-ONE Smart diagnostic system, which enables objective measurement of skin hydration, elasticity, wrinkles, and pigmentation.

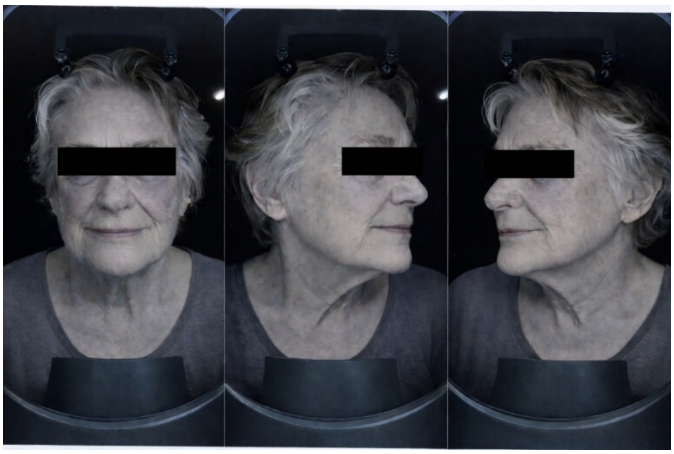

Figure 5. Recording of the Client's Skin Condition Before the Procedures

The hydration index indicates the amount of water in the epidermis and allows evaluation of the condition of the skin barrier. The elasticity parameter describes the skin's ability to stretch and return to its original shape, which is directly related to the collagen and elastin structure in the dermis. The wrinkle index assesses the depth and

distribution of wrinkles, while the pigmentation indicator describes the uniformity of melanin distribution.

Figure 6 Recording of the Client's Skin Condition After 5 Procedures

Over seven weeks, after five procedures, positive changes in skin condition were observed. The skin elasticity index increased from 7% to 78%, the pigmentation index decreased from 46% to 42%, and the wrinkle index decreased from 60% to 56%. These data indicate that the systematic application of acid combinations may improve the condition of mature skin.

Figure 7 Recording of the Client's Skin Condition After the Procedures

Over a period of seven weeks, after performing five procedures and summarising the results of three skin assessment indicators obtained using the A-ONE Smart diagnostic system, it can be observed that the systematic and responsible use of a combination of three acids produced positive results. These acids softened and moisturised the patient's facial skin and worked effectively in combination with other ingredients, such as hyaluronic acid, which enhances their effect (see Fig. 8).

The gentle exfoliating action removes dead skin cells, giving the skin a smoother and more radiant appearance. Another advantage of combining acids for the skin is their ability to brighten the complexion, enhance radiance, and even out skin tone. This combination helps inhibit the production of melanin, the pigment responsible for dark spots and hyperpigmentation, fade existing discolouration, and prevent the formation of new spots. As a result, the facial complexion becomes more even (Saxena et al., 2017).

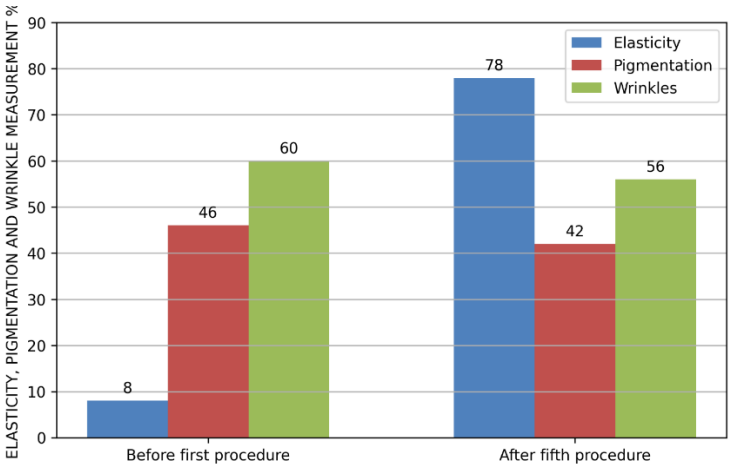

Figure 8 Results of the Client's Skin Elasticity, Pigmentation, and Wrinkle Assessment

The research results were evaluated based on the diagnostic device's scale unit values.
Skin Hydration Parameters
Low level (0-33%): The skin is dry, rough, and flaky, with a feeling of tightness. The skin barrier is impaired.
Medium level (34-66%): Normal hydration; the skin barrier function is maintained.
High level (67-100%): The skin is well hydrated, the epidermal barrier function is strong, transepidermal water loss is low, and the skin is resistant to irritants.
Skin Elasticity Parameters
Low level (0-33%): Reduced elasticity, deficiency of collagen and elastin, sagging and tired skin, typical of mature skin.
Medium level (34-66%): Normal skin structure and tone.
High level (67-100%): Very good skin tone and firmness; the skin quickly regains its shape after pressure.
Wrinkle Parameters
Low level (0-33%): Almost no wrinkles; smooth skin texture.
Medium level (34-66%): Fine to moderate wrinkles; reduced firmness.
High level (67-100%): Deep and pronounced wrinkles caused by ageing, UV exposure, or dehydration.
Pigmentation Parameters
Low level (0–-33%): Even skin tone with minimal pigmentation.
Medium level (34-66%): Physiological pigmentation with minor irregularities, isolated pigment changes.
High level (67-100%): Pronounced pigment spots and hyperpigmentation.
Research Ethics
During the research, the fundamental principles of scientific research ethics were followed. The participant was informed about the purpose of the study, the course of the procedures, and the intended use of the results in scientific work. The study aimed to ensure the participants' safety, confidentiality, and voluntary participation.
As noted by Gaižauskaitė and Valavičienė (2016), the researcher should maintain neutrality throughout the study, avoid evaluative judgments, and ensure respectful and ethical communication with research participants.

4. CONCLUSIONS

1. Succinic, lactic, and mandelic acids possess properties that may improve the condition of mature skin.
2. Combining acids in procedures provides a broader spectrum of action, more targeted problem-solving, and a more individualised effect on the skin.
3. After the course of procedures, a significant improvement in skin hydration and elasticity was observed.
4. Changes in wrinkles and pigmentation were smaller; however, a general improvement in skin tone and texture was observed.
5. Acid combinations may be an effective approach for mature skin care in cosmetological practice.

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DIGITAL REVOLUTION IN THE TOURISM SECTOR: CHANGES IN USER EXPERIENCE AND BUSINESS PROCESSES

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ABSTRACT

The digital revolution of the last decade has significantly changed the principles of the tourism sector, affecting both consumer behaviour and organisations' business processes. Digital technologies – from mobile applications and platform economies to artificial intelligence, personalisation systems and virtual reality – are transforming the stages of travel planning, experience and evaluation. The growing consumer reliance on real-time information, personalised recommendations, and seamless digital services indicates that technological progress is becoming one of the most important competitive factors for tourism organisations. The relevance of this topic is determined by the rapidly changing dynamics of the tourism market and the need for businesses to adapt to new consumer expectations, while ensuring operational efficiency.

This study aims to analyse how the digital revolution is transforming user experience and business processes in the tourism sector. To achieve this aim, the following research objectives are formulated: to analyse the theoretical foundations of digital transformation in tourism; to empirically examine its impact on user experience and business processes; and to identify practical implications and formulate recommendations.

This study applies a qualitative research approach based on scientific literature analysis and semi-structured interviews with tourism sector specialists.

The findings suggest that digital transformation enhances service personalisation and operational efficiency in tourism organisations, while simultaneously increasing technological dependence and the complexity of implementation.

Keywords: *Digitalization; tourism sector; digital transformation; user experience;*

1. INTRODUCTION

The rapid expansion of digital technologies has fundamentally transformed the structure of modern economic sectors, including tourism, which has become one of the most technologically intensive service industries. Digitalisation is increasingly recognised as a key driver of structural change in tourism, influencing business models, consumer behaviour, and service delivery systems. The integration of digital technologies enables tourism organisations to enhance efficiency, improve service accessibility, and develop more personalised customer experiences, thereby strengthening competitiveness in an increasingly dynamic market environment [1].

Tourism has historically been among the first sectors globally to adopt digital technologies. The introduction of computerised reservation systems and global distribution systems marked the early stages of digital transformation. At the same time, contemporary developments include artificial intelligence, big data analytics, Internet of Things technologies, virtual and augmented reality, and smart digital platforms that shape tourism ecosystems [1].

These technological advancements have significantly influenced business operations, marketing strategies, and consumer interaction patterns within the tourism sector [1]. Digital transformation is also closely linked to changes in consumer behaviour. The growing use of online travel planning platforms, digital booking systems, and real-time information services has reshaped how tourists search for information, evaluate

destinations, and purchase travel products. The expansion of internet use and digital services has led to increased reliance on digital environments for tourism-related activities, including booking accommodation, transportation, and travel packages [2]. As a result, tourism enterprises are increasingly adapting their business models to operate within digital ecosystems and to respond to evolving consumer expectations. At the organisational level, digitalisation contributes to the development of integrated information environments, data-driven decision-making, and platform-based business models. Digital platforms serve as centralised data hubs that support strategic management, enable real-time information exchange, and facilitate stakeholder interaction in the tourism market [3].

The creation of digital ecosystems enables tourism organisations to coordinate services, optimise resource allocation, and enhance the overall tourist experience through data analytics and intelligent systems. The digital transformation of tourism is also associated with broader structural changes in economic development. The widespread implementation of digital technologies reduces operational costs, increases productivity, and enhances competitiveness across the hospitality and tourism industry [4]. In addition to operational and economic impacts, digitalisation plays a crucial role in shaping contemporary research agendas in tourism. The growing academic interest in digital transformation, sustainability, smart tourism, and digital ecosystems reflects recognition of digitalisation as a fundamental structural force shaping tourism development [5]. Another significant dimension of digital transformation is the expansion of e-commerce in tourism. The development of digital platforms, online services, and information systems has reshaped market structures and enabled new forms of commercial interaction. Digitalisation supports customer engagement, improves communication channels, and facilitates data-driven marketing strategies, while introducing new challenges in financial management, technological integration, and organisational adaptation [6]. Nevertheless, despite the growing body of research, scholars emphasise the need for further investigation into the practical implications of digital transformation and its impact on tourism organisations and user experiences.

Therefore, the scientific problem addressed in this study concerns understanding how digital transformation reshapes both the user experience and organisational processes in the tourism sector amid rapid technological change.

This study aims to analyse how the digital revolution is transforming user experience and business processes in the tourism sector.

The study examines the impact of digital transformation on user experience and organisational business processes in the tourism sector.

To achieve this aim, the following research objectives are formulated:

1. To analyse the theoretical foundations of digital transformation in tourism.
2. Empirically examine its impact on user experience and business processes.
3. Identify practical implications and formulate recommendations.

This study applies a qualitative research approach based on scientific literature analysis and semi-structured interviews with tourism sector specialists.

The findings suggest that digital transformation enhances service personalisation and operational efficiency in tourism organisations, while simultaneously increasing technological dependence and the complexity of implementation.

2. THEORETICAL FRAMEWORK OF DIGITAL TRANSFORMATION IN TOURISM

2.1. Concept of digitalisation and digital transformation in tourism

The phenomenon of digital transformation in tourism has been widely examined in contemporary academic literature. Zaharia and Georgescu (2025) analyse the impact of digitalisation on the tourism industry and emphasise its role as a structural driver influencing competitiveness, innovation, and service development. Similarly, Purhani et al. (2025) highlighted the contribution of digital technologies to operational efficiency and economic performance in the hospitality and tourism sectors. In the broader context of digital economy research, Verhoef et al. (2021) conceptualised digital transformation as a comprehensive organisational change that extends beyond mere adoption of digital technologies, encompassing strategic restructuring and the creation of new value propositions. Saarikko et al. (2020) further argued that digital transformation requires organisational adaptation and reconfiguration of business models rather than simple process automation. In tourism studies, Gozgor et al. (2024) and Alieva et al. (2023) emphasised that digital technologies increasingly shape the development trajectories of tourism markets. According to Babtista et al. (2025), digitalisation contributes to service accessibility, the personalisation and simplification of tourism processes, positioning digital tools as central elements of tourism modernisation.

Thus, the academic literature distinguishes between digitalisation, the optimisation of existing processes through digital technologies, and digital transformation, a broader systemic change reshaping organisational structures and market interactions. Overall, digitalisation and digital transformation represent interconnected but distinct processes that reshape tourism by optimising existing activities while simultaneously enabling structural organisational change and the development of new business models.

2.2. Technological drivers of digital transformation

The rapid development and diffusion of advanced digital technologies drive the transformation of tourism. Research highlights the role of artificial intelligence, big data analytics, Internet of Things, blockchain, mobile platforms, virtual and augmented reality, and digital infrastructure in reshaping tourism services and business ecosystems [7]. The evolution of tourism technologies is often described as a transition from e-tourism to smart tourism, and then to smart tourism 2.0. E-tourism primarily supported online information exchange and electronic transactions, while smart tourism integrates digital and physical infrastructure through mobile devices, sensors and cloud computing [8-9].

Smart tourism 2.0 extends this development by incorporating artificial intelligence, virtual environments and hybrid digital-physical interaction systems. These technologies enable new forms of service automation, immersive experiences and AI-human interaction, as well as continuous engagement across travel phases [10]. Data plays a central role in these technological developments. The transition from structured information to big, real-time data, and from data processing to real-time processing is identified as a key factor enabling smart tourism systems and digital ecosystems [11].

In summary, the rapid development and integration of advanced digital technologies constitute the primary driving force behind the transformation of tourism systems,

enabling the evolution from basic digital services toward intelligent, data-driven and interconnected tourism environments.

2.3. Digital platforms and tourism ecosystems

Digital platforms are considered a fundamental structural element of tourism digitalisation. They function as centralised data hubs that support decision-making, service coordination, and interaction among tourism stakeholders [12].

The development of digital ecosystems enables integration of services, collaboration among market participants and the creation of unified information environments. These ecosystems facilitate communication, marketing activities and information exchange, which are essential components of tourism market functioning [13]. Research also emphasises the role of digital marketing and communication technologies in promoting tourism services and destinations, highlighting their importance for market interaction and customer engagement [14].

Overall, digital platforms and interconnected tourism ecosystems serve as central coordinating mechanisms that integrate services, facilitate stakeholder interaction, and support data-driven management in the contemporary tourism environment.

2.4. Impact on consumer experience and business processes

Digital transformation significantly influences tourist behaviour and expectations. The use of digital technologies contributes to the development of a new generation of tourists who expect personalised services, real-time information and enhanced travel experiences [13]. Digital tools support service personalisation, experience enhancement, and customer engagement through data-driven interactions and intelligent systems. The integration of immersive technologies and AI-based solutions expands the possibilities for experience design and interaction with tourism services [15].

Smart tourism research suggests that “smartness” should be understood as a holistic phenomenon rather than being limited to the application of digital tools. Grumadaitė and Jose (2023) conceptualise smart tourism through multiple dimensions—intelligence, innovativeness, network, and knowledge-basedness, learning, agility, sustainability, and digitality—arguing that these dimensions jointly shape consumer behaviour in tourism services. Their analysis highlights that achieving effective smart tourism outcomes requires coherence between service provision and service use, as consumer expectations, abilities, and actual behaviour may diverge, creating contradictions in the tourism service experience [16].

Digitalisation also transforms internal organisational processes. Researchers note that digital technologies enable cost reduction, operational efficiency, and process optimisation across tourism enterprises [4]. Digital innovation contributes to strategic change and the emergence of new forms of digital entrepreneurship and platform-based business models [17]. Tourism organisations increasingly rely on data-driven decision-making and integrated information systems to manage operations and forecast demand [18].

In general, digital transformation simultaneously reshapes both tourist experiences and internal organisational operations by enabling personalisation, automation, and data-driven management across tourism services.

2.5. Challenges and research gaps

Despite the rapid expansion of digital technologies in tourism, researchers emphasise that the long-term implications of digital transformation remain insufficiently

explored [18]. Studies also highlight barriers to digital transformation, including a lack of technological competencies, resistance to organisational change, limited digital maturity, and insufficient strategic planning [2]. Furthermore, the academic literature remains fragmented, and scholars emphasise the need for systematic research examining the impact of digital transformation on tourism experiences and organisational processes [20].
Overall, despite the widespread adoption of digital technologies in tourism, significant theoretical and practical gaps remain regarding their long-term organisational, experiential and strategic implications.

2.6. Research model of digital transformation in tourism

Based on the analysed literature, digital transformation in tourism can be conceptualised as a multi-level process involving technological, experiential, and organisational dimensions.

Figure 1. Conceptual Structure of Digital Transformation in Tourism

This structure reflects the interdependence among digital technologies, user experience, and organisational change described across the reviewed studies.

In summary, digital transformation in tourism can be conceptualised as a multi-level process linking technological innovation, user experience transformation, and organisational change within an integrated developmental framework.

3. RESEARCH METHODOLOGY

This study applies a qualitative research design to examine how digital transformation influences user experience and organisational business processes in the tourism sector. Qualitative research is appropriate for analysing complex social and organisational phenomena, particularly when the aim is to explore participants' perceptions, experiences, and interpretations [7]. The research focuses on practice-based insights from tourism sector specialists directly involved in digital transformation initiatives. This approach enables a deeper understanding of how technological changes are implemented and experienced within tourism organisations.

The primary data collection method used in this study is semi-structured interviews. Semi-structured interviews enable the researcher to explore predefined thematic areas while allowing greater depth in examining participants' perspectives. This method is widely used in research on digital transformation and organisational change because it allows participants to describe their experiences, practices, and challenges related to technology implementation.

The semi-structured interview was designed to examine two main analytical dimensions:

1. changes in tourism user experience
2. transformation of organisational business processes

Additional questions addressed digital technology adoption, implementation challenges and perceived organisational impacts.

The empirical research was conducted with tourism sector specialists representing travel organisations operating in Lithuania. Participants were selected using purposive sampling based on the following criteria:

- managerial or executive position;
- direct involvement in digital transformation processes;
- experience in tourism service management;

The final sample consisted of seven respondents. The selected participants represent major tourism service providers and decision-making roles within their organisations. This sampling strategy was chosen to ensure that respondents possess practical knowledge and experience relevant to the research problem.

3.1. Data collection

Data were collected through semi-structured interviews conducted with the selected participants. Interviews focused on organisational digital transformation practices, implementation processes and their perceived effects on customer experience and business operations.

The interview protocol included questions related to:

- digital technology adoption in tourism services;
- personalisation and customer interaction;
- operational process transformation;
- digital platform use;
- organisational challenges;
- strategic implications of digital transformation;

All interviews were conducted individually. The collected data were documented and prepared for qualitative analysis.

3.2. Data analysis

The collected qualitative data were analysed using thematic analysis. Thematic analysis allows systematic identification of recurring patterns, themes and relationships within qualitative data. This method is commonly used in studies examining organisational change and technological transformation because it supports the interpretation of participants' experiences and perceptions [7].

The analysis followed several stages:

1. familiarisation with interview data;
2. identification of initial themes;
3. grouping of themes into analytical categories;
4. interpretation of patterns related to research objectives;

The analysis focused on identifying how digital transformation affects:

- tourism user experience;
- organisational business processes;
- operational efficiency;
- implementation challenges;

3.3. Research validity and reliability

To ensure research credibility, the study applied several methodological principles typical of qualitative research:

- purposive selection of knowledgeable participants;
- use of a semi- structured interview framework;
- systematic thematic analysis;
- alignment between research objectives and analytical categories.

These procedures support the internal consistency and analytical transparency of the research process.

3.4. Ethical considerations

Participation in the research was voluntary. Respondents were informed of the study's purpose and the use of the collected data for academic research. Confidentiality of individual responses was ensured.

3.5. Research limitations

The study is based on qualitative data obtained from a limited number of participants within a specific national context. Therefore, the findings reflect practice-based insights rather than statistically generalizable results. This limitation is characteristic of qualitative research focused on in-depth exploration of organisational processes.

4. RESULTS AND DISCUSSION

The semi-structured interviews reveal that digital technologies significantly reshape user experience in the tourism sector. Respondents emphasised that digital platforms enhance service accessibility, personalisation, and convenience throughout the travel journey. Participants highlighted that online booking systems and digital communication channels improve efficiency during information search and travel planning. Real-time data availability strengthens interaction between customers and service providers. Service personalisation emerged as a key theme. Interviewees noted that digital tools enable tourism organisations to tailor services to customer preferences and behavioural data, thereby increasing satisfaction and perceived value. Furthermore, digital applications and automated systems simplify service processes, reduce procedural complexity and improve transparency, allowing customers to compare options and make informed decisions more efficiently.

The findings indicate that digital transformation substantially affects internal business processes within tourism organisations. Respondents reported growing integration of digital technologies into operational management and strategic planning. Process automation was identified as a major impact area. Digital tools reduce manual tasks and automate booking systems and customer management processes, enhancing operational efficiency and resource allocation. Data-driven decision-making also emerged as a central theme. Real-time data access enables organisations to monitor performance, analyse customer behaviour, and adjust service strategies accordingly. Digital platforms were described as integrative infrastructures that coordinate marketing, customer interaction and service management, supporting faster adaptation to market changes.

However, participants emphasised that performance outcomes depend on levels of technological integration and organisational readiness, including infrastructure and staff competencies.

4.1. Challenges of digital transformation

Despite the reported benefits, interview participants identified several challenges associated with digital transformation. One of the most frequently mentioned issues is the lack of technological competencies among employees. Respondents indicated that implementing advanced digital systems requires specialised knowledge and continuous staff training. Financial investment was also identified as a major constraint. Digital infrastructure development, system integration and technology maintenance require substantial resources. Another challenge highlighted by respondents is the complexity of integrating new technologies into existing organisational systems. Compatibility issues and organisational restructuring requirements may complicate implementation. Participants also noted increasing dependence on digital platforms and external technology providers. This dependency was described as a structural feature of digital transformation that influences organisational autonomy and strategic flexibility.

Overall, the empirical results indicate that digital transformation in tourism operates as an interconnected multi-level process. Changes in user experience, organisational processes and operational performance are structurally linked through digital platforms and data integration mechanisms. This supports the interpretation of digital transformation as an integrated developmental framework rather than a set of isolated technological changes.

5. CONCLUSIONS

The study examined how digital transformation affects user experience and business processes in the tourism sector using qualitative empirical data from semi-structured interviews with tourism industry specialists. The findings demonstrate that digital technologies play a central role in reshaping tourism services and organisational operations. Digitalisation contributes to enhanced personalisation, improved service accessibility, and increased convenience throughout the tourist journey. At the same time, digital transformation supports the automation of operational processes, data-driven decision-making, and improved coordination within tourism organisations. The results also show that digital transformation is associated with structural organisational changes. Tourism enterprises increasingly rely on digital platforms, integrated information systems and data analytics as core components of service delivery and strategic management. However, the study confirms that significant implementation challenges accompany digital transformation. These include technological competency gaps, financial investment requirements, system integration complexity and growing dependence on digital infrastructures. These findings indicate that digital transformation requires not only technological adoption but also organisational adaptation and capacity development.

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TRANSFORMATIONAL LEADERSHIP OF THE PERSON AND THE COMMUNITY

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ABSTRACT
This article discloses the contemporary relevance of Ignatian leadership as a transformative model grounded in the spirituality of Saint Ignatius of Loyola and the Jesuit tradition. A qualitative methodology was used to review about 20 documents and to reflect the author's personal experience. The findings show that this leadership model emerged to renew the Society of Jesus's apostolic mission, modernise its educational management, and empower both laypeople and Jesuits in leadership roles. Grounded in Ignatian spirituality—particularly in the practice of discernment aimed at promoting actions inspired by the Magis, in ever deeper and greater service to the most universal good—it seeks to serve others and promote the common good. Over time, the model has expanded beyond religious contexts, offering a counter-cultural and ethically grounded leadership style applicable in educational, managerial and civic settings. This shift of focus not only paves the way for institutional change but also guides individuals towards a more authentic and meaningful life. Five main characteristics were listed to describe the transformative nature of this model.

Keywords: *Ignatian Leadership; Ignatian spirituality; leadership model; personal transformation; transformational leadership*

1. INTRODUCTION
The Ignatian leadership style draws inspiration from the life and spirituality of St. Ignatius of Loyola, a sixteenth-century soldier, mystic and saint and especially from the most important of his writings - the Spiritual Exercises. It seeks the wisdom of this charism and brings the rich organisational tradition of the Society of Jesus to individuals, companies and modern-day organisations. Ignatian leadership integrates practical tools and strategies from organisational management with the spiritual foundations and practices of the Jesuit tradition. These elements have allowed it to become a unified and transformative model. Writings of St. Ignatius and his method of founding and governing the Society of Jesus reveal an intuitive grasp principles of *talent management, transformational leadership*, or *empowerment which are common to contemporary leadership* [1]; Following a deep process of personal transformation, Ignatius identified core principles of leadership and organisational culture that would shape the development of the Jesuit Order and underpin the global expansion of its educational mission, which today includes over 2700 institutions and more than 2 billion people worldwide [2].

2. METHODOLOGY
The first step in this methodology was to explore information sources and retrieve documents using the EBSCO, WoS, and Scopus databases. For database queries, English keywords were used: Ignatian leadership, Ignatian leader, transformational leadership, and servant leadership, reflecting the linguistic scope of our literature search, which is primarily limited to sources in English and Lithuanian. Another important source of the research was to retrieve and reinterpret the material from personal studies at Fordham University (New York, USA) in 1992-1993 in the so-

called CORD programme of Ignatian Leadership for the Jesuit prospective directors of educational institutions of the Society of Jesus, directed by J. O'Connell and R. Metz and later materials of ongoing formation for the heads of Jesuit Secondary schools. The third important resource was an overview of training programmes on governance of the Society of Jesus for Jesuit provincials, which the author attended in Rome in 2010.

3. RESULTS AND DISCUSSION

Leadership is a broad topic. There is much discourse regarding the definition of a leader and the impact of leadership on society. Some leaders are internationally recognised figures, while others quietly live out this role in schools, small businesses, and families. Leaders may be icons or ordinary people. The focus of this article is leadership from an Ignatian perspective. More specifically, what wisdom can the Spiritual Exercises offer regarding the spirit and skills of a good leader for the sake of the whole society?

The Cambridge Dictionary defines a leader as "The person who leads or commands a group, organisation, or country" [3].

More specifically, leadership can be defined as "a process whereby an individual influences a group of individuals to achieve a common goal" [4]. The leader helps people move forward toward their desired goals. Leadership is multifaceted. There are approximately 1400 different definitions of "leader" or "leadership" [5]. Today, the word 'leadership' is often characterised by other words, such as collective, transformational, relational, or servant. For example, the idea of servant leadership, first coined by Robert Greenleaf, holds that a leader must act as a servant first and leader second. Such a person seeks primarily to help followers become healthier, wiser, freer, more autonomous, able to reach their full potential, and more likely to become servant leaders themselves. Balancing conceptual thinking with day-to-day operations, servant leaders nurture in others the ability to dream great dreams [6].

The Spiritual Exercises were composed by the saint Ignatius before he was even a priest, and are often described as Ignatius' greatest gift to the world. These exercises unfold a dynamic process of prayer, meditation, and self-awareness. The main purpose is to make us more attentive to God's activity in our world, more responsive to what God is calling us to do.

How did Ignatius himself view the Exercises? In a letter he wrote to Fr. Manuel Miona in 1536. Ignatius writes, "The Spiritual Exercises are all the best that I have been able to think out, experience and understand in this life, both for helping somebody to make the most of themselves, as also for being able to bring advantage, help and profit to many others."[7]

This spirituality presupposes that God is present in Scripture and the Church. It asserts that God can also be found in the everyday world around us and that God is active there. As the prominent Jesuit palaeontologist and mystic Pierre Teilhard de Chardin wrote: "God is not remote from us. He is at the point of my pen, my pick, my paintbrush, my needle — and my heart and my thoughts".

The spiritual path laid out by Ignatius is a way of discerning God's presence in our everyday lives, and doing something about it.

Joseph O'Connell, SJ, in his manual "*Ignatian Leadership in Jesuit Schools: Resources for Reflection and Evaluation*", describes Ignatian leadership: "Ignatian Leadership is linked to the *Spiritual Exercises* and to the ability to shape leaders who,

following Jesus' example, will live a life of service to others and choose to do the greatest good possible" [8].

It is important to distinguish between the terms Ignatian and Jesuit, which are sometimes used as synonyms even though they do not refer to the same reality or meaning.

- While Jesuit leadership specifically refers to the leadership style practised by members of the Society of Jesus,
- Ignatian Leadership includes all people and organisations who wish to live, lead and take inspiration from this charism [9].

According to Jesuit scholar Johnny C. Go from Ateneo de Manila University, Quezon City, Philippines, Ignatian Leadership is, in fact, a radical form of servant leadership, since the Ignatian Leader is at the service not only of the Community, but also–and for Ignatius of Loyola, even more fundamentally–of the Mission entrusted to that Community. Leadership as a three-way relationship among the Leader, the Community, and the Mission, in the process, illustrating what *magis* and *cura personalis* might mean in one's exercise of leadership, but also, spelling out, in light of these relationships, the key functions of the Ignatian Leader [10].

3.1. Ignatius as leader [11]

The qualities he demonstrated include:

Vision: Ignatius' vision is nothing less than the Kingdom of Christ, as shown in his presentation of the Call of the King (Exx 91-98). He had an unfettered consciousness: no part of the world, no situation, was unimportant to him.

Attractiveness / Inspiration: Wherever Ignatius went, he had the capacity to attract women and men, young and old, of all classes: they came in crowds to listen to him teach and preach, they made the Exercises with him. He gathered three sets of companions in his pilgrim period, though only the last set, the Paris group, persevered. He won people over to his aims not by focusing on himself but on Jesus, by whom he himself had been captivated. People found in him someone interested in them, who respected them, and who had a huge capacity to listen deeply to what they said. They knew he loved them, so they felt safe and at home with him, and he evoked the best in them.

Imagination: An unpublished study on Leadership traces the qualities exhibited by Napoleon, Nelson, Trotsky, and Ignatius that enabled them to exert power over people. It is argued there that Ignatius had the capacity to identify persons of rich imagination. He would cultivate this quality in them until they were ready to make the Exercises, and then engage in imaginative contemplation of the Jesus of the Gospels to the point where they were won over to the Lord and his cause. This transformation occurred not only in the exercitant's mind and will, but in desire, emotion, physicality and affectivity. Then he would send them out across the world, confident that they would be true disciples and manage well whatever came their way. He pointed his followers, not to himself, but to Christ. He was even reluctant to be named general, and after ten years tendered his resignation (Alone and on Foot, Ch. 62).

Determination: This word had strong resonances for Ignatius. When he uses the Spanish verb *determinar,* he is resolved and will not be deterred from what he believes God wants him to do. This gave him his 'courage in difficult enterprises', which included the capacity to start all sorts of projects. He seems never to have given way to panic nor erred on the side of prudence when a legitimate risk was called for.

Openness: Ignatius is a supreme example of someone who learned from experience. From his conversion onward, he attended to his inner as well as his outer experiences,

which gave him this quality of openness. He let himself be taught by both failures and successes, his own and those of his followers, when they reported back to him on the execution of their tasks. He was aware, more than most leaders, perhaps, of his capacity to spoil the work of God by getting in the way.

Prayer/ Conviction: Believing that the founding of the Society was God's work rather than his own, Ignatius kept constantly in touch with God, asking to be shown what God wanted done in asking his followers to "keep God always before their eyes" Ignatius led by example, as his Spiritual Diary makes clear. He prayed his way to his decisions, and he proposes that the general of the Society should divide his daily time partly with God, partly with his advisors, and partly with himself. He was "led by Another", and his trust in that Other was absolute, even when the very existence of the Society was threatened.

- Development/Formation: Ignatius believed in a strong formation of his followers; they had to go through the experiences which he himself had found helpful – the Exercises, pilgrimages, work in hospitals and menial tasks, and later, studies. He respected each person's unique blend of strengths and limitations and worked to bring out the best in them. He required that the leader or superior should know what was going on in the hearts of those in his charge. In the Spiritual Exercises, the person who directs the retreat (the "spiritual director") should try to facilitate rather than direct, lest he/she gets in the way of the direct interaction between the retreatant and God. If we apply this approach to leadership, the leader serves as a facilitator, supporting team members as a companion and mentor. He/she is not expected to micromanage by giving very detailed instructions. Instead, the leader provides the space for the team to work out in detail how the job should be done. Even if the team's approach or solution is not the leader's preferred one, he/she may still refrain from outright intervention. This is perhaps why Jesuits are often seen as rather "liberal" in how they teach and lead.
- Positive: Rather than complain about the abuses in society and in the Church of his day, Ignatius "lit small candles everywhere". He went in the opposite direction to Luther: instead of public protest over the Church's woes, he supported it as best he could. Believing that the heart-to-heart approach was the best way to help people change their situations, his favourite task was to give the Exercises to selected people on a one-to-one basis. Ignatius was optimistic rather than pessimistic about people: he placed extraordinary trust in his men, empowered them, and they responded.

In summary, when we look at the qualities Ignatius demonstrated through his personal example, his writings, and his advisory commentary, we find most of the leadership attributes discussed in today's literature. These include vision, positivity, the ability to inspire, openness and humility, determination, a deep personal conviction, a belief in the development of self and of his followers. A prerequisite for your success as a leader is having the necessary qualifications and professional expertise to excel in the chosen area. Ignatius encouraged all his followers to achieve 'the more'('magis' in Latin). The drive to achieve 'excellence' is consistent with effective leadership.

3.2. Leadership and Ignatian Spirituality [12]

The characteristics associated with Ignatian Spirituality:

- the belief that we are each gifted with a unique value in the overall plan of creation;

- the belief that we can all play a part in the unfolding of life around us and in our work and culture;
- a positive appreciation of the good in our world and a realistic belief in the future;
- the value of reflection on experience and listening to experience to adapt to our future reality;
- the conviction that we do not work alone, but can be of real service to others and make a difference through our personal intervention, with Christ as our role model, showing our faith through deeds more than words;
- the focusing of energy on what is of "greatest value";
- the practice of 'stopping to think' before we act. This includes opening our minds to the possibility that the answer may not be obvious, inviting others to contribute their experience and wisdom, and believing that new possibilities will emerge if we have faith in the process of opening our lives to openness.

All of these characteristics are helpful and material to good leadership. Stephen Covey, when studying the habits of effective people/leaders, found that a common (and encouraging!!) trait they all shared was their preparedness to 'work' on developing their skills. None of the above happens overnight! Ignatius, as you have read in the account in 'Alone and on Foot', toiled for many years to adjust his personal approach to facilitate his growth. Slowly, with constant effort, he made progress!

Another point to remember is that we do the best we can in the circumstances and with the resources available to us – what is important is that we aim for the best but do not expect perfection. No one person embodies perfection; all have strengths and weaknesses. A good leader is aware of their strengths and has enough insight to leverage the support of others to compensate for their shortcomings.

The following 5 aspects of Ignatian leadership as a transformational model could be mentioned:

1. Ignatian Leadership as a Transformational Practice

Ignatian leadership is best understood not as a set of managerial methods, but as a transformative practice that changes both the leader and the community to which they are connected, striving generously for the Magis and the common good.

2. Inner Transformation as a Condition for Mature Leadership

In the Ignatian tradition, the transformation of structures begins with an inner transformation of the person — through spiritual discernment, reflection, humility and the inner freedom that arises from Ignatian spirituality.

3. Ignatian Leadership as an Instrument of Healing and Liberation

Ignatian leadership functions as a mechanism of human liberation. It promotes change wherever individuals or communities experience exclusion, injustice, or inner fragmentation.

4. *Cura Personalis* — The Healing Character of Leadership

At the heart of Ignatian leadership lies the commitment to *cura personalis*— leadership that recognises the dignity, vulnerability, and growth potential of each person. Such leadership cares not only about achievements but also about people themselves — their spiritual, emotional, and human well-being and authenticity.

5. Leadership as a Response to the Expectations of a "Wounded World"

Ignatian leaders are not formed merely to maintain existing structures, but to respond creatively and compassionately to the realities of a wounded world, transforming leadership into an instrument of reconciliation and healing.

Ignatian leadership is a form of servant leadership, in fact, a radical form of servant leadership, insofar as Ignatian Leaders ought to prioritise serving the Community they lead over their own interests. However, what distinguishes Ignatian Leadership from servant leadership is its explicit, non-negotiable prioritisation of the service of the Mission entrusted to that Community. Ignatian Leadership is a transformative model that combines organisational management principles with the spirituality of Saint Ignatius of Loyola and the Jesuit tradition.

This leadership model emerged to renew the apostolic mission of the Society of Jesus, modernising its educational management and empowering laypeople and Jesuits in leadership roles. It is grounded in Ignatian spirituality, particularly the practice of discernment, and is aimed at promoting actions inspired by the Magis in ever-deeper, greater service to the most universal good. It seeks to serve others and promote the common good. Over time, the model has expanded beyond religious contexts, offering a counter-cultural and ethically grounded leadership style applicable in educational, managerial and civic settings. This shift of focus not only paves the way for institutional change and transformation but also guides individuals towards a more authentic and meaningful life.

The increased accessibility and popularisation of Ignatian Leadership among people of different faiths and religious and non-religious companies and organisations was brought about in 2003 with the publication of *Heroic Leadership: Best Practices from a 450-Year-Old Company That Changed the World* by Chris Lowney, who was a Jesuit novice for several years before becoming a managing director at JP Morgan. In this book, Lowney applies Ignatian spirituality and the best practices of the Society of Jesus to modern personal and organisational leadership, identifying four key pillars: self-awareness, ingenuity, love and heroism. In his book, he stresses that every person is a leader, at least of their own life, and that this contributes to the developing discipline of workplace spirituality, based on the argument that spiritual principles and values can be integrated into the workplace. He also extended the possibility, discussed internally in the Society of Jesus, that Ignatian Leadership could be applied to people and businesses of all kinds, regardless of whether they are religious or not [13].

Ignatian leadership is not simply a subset of positional power, and the hierarchy is structured as a two-way, not a one-way street (each Jesuit provincial steps back ‘down’ after six years in office). It taps straight into vocation – every Jesuit leads, well or badly. Moreover, the domain of Ignatian leadership extends beyond directors of Jesuit workplaces. Everyone shaped by an Ignatian education is formed to lead, whether they are in charge or not. If Ignatian, a person is called to be aware of how they lead in their life and the impact it has on others.

Leadership infused by Ignatian spirituality orients us to our deepest vocation. In the first principle and foundation of the Spiritual Exercises, St. Ignatius explains: “I ought to desire and elect only that which is more conducive to the end for which I am created.” We are created to serve God—that is our first vocation. However, how do we do so? How we choose to lead reflects how we understand our vocation. Do we lead for our own ends or for the greater glory of God? Whose interests are we serving? The concept of vocation is an important check against the tendency to think of leadership as a vehicle for personal advancement. Recalling that Ignatian leadership is an expression of a deeper vocation encourages humility, charity, and integrity, which also happen to be qualities of strong leaders.

Ignatian-inspired leadership is other-focused.

Fr. Pedro Arrupe, SJ, instructed us that our work must form people for and with others. Being a leader "for and with" others means considering the needs of those we are serving. It is a model of leadership that enriches individuals' lives, builds better communities, and creates a more just world. It requires a practice of discernment that allows us to act thoughtfully amid trying circumstances or competing goods. Moreover, it asks that we foster awareness of our emotional state, freeing us from impulse and enabling genuine, affirmative communication with others. Being a leader in this tradition means, as Fr. Peter-Hans Kolvenbach, SJ, tells us, we must be men and women marked by "competence, conscience, and compassion."

Once again, Ignatian spirituality fosters characteristics valued among great leaders.

In the Spiritual Exercises, St. Ignatius tells us that actions are to be preferred to words. Ignatian leadership is an invitation to act in ways that reflect our most deeply held beliefs, affirm our vocation, and serve others, particularly those in need.

Pope Francis urged all Christians to work with God to repair what is broken in our hearts, communities, and environment. In his final encyclical letter, *Dilexit Nos* (24 October 2024), he developed this reparative theme and offered a way to repair past sins and restore what has been lost. He wrote, "Amid the devastation wrought by evil, the heart of Christ desires that we cooperate with him in restoring goodness and beauty to our world." [14]

To lead well, an Ignatian leader must be humble. According to Sarah Broscombe [15], Ignatian humility is not about anxiously balancing your flaws and strengths, or comparing yourself to others, or self-abnegation (keeping your head down and your mouth shut). It is seeing one's real self, truly and in proportion, in a world that is different because of Jesus's work; "If the gospel is true, then Christ has revealed potentials in the human condition for bringing good out of evil… Moreover, only out of this sin and degradation can the full greatness of the redeemer be displayed. Humility dares to look because it knows it is loved. It also dares to be humbled without believing the core of the self to be diminished by humiliation. False humility attacks a person's sense of dignity and worth. True humility frees us from the pressure of trying to earn worth. When Ignatius describes the third degree of humility in the Spiritual Exercises, he speaks of choosing poverty with Christ, and of insults rather than honours. We choose differently, not because we are addicted to self-sacrifice or self-abasement, nor because we are allergic to power, but because we love Jesus too much and want the journey with him too much to prefer ease, strength, and success.

A leader operating with this humility, this sense of themselves as an utterly loved sinner, will have different relationships. They will see themselves in proportion to their team, their organisation, and the purpose it serves. Ignatian leaders will view power differently; they will handle it carefully but not avoid it.

Humility supports authenticity by removing the pressure to be larger than life. It can help us carry the responsibility of leadership more lightly than leaders of the heroic, charismatic and maverick stamp. Others' brilliance does not threaten Ignatian leaders, because they do not derive their legitimacy from being the best at everything. They can surround themselves with teams of people who exceed their own skill. When this happens, humility is mutually reinforcing among those they lead.

As the first Jesuit pope, Francis was steeped in Ignatian spirituality, particularly Saint Ignatius' teachings on desires. Pope Francis saw in Loyola a unique insight into repair and restoration. Often, our sins are rooted in disordered attachments and desires. If we but "rearrange" our life's goals and desires, we might open the door to true healing. Saint Ignatius of Loyola's classic work, *The Spiritual Exercises,* assumes a firm and heartfelt desire to 'rearrange' one's life, a desire that in turn provides the strength and

the wherewithal to achieve that goal." For Pope Francis, Ignatian spirituality helps us change our hearts and lives so that we might change the world. [16].

In the Spiritual Exercises, Ignatius gives us ways to recognise the grace of consolation. In our life with God, in the joy of the Fourth Week of the Exercises, we earnestly seek and pray for this gift. Ignatian leaders imagine, even expect, that joy might somehow be present, to the point of becoming a decisive influence. They seek the kingdom of heaven in this world because the resurrection means that sin does not win. Pope Francis chose this emphasis in his address to the 36th General Congregation of the Society of Jesus (GC36) in 2016: *In the Exercises, Ignatius asks his companions to contemplate 'the task of consolation' as something specific to the Resurrected Christ... Let us never be robbed of that joy, neither through discouragement when faced with the great measure of evil in the world and misunderstandings among those who intend to do good, nor by letting it be replaced with vain joys… Joy is not a decorative 'add-on' but a clear indicator of grace: it indicates that love is active, operative, present.*

Ignatian leaders must hold hope, strategise with hope, and attend to 'the task of consolation' [17].

Today, we can see Ignatian Leadership embodied by institutions and individuals who live it with radical creativity and courage. The network of Jesuit schools and universities (about 2700 institutions) forms more than 2 million students to become men and women for others, serving the common good and fighting the injustices; the Jesuit Refugee Service, present in more than 50 countries, accompanies and advocates for forcibly displaced people through education and psychosocial support [18] In Los Angeles, Homeboy Industries—founded by Jesuit Greg Boyle—transforms the lives of former gang members through meaningful work, a strong sense of community, and deep compassion [19] At the highest levels of the Church, Pope Francis has projected Ignatian Leadership globally by advancing the reform of the Roman Curia in a more synodal, austere, and missionary direction, and by addressing cases of abuse with decisive action and a willingness to see them through to their ultimate consequences [20].

Throughout history, we find the same spirit in figures like Saint Francis Xavier, who crossed continents and cultures to bring the Gospel to Asia. He preached in ports, hospitals, and remote villages, baptised thousands, and used theatre, music, and illustrated catechisms to evangelise those who could not read [21] Matteo Ricci, in 16th-century China, immersed himself in local culture, adopted Confucian dress, and gained access to the imperial court, building bridges between East and West [22] Saint Alonso Rodríguez, despite holding no public office or external success, became a spiritual reference through his humble, welcoming presence as the porter of a Jesuit college. The Reductions of Paraguay represented an alternative model of society, managed by and for Indigenous communities, in which education, liturgy, economy, and culture were fully integrated into a shared life project [23].

These transformative Ignatian Leadership initiatives have generated significant interest, both as a means for reforming organisations and companies and as a path for personal and spiritual renewal.

With its strong Ignatian identity, broad adaptability, and proven effectiveness in complex environments, Ignatian Leadership emerges as a distinctive model for cultivating new, counter-cultural, and deeply committed forms of leadership in the 21st century—rooted in the spirituality of Saint Ignatius of Loyola and the Jesuit organisational tradition.

In contrast to other consolidated models of leadership, it offers a unique integration of inner transformation, deep discernment that orders desires and decisions, and action in service of a greater mission.

- Unlike other contemporary leadership models, such as transformational or servant leadership [24,25], Ignatian Leadership introduces a distinctive integration of deep self-knowledge, spiritual depth, and pedagogical coherence, grounded in a centuries-old tradition of personal and institutional formation. While it shares a focus on personal development and profound change with transformational leadership, it differs by not relying on individual charisma or purely organisational goals, but rather by fostering inner transformation through discernment and a clear orientation toward the greater good [26].
- Similarly, although it aligns with servant leadership in its commitment to service, the Ignatian approach places special emphasis on self-awareness, the purification of motivations, and a discerning engagement with a transcendent mission.
- Compared to ethical or authentic leadership, which seeks consistency between values and actions, Ignatian Leadership goes beyond normative alignment by incorporating Magis as a guiding principle and employing a concrete decision-making methodology rooted in the *Spiritual Exercises* [27].

4. CONCLUSION

Over the years, the Society of Jesus has successfully integrated its rich spiritual heritage with contemporary management principles. The convergence of Ignatian spirituality and organisational management has revolved around three main objectives:

- to form laypeople in leadership roles with a clear Ignatian identity;
- to professionalise educational governance; and
- to promote a model of leadership rooted in service, love of neighbour, and commitment to the common good.

The transformative convictions that shaped Saint Ignatius's leadership continue to resonate in today's increasingly complex and interconnected world. Our present context is also marked by growing individualism, which often fragments the self and distances it from its social and Christian vocation. However, this renewal requires:

- a reawakening of our shared humanity—one possible path being the practice of the Spiritual Exercises—and
- a style of leadership inspired by Ignatian principles, moving us toward a freer, more committed, and hope-filled way of life.

Today, Ignatian Leadership is not confined to religious settings; it serves as a tool for forming people who can lead with depth and purpose in any context.

- In schools and universities, it helps educators and students reconnect with their mission and values when making decisions, providing greater direction to everything they do, always seeking to orient their actions from the Magis toward the transformation of the world.
- In companies, it offers a way to lead that prioritises people over results through thoughtful, ethically grounded, and attentive decisions that address real human needs.
- In social or civic spaces, it enables leaders to stay rooted, act with clarity amid complexity, and choose not from ego or urgency, but from what truly matters. Its strength lies here: forming leaders who are not only effective, but free—free to choose well, and to choose the greater good.

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THE ROLE OF A SOCIAL WORK MANAGER IN THE LITHUANIAN ARMED FORCES

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ABSTRACT

The Lithuanian Armed Forces operate in a complex and demanding security environment, where military personnel are exposed to prolonged stress, organisational pressure, family separation, and potential crises. Contemporary military effectiveness increasingly depends not only on tactical and technical capabilities but also on psychosocial stability, organisational cohesion, and long-term personnel sustainability. In this context, social work management plays an essential role in maintaining soldiers' psychosocial well-being and supporting operational readiness.

This article analyses the role, functions, challenges, and strategic significance of social work managers in the Lithuanian Armed Forces, drawing on a review of contemporary scientific literature. Research Objectives:

1. To analyse the role and main functions of social work managers in the armed forces.
2. To examine the contribution of social work management to soldiers' psychosocial well-being and organisational functioning within military institutions.
3. To identify the main challenges, ethical dilemmas, and development directions for strengthening social work management in the Lithuanian Armed Forces.

A narrative literature analysis was conducted using peer-reviewed international publications published between 2011 and 2025. The analysis focuses on military social work, psychosocial support systems, leadership processes, ethical dilemmas, organisational resilience, and adaptation to military culture.

The results demonstrate that social work managers perform multifunctional roles, including psychosocial counselling, crisis intervention, preventive support, mediation between soldiers and command structures and civilian institutions, and coordination of multidisciplinary support services. Effective social work management contributes to improved psychosocial adaptation, reduced stress-related difficulties, enhanced morale, strengthened organisational trust, and increased institutional resilience. At the same time, the findings reveal persistent challenges such as limited institutional resources, role ambiguity, ethical tensions, professional isolation, and stigma related to psychosocial support within military culture.

Keywords: *military social work; social work management; Lithuanian Armed Forces; psychosocial support; soldier well-being.*

1. INTRODUCTION

In recent decades, the understanding of military effectiveness has expanded beyond traditional concepts of physical readiness and tactical capability to encompass psychosocial and organisational dimensions. Modern armed forces increasingly recognise that human factors - including psychological resilience, social stability, and emotional well-being - play a decisive role in sustaining long-term operational readiness. This shift is particularly significant in professional armed forces, where service members are expected to maintain consistently high performance levels over extended periods.

The Lithuanian Armed Forces operate within a complex geopolitical and security environment shaped by regional instability, NATO commitments, and heightened readiness requirements. These conditions impose sustained psychological and social demands on military personnel. Soldiers are required not only to master technical and

tactical skills but also to cope with chronic stress, uncertainty, role strain, and prolonged separation from family members. Scientific research indicates that prolonged exposure to such stressors, if insufficiently addressed, may result in decreased performance, burnout, family dysfunction, and increased attrition rates [1].

Military social work has emerged as a structured, professional response to these challenges, providing institutionalised psychosocial support within military organisations. Social work managers occupy a particularly important position, operating at the intersection of individual support and organisational systems. Their responsibilities extend beyond direct counselling to include coordination, mediation, preventive programming, strategic consultation, and participation in policy-related processes. In smaller NATO member states such as Lithuania, where institutional resources may be comparatively limited, the effectiveness of social work management becomes especially significant.

Despite the growing body of international literature on military social work, empirical and conceptual analyses specifically addressing social work management within the Lithuanian Armed Forces remain limited. This article seeks to address this gap by offering a comprehensive literature-based analysis of the role, functions, challenges, and strategic importance of social work managers in the Lithuanian military context.

In addition to operational demands, contemporary military organisations face increasing societal expectations regarding transparency, ethical governance, and personnel welfare. Armed forces are no longer evaluated solely on battlefield performance but also on their capacity to safeguard the dignity, mental health, and long-term well-being of their personnel. Research demonstrates that perceived organisational support significantly influences soldiers' trust in leadership, institutional commitment, and long-term service retention [2]. Therefore, social work management should be understood not only as an internal support mechanism but also as a contributor to institutional legitimacy in democratic societies.

Moreover, NATO-aligned armed forces, including Lithuania, increasingly operate within multinational frameworks. Participation in international missions exposes soldiers to intercultural environments, coalition command systems, and diverse operational stressors. These dynamics require adaptive psychosocial competencies and structured support mechanisms that can respond to complex stress patterns. Through coordination, advisory functions, and systemic intervention, social work managers contribute to strengthening institutional preparedness for such multidimensional operational demands.

2. MATERIALS AND METHODS

This article is based on a narrative review of the scientific literature on military social work, social work management, psychosocial support in the armed forces, and organisational well-being. The literature search was conducted using international academic databases, including Scopus and Web of Science.

The inclusion criteria were as follows:

- peer-reviewed scientific articles and academic book chapters;
- publications in English;
- studies published between 2011 and 2025;
- research focusing on military social work, leadership, psychosocial support, or soldier well-being.

The following keywords were used in various combinations: "military social work", "social work manager", "armed forces psychosocial support", "soldier well-being", and "military organisations".

Selected sources were analysed thematically, with particular attention to the roles, functions, challenges, and institutional impact of social work managers in military contexts. As the study relies exclusively on secondary data, ethical approval was not required. Generative artificial intelligence tools were used solely for language editing and structural refinement; all analytical decisions and interpretative processes were carried out independently by the author.

The narrative review methodology was selected due to the exploratory and interdisciplinary nature of the research topic. Military social work management remains a relatively under-theorised field, and existing studies vary considerably in their methodological designs, disciplinary orientations, and national contexts. A narrative approach, therefore, allows for the integration of diverse theoretical and empirical perspectives.

The literature search was conducted in several stages. Initially, database searches were performed using predefined keywords and combinations. Subsequently, titles and abstracts were screened to assess relevance to military social work, psychosocial support, leadership, and organisational well-being. Finally, full-text articles were reviewed to ensure conceptual alignment and scientific rigour.

Thematic analysis enabled the organisation of findings into core analytical categories: functional roles of social work managers; psychosocial well-being; leadership and organisational relevance; ethical and structural challenges; adaptation to military culture; and strategic development directions. This analytical framework facilitated the identification of recurring conceptual patterns and interrelationships across studies.

The reliance on secondary data constitutes a methodological limitation, as the study lacks original empirical evidence from the Lithuanian Armed Forces. Nevertheless, the review provides a necessary theoretical foundation for future empirical investigations and contributes to the conceptual consolidation of military social work management as a distinct professional domain.

3. RESULTS AND DISCUSSION

3.1. The role and functions of a social work manager in the military

Military social work is defined as a specialised professional practice aimed at addressing the psychosocial, organisational, and family-related needs of service members within hierarchical, disciplined institutions [3,1]. Within this framework, the role of a social work manager integrates direct psychosocial assistance with organisational coordination and strategic advisory responsibilities.

At the individual level, social work managers conduct psychosocial assessments, provide counselling, implement crisis intervention, and facilitate referrals to internal or external support services. Military personnel are exposed to prolonged stress, intensive training cycles, deployment-related uncertainty, and family separation, all of which may negatively affect psychological functioning. Early identification of psychosocial risk factors enables preventive intervention and supports adaptive functioning.

Preventive work represents an equally important dimension of professional practice. Social work managers organise psychoeducational activities, stress-management programs, and adaptation support initiatives to strengthen long-term resilience. In professional armed forces, where sustained service requires continuous psychological stability, preventive measures are essential.

At the organisational level, social work managers serve as mediators between soldiers, command structures, and civilian institutions. As emphasised by [4], such

mediation enhances access to social and health services while reducing institutional barriers. Consequently, social work management becomes an integral component of broader military personnel support systems rather than a purely auxiliary service.

The role further includes continuous assessment of psychosocial needs across different stages of military service: initial adaptation, intensive training, deployment, post-deployment reintegration, and long-term career development. Each stage presents specific psychosocial challenges that require targeted and context-sensitive interventions.

In addition, social work managers contribute to institutional learning processes. Through documenting recurring issues, preparing reports, and participating in interdisciplinary consultations, they provide leadership with feedback on systemic risk factors. This function connects individual-level experiences with organisational decision-making processes and policy development.

Recent empirical evidence reinforces the multidimensional nature of this role. Grover et al. identify perceived social support as a central determinant of long-term psychological adjustment [2]. Although their findings are primarily focused on individual outcomes, they underscore the structural importance of professionals who strengthen institutional support networks. Similarly, methodological flexibility in military social work is emphasised [5].

Within the Lithuanian Armed Forces, social support mechanisms are institutionally established and operationalised. Social work managers coordinate assistance for soldiers affected by service-related trauma, injury, or health complications. Their responsibilities include psychosocial consultations, support in preparing documentation for compensation and insurance procedures, mediation with medical and rehabilitation institutions, and representation in relevant commissions. Support often extends throughout rehabilitation and post-service reintegration processes, ensuring continuity of care.

In cases of illness, social work managers provide guidance regarding healthcare access, social guarantees, temporary incapacity procedures, and financial entitlements. By assisting soldiers in navigating administrative systems, they reduce bureaucratic burden and secondary stress during vulnerable periods.

Structured assistance is also provided throughout deployment cycles. Prior to international operations, social work managers offer consultations concerning social guarantees, family preparedness, and potential psychosocial risks. During deployment, they may serve as contact persons for families experiencing difficulties. Post-deployment support includes reintegration counselling and mediation in cases of relational or emotional strain. Such continuity strengthens both individual resilience and institutional stability.

Family-related assistance constitutes another essential area of practice. Services include mediation in cases of family conflict, counselling regarding children's educational challenges, support during bereavement, and assistance with administrative procedures following the loss of a family member. Recognising the direct relationship between family stability and operational readiness, social work managers incorporate family systems into broader support strategies.

Targeted interventions are also available for soldiers experiencing material hardship, addiction-related problems, or other complex social circumstances. Through comprehensive needs assessment, coordinated referrals, and follow-up monitoring, social work managers adopt a preventive, systemic approach to reduce long-term psychosocial risks.

Additional guarantees are ensured for conscripts and soldiers with officially recognised service-related disabilities. Social work managers facilitate access to rehabilitation programs, compensation mechanisms, and social integration measures, thereby safeguarding legal entitlements and human dignity.

Collectively, these institutional practices demonstrate that social work managers within the Lithuanian Armed Forces operate simultaneously as case coordinators, mediators, advocates, and strategic advisors. Their role integrates individual counselling with institutional navigation and systemic coordination, thereby contributing to psychosocial well-being and organisational resilience [10].

3.2. Contribution to soldiers' psychosocial well-being

Psychosocial well-being encompasses emotional stability, perceived social support, and the capacity to cope effectively with stressors. In military settings, it is closely linked to operational readiness, ethical conduct, and long-term retention. Research indicates that soldiers who receive timely psychosocial support demonstrate improved adaptation and lower levels of stress-related symptoms [3].

Accessibility and confidentiality are central to effective support. In military culture, stigma associated with mental health difficulties may discourage help-seeking behaviour. When social work services are perceived as trustworthy, independent, and non-punitive, soldiers are more likely to seek assistance at an early stage [1].

Family-related factors significantly influence psychosocial stability. Military service often entails frequent relocations, prolonged absences, and uncertainty. Indirectly supporting military families strengthens service members' emotional stability and job satisfaction [4].

Social work managers play a particularly important role during crises, including exposure to traumatic events or personal loss. Timely psychosocial intervention reduces the likelihood of long-term psychological consequences and facilitates recovery, thereby supporting both individual well-being and unit cohesion [6].

Psychosocial well-being should be conceptualised as a dynamic process rather than a static condition. It fluctuates in response to operational tempo, leadership practices, and personal circumstances. Social work managers contribute to stability through ongoing monitoring, follow-up interventions, and relational continuity.

Contemporary empirical findings further highlight that social support significantly mediates the relationship between psychological capital and subjective well-being [7]. Similarly, higher perceived support is associated with reduced depressive symptoms, lower post-traumatic stress indicators, and improved functional outcomes [2].

Structured psychosocial support programs encompassing both service members and their families improve reintegration outcomes and reduce long-term stress effects [8]. These findings collectively reinforce the importance of comprehensive, relationally oriented psychosocial management within military institutions.

3.3. Organisational significance and leadership aspects

Beyond individual assistance, social work managers play a substantial organisational role by contributing to leadership processes and the organisational climate. Military effectiveness depends not only on discipline and operational structure but also on trust, morale, and cohesion.

Social work managers advise commanders on psychosocial risks, including chronic stress, family-related difficulties, and declining morale. Integrating social work perspectives into leadership decision-making enhances institutional adaptability and resilience [5].

Leadership endorsement significantly influences the effectiveness of psychosocial programs. Awareness and leadership support directly affect participation rates. Even well-developed programs remain underutilised in the absence of cultural normalisation of help-seeking [9].

Perceived organisational support increases trust and morale [2]. Through advisory and consultative roles, social work managers contribute to shaping this perception at both structural and cultural levels.

Their advisory function becomes particularly critical during organisational change, including restructuring, heightened readiness states, or extended deployments. By assessing potential psychosocial implications of strategic decisions, social work managers help leadership balance operational demands with human capacity.

In this sense, social work management contributes to the "human sustainability" of military institutions, ensuring that operational effectiveness is aligned with ethical responsibility and long-term personnel stability.

3.4. Challenges in social work management within the armed forces

Despite their institutional importance, social work managers encounter multiple structural, cultural, and professional challenges within military environments. Limited financial and human resources, high caseloads, and insufficient staffing levels frequently constrain the scope of psychosocial support and reduce opportunities for preventive programming [6]. When operational demands intensify without proportional expansion of support structures, systemic vulnerability may emerge.

Role ambiguity represents an additional challenge. Social work managers must reconcile professional ethical standards with organisational accountability within hierarchical command systems. Unclear expectations regarding authority, confidentiality, and reporting obligations may weaken professional autonomy and undermine trust among service members. Clear institutional role definitions are therefore essential for effective practice [3].

Stigma associated with mental health and psychosocial support remains a persistent barrier. Soldiers may perceive engagement with social work services as potentially detrimental to career progression or as an indication of weakness. Even in well-developed military systems, awareness of available services does not automatically translate into utilisation if cultural barriers remain unaddressed [9]. Consequently, social work managers operate not only as service providers but also as agents of cultural change within military institutions.

Professional isolation further complicates practice. In certain units, social work managers may represent the only professionals from their discipline, limiting opportunities for peer consultation and supervision. Such isolation can increase professional strain and heighten ethical risk. Continuous training, structured supervision, and institutional recognition are therefore necessary to sustain professional competence and prevent burnout.

Escalating geopolitical tensions and prolonged readiness conditions intensify these challenges. Environments characterised by heightened military conflict increase psychosocial strain while simultaneously amplifying organisational pressure [6]. Under such conditions, the demand for support services rises significantly, requiring adaptive capacity and institutional resilience within social work management structures.

3.5. Social work management and adaptation to military culture

Adaptation to military culture is a complex psychosocial process, particularly during the initial stages of service and during periods of organisational transformation. Military culture is characterised by hierarchy, discipline, collective identity, and strong mission orientation. While these elements are essential for operational effectiveness, they may generate psychological tension when individual needs conflict with institutional expectations.

Social work managers facilitate adaptive integration by supporting identity development, coping strategies, and constructive engagement with hierarchical structures. Adaptation should not be reduced to passive compliance but understood as an active negotiation between personal values and organisational norms [5]. Social work managers assist service members in navigating this process while maintaining psychological integrity.

In the Lithuanian Armed Forces, adaptation challenges may be intensified by participation in multinational NATO missions, sustained readiness requirements, and exposure to high-intensity operational contexts. Soldiers are expected to perform under uncertainty and potential threat, conditions that may exacerbate role conflict and moral dilemmas. Social work managers address these challenges through psychoeducation, stress management support, and counselling focused on work–life balance and ethical reflection.

Research associates inadequate adaptation with increased disciplinary issues, emotional distress, and early attrition [1]. Preventive identification of maladaptive patterns allows timely intervention, benefiting both the individual and the institution. Retention of experienced personnel is strategically significant in professional armed forces; therefore, early psychosocial support directly contributes to organisational sustainability.

Perceived social support within units further influences adaptation outcomes. Strong peer and institutional support enhances psychological adjustment following combat exposure [2]. By strengthening relational networks through mediation, group interventions, and preventive programming, social work managers foster collective cohesion and facilitate successful cultural integration.

3.6. Ethical challenges and professional dilemmas in military social work management

Ethical complexity is inherent in military social work management. Professionals operate at the intersection of social work ethics, organisational loyalty, and hierarchical authority. One of the most significant dilemmas concerns confidentiality. While professional standards prioritise client privacy and trust, military contexts may necessitate information sharing to ensure operational safety and discipline.

Ethical decision-making in military settings requires advanced professional judgment and institutional clarity [3]. Social work managers must carefully evaluate when disclosure is justified to prevent harm, while simultaneously preserving trust in support services. Inadequate management of this balance risks undermining the legitimacy of psychosocial assistance.

Dual loyalty represents another persistent challenge. Social work managers are expected to advocate for soldiers' well-being while remaining accountable to command structures. Tensions may arise in cases involving disciplinary procedures, deployment fitness evaluations, or organisational restructuring [4]. Navigating such

situations requires ethical sensitivity, transparency, and adherence to professional standards.

During periods of active conflict, ethical tensions may intensify. Psychological vulnerability can increase even among highly motivated soldiers under high-intensity operational conditions [7]. In such contexts, social work managers must reconcile operational imperatives with the protection of human dignity and psychological safety.

Addressing stigma constitutes an additional ethical responsibility. By promoting psychological literacy and normalising help-seeking behaviour, social work managers foster a culture of respect and support within military institutions.

3.7. Strategic importance of social work management for organisational resilience

Organisational resilience refers to an institution's capacity to withstand, adapt to, and recover from internal and external stressors. In military contexts, resilience encompasses not only logistical preparedness but also human sustainability. Psychological stability, morale, and social cohesion are central components of long-term operational effectiveness.

Social work managers contribute to resilience by identifying psychosocial risk factors, strengthening support networks, and facilitating recovery processes. Military social work should be viewed as a strategic investment rather than a supplementary service [1]. Effective psychosocial management reduces absenteeism, supports retention, and enhances ethical decision-making under pressure.

Perceived social support functions as a protective factor against long-term psychological distress among combat-exposed personnel [1]. Social support enhances the impact of psychological capital during conflict, amplifying resilience mechanisms [7]. Integrated support systems involving families, leadership, and health professionals generate more sustainable reintegration outcomes [8].

Within the Lithuanian Armed Forces, social work managers contribute to resilience during heightened readiness periods, post-deployment reintegration, and organisational change. By strengthening institutional feedback mechanisms and advising leadership on systemic issues, they support adaptive learning and long-term stability.

3.8. Future directions for social work management in the Lithuanian Armed Forces

The future development of social work management in the Lithuanian Armed Forces should prioritise institutional consolidation, professional capacity-building, and empirical evaluation.

First, formal clarification of roles within organisational structures would enhance cooperation with commanders and strengthen professional autonomy. Clearly defined responsibilities reduce ambiguity and improve interdisciplinary collaboration.

Second, continuous professional development is essential. Social work managers require advanced training in trauma-informed practice, crisis response, moral injury, organisational consulting, and culturally sensitive intervention in multinational contexts. Investment in specialised education ensures preparedness for evolving operational realities.

Third, interdisciplinary integration should be strengthened. Social work managers should collaborate closely with psychologists, medical personnel, chaplains, and leadership representatives within structured multidisciplinary teams. Coordinated

approaches have been shown to produce more sustainable outcomes than isolated interventions [1].

Finally, future research should focus on empirically assessing social work management outcomes within the Lithuanian Armed Forces. Mixed-method designs combining qualitative interviews with quantitative well-being indicators would provide valuable evidence for policy development and institutional planning.

4. CONCLUSIONS

The analysis of contemporary scientific literature demonstrates that social work managers play a multifaceted, strategically significant role within the Lithuanian Armed Forces. Their professional responsibilities include psychosocial counselling, crisis intervention, preventive programming, mediation, ethical decision-making, leadership consultation, and participation in organisational development.

At the individual level, social work managers contribute significantly to soldiers' psychosocial well-being by addressing stress-related challenges, facilitating adaptation to military culture, supporting military families, and responding to crises. At the organisational level, they enhance leadership awareness of human factors, strengthen institutional trust, and contribute to the resilience and sustainability of military organisations.

At the same time, the literature reveals several persistent challenges affecting social work management in military environments, including stigma related to psychosocial support, ethical dilemmas, professional isolation, limited institutional resources, and increasing operational pressures. Addressing these challenges requires clear role definitions, leadership support, and continuous professional development.

Therefore, strengthening social work management should be considered a strategic priority in the continued development of the Lithuanian Armed Forces. Institutional recognition and investment in psychosocial support systems can enhance not only soldiers' well-being but also long-term organisational resilience, ethical leadership, and operational readiness.

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THE DIGITAL VOICE OF CONNECTION: VIRTUAL CHOIRS AS REGENERATIVE PASTORAL PRACTICE

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ABSTRACT
In today's world, marked by increasing isolation and digital saturation, the search for meaningful human and spiritual connection is finding new forms through technology and art. Virtual choirs—communities of voices united across distance—create an innovative space where technology becomes a medium for healing, empathy, and spiritual togetherness. This presentation explores how virtual choirs can serve as a regenerative pastoral practice, nurturing connection, compassion, and renewal through shared creativity.
Drawing on practical experience from Lithuanian and international virtual choir projects, this study explores how digital platforms such as Zoom, Teams, and Google Meet can evolve into spaces of digital spirituality and pastoral education. Within these creative communities, music transcends its technical dimension and becomes a means of presence, belonging, and mutual care.
From a phenomenological and reflective perspective, the paper argues that consciously used technology does not fragment but unites. The human voice becomes a bridge of resonance and regeneration, transforming digital space into a field of shared empathy and spiritual vitality. Virtual choirs reduce feelings of loneliness, dissolve emotional distance, and foster collective renewal. Singing together—even while apart—becomes a source of regeneration for both individuals and communities.

Keywords: *virtual choirs; digital pastoral care; regenerative pastoral practice; voice and embodiment; digital spirituality; mediated community; emotional regeneration.*

1. INTRODUCTION

In the contemporary world, where social isolation, technological fragmentation, and emotional distance are increasingly part of everyday life, the question of restoring human connection acquires particular significance. Digital technologies are often perceived as operating in opposition to communality: they create distance, enclose individuals within personal media environments, and weaken interpersonal relationships. However, recent research demonstrates that technologies, when consciously integrated into creative and spiritual practices, can function in the opposite direction — becoming spaces that foster social sensitivity, a sense of belonging, and emotional regeneration [3,4].
Virtual choirs are a rapidly growing phenomenon of musical and digital practice since 2010, in which individually recorded voices are combined into a collective sonic structure. During the pandemic period, this form became a global social, educational, and cultural response to restrictions on physical proximity. However, the significance of virtual choirs extends far beyond technological effect: they become digital communities in which the voice acquires the function of spiritual connection and mutual care [5,13].
Although virtual choirs are often analysed as a musical or technological phenomenon, this article examines them from a broader perspective — that of regenerative pastoral practice. The pastoral approach to technology is changing: it is increasingly recognised that digital space can become a genuine environment of community,

listening, care, and spiritual support [4,11]. In this study, the virtual choir is understood as a medium in which the human voice and digital interaction create a regenerative field of being together.

In Lithuania, virtual choirs developed along a unique path: the first initiatives ("Virtual Choir. Lithuania", 2016; 2018) emerged even before the pandemic, and the author's earlier analysis demonstrated that these practices were already perceived at that time as new forms of choral identity and digital musicking [2]. This allows virtual choirs to be examined not as a response to crisis, but as a consciously chosen model of community building. This experience creates a distinctive empirical foundation for analysing how technologies can become channels of spiritual closeness.

Research problem. Although the practice of virtual choirs has been widely discussed in musicology and digital culture studies, their significance for pastoral care, spiritual community, and emotional regeneration remains largely unexplored.

Research aim. To reveal how virtual choirs can function as a regenerative pastoral practice that fosters connection, empathy, and a sense of belonging in digital space.

Research question. How do individually recorded voices, combined in digital space, create experiences of spiritual connection, emotional support, and community?

2. MATERIALS AND METHODS

2.1. Theoretical Context

The phenomenon of the virtual choir today unfolds as one of the most intriguing manifestations of digital music culture, where the phenomenology of embodiment, processes of media mediation, structures of community, and principles of pastoral practice intersect. Digital technologies transform not only the conditions of performance, but also the ontology of musicking itself: the choir, traditionally understood as an ensemble grounded in the interaction of physical space, time, and bodies, acquires a new form in virtual space that integrates individual performance, asynchronous participation, and the synthesis of a collective audiovisual structure. This transformation requires a broader theoretical approach that encompasses not only technological or musicological analysis but also social, phenomenological, and spiritual dimensions.

2.2. Voice and embodiment in digital space

The phenomenological tradition, particularly Maurice Merleau-Ponty's theory of embodiment, provides a conceptual foundation for analysing how voice functions in mediated environments. Merleau-Ponty argues that the body is the primary medium of our being-in-the-world, and that the voice is a continuation of this embodied existence, enabling the subject's intentions to be embodied in the sonic domain. Even within technological mediation, the voice does not lose its markers of corporeality: timbre, breath, vibration, and micro-intonational dynamics remain essential elements of identity and relationality [10].

The virtual choir reveals a paradoxical situation: physical choral space disappears, yet corporeality is not eliminated — it is transformed. Singing alone, in front of a camera and microphone, the performer experiences not only technological mediation but also an intensified vulnerability of the individual voice. This experience is not merely technological; it is existential. It opens the possibility of hearing oneself anew, acquiring reflective distance from the collective anonymity of the choir, and encountering one's voice as an autonomous bodily expression. In this way, the virtual choir becomes a space in which the phenomenological relationship between the individual body and the collective structure is particularly pronounced.

2.3. Digital communication and mediated being-together

Contemporary media studies emphasise that online platforms are not merely channels for information transmission — they create social relationships, identities, and new forms of community [3]. Zoom, Microsoft Teams, Google Meet, and other synchronous communication platforms serve as virtual rehearsal spaces where choir preparation, conductor communication, discussion of vocal parts, and the development of rhythmic and articulatory coherence occur. Although synchronous musical performance is impossible on these platforms due to audio latency, they fulfil an essential social and psychological function: they create an experiential structure resembling real being-together. Participants see one another, participate in shared time, respond to the conductor's gestures and intonations, even though their voices do not physically sound simultaneously. As Hutchings emphasises, digital platforms can acquire a sense of sacredness when they provide structures that enable the experience of connection and collective action [8].

Heidi Campbell's research on digital religion asserts that digital spaces can acquire sacred characteristics when they create structures that enable connection, belonging, and collective action [4]. In the case of virtual choirs, such a structure emerges not through synchronous musical performance, but through rhythms of participation: recurring meetings, shared preparation, the creation of recordings, and anticipation of the collective result. This allows us to speak of a new form of community — a "mediated community" in which technological mediation is not an obstacle to social cohesion, but its very condition.

Empirical studies confirm that during the pandemic, virtual choirs served a significant role in providing emotional and social support, reducing loneliness, offering structured activity, and contributing to psychological stability [5,13]. These findings demonstrate that digital musical participation can perform functions analogous to those of traditional artistic and communal activities, even though their forms differ.

2.4. Transformation of choral culture in mediated environments

Virtual choirs expand the concept of choral practice, allowing it to be understood as a multi-layered structure not limited by physical synchrony. In traditional choirs, time and space are the primary organising categories: voices merge within a single acoustic space, and the synchrony of bodies and breath shapes choral time. The virtual choir negates these parameters without abolishing the essence of choral action. Here, the collective sonic structure emerges not from simultaneous performance, but from post-production processes, whose logic resembles the construction of a polyphonic work through digital means.

This opens a new aesthetic field in which technology becomes a creative partner rather than merely a recording tool. The aesthetics of the virtual choir are grounded in montage rhythm, voice layering, visual dramaturgy, and spatial sound architecture. Thus, the virtual choir is not only a musical but also an audiovisual cultural form, in which the medium itself becomes a generator of aesthetic meaning.

2.5. The virtual choir as a space of pastoral practice and regenerative experience

Researchers in pastoral theology, such as Henri Nouwen and Johann Meylahn, emphasise that spiritual care is not bound to a specific physical location or institutional structure — it primarily manifests as the creation of spaces of acceptance and listening. Such spaces can arise in many forms, including digital environments.

Despite its technological form, the virtual choir creates precisely such a space: participants experience being heard, accepted, and included in a collective creation, regardless of their physical location, social status, or musical training. Group singing functions as a mechanism of emotional co-regulation, creating a shared emotional field among participants, and this dynamic persists in virtual contexts as well [6].
The concept of pastoral regeneration becomes particularly significant in this context: the virtual choir enables experiences of restoration, belonging, and internal cohesion through voice, creativity, and collective outcome. Nouwen argued that pastoral care is "the art of being together", and the virtual choir creates a new form of this being, in which spiritual connection is formed through technological mediation without being limited by it [12]. Meylahn argues that digital space can become "the digital other"—a place where authentic, ethical, and spiritual relationships occur [11]. The virtual choir aligns with this understanding, as it opens possibilities for participants to experience community and inner renewal through mediated vocal space.

3. METHODOLOGY

The methodological approach applied in this study combines practice-based research, autoethnographic creative reflection, and phenomenological interpretation of experience. It also integrates insights from contemporary media theory and pastoral theology. This methodological framework was chosen because the virtual choir is a hybrid cultural phenomenon. Its analysis requires attention to technological media, artistic practice, and the social and spiritual experiences emerging in digital space.

3.1. Practice-based research as the primary analytical approach

The study is grounded in the practice-based research paradigm, in which the creative process is considered an important source of knowledge. The research data consist of virtual choirs created by the researcher between 2016 and 2020, including their creative methodology, technological solutions, structural principles, and production processes.
The virtual choir is therefore analysed not merely as a final artistic product but as a creative system. This system reveals the principles of digital musicking: the exposure of the individual voice, the overcoming of spatial dispersion, coordination without shared physical time and space, and the formation of a collective sonic structure through technological means.
Practice-based research enables examination of the virtual choir as an activity in which musical, technological, and social dimensions operate simultaneously. Because the analysed material originates from the researcher's own creative work, the methodology provides access to empirically grounded and contextually specific data characteristic of the phenomenon itself.

3.2. Autoethnographic creative reflection

In this study, the autoethnographic approach is understood not as autobiographical storytelling but as systematic reflection on creative practice. This perspective enables the phenomenon to be analysed from within.
As the creator, conductor, and organiser of virtual choir projects, the researcher possesses unique epistemological access to the creative process and its aesthetic, technological, and social dynamics. The analysis does not rely on participants' narratives or personal correspondence; instead, it is based on professional experience, creative documentation, and consistent analytical reflection.

This approach enables the identification of aspects of practice that are often difficult to observe externally. These include the experience of vocal vulnerability, the interaction between body and technology, the reconstruction of choral time without physical synchrony, and the emergence of collective identity in digital space. The approach corresponds with contemporary understandings of autoethnography as a qualitative research method in which the researcher's professional experience can function as a legitimate source of knowledge [1].

3.3. Phenomenological analysis of experience

The phenomenological method is used to interpret experiences that emerge during the creation and development of virtual choirs. Drawing on Merleau-Ponty's theory of embodiment [10], the voice is understood as a continuation of embodied expression that retains its essential qualities even within technological mediation.

Phenomenological analysis allows identification of key experiential structures of the virtual choir: individual singing across dispersed time and space, the rhythm of waiting and listening, the sense of "virtual presence" produced by technological media, and the emergence of the collective work as confirmation of shared community.

From this perspective, the virtual choir is not merely a simulation of a traditional choir but an autonomous form of choral practice with its own phenomenological characteristics.

3.4. Integration of media theory and pastoral theory

Media theory, particularly research on digital communication and the formation of online communities [3,4], provides the conceptual framework for analysing how virtual platforms support collective experience and social cohesion. At the same time, pastoral theology offers tools for interpreting the spiritual and relational dimensions of musical participation [12,11].

Combining these theoretical perspectives allows the virtual choir to be understood as a form of regenerative pastoral practice. Within this framework, participants experience belonging, acceptance, and renewed social connection even in the absence of physical co-presence.

3.5. Virtual choirs as empirical research data

The empirical basis of this research consists of virtual choirs created by the researcher, including their audiovisual structures, documentation of the creative process, technical guidelines, and editing procedures. These materials allow systematic analysis of how virtual choir practices shape social and spiritual experience and how technological tools transform the structure of choral performance. Together, these sources provide a foundation for examining the virtual choir as a contemporary form of community formation and pastoral practice.

At the same time, the autoethnographic character of the research should be acknowledged. Because the analysis is grounded in the researcher's own creative practice, the findings remain interpretative and may have limited generalisability.

4. RESULTS AND DISCUSSION

The analysis of virtual choirs, based on practice-based research, autoethnographic reflection, and phenomenological interpretation, revealed several thematic trajectories that allow the virtual choir to be understood as a multi-layered musical, social, and pastoral structure. These results emerged from the analysis of virtual choir projects

created by the researcher (2016–2020), including their audiovisual structure and creative processes. As is typical in practice-based artistic research, empirical findings intersect with theoretical insights.

The analysis demonstrates that virtual choir practice can create an environment of emotional safety. Recording individually removes the pressure of immediate evaluation and allows participants to focus more freely on vocal expression and exploration of their own voice. This experience supports a sense of belonging and creates a structure of spiritual support that is particularly pronounced when social connections are weakened or disrupted.

Singing also reduces cortisol levels, thereby improving emotional stability [7]. Research confirms that group singing is one of the most effective and rapid mechanisms for social bonding, strengthening a sense of belonging even among strangers [9]. Pandemic-era studies show that virtual singing practices provided participants with structure, psychological stability, and significantly reduced feelings of loneliness [5,13]. Therefore, virtual choirs can be understood as a distinctive form of social and psychological support that enables the maintenance of connection and community even when physical co-presence is impossible.

4.1. Voice as a structure of connection and the formation of a collective body

Phenomenological analysis revealed that the essence of the virtual choir lies in the relationship between voices rather than in the technological medium. Although voices are recorded individually, they remain embodied, marked by breath, timbral nuances, and vibration. Based on Merleau-Ponty's concept of embodiment [10], the voice can be understood as a continuation of the body; therefore, technological recording does not eliminate its function of being-in-the-world. In the editing process, these individual markers merge into a collective choral body, whose emergence is not merely aesthetic but also social and spiritual. Participants experience that their voices have a place within the community, and the collective sound becomes a confirmation of mutual acceptance. In this way, the virtual choir creates a new field of connection in which individuality and collectivity intertwine not in physical space, but in acoustic and intentional space.

4.2. The virtual choir process as a ritual and spiritual sequence

The study revealed that the process of creating a virtual choir possesses a ritual structure composed of preparation, recording, waiting, and the unveiling of the final work. This sequence serves not only a practical but also a spiritual function, as participants engage in a consistent, rhythmic activity that involves elements of inner focus, intentionality, and discipline. Such a process resembles liturgical logic, in which not only the result but also the path leading to it is significant. Campbell's [4] analyses of digital sacredness confirm that technological spaces can acquire spiritual meaning when they generate shared meaning, ritual repetition, and collective intention. In this context, the virtual choir functions as a new type of sacred space in which participants experience their own and others' presence not at a physical, but at a spiritual level, and the aesthetic outcome becomes testimony to shared experience.

4.3. Complementarity of synchronous and asynchronous modes of action in digital choral practice

Virtual choir practice demonstrates that synchronous communication platforms (Zoom, Microsoft Teams, Google Meet) and asynchronous voice recording form complementary structures essential to the functioning of the virtual choir. Although

synchronous singing is impossible due to technological constraints, synchronous platforms create social rhythm, visual interaction, emotional support, and conductor–performer connection. Participants see one another in real time, share preparation moments, respond to the conductor's gestures, and experience structures of being-together, which, according to Baym [3], constitute networked sociality — social connection arising from structured interaction rather than musical synchrony. The asynchronous process, in turn, ensures aesthetic precision and rhythmic and timbral coherence that would be technically unattainable in a live setting. The interaction of these two forms allows the virtual choir to be understood as an autonomous hybrid form of choral practice in which social and musical community emerge at different yet interconnected levels of action.

4.4. The virtual choir as evidence of regenerative pastoral practice

The integration of all results demonstrates that virtual choirs acquire characteristics of regenerative pastoral practice. Participants experience the restoration of social cohesion, emotional support, and spiritual dialogue, emerging not through verbal exchange but through a shared creative process. The individually recorded voice, entering the collective work, becomes a sign of acceptance, listening, and mutual care, while participation in the project helps restore inner stability and reduce feelings of isolation. Nouwen's [12] theological understanding of pastoral care — as a space of being-together, acceptance, and listening — is realised in the virtual choir through technological mediation without loss of spiritual essence. The final musical work acquires the meaning of inner regeneration: it becomes a communal healing moment, testifying that digital environments can function as genuine spaces of spiritual renewal and pastoral action.

4.5. The virtual choir as an extended form of choral community

Analysis of the results shows that the virtual choir opens an alternative form of choral practice in which the absence of physical co-presence is not an obstacle to experiencing interpersonal connection, belonging, and embodied vocal interaction. Although choristers' bodies do not meet in a single acoustic space, the voice — as an extension of embodiment — remains the essential carrier of interpersonal relations. Thus, the choir is transformed from a geographically specific ensemble into a digital, yet no less real, structure of community, in which collective participation is grounded in intention, creative rhythm, and shared purpose. This transformation demonstrates that choral culture can adapt to technological conditions without losing its essential social and aesthetic functions.

4.6. Digital platforms as social and spiritual spaces

The results confirm media theory's claims that Zoom, Teams, and Google Meet are not merely technical tools but social structures that shape community experience. The "being-together" emerging on these platforms results not from musical synchrony, but from psychological and social synchrony. Participants see one another, respond to the conductor's gestures, and share preparatory rhythms — these elements generate a form of communal rhythm described by Baym as networked sociality [3]. The asynchronous recording process complements this experience by ensuring musical precision and sonic quality. Thus, the virtual choir becomes a dual structure: synchronous space generates social connection, while asynchronous space ensures aesthetic coherence. This dynamic provides a basis for understanding the virtual choir

as a hybrid cultural practice in which musical action and social interaction manifest at different yet complementary levels.

4.7. The spiritual and pastoral dimension of the virtual choir

Interpreting the virtual choir as a form of pastoral practice is supported by clearly articulated spiritual experiences: belonging, acceptance, recognition, and inner regeneration. Participants experience that their voices are heard and integrated into the collective work, aligning with Nouwen's pastoral principles that emphasise listening, being-together, and acceptance. The virtual space, despite its technological nature, becomes a place in which interpersonal connection and spiritual dialogue emerge — this spiritual presence is no less real simply because it occurs through a screen. Participants experience not only creative but also existential renewal akin to processes of meaningful healing. Thus, the virtual choir confirms the thesis that spiritual community can be created through digital media and that pastoral practice can be technological as well as physical.

4.8. Limitations and challenges of pastoral action in digital space

Although the virtual choir demonstrates clear pastoral characteristics, the study also reveals limitations that prevent it from being considered a full equivalent of traditional communal practice. One essential limitation is the absence of physical synchrony: shared breath, embodied resonance, and acoustic space characteristic of traditional choirs are inevitably lost in virtual formats. Additionally, technological mediation may increase inequality among participants, as not all have equal technical resources or private recording spaces. From a pastoral perspective, the virtual choir cannot replace liturgical practice, sacraments, or deeper spiritual guidance, but it can function as a complementary, temporary, or contextually significant space of spiritual support. These limitations indicate that the virtual choir is an important but not absolute form of pastoral action.

4.9. The virtual choir as a contemporary model of regenerative community

Overall, the findings suggest that the virtual choir represents an important contemporary form of musical, communal, and pastoral practice. It generates experiences of belonging, acceptance, and collective creation that become sources of spiritual support and regeneration. The virtual choir expands the boundaries of pastoral practice by demonstrating that healing, belonging, and spiritual unity can be experienced not only in physical but also in digital spaces. Such a model opens new perspectives for contemporary pastoral care and encourages reconsideration of how spiritual connection can be formed within technological culture.

5. CONCLUSIONS

This study demonstrated that virtual choirs are not merely technological solutions for musicking but fundamentally transformed forms of choral community, social connection, and pastoral practice. The analysis revealed that the virtual choir, as a cultural and spiritual practice, can maintain and expand the essence of choral activity by bringing it into the digital space, where new possibilities for creativity, community, and inner regeneration emerge. The conclusions allow several essential statements to be formulated.

First, virtual choirs demonstrate that the voice does not lose its corporeality, emotional intensity, or social function in technological space. Even in mediated form, the voice remains a carrier of interpersonal relationships, belonging, and self-

expression, while individual voices, combined into a collective sonic structure, create a new form of community not bound by physical spatial limitations. This confirms the phenomenological assumption that embodiment can be experienced and reconstructed even when physical presence is absent from the field of action.

Second, the study showed that synchronous (Zoom, Teams, Google Meet) and asynchronous platforms function as complementary structures forming a unique interaction of social and musical activity. Synchronous space creates conditions for social presence, visual contact, and shared rhythm, while asynchronous recording processes ensure aesthetic precision and musical coherence. The combination of these modes enables the virtual choir to function as a hybrid yet fully realised structure of choral culture in which social cohesion and musical quality are achieved through different but equally effective means.

Third, virtual choirs acquire clearly recognisable characteristics of pastoral practice. Empirical data indicate that this practice helps participants restore a sense of inner cohesion, reduce experiences of loneliness and social isolation, and experience acceptance, listening, and belonging. Virtual space becomes not only a sequence of creative actions but also a structure of spiritual support consistent with pastoral care conditions described by Nouwen [12] and Meylahn [11]. Therefore, the virtual choir can be evaluated as an effective form of regenerative pastoral practice in which spiritual connection and healing processes emerge through collective creativity.

Fourth, the limitations of the virtual choir allow its place in contemporary culture and pastoral care to be more precisely defined. This practice cannot replace the embodied synchrony of traditional choirs, liturgical contexts, or sacramental community functions. However, it can serve as a complementary, context-sensitive pastoral space, particularly when physical presence is limited, and the need for social and spiritual support remains high. Virtual choirs may also be particularly significant for those unable to participate in traditional communal practices due to geographic, social, or health-related reasons.

Finally, virtual choirs open a new intersection between contemporary choral culture and pastoral theology. They invite reconsideration of the relationship between musical community, liturgical space, spiritual presence, and technological media, revealing that digital environments can function not merely as mediating tools but as autonomous cultural and spiritual spaces. The virtual choir becomes a model demonstrating how creativity can foster connection and regeneration in the digital era, and how pastoral practice can take on new forms enabled by technology. This study suggests that technologically mediated creativity can function as a significant spiritual and communal resource for contemporary societies, and that the virtual choir represents one of the emerging models through which pastoral practice may evolve in the digital era.

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APPLICATION OF ARTIFICIAL INTELLIGENCE METHODS IN FLATFOOT ASSESSMENT

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ABSTRACT
This study examined the potential of artificial intelligence tools for detecting flatfoot pathology. We want to emphasise that there is very little research in this area and to point out that this is a relevant and very important topic in medicine. First, the base flow used a pre-trained "backbone" on the ImageNet dataset. In this study, this term refers to the feature extraction part of a convolutional network. A standardised pre-processing with pruning and augmentation was performed, and a three-stage training schedule (stages 1, 2, and 3), average and maximum aggregation at the subject level, and the addition of light test time were proposed. Nine different model architectures were used. From stage 2 onwards, all models were trained on feet. Three-dimensional photographs with real flatfoot shapes, from flatfoot stages I to IV, were used. The most validated model was displayed in accurate AUROC plots, with estimated average and maximum aggregation values and their standard deviations. The research and calculations demonstrate the feasibility of applying artificial intelligence in orthopaedics. This work aimed to apply artificial intelligence methods and to detect flat feet.

Keywords: *orthopaedics; flat feet; artificial intelligence; 2D images.*

1. INTRODUCTION
Flat feet are a common problem among patients visiting musculoskeletal clinics. This condition, often called *pes planus*, *planovalgus* foot, or fallen arches, can be congenital or acquired. There are many causes of acquired flatfoot, including posterior tibial tendon degeneration, trauma, neuroarthropathy, neuromuscular disease and inflammatory arthritis. Of these, tibial tendon degeneration is probably the most common. The foot is distinguished from other parts of the body by its contact with the ground during movement, which is why its structure and function are so important. Each bone connects to another, forming a closed movement system through which each movement disorder can reach other parts of the system: the knee, hip joints, back, and neck **[1–3]**. The foot is unique in that it is in contact with the ground during movement, which is why its structure and function are so important. Each bone connects to the others, forming a closed movement system through which any movement disorder can reach other parts of the system: the knees, hips, back, and neck [2–4].
Anatomically, it is accepted that the foot consists of three parts: the ankle, which allows the shin bones to connect to the foot, the midfoot, and the toes. The main function of the ankle and foot is to absorb shock and generate force when walking. The sole absorbs most of the load on the body, but if the foot does not perform its function properly, other parts of the body (knees, hips, spine, etc.) receive increased load, which can eventually lead to damage to the musculoskeletal system [5–7]. At first glance, the foot may seem like a simple part of the body that requires little attention, but when we examine it anatomically, we see that it is a complex assembly

of bones, muscles, ligaments, and joints. In flatfoot, the arches of the feet descend downward, and the foot itself turns inward. Flatfoot is influenced by weakness of the ligaments and muscles, so the correct shape of the arches is not maintained. If the arches do not form, the entire posture of a person is disrupted [6–9].
This work aimed to apply artificial intelligence methods and to detect flat feet.
Recently, various artificial intelligence tools have been widely used in almost all fields. The field we are considering is no exception. A publication attempts to determine whether a pathology is present in a camera image [10]. The article examines lateral images of the foot; such images are not widely used in orthopaedics. In our publication, we present a scan of the foot from below. By applying various artificial intelligence tools, we will determine the presence/absence of flatfoot.
The paper is organised as follows. Section 1 reviews foot function and pathology, and presents the theoretical background. The application of artificial intelligence tools for pathology detection is reported in Section 2. The conclusions and discussion are in Section 3.

2. FOOT FUNCTION AND PATHOLOGY

To apply AI tools correctly, it is first necessary to understand the foot's function and anatomy. Therefore, this chapter introduces the anatomy and pathology of the foot.
Foot Function. The foot has two arches: the longitudinal and the transverse. The foot has three arches and is presented in Figure 1 **[2,11,12]**:

- The lateral longitudinal arch, which is the arch on the outer side of the foot. This arch is responsible for supporting the foot, and the force of the body's weight is transmitted through it from the lower leg.
- The medial longitudinal arch, which is the arch found along the inner part of the foot, is characterised by soft tissues and interarticular cartilage. The purpose of the medial longitudinal arch is to cushion contact with the ground.
- The transverse arch of the foot is located across the foot, connecting the first and fifth metatarsals.

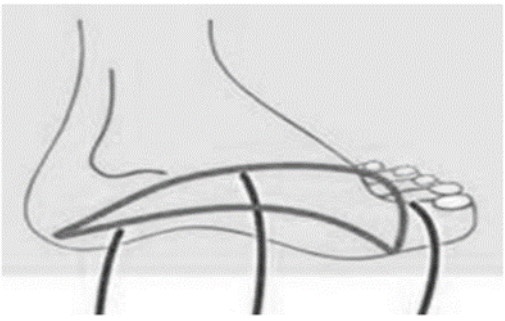


Figure 1. The foot arches.

The calcaneus is a common bone of both the outer and inner arches. The inner arch consists of the calcaneus, the talus (through which the foot connects to the arch), the navicular bone, three arches and the I–III metatarsals. The outer arch consists of the calcaneus, cuboid bone, the IV and V metatarsals. Ligaments and muscles influence the shape of the arches. The arches of the feet fluctuate with load. On the inner side,

5-7 cm, and on the outer side, about 2 cm. The most significant part in maintaining the shape of the arches is the lintel stone, located at the top of the arch and connecting the arcuate bridge or arcuate gate structure. The foot has one scutellum in each arch. These scutella are the scutellum, the talus and the inner scutellum. The base of the foot consists of three main support points—the base of the calcaneus, the head of the I metatarsal with two sesamoid bones, and the head of the V metatarsal. In a healthy foot, all three points distribute the load and connect into a triangle with the help of arches (Figure 2) [13-15].

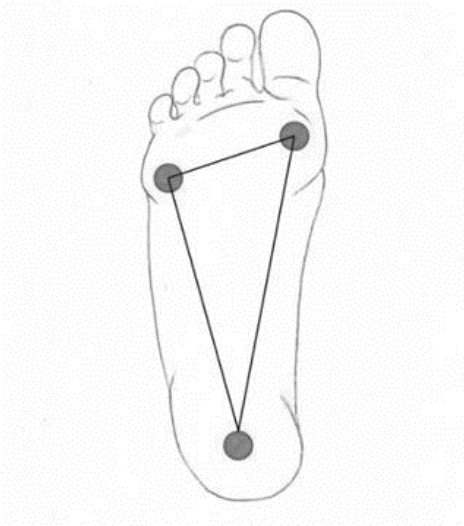


Figure 2. Foot base.

The base of the foot (3 support points) is extremely important for the body's balance and posture. If the muscles' work is disrupted, this alters the biomechanics of walking, and the support points can shift, leading to irregular posture, coordination problems, and joint and bone deformities.

Acquired flat feet were classified according to the Johnson and Strom system, which ranges from I to III, in 1997. Merson added a fourth grade. The grading system helps clinicians assess the severity of AAFD and can guide treatment plans. Stage I is characterised by tenosynovitis of the posterior tibial tendon without arch collapse. Patients with stage II adult-acquired flatfoot have collapsed feet and are unable to perform a single-leg heel raise. This stage is further divided into stages IIa and IIb. Stage IIa has a foot drop with a valgus deformity of the hindfoot but no midfoot abduction, while stage IIb has midfoot abduction. Patients with stage III adult-acquired flatfoot have a fixed deformity with valgus deformity of the hindfoot and abduction of the forefoot. Patients with stage IV deformity have ankle valgus due to weakening of the deltoid ligament **[16–20]**:

Stage I. Stage I is the mildest form of PTT dysfunction. Patients may have a history of tenosynovitis or tendinosis with mild to moderate pain along the tendon course. The hindfoot is mobile and normally flexed. The PTT can still invert and lock the hindfoot during heel-lift, allowing the patient to stand on the toes. Radiographs may be normal, although MRI may show PTT inflammation or early signs of degeneration.

Stage II. In stage II, deformity and impaired function develop. However, the deformity remains flexible, and passive correction can be achieved by adducting and inverting the metatarsophalangeal joint. As the PTT degenerates and lengthens, the foot inverts less actively, and the transverse metatarsal joints can no longer be locked, and the toes can no longer be supported. Later, the bones distal to the talus rotate

laterally, and the talocrural joint subluxes, resulting in hindfoot valgus and forefoot abduction. The unsupported talus is now plantarflexed. At some point, the spring ligament may weaken, contributing to increased deformity. A stage IIA deformity is characterised by minimal abduction at the midfoot and less than 30% tarsal coverage on a standing AP radiograph. A stage IIB deformity is still flexible, but there is greater forefoot abduction (>30% tarsal coverage). The distinction between stages IIA and IIB may help determine the treatment approach.

Stage III. Stage III represents a more fixed deformity, where correction by passive inversion to neutral is no longer possible. The hindfoot is in a fixed valgus position, while the forefoot is abducted.

Stage IV. A stage IV deformity differs from the other stages in that the ankle joint is involved. In stage IV, the deltoid ligament is insufficient, resulting in lateral talar tilt and valgus deformity of the tibia. Although some patients have tibial deformity and flexible flatfoot (stage IVa), most have rigid foot deformities due to damage to the ankle joint (stage IVb). In addition to tibial deformity, ankle joint arthritis may be present. Uncorrectable flatfoot is characterised by impaired foot support, gait changes, discomfort when standing or walking, rapid fatigue in the foot area, and coordination changes.

This assessment scale is suitable for evaluating foot posture in adults. The assessment scale is used to assess the position of the foot (pronation-supination) and to determine whether the foot is supinated, neutral, or pronated (flatter). This is not a direct diagnosis of “flatfoot”, but a very good tool for assessing foot posture and monitoring changes. Other methods:

- Clinical examination (assessment of arch height, heel axis, gait);
- Standing on tiptoes (if the flexible arch is restored—this is physiological flatfoot);
- Photopodometry or plantography;
- Jack test (restoration of the arch of the foot by lifting the toe);
- X-ray - only if additional diagnostics are needed.

Orthopaedic care involves selecting orthopaedic devices. Their range is extremely wide, including half- and full-foot inserts, footwear, and insoles, but they are ineffective if the flatfoot stage is misdiagnosed. Therefore, after reviewing all the main features of the anatomy and pathology of the foot, we can use artificial intelligence tools and determine the presence/absence of pathology.

3. APPLICATION OF ARTIFICIAL INTELLIGENCE (AI) TOOLS FOR PATHOLOGY DETECTION

This investigation presents a methodology based on the application of artificial intelligence tools to identify flatfoot pathology. Using the Elinvision iQube scanner, 2D images were obtained to reflect the patient’s foot structure. The scanner accuracy 0.5 mm, scanning area (L × W × H) 40 × 180 × 150 mm ± 5 mm; scan time is 5–9 s; file format—png; heel positioning laser Integrated heel positioning laser allows to align patient’s foot/ankle for the better scan result; 3D texture in colour allows to view and evaluate the condition of the sole and markings made by physicians; calibrated 2D texture in color provides more accurate data in images. The dataset comprised 42 paediatric subjects, each contributing two plantar images (left and right foot), for a total of 84 images. Clinical labels were provided at the subject level and mapped to both feet: 33 subjects were classified as healthy and 9 subjects as flatfoot (see Table 1). Only binary labels (healthy vs flatfoot) were available; no gradation of flatfoot severity (e.g., stages I–III) was provided. Labels were assigned by an orthopaedist as

healthy vs flatfoot. Those classified as having flexible flatfoot according to routine clinical assessment were labelled as ‘flatfoot’. Asymptomatic individuals with a normal medial longitudinal arch and neutral hindfoot alignment were labelled as ‘non-flatfoot’. All “flatfoot” cases (regardless of suspected stage) were merged into one positive class. For this study, a binary label (flatfoot vs non-flatfoot) was used.

Stages were not modelled separately due to the small sample size. Written consent to participate in the study was obtained from all subjects. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki (64th WMA General Assembly, Fortaleza, Brazil, October 2013). Identifiable information was removed from the collected data to ensure subject anonymity. An example of the images used is shown in Figure 3. Standardisation and sorting of scanned data (e.g., consistent foot positioning, illumination) were performed to ensure data uniformity and reliability. Analysis of existing databases and diagnostic tools for 3D image processing and classification, e.g., specialised 3D CNN architectures or hybrid models that combine 3D geometric analysis with 2D feature extraction.

Table 1. Dataset summary

	Number of Subjects	Number of Images
Controls (no flatfoot)	33	66
Flatfoot	9	18
Total	42	84

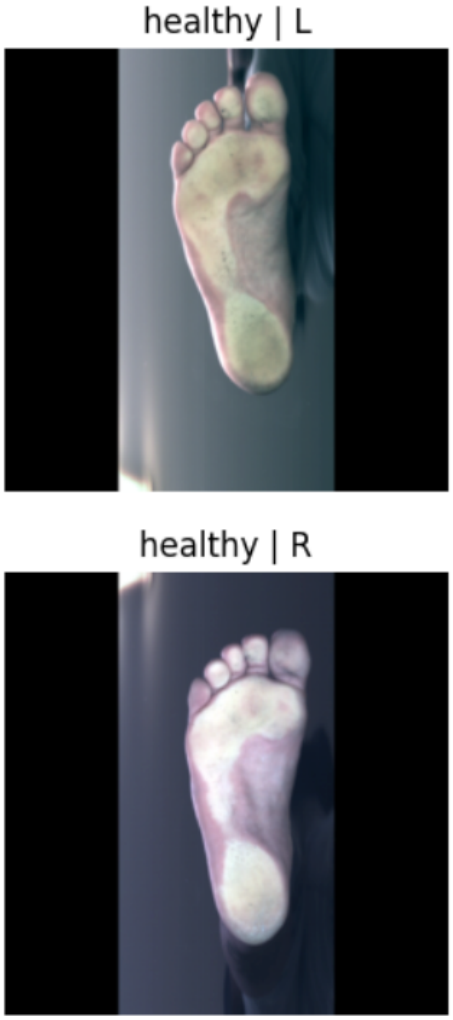


Figure 3. Left and right patient feet.

In this study (see Figure 4), the term backbone refers to the feature-extraction part of a convolutional network. The backbone receives an image and produces a compact representation, after which a single-logit classification head is applied for the binary task. All backbones were initialised with ImageNet pre-trained weights and trained under the same three-stage schedule: the head was trained first (Stage-1), selected late backbone blocks were unfrozen and fine-tuned (Stage-2), and an optional short fine-tune with class-balanced sampling was performed (Stage-3). Multiple backbones were evaluated to characterise differences in architectural bias, capacity, and computational cost under identical data, preprocessing, and optimisation settings.

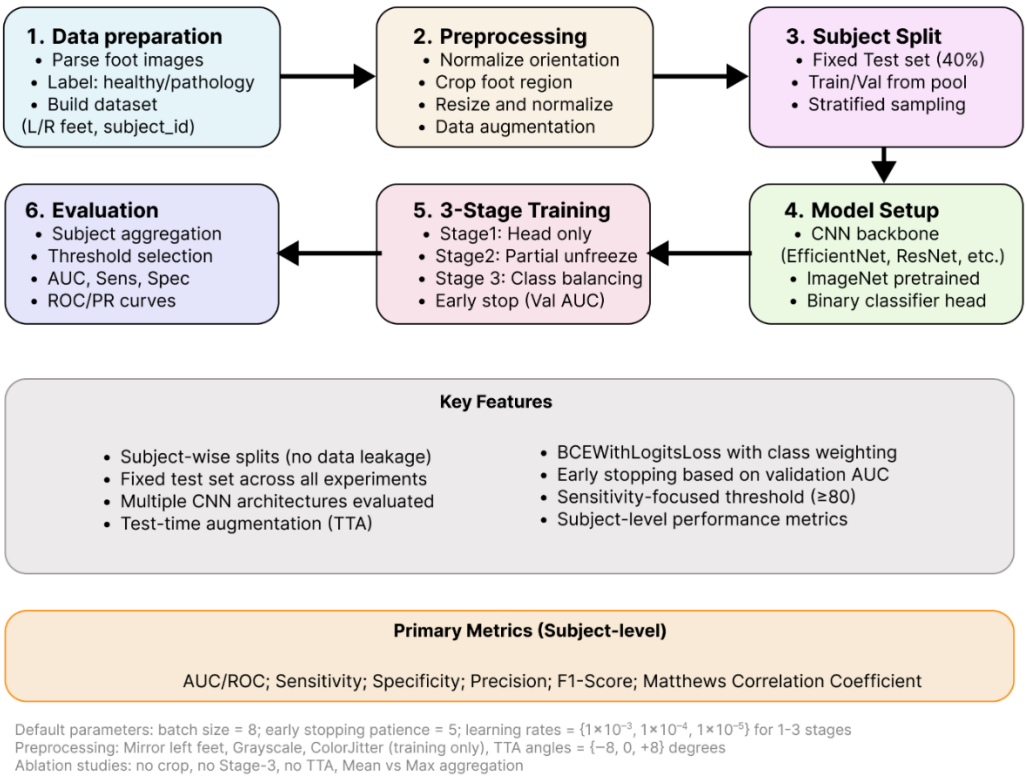


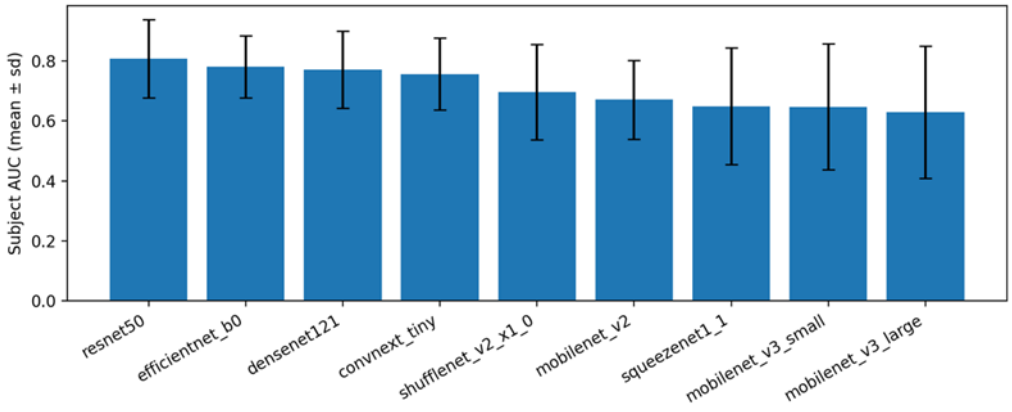
Figure 4. Workflow of the proposed framework for the flat feet classifier.

Nine architectures were assessed. ResNet-50 was used as a strong residual-network baseline whose stability under transfer learning has been widely observed [21]. Dense-Net-121 was included to represent densely connected feature reuse, which is known to be parameter-efficient [22]. EfficientNet-B0 was chosen for its compound scaling and Mobile Inverted Bottleneck (MBConv) blocks, which frequently yield favourable accuracy-to-compute trade-offs on small datasets [23]. Two lightweight families: MobileNetV2 and MobileNetV3 (Small and Large) were included to reflect mobile/edge deployment constraints while retaining competitive transfer performance [24,25]. ConvNeXt-Tiny was used as a modern convolutional design that replaces some batch-norm/activation patterns with LayerNorm and larger effective kernels, offering transformer-like training behaviour while remaining fully convolutional [26]. Two very efficient baselines, ShuffleNetV2 (×1.0) and SqueezeNet1.1, were added to probe the lower end of the parameter/FLOP spectrum [27,28]. All backbones were used only as feature extractors. The final classification layer was replaced with a single fully connected unit producing a single logit.

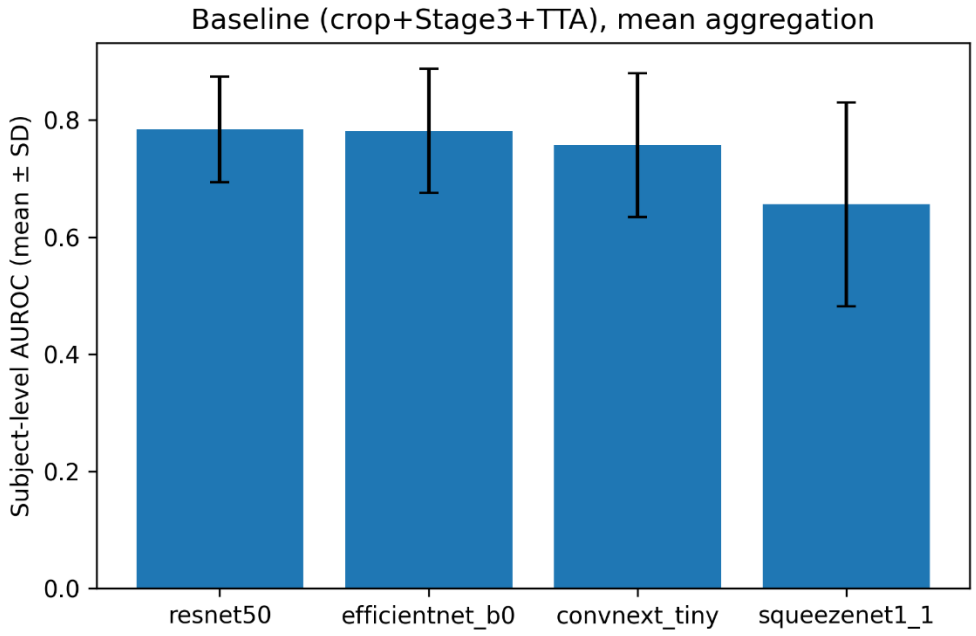
A fixed subject-held-out test set was created once and kept unchanged for all experiments. The test set contained 40% of subjects (patient-wise split; exact counts are reported in the Dataset section). The remaining subjects formed a training/validation pool. For each backbone, models were trained in 20 independent repeats: in each repeat, a new stratified subject split was drawn from the pool to form a small validation set used for early stopping and threshold selection. Results were reported on the same fixed test set, and summary values were given as mean ± standard deviation across repeats.

Performance was computed at the subject level. Image scores for the same subject (e.g., left/right feet) were first aggregated into a single subject score using either the mean or max aggregation method, as specified. A decision threshold was then chosen

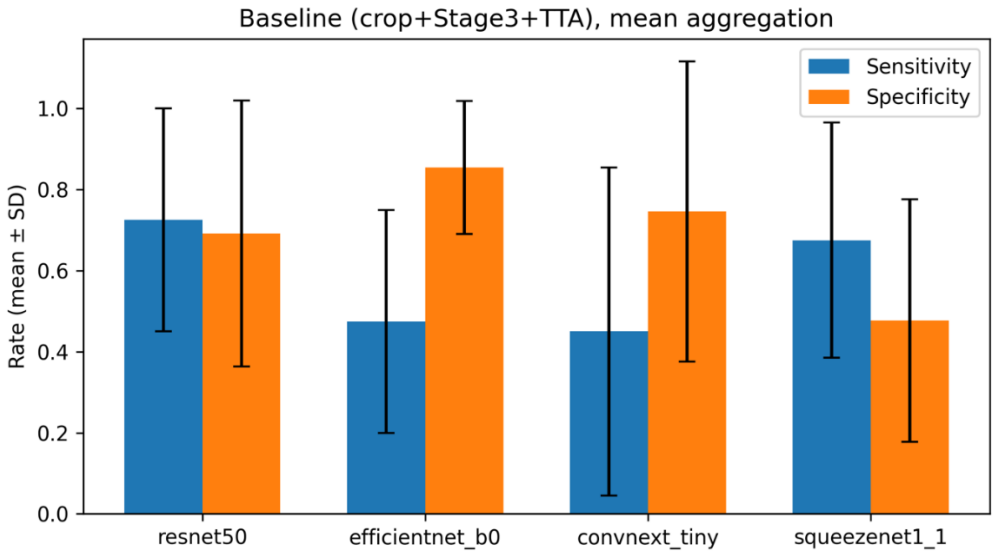
for the validation subjects to achieve≥80% sensitivity. When that target was not reachable, the Youden index (maximising TPR–FPR) was used. Sensitivity was defined as the proportion of pathology subjects correctly flagged as positive. Specificity was defined as the proportion of healthy subjects correctly flagged as negative. "Subject accuracy" refers to the fraction of test subjects correctly classified after aggregation and thresholding. The baseline pipeline was used: ImageNet-pretrained backbone, standardised pre-processing with cropping and padding, the proposed three-stage training schedule (head-only → partial unfreeze → class-imbalance fine-tune), mean or max aggregation at the subject level, and light test-time augmentation. Under the proposed baseline pipeline, subject-level performance was stable across backbones when mean aggregation was used (Figure 5). Across repeats, variability is shown as mean (± std), and no additional confidence intervals are reported to avoid over-interpretation on a small test cohort. The top models achieved the highest average AUROC with modest variability across repeats, while lower-capacity models trailed by a consistent margin. This pattern indicates that the pre-processing and 3-stage schedule transfer well across architectures, with differences largely attributable to backbone capacity.



(a)



(b)



(c)

Figure 5. Baseline subject-level AUROC with mean aggregation.

Under the baseline configuration (cropping, Stage-3, and test-time augmentation) with mean aggregation, subject-level AUROC ranged from ~0.66 to ~0.78 across the four backbones evaluated (Figure 5b). The two strongest performers were ResNet-50 (AUROC 0.784 ± 0.090) and EfficientNet-B0 (0.781 ± 0.106), while ConvNeXt-Tiny was close (0.757 ± 0.123) and SqueezeNet1.1 trailed (0.656 ± 0.174). Sensitivity–specificity trade-offs differed by model (Figure 5c): EfficientNet-B0 favoured specificity on this dataset (0.854 ± 0.164) at the cost of lower sensitivity (0.475 ± 0.275), whereas ResNet-50 yielded more balanced behaviour (sens 0.725 ± 0.275; spec 0.692 ± 0.328). Aggregate confusion matrices directly visualise these patterns (e.g., EfficientNet-B0 shows fewer false positives but more false negatives than ResNet-50). All results are subject-level and were computed under strictly subject-wise splits to avoid leakage. The present study was conducted on a small sample (84 images from 42 subjects), a major limitation for both statistical power and model generalisation. The reported results should therefore be interpreted as exploratory rather than definitive. In particular, the model was not explicitly stratified or adjusted for age, sex, BMI, or foot size, and it cannot be assumed that the learned decision boundary is stable across these factors. Uncertainty is expressed as the standard deviation across repeated subject-wise splits. Formal confidence intervals and hypothesis tests were not reported due to the limited cohort size, to avoid over-interpretation. The small cohort makes the results sensitive to differences in age, body mass, and foot morphology. With few subjects, a model can learn patterns that reflect this case mix rather than general features of flatfoot. No stratification or adjustment by age, BMI, or foot size was performed, and no normalisation for these factors was applied. Therefore, the reported metrics should be read as conditional on this cohort.

4. CONCLUSIONS

This study presents a methodology based on the application of artificial intelligence tools to detect flatfoot pathology. 2D images were measured to reflect the patient's foot structure. The observations showed that the proposed three-stage training system, together with orientation normalisation, cropping and dilation preprocessing, and test-

time padding, is the main source of reliability. The specific backbone mainly modulates the absolute performance level. Using 9 different models and training them 20 times, after applying the proposed model improvements, it is possible to assess the presence/absence of flatfoot pathology.

Regarding subject aggregation, the maximum aggregation often yielded a slightly higher AUROC, but the average aggregation was generally more stable across repetitions and produced a more balanced sensitivity and specificity profile. Our study and the proposed methodologies showed the best accuracy with two architectures—resnet50 and efficientnet_b0, which have accuracies of 0.808 (±0.13) and 0.781 (±0.103) when the average aggregation value is used, and 0.861 (±0.118) and 0.855 (±0.12) when the maximum aggregation value at the study level is used. In the future, we plan to apply this method to determine the stages of flatfoot pathology described in this article. This is a new and complex process, but in orthopaedics, it would help determine the stage of pathology more quickly and accurately.

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LEFT VENTRICULAR ANEURYSM AND THROMBUS FORMATION AFTER ACUTE MYOCARDIAL INFARCTION: TREATMENT OPTIONS

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ABSTRACT
Left ventricular aneurysm and thrombus are clinically significant complications of acute myocardial infarction. However, clear guidelines for selecting a treatment approach are lacking. A literature review was conducted to discuss the pathophysiology, aetiology, and associated risks of these complications, and to summarise treatment strategies and the process of selecting a suitable one. Conclusions: Left ventricular aneurysm with a mobile thrombus is a rare complication; therefore, therapeutic recommendations are based mainly on retrospective case series, and there are no clear treatment guidelines. Depending on the size of the aneurysm and the clinical significance of symptoms, either surgical treatment or conservative management with anticoagulation is chosen. More commonly, initial pharmacological therapy is selected, with therapeutic efficacy assessed over time and the need for surgical intervention reconsidered accordingly. Treatment is planned individually for each patient, taking into account the risks associated with surgery.

Keywords: *left ventricle aneurysm; left ventricle thrombus; acute myocardial infarction; left ventricular reconstruction.*

1. INTRODUCTION
In recent decades, outcomes of diagnosis and treatment of acute myocardial infarction (AMI) have improved significantly. According to 2019 data, 30-day mortality after diagnosis in European Union countries was 9% (the lowest in the Netherlands (3,2%); the highest, in Latvia (17%); and 13.4% in Lithuania) [1]. With improving survival rates after acute myocardial infarction, increasing attention should be directed toward complications that occur in the post-infarction period. These may be ischemic, mechanical, arrhythmic, embolic, or inflammatory in origin [2]. One of the most common complications of transmural AMI is left ventricular aneurysm. Epidemiological data reported in the literature indicate that it develops in 10–35% of all acute transmural myocardial infarction cases [3, 4].
Left ventricular aneurysm (LVA) is defined as a portion of the ventricular wall that has undergone fibrotic remodelling and paradoxically bulges outward during systole, resulting in reduced left ventricular ejection fraction (LVEF). Akinesia or dyskinesia of the affected myocardial segment is typically observed [5]. In 40–60% of cases, left ventricular thrombus (LVT) is also diagnosed concomitantly with post-AMI aneurysm formation, potentially leading to thromboembolic events [2, 3, 6]. Thrombus protrusion from the ventricular wall and its mobility are the principal determinants of embolic risk [7]. Several key factors predispose LV thrombus formation: large anterior wall or apical ST-segment elevation myocardial infarction (STEMI), especially when treatment is initiated more than 12 hours after symptom onset; reduced LV ejection fraction; and impaired contractility of the infarcted myocardial segment [8]. With increasing availability of percutaneous coronary intervention (PCI), advanced cardiac imaging, and early pharmacological therapy, the incidence of LV thrombus in AMI patients has decreased to 3–10% [9, 10]. A 2022

meta-analysis reported that LV thrombus formation after PCI occurs in 2–4% of cases [11].

This literature review aims to discuss the pathophysiology, aetiology, and clinical risks of left ventricular aneurysm and thrombus formation following acute myocardial infarction, and to analyse available treatment strategies for this patient population.

The aforementioned AMI complications and their associated symptoms directly affect patient quality of life, a major priority in contemporary medicine. Therefore, it is clinically relevant to review current strategies and the optimal timing for restoring LV structure in the presence of these complications. According to the literature, surgical aneurysm repair with thrombectomy is indicated in cases of refractory heart failure, thromboembolism, or life-threatening tachyarrhythmias [5]. In these cases, one of the most frequently performed procedures is surgical ventricular restoration (the Dor procedure), aimed at aneurysm resection and LV shape restoration [12].

2. MATERIALS AND METHODS

A search of scientific publications was conducted in the MEDLINE database using the PubMed search engine. The study includes an analysis of literature reviews, systematic reviews, meta-analyses, as well as retrospective clinical studies, observational studies, and case reports.

The following keywords were used during the search: “left ventricular aneurysm” OR “left ventricular thrombus” OR “left ventricular mobile thrombus” AND “treatment” OR “surgery” OR “surgical treatment” OR “left ventricular reconstruction” OR “Dor procedure” AND “myocardial infarction” OR “postinfarct*”.

Articles published in English or Lithuanian were selected for analysis. Initially, information was collected on the characteristics of left ventricular thrombus and aneurysm formation following acute myocardial infarction, including their features and their relevance to choosing an appropriate treatment strategy.

Subsequently, the search was narrowed by applying additional restrictions: articles published within the past 20 years; studies conducted in human subjects; patients older than 18 years; and cases in which left ventricular thrombus and aneurysm developed as a consequence of a newly occurring acute myocardial infarction. Particular attention was given to identifying the treatment strategies chosen in cases of mobile left ventricular thrombus.

3. RESULTS AND DISCUSSION

3.1. Pathophysiology of Left Ventricular Thrombus (LVT) Formation

The pathophysiological mechanism of left ventricular thrombus (LVT) formation can be explained by Virchow’s triad (blood stasis, myocardial injury, and hypercoagulability or inflammation) [10]. All components of this triad are present in the setting of acute myocardial infarction (AMI). A hypokinetic or akinetic ventricular segment promotes blood stasis. Studies demonstrate that AMI patients with reduced left ventricular ejection fraction (LVEF) at hospitalisation have a higher risk of developing LVT [14–16]. Decreased LVEF is considered a principal risk factor for thrombus formation. Furthermore, increased left ventricular dimension (>60 mm) is associated with a higher likelihood of thrombus formation [16].

The extent of local myocardial injury influences the risk of LVT. Compared with patients with non-ST-segment elevation myocardial infarction (NSTEMI), those with ST-segment elevation myocardial infarction (STEMI) are more likely to develop LVT. The final component of Virchow’s triad— inflammation and

hypercoagulability—also contributes to thrombus formation. Monocytes and macrophages participate in myocardial healing; local inflammation promotes platelet aggregation and fibrin network formation through interaction with pro-inflammatory cytokines. Elevated platelet count and increased C-reactive protein levels are associated with a higher incidence of LVT following AMI [6,8,16].

LVT most commonly develops within the first two weeks after myocardial infarction [17]. Diagnosis may be challenging, as many thrombi form during the second week, by which time patients have already been discharged from the hospital. Therefore, the 2023 European Society of Cardiology guidelines emphasise the importance of the appropriate timing of imaging (transthoracic echocardiography or cardiac MRI). The imaging tests are recommended at least two weeks after AMI [18].

LVT is morphologically classified according to its configuration: a flat thrombus parallel to the endocardial surface is defined as mural, whereas a thrombus protruding into the left ventricular cavity is classified as protruding. If any part of the thrombus exhibits independent motion relative to the myocardium, it is defined as mobile [19].

3.2. Risk of Embolisation in Left Ventricular Thrombus

The presence of LVT is associated with a substantial risk of embolisation. According to data from the American Heart Association, the risk of thromboembolism may reach up to 22%, depending on thrombus morphology and additional risk factors [8]. Most embolic events occur within the first three months after MI, with the highest risk during the initial weeks.

The most important predictor of embolic risk is thrombus mobility and protrusion into the ventricular cavity [20]. Thrombus size appears less significant in predicting embolisation [8]. Interestingly, mobile thrombi have been reported to respond more favourably to pharmacological therapy than mural thrombi and may resolve more rapidly (within approximately 1 month) [21].

3.3. Aneurysm Formation and Associated Symptoms

Myocardial changes leading to aneurysm formation begin within the first hours after AMI. The infarcted myocardium becomes thinned; during the initial days, inflammatory cells migrate into the affected region, and necrotic myocytes undergo lysis. The ventricle dilates, and akinetic and dyskinetic fibrotic tissue develops, leading to ventricular remodelling. Left ventricular aneurysm typically begins to form within 2–10 days after AMI [2].

An aneurysm develops when, following transmural myocardial infarction, a damaged myocardial segment loses its contractile function and bulges outward during systole due to increased intracavitary pressure, resulting in reduced left ventricular stroke volume [2].

Over time, LV dilation progresses, wall stiffness increases, and LV end-diastolic pressure rises. Laplace's law ($\sigma = Pr/2\ h$) explains these processes [22]. At constant ventricular pressure (P), increased radius (r) and reduced wall thickness (h) increase wall stress (σ), promoting further deformation and ischemia. Functionally, this leads to ventricular dilation and increased end-diastolic volume, contributing to myocardial hypertrophy, increased oxygen demand, and symptoms such as angina or arrhythmias [5].

Fibrosis, wall thinning, and dilation are interrelated processes. LV dilation promotes aneurysm formation, and aneurysm formation further contributes to progressive myocardial hypertrophy and clinical deterioration. Some reports suggest that mural LV thrombus may exert a mechanical stabilising effect at the infarct site, potentially

reducing the risk of ventricular rupture. By partially restoring wall thickness, mural thrombus may reduce wall stress, as per Laplace's law, and thereby improve contractile efficiency [23].
LV aneurysm diameter typically ranges from 1 to 8 cm. In 90% of cases, aneurysms develop in the apical or anterior wall, and in 10% in the inferoposterior wall [5].
The clinical presentation of LV aneurysm is variable. Some patients are asymptomatic, and the aneurysm is detected incidentally on TTE or cardiac MRI. The most common symptom is angina [5]. Dyspnea, arrhythmias, and heart failure may also occur. In severe cases, pulmonary oedema, thromboembolism, or ventricular rupture may develop [3].

3.4. Myocardial Remodelling and Scar Formation After MI: Implications for Treatment Strategy

Myocardial remodelling is a dynamic process comprising three phases: inflammatory-necrotic, proliferative-fibrotic, and long-term remodelling.
Following AMI, fibroblasts are activated and differentiate into myofibroblasts, which are the primary source of extracellular matrix during myocardial healing. A temporary fibrin-based matrix forms in the inflammatory environment [24]. The final phase, long-term remodelling, lasts several months. During this phase, collagen content stabilises, the provisional fibrin matrix is replaced by mature collagen, and the scar gains structural stability through collagen cross-linking [25].
Aneurysmectomy is recommended during the third remodelling phase, after stable scar formation, as it reduces the risk of bleeding and improves surgical outcomes [19]. Delayed intervention also facilitates differentiation between viable and non-viable myocardium intraoperatively.
Recently, a modified surgical approach for LVT removal has been introduced, aiming to preserve LV wall integrity through trans-mitral thrombectomy. This approach avoids direct ventricular incision in fragile post-infarction myocardium but is applicable only in cases of LVT without concomitant aneurysm [26,27].

3.5. Treatment Recommendations

The European Society of Cardiology and the European Association for Cardio-Thoracic Surgery guidelines on myocardial revascularisation recommend considering LV aneurysmectomy combined with coronary artery bypass grafting (CABG) in patients with NYHA class III–IV heart failure, large LV aneurysm, large thrombus, or aneurysm-related arrhythmias (Class IIa, Level C recommendation). LV reconstruction during CABG is performed in selected patients at specialised centres (Class IIa, Level B recommendation) [22,28]. No specific timing for surgery is defined in the guidelines.
Isolated LVT without aneurysm is not considered an indication for open-heart surgery [9]. The 2023 ESC guidelines recommend vitamin K antagonists or direct oral anticoagulants for 3–6 months, with repeat imaging (TTE or cardiac MRI), bleeding risk assessment, and consideration of concomitant antiplatelet therapy. The guidelines acknowledge the lack of prospective randomised trials to determine optimal anticoagulation regimens and duration [18]. Increasingly, patients with both LV aneurysm and thrombus are managed conservatively with outpatient anticoagulation therapy [9].
Regarding mobile and protruding LVT, available literature consists primarily of case reports and case series describing heterogeneous strategies, including urgent thrombectomy and conservative management [13]. Neither European nor American

societies provide specific recommendations for these thrombi. A 2022 American Heart Association scientific statement concluded that current evidence is insufficient to routinely recommend surgical intervention in the absence of other operative indications. Surgical management may be considered in exceptional circumstances, such as intolerance to anticoagulation or high embolic risk [8], although clear criteria for defining embolic risk are not provided.

3.6. Left Ventricular Restoration Surgery

Although surgical treatment of LV aneurysms has been performed for more than 50 years, opinions regarding its benefit in advanced ischemic heart disease remain divided. The RESTORE group reported in 2004 that LV restoration surgery significantly improved outcomes in ischemic cardiomyopathy, with a 5-year survival of 68.6 ± 2.8% and a significant improvement in NYHA functional class [29].

However, the 2009 randomised controlled STICH (Surgical Treatment of Ischemic Heart Failure) trial demonstrated no significant difference in outcomes between CABG alone and CABG with LV volume reduction [30]. LV volume reduction did not significantly improve symptoms, exercise tolerance, or mortality. The study was later criticised for including patients with relatively small aneurysms. Subsequent analyses suggest that LV volume restoration is beneficial in patients with large symptomatic aneurysms and a significantly reduced LV volume, particularly when postoperative end-systolic volume index is ≤ 70 mL/m² [31]. Patients with extensive LV scarring, who may benefit most, were excluded from the STICH trial [32].

A 2018 systematic review including 27 studies concluded that LV restoration surgery may improve long-term outcomes in selected patients [33].

3.7. Review of Treatment Strategies for Mobile and Protruding Thrombi

Cases of mobile LVT with concomitant LV aneurysm following recent AMI are rare. A review of the past 20 years identified 9 case reports, 1 retrospective descriptive study, and 1 retrospective cohort study involving patients with LV aneurysm and thrombus after recent AMI (Table 1). Reported management strategies included urgent surgery, initial medical therapy followed by surgery, and exclusive pharmacological management. Most reports describe favourable outcomes without major complications, highlighting the perceived success of the selected treatment strategy.

The case report by F. He and colleagues described an adverse outcome in a patient with a hypermobile left ventricular thrombus: during conservative management with low-molecular-weight heparin, the patient developed an ischemic stroke two days after AMI [34]. The patient was transferred to the neurology department, and surgical treatment was performed one month later. It is important to note that this patient had multiple high-risk factors, including a myocardial bridge of the right coronary artery, alcohol abuse, and active smoking.

Bennett and colleagues reported a case in which vitamin K antagonists were contraindicated for the patient; therefore, treatment with apixaban was initiated. A favourable outcome was observed, with thrombus resolution within six days and no complications.

S. Pasli and colleagues suggest that surgery should be performed immediately. Although urgent surgical intervention may reduce the risk of thromboembolism, it is rarely chosen [13,42], yet reported cases describe favourable outcomes. H. Minami and colleagues reported surgery performed three days after AMI using the David–Komeda technique, in which a patch is sutured to the non-infarcted endocardial

surface, thereby reducing bleeding risk. However, they suggested that optimal timing for surgery may be approximately two weeks after AMI.

In a retrospective study, Joo Myung Lee and colleagues reported that no thromboembolic complications occurred after surgical treatment. In contrast, thromboembolic events were observed in 17% of patients treated with warfarin, despite maintaining a therapeutic INR (2.75 ± 0.43). However, it should be emphasised that left ventricular restoration surgery carries inherent risks, including postoperative ventricular dysfunction, bleeding, and arrhythmias [43].

A 2019 systematic review including 3,220 patients reported 30-day mortality of 7.1% and 5-year mortality of 29% following left ventricular restoration surgery [33]. Factors associated with worse outcomes included higher NYHA functional class, LVEF < 20%, age > 70 years, urgent surgery, concomitant mitral valve replacement, prolonged operative time, and higher EuroSCORE index [43,44].

Across all reviewed case reports, a recurring limitation was the lack of randomised controlled trials to guide management decisions in patients with mobile left ventricular thrombus and left ventricular aneurysm following AMI. Furthermore, comparative studies evaluating direct oral anticoagulants versus vitamin K antagonists in this clinical setting remain limited.

Table 1. Studies and their characteristics

Study	Study design	Patient Age (years)	Management Strategy	Thrombus' Characteristics	LVE F (%)	Clinical Outcomes / Complications
He et al (2023) [34]	Case report	33	Pharmacological/surgical	Hypermobile	63	Stroke before surgical treatment
Pasli et al (2022) [13]	Case report	74	Urgent surgery	Mobile	10-15	No complications reported
Shi et al (2022) [35]	Retrospective cohort study	-	21 patients pharmacological and 7 surgical	Mobile	-	Not mentioned separately
Demirci et al (2020) [36]	Case report	35	Surgical	Hypermobile	35	No complications reported
Bennett et al.	Case report	42	Pharmacological	Mobile	29	Thrombus dissolved in 6 days

(2018) [37]						
Kolekar et al (2015) [38]	Case report	61	Pharmacological	Mobile		No complications reported, thrombus dissolved
Oyedeji et al (2013) [39]	Case report	50	Pharmacological	Protrudent, mobile	30-35	No complications reported, thrombus dissolved
Lee et al (2013) [40]	Retrospective descriptive	-	Pharmacological/surgical	Mobile/ several thrombi	-	Thromboembolism in 5 of 9 patients
Cimadevilla et al (2010) [41]	Case report	37	Pharmacological	Mobile		Size reduction, loss of mobility (at 2 months)
Kikuchi et al (2009) [42]	Case report	59	Urgent surgery	2 mobile thrombi	38	No complications reported
Minami et al (2008) [19]	Case report	61	Pharmacological and after 3 days of surgery	Mobile	34	No complications reported

4. CONCLUSIONS

Based on the literature review, it can be concluded that current decision-making regarding the management of left ventricular aneurysm and mobile thrombus is largely based on institutional experience, case reports, and individualised clinical assessment of the patient. European and American treatment recommendations lack specificity, and no dedicated guidelines exist for the management of mobile left ventricular thrombus. The timing of surgery is determined on an individual basis, taking into account the patient's bleeding risk and the risk of thromboembolism; conservative management may be beneficial prior to surgical intervention [16].

Left ventricular volume restoration surgery is effective in cases of large, symptomatic aneurysms and markedly reduced left ventricular function (LV ejection fraction < 30%) [31]. Small aneurysms and associated thrombi are managed conservatively, as

aneurysmectomy in such cases does not provide significant hemodynamic benefit and may increase perioperative risk.

Pharmacological treatment with anticoagulants is more commonly selected as primary therapy, with therapeutic efficacy dynamically assessed and the need for surgery reconsidered accordingly, as LV reconstruction is safer after the formation of stable scar tissue within the weakened, fragile myocardial wall. Immediate surgery is associated with increased bleeding risk at suture lines and higher intraoperative risk, as it is difficult to differentiate viable from non-viable myocardium. However, in cases of high embolic risk when the LV thrombus is mobile and protruding from the ventricular wall, urgent thrombectomy is considered. Nevertheless, the literature lacks consensus and detailed guidelines regarding the optimal therapeutic strategy in such cases. Further randomised controlled trials are needed to guide evidence-based management and improve patient outcomes.

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USER EXPERIENCES AND BEHAVIOUR IN ORTHOTIC USE: FACTORS OF MOTIVATION AND SATISFACTION

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ABSTRACT

Orthoses are externally applied devices intended to modify or support neuromuscular and skeletal function and are widely used to reduce pain, improve stability, and maintain participation in daily activities. Despite advances in materials, design, and service delivery, real-world adherence to prescribed orthosis wearing regimens often remains suboptimal, limiting therapeutic effectiveness. This narrative review synthesises evidence on user behaviour, motivation, and satisfaction in orthosis use, integrating clinical and consumer-behaviour perspectives. A targeted search of major biomedical databases and key standards documents was conducted, prioritising studies that report adherence, reasons for discontinuation, and validated satisfaction outcomes (e.g., QUEST 2.0; OPUS). The synthesis indicates that adherence is shaped by a dynamic balance between perceived benefits (pain relief, functional gains, avoidance of surgery, prevention of deterioration) and perceived burdens (discomfort, skin irritation, restricted movement, heat, aesthetic concerns, stigma, and disruption to routines). Service quality—especially accurate fitting, education, and follow-up emerges as a modulator of satisfaction and continued use. Evidence also suggests self-reported wearing time may overestimate actual wear, supporting selective use of objective monitoring in high-stakes indications. The review concludes that maximising orthosis effectiveness requires an integrated, user-centred approach that combines biomechanical optimisation with psychosocial support, clear communication, and iterative service delivery.

Keywords: *orthoses; orthopedic braces; adherence; patient satisfaction; motivation; user experience; service quality*

1. INTRODUCTION

Orthoses (often referred to as orthopaedic braces or supports) are a major class of assistive medical devices designed to protect, stabilise, correct, or otherwise influence the structural and functional characteristics of the neuromuscular and skeletal systems [1]. Their clinical purpose commonly includes pain reduction, improved joint stability, prevention of secondary injury, post-operative or post-trauma support, deformity correction, and functional assistance in chronic conditions [2,3]. Orthoses are therefore positioned at the intersection of engineering design, clinical decision-making, behavioural adherence, and real-world daily living.

Demand for orthopaedic braces and supports has increased in the mid-2020s, amid population ageing, a higher prevalence of musculoskeletal disorders, expanding rehabilitation needs, and sustained participation in sports and leisure activities [4,5]. Market estimates differ by methodology, but multiple analyses place the global orthopaedic braces/supports market at mid–single-digit billions (USD) in the mid-2020s, with projected growth through 2030 [4,5]. From a health services and outcomes perspective, increasing access and technological sophistication do not guarantee that prescribed orthoses deliver the intended benefits if users do not wear them as recommended.

A persistent and clinically consequential gap exists between prescribed orthosis wear and actual orthosis use. This gap is often described as “compliance” in older clinical language; however, contemporary frameworks emphasise “adherence” as a multidimensional behaviour influenced by patient, therapy, condition, healthcare system, and socioeconomic factors [6]. Orthosis adherence is particularly relevant when therapeutic benefit is dose-dependent, as in adolescent idiopathic scoliosis (AIS) bracing, where hours of wear are associated with the probability of treatment success [7]. Similarly, in knee osteoarthritis, a substantial proportion of users discontinue unloader braces within a year, commonly due to discomfort, inadequate symptomatic relief, poor fit, and skin irritation [8]. In such contexts, adherence becomes not merely a behavioural afterthought but a mechanism through which orthotic efficacy is realised or undermined.

Orthosis use also has a psychosocial dimension. Especially among adolescents, brace visibility, perceived stigma, and body image concerns can negatively influence satisfaction and willingness to wear the device in public or for the prescribed duration [9–11]. These factors can create a paradox: the individuals who may benefit substantially from consistent brace wear (e.g., AIS patients at risk of progression) may also experience heightened emotional and social burdens that reduce adherence.

From a measurement standpoint, understanding orthosis-related satisfaction and service experience is strengthened by the use of validated instruments. The Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST 2.0) evaluates satisfaction across device and service dimensions, including comfort, effectiveness, usability, and professional services [12,13]. The Orthotics and Prosthetics Users’ Survey (OPUS) similarly provides structured modules to assess outcomes and satisfaction with devices and services [14]. These tools enable a patient-centred, quality-improvement orientation consistent with global guidance that assistive products require appropriate services (assessment, fitting, follow-up) to be effective in practice [3,15].

Aim and contribution. This manuscript aims to synthesise and conceptually integrate evidence on the determinants of user behaviour, motivation, and satisfaction in orthosis use, emphasising how these determinants shape adherence and, consequently, treatment effectiveness. The manuscript also translates these determinants into practical recommendations for orthosis design, clinical service delivery, and future research.

2. MATERIALS AND METHODS

This manuscript is a targeted narrative review and secondary synthesis of published evidence addressing orthosis user behaviour, motivation, satisfaction, and adherence. The approach is appropriate given the heterogeneity of orthosis types, indications, and outcome measures, as well as the need to integrate clinical evidence with behavioural and service-quality constructs [6,12,14].

Included sources met one or more of the following conditions: 1) reported adherence/wearing time or continuation/discontinuation rates for orthoses; 2) examined determinants of adherence (e.g., comfort, aesthetics, psychosocial factors, health belief constructs); 3) reported patient satisfaction using validated tools (e.g., QUEST 2.0, OPUS, D-QUEST); 4) addressed orthosis service delivery standards (assessment, fitting, follow-up); or 5) investigated objective adherence monitoring (e.g., sensor-based wear tracking). Excluded sources were purely technical engineering papers without user outcomes and opinion pieces lacking empirical or standards grounding.

A targeted search was conceptually structured around biomedical databases (e.g., PubMed/MEDLINE) and standards repositories. Search terms combined orthosis/brace terminology with constructs of adherence and satisfaction (e.g., "orthosis and adherence," "brace compliance and scoliosis," "knee unloader brace use," "QUEST 2.0 orthotics," "OPUS orthotics satisfaction"). Additional "citation chaining" was applied from key papers and standards documents to identify foundational and recent evidence on adherence measurement and psychosocial determinants [6–8,12,14].

For each included source, the following data were extracted qualitatively: population/indication, orthosis type, adherence definition/measurement method (self-report vs objective), satisfaction domains, reported barriers/facilitators, and service-related factors (fitting, education, follow-up). Findings were synthesised into a conceptual model linking determinants to satisfaction and adherence, and adherence to treatment effectiveness.

No human subjects were recruited, and no identifiable patient data were used in this review; therefore, ethics committee approval was not required.

Generative AI was used in a supportive capacity to support structural organisation. All academic content, interpretation of sources, and scholarly conclusions remain the independent work of the authors.

3. RESULTS AND DISCUSSION

3.1. Overview of the evidence synthesis

Across orthosis contexts, adherence emerges as a behavioural outcome shaped by a trade-off between perceived benefits and perceived burdens, moderated by service quality and psychosocial context [6,8,9]. This pattern is consistent with a multidimensional adherence model and supports treating orthosis use as a user-centred health behaviour rather than a purely mechanical intervention [6,15].

3.2. Context of orthosis use: types, functions, and service dependency

Orthoses are used across multiple anatomical regions (e.g., foot orthoses, knee braces, spinal orthoses, wrist-hand splints) and indications (acute injury stabilisation, chronic degenerative disease management, rehabilitation, deformity correction) [1–3]. While device design determines the mechanical action (support, unloading, immobilisation, alignment), real-world effectiveness depends on fitting accuracy, user training, maintenance/adjustments, and follow-up services [3,12,15]. The WHO standards for prosthetics and orthotics emphasise that assistive products require accompanying services and user-centred decision-making to achieve functional and participation benefits [3,15]. This standards perspective reinforces a service-dominant view: the orthosis is not only a product but also a clinical service pathway.

3.3. Adherence patterns and the importance of measuring actual wear

Dose dependence and scoliosis bracing. In AIS, high-quality evidence shows that bracing can reduce progression to surgical thresholds, and greater daily wear time is associated with a higher likelihood of success [7]. This establishes adherence (hours worn) as a mechanism of action rather than merely a behavioural correlate.

3.4. Attrition in osteoarthritis knee bracing

In knee osteoarthritis, a commonly prescribed intervention is an unloader brace, intended to reduce pain and improve function by mechanically unloading the joint.

However, longitudinal data show that only a minority of patients continue regular use for 1 year or more, with discontinuation attributed to insufficient symptom relief, discomfort, poor fit, and skin irritation [8]. This pattern highlights a key behavioural reality: even clinically rational prescriptions can fail if the lived experience of use is negative.

3.5. Self-report bias and objective monitoring

Evidence indicates that self-reported wearing time can overestimate objectively measured wear. Sensor-based monitoring and other objective approaches have been adopted in AIS research and clinical practice to improve measurement fidelity and support counselling [16,17]. Systematic reviews suggest sensors provide continuous monitoring and can be integrated with education/counselling interventions to improve adherence, though study quality and generalizability remain variable [16].

3.6. Determinants of motivation and continued use

Motivation to wear an orthosis is strongly supported when users perceive meaningful benefit- pain reduction, improved stability, functional independence, prevention of deterioration, or avoidance of surgery [7,8,18]. In AIS, avoiding progression and surgery is a salient motivator, and the effectiveness of bracing reinforces adherence when communicated clearly and experienced as valuable [7,10]. In chronic neuromuscular conditions, motivation may also centre on preserving function and delaying contractures, even if comfort challenges persist [18].

3.7. Psychosocial and cognitive drivers

Beliefs, intentions, social norms, and perceived behavioural control influence orthosis adherence. For example, adherence to ankle-foot orthoses (AFOs) in stroke populations has been modelled using the Theory of Planned Behaviour, in which intention predicts adherence and is shaped by attitudes and perceived control [19]. This supports a pragmatic implication: interventions that improve perceptions of benefit, reduce perceived barriers, and strengthen user self-efficacy may increase orthosis use.

3.8. Common barriers to adherence and satisfaction

Comfort and physical burden. Discomfort is repeatedly identified as a dominant barrier, including pressure points, skin irritation, heat, bulk, and restricted movement [8,13,18]. In practical terms, discomfort can negate perceived benefits, particularly when symptom relief is not immediate or when the orthosis interferes with valued daily activities.

3.9. Aesthetics, stigma, and body image

For adolescents wearing spinal braces, body image concerns and fear of negative social attention are central burdens [9–11]. Quantitative and qualitative findings show brace treatment can affect perceived happiness, satisfaction, and self-image relative to peers, underscoring that psychosocial costs can be clinically significant even when physical outcomes improve [9,11]. These burdens justify design and service innovations that reduce visibility, improve aesthetics, and normalise brace use through supportive counselling and peer-informed strategies.

3.10. Service and system barriers

Even a well-designed orthosis can fail when service delivery is inadequate- poor fitting, insufficient education, delayed adjustments/repairs, or weak follow-up [3,12,15]. Standards emphasise the necessity of user-centred decision-making and regular follow-up to ensure fit, acceptability, and documentation of outcomes [15]. At a behavioural level, insufficient service can reduce trust and perceived value, thereby reducing intention to continue use [19].

3.11. Determinants of satisfaction and how satisfaction relates to adherence

Validated satisfaction frameworks. QUEST 2.0 conceptualises satisfaction across device attributes (e.g., comfort, effectiveness, ease of use) and service dimensions (professional services, repair/follow-up), positioning satisfaction as a multidimensional construct relevant to continued use [12,13]. OPUS provides modules for assessing device and service satisfaction and functional outcomes, supporting quality assessment in orthotic programs [14].

3.12. Satisfaction as a predictor of continued use

The behavioural pathway implied by the literature is: device/service experience, satisfaction, intention/continued use, adherence, clinical outcome. This is consistent with evidence that discomfort and poor fit contribute to discontinuation in knee bracing and hand orthoses [8,18]. It is also consistent with assistive-technology service frameworks that treat satisfaction and user participation as key outcomes of effective provision [3,12,15].

3.13. Limitations

This review is limited by heterogeneity across orthosis types, indications, and adherence measurement methods. In particular, adherence estimates depend on whether studies use self-report, clinician estimates, or objective sensors; self-report may overestimate true wear [16,17]. Evidence is also uneven across populations: AIS and knee osteoarthritis have relatively visible adherence and outcomes research, while many everyday orthosis uses (e.g., low back supports) may be underrepresented in high-quality adherence studies. Furthermore, although behavioural frameworks (e.g., Theory of Planned Behaviour) have been applied to orthosis adherence, broader theory-informed intervention trials remain limited, and causal inference is often constrained by observational designs [19].

3.14. Recommendations

Design recommendations. Comfort optimisation should be treated as a primary therapeutic objective rather than a secondary feature, given its centrality to continued use [8,13]. Aesthetic acceptability should be incorporated as a design requirement in populations sensitive to visibility and stigma, particularly adolescents [9–11]. Iterative personalisation- adjustments after initial fitting based on user feedback- should be built into routine care pathways [12,15].

3.15. Service recommendations

Orthosis provision should follow a user-centred service model, emphasising shared decision-making, education, and regular follow-up to safeguard the acceptability of fit and function and to document outcomes [15]. Practical adherence support should include clear explanations of expected benefit timelines, management of discomfort/skin issues, and contingency plans for adjustments and repairs [3,12].

3.16. Behavioural and monitoring recommendations

Where outcomes are strongly dose-dependent (e.g., AIS bracing), selective objective monitoring with feedback-informed counselling may improve adherence and support accurate clinical decision-making [7,16]. Behavioural strategies should target intention, perceived behavioural control, and attitudes about orthosis value, consistent with evidence that these constructs can predict AFO adherence [19]. For adolescents, interventions should explicitly address body image, social participation, and school-context constraints, with mechanisms for family and peer support [9–11].

4. CONCLUSIONS

Orthosis effectiveness in real-world care is mediated by user behaviour- specifically, whether and how consistently users wear devices as prescribed. Evidence indicates that adherence can be low in practice and that the therapeutic effect depends on the "dose"; reduced adherence can substantially reduce outcomes. Adherence is determined by a balance between perceived benefits (symptom relief, function, prevention of deterioration, avoidance of surgery) and perceived burdens (discomfort, restricted mobility, heat, aesthetics, stigma), with service quality acting as a critical moderator. Validated satisfaction tools (e.g., QUEST 2.0, OPUS) reinforce the idea that both device and service domains shape the user experience and continued use. Optimising orthosis care, therefore, requires an integrated, user-centred approach that combines biomechanical design excellence with high-quality service delivery, psychosocial support, and, where appropriate, objective monitoring and feedback. Future research should prioritise theory-informed interventions and standardised adherence measurement to strengthen causal understanding and improve orthosis outcomes at scale.

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INTEGRATION OF SPIRITUAL CARE IN PALLIATIVE CARE

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ABSTRACT

Based on the concept of palliative care, it becomes evident that integrality in palliative care means that support for the patient encompasses not only medical, social, and psychological perspectives, but also a spiritual approach to the person. Palliative care provides comprehensive support not only to the patient but also to their relatives, thus becoming holistic in nature - addressing the whole person with their physical, social, spiritual, psychological, and emotional characteristics, as well as their strengths, weaknesses, and the difficulties and challenges they encounter. Pastoral care integrates the understanding that each person is important and unique, and that every effort should be made to help the patient not only die peacefully but also live as fully and comfortably as possible until death. In many cases, the assistance of a pastoral care specialist is needed to understand the situation adequately and to help patients and their relatives view illness and the dying process as a natural and inevitable part of life. This study aims to identify the assumptions underlying the need to integrate pastoral care into palliative care for patients and their relatives. The object of the study is the integration of pastoral care in palliative care. Research methods: (1) analysis of scientific literature and documents using synthesis and comparative methods; (2) questionnaire survey and statistical data analysis.

Keywords: *pastoral care, integration, palliative care, patient.*

1. INTRODUCTION

Although spirituality is internationally recognised as a significant component of human well-being and quality of life, the practical implementation of the spiritual dimension within healthcare systems remains uneven and fragmented. Palliative care promotes a holistic, person-centred model; however, in practice, spiritual care often remains less structured than medical or psychosocial care. The growing attention of scientific research to spiritual interventions and their impact on patient well-being highlights the relevance of this field (Austin et al., 2025). Nevertheless, there is still insufficient understanding of how pastoral care is perceived within specific palliative care systems, of the assumptions that underlie its necessity, and of the organisational or structural factors that determine its development. In other words, a gap exists between the normative holistic care model established in policy documents and the empirically grounded understanding of how spiritual care is integrated in real-life contexts. Thus, the key question is no longer whether spiritual care is necessary, but rather how it should be systematically integrated into palliative care - whether pastoral care is perceived as an additional, optional activity or as an integral and strategically planned component of team-based practice. Considering this issue, it is necessary to empirically analyse the need for integrating pastoral care and the preconditions for its implementation. This article aims to reveal the assumptions underlying the need for integrating pastoral care into palliative care for patients and their relatives. The object of the study is the integration of pastoral care in palliative care.

Research methods: 1) analysis of scientific sources and documents using synthesis and comparison methods; 2) questionnaire survey and statistical data analysis.

2. SPIRITUALITY IN PALLIATIVE CARE THROUGH PASTORAL CARE

In palliative care, there is a striving to apply a person-centred approach that encourages seeing not the disease but the person, focusing on the patient's strengths rather than disabilities. Pope Francis (2022) stated that "new medical technologies allow the application of effective treatment and rehabilitation methods; however, none of this should ever overshadow the uniqueness, dignity, and fragility of every patient. The patient is always more important than the disease." Pastoral care integrates the principle that every person is important and unique, and that everything should be done so that the patient not only dies peacefully but also lives fully until death. This approach is grounded in the recognition of the sanctity of human life and in the respect for the dignity and uniqueness of the person, which allows compassion and love for one's neighbour to flourish. It also implies the ability and attitude to accept the patient's situation as it is. In many cases, the assistance of a pastoral care specialist is necessary in order to understand the situation adequately and help patients and their relatives perceive illness and death as a natural and inevitable part of life. In palliative care, pastoral care for patients is understood as spiritual care. The "spiritual" dimension encompasses a person's relationship with transcendence, including questions of ultimate meaning, religious and spiritual beliefs, values, and practices. The main concern of pastoral care is to respond to the patient's spiritual and religious needs, increase opportunities for spiritual or religious coping, and alleviate suffering. Pastoral care workers devote particular attention to spiritual needs and resources. Patient care integrates medical, social, psychological, and spiritual perspectives of the person. It relates not only to monitoring and supporting the patient's physical condition but also to existential questions that arise during illness, for example: "What is the meaning of life if I become dependent on others and a burden to them?" Documents regulating palliative care in Lithuania indicate the goals of integrated care: to reduce patients' physical suffering; to identify the psychological and social problems of patients and their relatives and help address them; to improve the quality of life of patients and their relatives; to support the patient's family and/or relatives during the bereavement period. Spirituality, defined by an international consensus group as "the way individuals seek and express meaning and purpose and experience their connectedness to the present moment, themselves, others, nature, and the significant or sacred," plays an important role in the context of serious illness (Balboni, 2023; Wei et al., 2025). Spirituality is a broad construct: although it includes communal forms of religious traditions, it also extends beyond them and encompasses diverse sources of meaning, connection, and transcendence (Balboni, 2023). Spiritual care is increasingly recognised as an essential component of palliative care. Given the growing body of literature on spiritual interventions, there is a need to systematically evaluate and synthesise the findings of prior systematic reviews (Austin et al., 2025). According to the World Health Organisation (WHO), spiritual care includes spiritual support intended to address the spiritual and/or religious needs of patients, their families, and members of the care team in all care settings. Spirituality and spiritual well-being are multidimensional constructs encompassing existence, values, and religion. The existential dimension relates to questions of identity, meaning, suffering, despair, guilt, shame, reconciliation and forgiveness, freedom and responsibility, hope, love, and joy. Values and attitudes refer to what is most important to each individual (relationships with oneself, family, friends, work, nature, art and culture, ethics and morality, and life itself). Religion is associated with faith, beliefs, and a person's relationship with God or a higher power. Palliative care

refers to measures aimed at improving the quality of life of patients with life-threatening, incurable, progressive diseases and their relatives, seeking to alleviate suffering and address physical, psychosocial, and spiritual problems (WHO, 2020). Palliative care holistically integrates medical, psychosocial, social, and spiritual support for patients and their environment, involving not only specialists but also patients, family members, and volunteers on the care team. The main principles of palliative care include: respect for the patient as a unique person with intrinsic value; recognition of the patient as an inseparable unity of body, soul, and spirit; acknowledgement of the dignity and invaluable worth of every person until natural death (Wei et al., 2025). Palliative care encompasses not only the principle of non-euthanasia as a practical expression of respect for every human life, but also dimensions of teamwork, community, integration, dynamism, and pastoral accompaniment. Palliative care is provided to patients suffering from severe, progressive, advanced-stage diseases when life is approaching its end, as well as to family members and relatives during the bereavement period. The main goal of palliative care is to reduce pain and other symptoms and to provide emotional, spiritual, and practical support to patients and their relatives. Palliative care can be provided simultaneously with other treatments, such as chemotherapy or radiotherapy. However, when curative treatment options are exhausted, palliative care may become the primary form of care. Its purpose is to alleviate suffering and ensure the best possible quality of life for the patient.

3. EMPIRICAL STUDIES

In recent years, the scientific literature has increasingly focused on the role of the spiritual dimension in palliative care. Empirical studies indicate that spirituality is closely related to the search for meaning in life, the process of reconciliation, and the reduction of existential suffering, thereby becoming an important component of holistic care. Although spiritual care is recognised as an essential component of palliative care, its practical implementation across different healthcare environments remains uneven. The empirical studies presented in Table 1 reveal various aspects of pastoral and spiritual care in palliative and critical care settings. Batstone (2020), who conducted a systematic analysis of 19 electronic databases, found that palliative care nurses perceive spiritual care through a triadic model consisting of the spirit of nursing, the soul of care, and the body of care. The results showed that the spiritual care provided by nurses is grounded in an integrated, holistic worldview in which personal spirituality, life experience, and professional practice form a unified system. This confirms that spiritual care is not an incidental or supplementary activity but emerges from an integrated professional identity. Wei et al. (2025), in a systematic review and meta-synthesis of qualitative studies, identified five main themes describing the spiritual needs of adolescents with cancer: autonomy, connectedness, the search for meaning in life, a positive outlook, and confrontation with death. The study revealed that spirituality is an important part of patients' lives and significantly influences their spiritual health and quality of life. These results indicate that spiritual needs are not peripheral but constitute an essential dimension of the illness experience. Balboni (2025), in a case analysis examining an oncological emergency care situation, emphasises that existing palliative care quality guidelines identify spiritual care as a core domain of care. Integrating spiritual care into patient and family care strengthens holistic care and improves overall well-being. This study highlights that the spiritual dimension is relevant not only in long-term care but also in acute clinical situations. A case analysis by Karmakar et al. (2025) demonstrated

that, even in critically ill, intubated, but conscious patients, spiritual care remains responsive. A 67-year-old patient who reacted negatively to physical care responded positively to spiritual support. This suggests that spiritual needs may remain significant even when communication abilities are limited and the clinical condition is complex.

Table 1. Empirical studies

Author (Year)	**Method**	**Sample / Object**	**Key Findings**
Batstone (2020)	Systematic review of 19 databases; qualitative studies assessed using the CASP checklist; thematic deductive analysis.	Palliative care nurses.	Spiritual care was conceptualised through a triadic model: the spirit of nursing, the soul of care, and the body of care. Nurses' spiritual care practices are shaped by personal spirituality, professional identity, and clinical experience.
Wei et al. (2025)	Systematic review and meta-synthesis of qualitative studies from 11 databases (until March 2025).	Adolescents with cancer.	Five themes identified: autonomy, connectedness, search for meaning, positive outlook, and confronting death. Spirituality significantly influences patients' well-being and quality of life.
Balboni (2025)	Case analysis.	59-year-old female patient with metastatic small-cell lung cancer.	Palliative care guidelines identify spiritual care as a core domain of care. Its integration strengthens holistic care and improves patient and family well-being.
Karmakar et al. (2025)	Case analysis.	67-year-old critically ill patient on mechanical ventilation (GCS 10T).	Despite limited communication, the patient responded positively to spiritual care. Spiritual needs were assessed using yes/no questions, demonstrating the relevance of spiritual support even in critical conditions.

The review of empirical studies shows that spiritual needs emerge in various clinical contexts—from paediatric oncology to intensive care. Spiritual care is associated with the search for meaning in life, reconciliation, emotional stability, and improvement in quality of life. The attitudes and personal worldviews of healthcare professionals play a significant role in the provision of spiritual care. Although the theoretical and normative justification of spiritual care is strengthening, its practical implementation remains uneven and often depends on institutional or organisational conditions. The body of scientific evidence supporting the benefits of spiritual and pastoral care is growing; however, the spiritual needs of patients in palliative care are still often addressed in an unsystematic manner. This reveals a gap between the theoretical model of holistic care and its practical integration within real healthcare systems. Therefore, it is relevant to empirically investigate the need for integrating pastoral care in specific palliative care settings. In particular, the following questions become important: What spiritual needs do palliative care patients experience? How do patients and their families evaluate the role of pastoral care? How do palliative care

professionals assess the integration of pastoral care? What barriers and opportunities exist for integrating pastoral care into the interdisciplinary team?
The analysis of these questions not only assesses the current situation but also contributes to strengthening a holistic model of palliative care in which the spiritual dimension is systematically integrated alongside medical, psychosocial, and emotional care.

4. RESEARCH METHODOLOGY

The study used a quantitative survey methodology. Data were collected through a structured questionnaire consisting of the following sections: sociodemographic questions, evaluation of the role of palliative care, and open-ended questions. A total of 146 respondents from Lithuania participated in the survey. The respondents represented different groups: palliative care and pastoral care professionals, as well as non-specialists. 51% of respondents were palliative care professionals, including physicians, nurses, and social workers, while 49% were family members or close relatives of patients. The gender distribution indicated that 95% of respondents were women and 3% were men. The age distribution was more differentiated: nearly half (45%) of the respondents were aged 51–60, 21% were aged 41–50, 19% were aged 61 or older, 10% were aged 31–40, and 5% were under 30. Professional experience in palliative care among specialists was heterogeneous and relatively evenly distributed across categories. Approximately one quarter of the specialists had less than one year of experience, another quarter had 1–5 years, a further quarter had 6–10 years, and the remaining respondents reported more than 10 years of professional experience in this field. This distribution indicates that both novice specialists and experienced practitioners participated in the study, allowing the results to reflect perspectives from professionals with varying levels of experience. The collected data were analysed using descriptive statistics: means (M), standard deviations (SD), minimum and maximum values, and percentage distributions of responses. The research instrument consisted of 25 statements (see Table 2), grouped into five theoretical dimensions that reflect different aspects of integrating pastoral care into palliative nursing. Each dimension contained five statements evaluated using a Likert-type scale, where: 1 – strongly disagree; 2 – disagree; 3 – neither agree nor disagree; 4 – agree; 5 – strongly agree. The spiritual needs dimension reflects the importance of patients' existential and spiritual experiences in palliative care. The statements address the need to discuss death, hope, and the meaning of life, the importance of being heard regarding spiritual concerns, and the intensification of spiritual and religious experiences during illness. In addition, a statement concerning the possible neglect of spiritual needs within medical care processes is included. This dimension assesses the relevance of the spiritual dimension in the patient's experience. The pastoral care role dimension focuses on the functional and therapeutic significance of pastoral care. The statements address its contribution to the process of accepting illness, reducing emotional and spiritual suffering, ensuring patient dignity, supporting families during bereavement, and emphasising the importance of pastoral care for comprehensive palliative care.
The integration dimension evaluates the practical and organisational advantages of integrating pastoral care into the interdisciplinary team. Statements address the inclusion of pastoral care in individual care plans, the participation of pastoral care specialists in team meetings, the establishment of a permanent role within the team, and the potential impact on the overall quality of palliative care and improved understanding of patient needs. The barriers-to-integration dimension identifies

potential obstacles. Statements refer to unclear role definitions, insufficient knowledge among team members, limited funding, lack of institutional recognition, and inadequate collaboration between medical and pastoral care professionals. This dimension allows the assessment of systemic and organisational challenges. The need for new solutions dimension reflects respondents' perspectives on potential strategies for strengthening integration. Statements address the need for methodological guidelines, team training, national regulation, the potential contribution of integration to the humanisation of services, and the strengthening of mutual trust among professionals.

Table 2. Dimensions of Palliative Care with Integrated Pastoral Care

Dimension (No. of items)	**Statements**
Spiritual Needs (5)	Patients consider it important to discuss death, hope, and the meaning of life; Patients value being listened to regarding spiritual concerns; Illness often intensifies spiritual and religious experiences; Patients seek opportunities to discuss existential questions; Spiritual needs may remain insufficiently addressed within medical care.
Role of Pastoral Care (5)	Pastoral care helps patients accept illness, reduces emotional and spiritual suffering, maintains patient dignity, and supports families during bereavement. Without pastoral care, palliative care is not fully holistic.
Benefits of Integration (5)	Pastoral care should be a permanent part of the palliative care team; Pastoral care specialists should participate in team meetings; Pastoral care should be included in individual care plans; Integration improves overall palliative care quality; It contributes to a better understanding of patient needs.
Barriers to Integration (5)	Lack of a clearly defined pastoral care role in palliative care; Insufficient knowledge among team members about pastoral care functions; Limited financial resources; Insufficient institutional recognition; Lack of collaboration between medical and pastoral care professionals.
Need for New Solutions (5)	Integration would facilitate the development of methodological guidelines; Training of team members would strengthen acceptance; Integration could enhance the humanisation of care services; It would strengthen trust between patients and care teams; Pastoral care integration should be regulated at the national level.

*Scale means were calculated when at least 60% of statements were answered.

The overall structure of the instrument comprises three main levels of analysis: the assessment of spiritual needs and the significance of pastoral care; the benefits and barriers of integration; and the need for potential solutions and systemic changes. In this way, the instrument enables a comprehensive evaluation of the value-based, organisational, and strategic aspects of integrating pastoral care into palliative nursing.

5. RESEARCH RESULTS

A total of 146 respondents participated in the study. Of these, 79 (54%) were specialists (members of palliative care teams or leaders of relevant organisations), while 64 (44%) were non-specialists (patients or their relatives). The graphical illustrations (Figures 1–5) present the distribution of respondents' answers reflecting the perceived significance of the statements in the context of palliative care. In the graphs, the response categories "agree" and "strongly agree" are combined, as well as

"disagree" and "strongly disagree," while the neutral responses "no opinion" are presented separately.

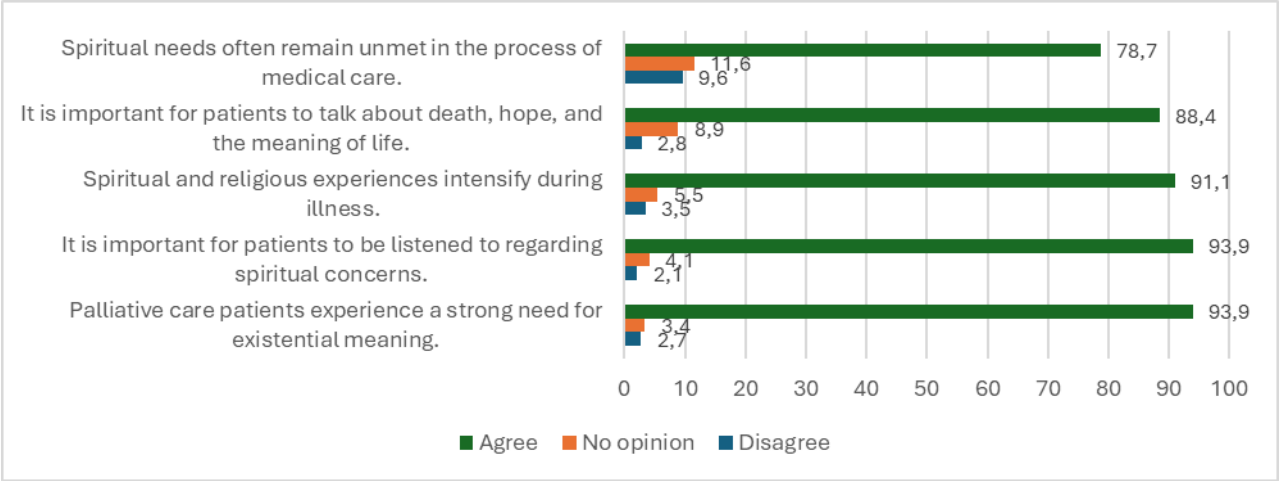

Figure 1. Percentage distribution of respondents' answers evaluating spiritual needs in palliative care.

The results presented in Figure 1 demonstrate a very high level of agreement with all statements concerning the importance of spiritual needs in palliative care. The highest proportion of respondents agreed that palliative care patients experience a strong need for existential meaning (93.9%) and that patients consider it important to be listened to regarding spiritual issues (93.9%). A similarly high level of agreement was observed for the statement that spiritual and religious experiences often intensify during illness (91.1%). A large proportion of respondents also agreed that patients find it important to discuss death, hope, and the meaning of life (88.4%). Although the statement that spiritual needs often remain unmet in the medical care process received slightly lower agreement (78.7%), 78.7% of respondents still supported it.

Negative evaluations were minimal across all cases, ranging from 2.1% to 3.5%, while neutral responses ranged from 3.4% to 11.6%, with the highest proportion observed for the statement on unmet spiritual needs. Overall, the findings indicate that respondents clearly recognise the importance of spiritual aspects in palliative care. The high level of agreement suggests a strong perception that existential, spiritual, and religious issues constitute an essential component of the patient experience and should be integrated into palliative care practice.

Figure 2 presents respondents' evaluations of the role of pastoral care in palliative nursing, highlighting its relationship with patients' spiritual needs and emotional well-being. The results demonstrate a very high level of agreement with all statements regarding the significance of pastoral care. The largest proportion of respondents agreed that pastoral care helps patients' families cope with the process of loss (93.8%) and reduces patients' emotional and spiritual suffering (92.4%). A similarly high level of agreement was found for the statements that pastoral care is important for ensuring patient dignity (91.1%) and helps patients more easily come to terms with their illness (89.7%). Although a slightly smaller proportion (83.6%) agreed with the statement that palliative care is not comprehensive without pastoral care, this still reflects the majority's clear position. The proportion of neutral responses ranged from 4.8% to 11.6%, while negative evaluations were very limited (1.4% to 4.1%).

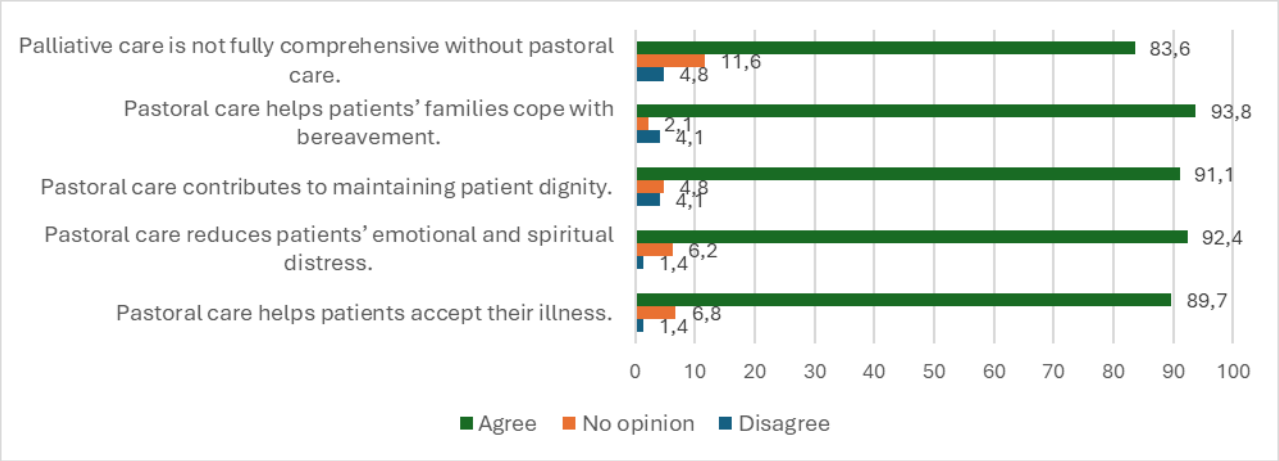

Figure 2. Percentage distribution of respondents' answers evaluating the role of pastoral care in palliative care.

The findings indicate that respondents associate the role of pastoral care with key aspects of palliative care, including emotional support, the preservation of patient dignity, the process of acceptance, and support for relatives. The high level of agreement suggests that pastoral care is perceived as an important component of holistic palliative care oriented toward patients' spiritual needs.

Figure 3 presents respondents' evaluations of the importance of integrating pastoral care into the palliative care team and its potential impact on the quality of services. The results show a very high level of agreement with all statements related to the integration of pastoral care. The largest proportion of respondents (94.5%) agreed that pastoral care should be a permanent part of the palliative care team. In addition, 91.8% agreed that pastoral care should be included in the individual patient care plan, while 91.1% stated that a pastoral care specialist should participate in team meetings. An equally high level of agreement (91.1%) was observed for the statements that integrating pastoral care would help the team better understand patient needs and improve the overall quality of palliative care. The proportion of neutral responses ranged from 3.4% to 6.2%, while negative evaluations were very limited (2.1–4.1%). These findings suggest that respondents perceive the integration of pastoral care as a significant factor in improving the quality of palliative care. Such integration may strengthen teamwork, better recognise patients' needs, and ensure more comprehensive care. The high level of agreement indicates that pastoral care is not viewed as an additional or peripheral service but rather as a potentially integral and structurally important component of the palliative care team.

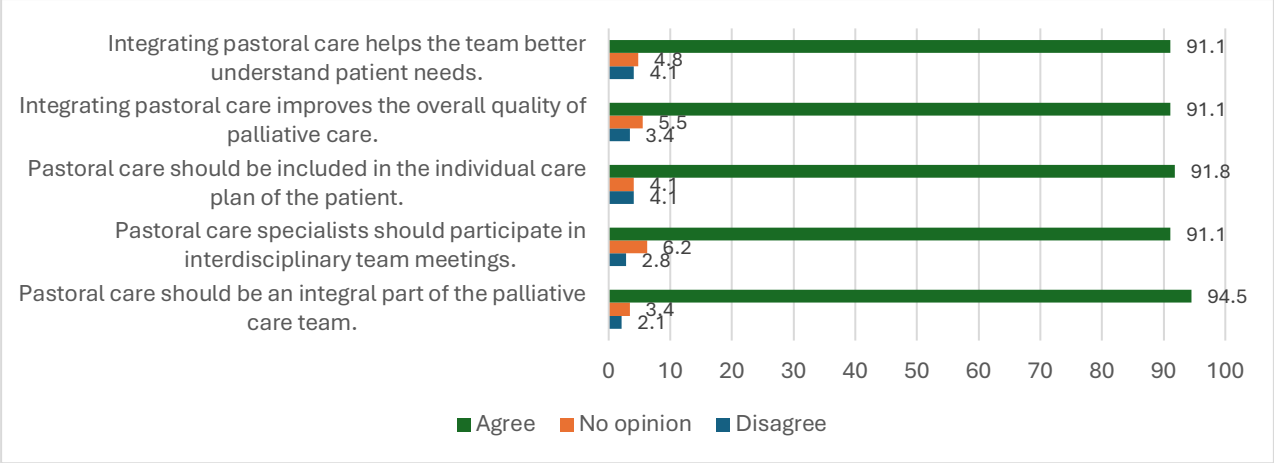

Figure 3. Percentage distribution of respondents' answers evaluating the integration of pastoral care into the palliative care team and its contribution to service quality.

Figure 4 presents respondents' evaluations of potential barriers that hinder the integration of pastoral care into palliative care. The results indicate that the majority of respondents recognise significant systemic and organisational barriers. The largest proportion of respondents agreed that the importance of pastoral care is insufficiently recognised at the institutional level (80.7%). Similarly high levels of agreement were observed for the statements that palliative nursing lacks a clearly defined role for pastoral care (79.5%) and that team members often lack sufficient knowledge of pastoral care's functions (78.0%). In addition, 77.4% of respondents agreed that there is insufficient collaboration between medical and pastoral care professionals. A slightly lower, yet still notable, level of agreement (64.8%) was observed for the statement that a lack of financial resources limits the integration of pastoral care. This statement also received the highest proportion of neutral responses (29%), which may reflect varying levels of awareness regarding financial aspects. Negative evaluations remained relatively low across all statements (3.5–8.9%), while neutral responses ranged from 13% to 29%.

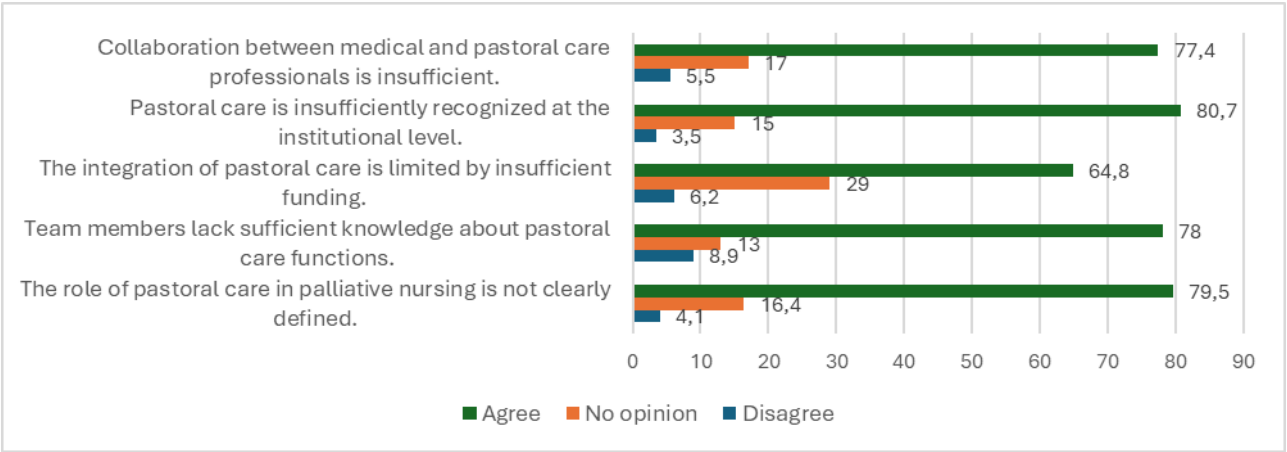

Figure 4. Percentage distribution of respondents' answers evaluating barriers to the integration of pastoral care into palliative nursing.

Figure 5 presents respondents' evaluations of possible solutions and additional measures that could strengthen the integration of pastoral care into palliative nursing. The results demonstrate a very high level of agreement with the proposed strategies for enhancing integration. The largest proportion of respondents (97.2%) agreed that

clear methodological guidelines would facilitate the integration of pastoral care. In addition, 95.1% of respondents agreed that training for team members on pastoral care would increase its acceptance in practice. More than nine out of ten respondents (93.8%) stated that the integration of pastoral care should be regulated at the national level. A similarly high level of agreement (93.1%) was observed for the statements that integrated pastoral care would strengthen mutual trust between patients and care teams and enhance the humanisation of healthcare services. The proportion of neutral responses remained relatively low across all statements (3.4–6.9%), while negative evaluations were minimal (1.4–4.8%). These findings indicate that respondents clearly express the need for systemic solutions and structural development. The greatest emphasis is placed on methodological clarity, professional training, and national-level regulation. Overall, the results suggest that integrating pastoral care is perceived as a process that requires not only value-based support but also a well-developed institutional, methodological, and educational infrastructure.

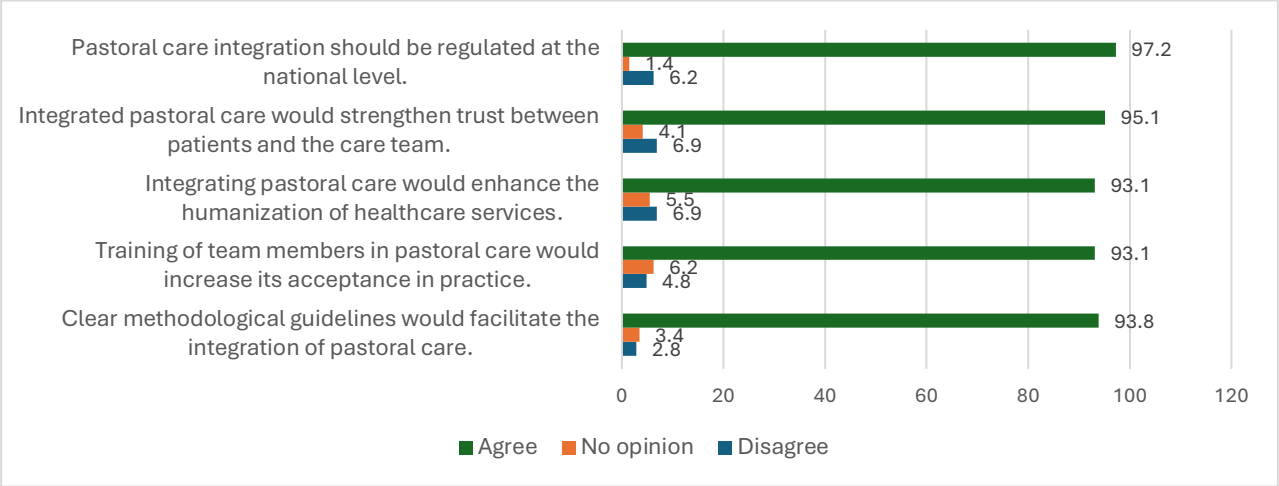

Figure 5. Percentage distribution of respondents' answers evaluating the need for additional integration opportunities and new solutions.

In the research instrument, respondents were also presented with two open-ended questions: why pastoral care should (or should not) be integrated into palliative nursing and what changes would be necessary for pastoral care to become a fully developed component of palliative care.

Table 3. Structured distribution of responses explaining why pastoral care should (or should not) be integrated into palliative nursing.

Thematic Category	**Description**	**Frequency (n)**	**Orientation**
Holistic approach (body–soul unity)	The patient is perceived as a whole person integrating body, mind, and spirit.	≥40*	Strongly supportive
Importance of spiritual needs	Emphasis on spiritual support, faith, meaning, and hope during illness.	≥30*	Strongly supportive
Psychological and emotional support	Pastoral care is seen as a source of emotional security and support.	≥10*	Supportive
Strengthening teamwork	Emphasis on interdisciplinary collaboration within the care team.	≥15*	Supportive
Perceived non-necessity / doubts	Statements suggesting that pastoral care is unnecessary or should remain optional.	≥3	Critical minority

Other individual opinions	Individual or difficult-to-categorise responses.	≥38	Diverse

* Some responses were assigned to multiple categories; therefore, totals may exceed the number of respondents.

The motives emerging from respondents' answers (see Table 3) reveal a distinctly holistic view of the human person. The dominant paradigm reflects a holistic understanding of the person, as illustrated by statements such as: "A human being is not only a body but also a spirit" and "Palliative care must be comprehensive." These responses indicate that respondents perceive pastoral care as a natural component of comprehensive care. Respondents also recognise spiritual needs, which they associate with hope and existential concerns. As one respondent noted, "In critical moments of a person's life, the need for faith or spiritual accompaniment emerges." This finding aligns with the quantitative analysis, which demonstrates a strong correlation between the perceived importance of spiritual needs and support for integrating pastoral care. Respondents also emphasised the importance of emotional security for the patient and support for relatives, particularly during moments when assistance is needed in processes of reconciliation and loss. Responses regarding security, support, and reconciliation may therefore be interpreted as indicators of the practical usefulness of integrating pastoral care. The strengthening of a multidisciplinary model is also clearly reflected in respondents' statements, for example: "Integrated pastoral care would strengthen teamwork and collaboration among different specialists"; "Teamwork would be more effective if spiritual aspects were addressed systematically rather than occasionally"; and "Pastoral care could become a full member of the team, contributing to the overall treatment plan." These statements suggest that some respondents perceive the integration of pastoral care not merely as an individual form of assistance but as a structural element of team-based practice. In this context, pastoral care is conceptualised as an equal component of the multidisciplinary team, complementing medical, nursing, and social care and contributing to the comprehensive response to patients' needs. Only a very small proportion of respondents expressed doubts about the necessity of pastoral care in palliative care. These respondents indicated that pastoral care should remain optional, as reflected in statements such as: "Pastoral care should not be mandatory; it should be a personal choice", and "It is not relevant for all patients." Such views are grounded in the principle of patient autonomy rather than in the rejection of integrating pastoral care. Thus, they represent a position favouring individualisation rather than opposition to pastoral care itself. The analysis of responses also revealed a clear anthropological assumption: the human person is perceived as an integral unity of body and spirit. Respondents justify the integration of pastoral care not through institutional or religious arguments but through the existential principle of human wholeness. In this perspective, palliative care is constructed as more than a medical intervention; it becomes a process of existential accompaniment that reflects a holistic model of care. Consequently, pastoral care integration is perceived as a natural rather than an additional or external function.

Many responses frame the end-of-life situation as an existential crisis, reflected in recurring semantic categories such as meaning, hope, reconciliation, and peace. This suggests that respondents associate pastoral care with the alleviation of existential distress rather than solely with religious practice. Importantly, this motif is consistent with the quantitative findings, which showed that the importance attributed to spiritual needs significantly predicted support for integrating pastoral care. Open-ended responses frequently referred not only to patients but also to their relatives, indicating

that respondents perceive palliative care as a systemic form of care that includes the family unit. In this context, pastoral care is understood as a mechanism for emotional support, bereavement assistance, and a space for mediation and reconciliation. Some responses extend the discussion to the organisational level, highlighting the strengthening of teams, improved collaboration, and the need for systematic integration. This suggests that some respondents view pastoral care not only as an individual intervention but also as a structural component of care quality. Overall, the analysis of respondents' answers reveals a dominant orientation toward a holistic model of care in which pastoral care is perceived as an essential element of comprehensive palliative care. Critical attitudes were minimal and were primarily based on the principle of freedom of choice rather than rejection of integration.

Table 4. Structured distribution of responses explaining what changes would be necessary for pastoral care to become a fully integrated component of palliative care.

Thematic Category	**Content**	**Level**	**Frequency**
Institutional regulation	Legal definition of pastoral care roles, formal recognition of positions, and funding mechanisms.	Systemic	Very frequent
Clear definition of pastoral care roles	Specification of competencies, responsibilities, and professional functions.	Structural	Frequent
Specialist training	Education and training of team members regarding the role and functions of pastoral care.	Educational	Frequent
Interdisciplinary collaboration	Strengthening teamwork and cooperation among professionals.	Organizational	Moderate
Public awareness	A broader understanding of pastoral care as a professional field.	Social	Moderate
Resource allocation	Provision of financial and human resources.	Administrative	Moderate

The analysis (see Table 4) revealed that respondents perceive the integration of pastoral care into palliative care as purposeful and necessary; however, its full implementation requires systemic, structural, and cultural changes. First, respondents emphasised the need to establish an institutional framework, including legal regulation, the formal recognition of pastoral care positions within the healthcare system, and adequate funding. Respondents stressed that without official recognition and structural legitimisation, pastoral care would remain fragmented or dependent on individual initiatives. This perspective is reflected in statements such as: "Clear legal recognition and regulation of pastoral care within the healthcare system are needed"; "A formal position and funding for this function should be established"; "Without official recognition, pastoral care will remain only an additional initiative"; "Pastoral care must be integrated into the team rather than function separately"; "Collaboration between medical professionals and pastoral care representatives must be systematic." Second, respondents highlighted the importance of a clear definition of pastoral care functions and competencies to avoid role duplication and ensure smooth interdisciplinary collaboration. This reflects the intention to strengthen professional identity and integrate pastoral care as an equal member of the multidisciplinary team. For example, respondents stated: "A clear definition of pastoral care within palliative care is needed" and "It is important to define the competencies and responsibilities of pastoral care." These responses indicate expectations for a shift from value-based recognition toward structural institutionalisation. Third, respondents emphasised the educational dimension, particularly the need for team members to be trained to

recognise spiritual needs and to understand the role of pastoral care in palliative practice. This reflects the need to foster a supportive organisational culture and expand understanding of the importance of the spiritual dimension in care. As respondents noted: “Team members need more training in recognising spiritual needs” and “Education would help professionals better understand the significance of pastoral care in practice.” The emphasis on training suggests that integration is associated not only with structural solutions but also with cultural change within healthcare organisations. Fourth, respondents stressed the importance of public awareness, noting that patients and their families should be informed about the availability of pastoral care services to make informed choices about this form of support. Representative responses include: “There is a need to provide more information to society about the pastoral care profession” and “Patients should know that this type of support is available.” Overall, these responses indicate that respondents perceive pastoral care integration as a characteristic of a mature multidisciplinary care system. Integration is viewed as an indicator of care quality. The full implementation of pastoral care in palliative care is associated not only with value-based recognition but also with consistent institutionalisation, a clear professional structure, and a strong interdisciplinary culture. Respondents’ perspectives demonstrate a shift from the question “whether pastoral care should be integrated” to “how it can be integrated systematically and sustainably.”

6. CONCLUSIONS

The results of the empirical study reveal a clear interest among respondents in integrating pastoral care into palliative care. These findings confirm the assumption presented in the theoretical section that palliative care, grounded in a holistic understanding of the human person, inevitably includes the spiritual dimension as an integral part of the patient’s experience. Respondents’ perspectives reinforce the study’s central tendency: the integration of pastoral care is perceived as both necessary and meaningful. However, its implementation should be responsible, ethical, and systematic. The empirical findings highlight three key dimensions of pastoral care integration within palliative care.

1. Structural–institutional dimension. Integration should be clearly regulated and professionally structured. The functions and responsibilities of pastoral care must be clearly defined in order to avoid role duplication or ambiguity. This finding aligns with the principle of integrality discussed in the theoretical framework, which holds that all dimensions of palliative care must be systematically coordinated and embedded within organisational structures.
2. Ethical–autonomy dimension. Pastoral care should remain a matter of personal choice rather than coercion. This conclusion aligns with the principles of palliative care, which emphasise patient dignity, freedom, and individuality. Even respondents who strongly support integration highlight the importance of patient autonomy, reflecting contemporary bioethical principles and patient-centred care models.
3. Organisational–practical dimension. Integration requires concrete organisational solutions, sufficient resources, and effective interdisciplinary collaboration. This confirms the theoretical assumption that although spiritual care is conceptually recognised, its implementation in practice often faces institutional, financial, or competency-related limitations.

Overall, the findings demonstrate the dominance of a holistic care perspective, in which pastoral care is an essential component of comprehensive palliative care. Critical attitudes were minimal and were primarily based on the principle of freedom

of choice rather than rejection of integration. These results empirically confirm the theoretical premise that spirituality, understood as an existential and meaning-oriented dimension, plays an important role in serious illness. Pastoral care integration is perceived not as an additional or external function but as a natural component of palliative care, associated with reducing existential distress, facilitating processes of reconciliation, and strengthening emotional support. Respondents also perceive palliative care as a systemic model that encompasses not only the patient but also the family unit. In this context, pastoral care is conceptualised as a mechanism of emotional support, assistance during bereavement, and a space for mediation and reconciliation.

The findings confirm that the spiritual dimension constitutes an integral component of palliative care. According to respondents' perspectives, the question of whether pastoral care should be integrated is no longer central—attention instead shifts to the practical challenge of ensuring systematic, sustainable, and well-coordinated integration. Consequently, the inclusion of pastoral care can be viewed as a strategic direction in the development of palliative care systems, requiring clear regulation, methodological guidelines, interdisciplinary collaboration, and the strengthening of professional competencies.

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POSSIBILITIES AND PROSPECTS FOR PROVIDING PATIENTS WITH NEW GENERATION ORTHOPAEDIC DEVICES

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ABSTRACT

Orthopaedic braces are widely used orthopaedic devices designed to stabilise joints, reduce pain, and facilitate rehabilitation after injuries, surgeries, or chronic diseases. The demand for these products is growing due to an increase in musculoskeletal disorders, an ageing population, sports injuries, and trends in preventive care.

Due to increasing demand for non-invasive treatments, the orthopaedic braces market in Europe is growing at 5-7 per cent per year. People over 65 years of age are more likely to suffer from osteoarthritis, osteoporosis, and spinal problems, which increases the need for back, foot, knee, and hip braces.

The increasing popularity of amateur sports (e.g., running, football) leads to more ligament injuries and post-operative rehabilitation that require the application of splints.

Technological progress enables the production of lightweight, "smart" splints with various sensors via 3D printing. The development of e-commerce (over-the-counter) makes splints easily accessible.

The need for orthopaedic splints is stable and growing, especially for preventive and rehabilitative purposes.

Research arm: to review the prospects and possibilities of providing patients with new-generation orthopaedic technical devices.

Research tasks:

1. To reveal the need for orthopaedic technical devices.
2. To discuss patient testing with Digitsole equipment.
3. To explain new technologies for the production of orthopaedic braces.

Research methods: experiment, analysis of scientific literature.

Keywords: *braces, 3D printing, Digitsole equipment, orthopaedic technical devices, foot.*

1. INTRODUCTION

Digitsole Pro is a wearable technological solution for objective gait assessment based on sensor-equipped insoles rather than stationary laboratory instrumentation. The system is designed to enable biomechanical evaluation of walking and running in environments that reflect everyday movement, thereby reducing dependence on fixed gait laboratories and complex motion capture installations. This approach aligns with current trends in gait research, which emphasise ecological validity and repeated functional assessment (Prisco et al., 2025).

A distinctive feature of Digitsole Pro is that it is provided as a fully transportable assessment kit, housed in a dedicated carrying case that allows the entire system to be easily moved and deployed in different locations. This portable case contains all hardware components required for gait analysis and enables clinicians to perform assessments in outpatient clinics, rehabilitation facilities, community settings, or patients' homes. The compact, organised structure of the kit eliminates the need for permanent installation and supports flexible use across multiple clinical environments [1].

The Digitsole Pro kit includes a complete range of smart insoles for multiple shoe sizes, enabling assessments across different individuals without custom manufacturing. The insoles are thin and designed to fit inside standard footwear, preserving natural gait mechanics. Each insole can be paired with detachable electronic sensor units, which are responsible for data acquisition and wireless transmission. The kit also includes charging equipment and protective compartments that facilitate repeated use, storage, and efficient preparation between measurement sessions [1].

Embedded in the insoles are miniaturised inertial measurement units comprising multi-axis accelerometers and gyroscopes. These sensors record dynamic characteristics of foot motion, including changes in acceleration and angular velocity throughout successive gait cycles. The modular construction allows sensor units to be easily removed for charging and reattached for subsequent measurements, supporting high clinical throughput and routine use [1].

During data collection, raw inertial signals generated by foot movement are continuously recorded and transmitted to the analytical platform. These signals are not evaluated directly but are processed through proprietary algorithmic pipelines that incorporate artificial intelligence–based methods. The processing converts sensor-level data into clinically interpretable gait parameters, including spatiotemporal measures such as walking speed, cadence, step timing, and phase distribution, as well as kinematic indicators of foot orientation and movement behaviour [2].

The system provides simultaneous access to multiple categories of gait metrics. Spatiotemporal parameters provide a general characterisation of locomotor performance and rhythm, while kinematic indicators enable a more detailed analysis of foot motion during the stance and swing phases. The combination of these outputs enhances sensitivity to gait asymmetries and movement irregularities, which may be associated with musculoskeletal dysfunction, neurological impairment, or altered motor control [3].

The accompanying software environment supports structured visualisation and reporting of results, allowing clinicians to compare measurements across sessions and monitor changes over time. This functionality is particularly relevant for evaluating rehabilitation, tracking functional recovery, or informing decisions related to orthotic intervention. Because measurements can be performed in natural walking environments, the resulting data may provide a more representative picture of functional mobility than assessments restricted to controlled laboratory settings [4].

Overall, Digitsole Pro integrates a portable hardware kit, wearable inertial sensing technology, and algorithm-driven data interpretation into a single assessment system. Its design supports repeated, non-invasive gait evaluation across diverse environments and contributes to the growing application of digital tools in personalised rehabilitation and functional movement analysis (Digitsole, 2023; Prisco et al., 2025).

Patient testing was performed using Digitsole pro portable equipment for biomechanical analysis of movement.

Digitsole is designed to improve patient outcomes through AI-based motion analytics. The technology in the insole records walking steps, running strides, and the orientation of a foot in space.

Aiding in recovery from neurological, orthopaedic, and age- or sport-related conditions.

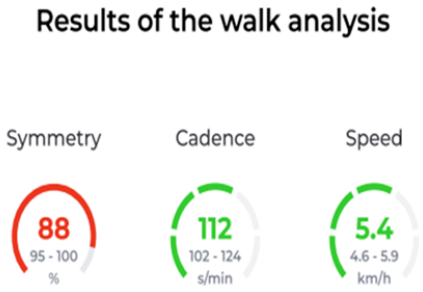
The Digitsole Pro kit allows analysis of patients' walking or running in place. It can be carried everywhere, it weighs less than 3 kg.

It includes 6 pairs of insoles with 2 connected chips & a charger.

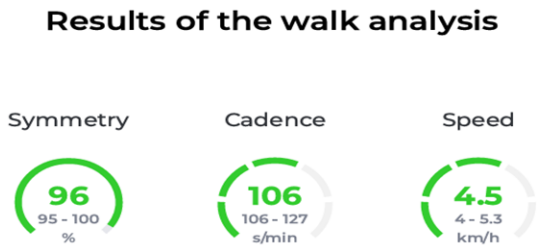
Results of the walk provide general values for the recording, independent of laterality. Symmetry close to 100% indicates good congruence between left and right steps.
On the other hand, less symmetry may indicate different behaviours of the lower limbs and therefore either an abnormality in one foot or both feet affected in different ways. Speed is a good indicator of walking quality and range.
Walking too fast or too slow may be the first sign of a locomotion problem. Pace is strongly correlated with speed and will therefore also be a qualitative indicator of walking.

2. TWO PATIENTS NAMED A AND B TESTED THE DIGITSOLE EQUIPMENT.

A Patient: All parameters fall within normal ranges except for symmetry. A symmetry value of 88% indicates a slight imbalance between the left and right limbs, suggesting uneven loading or a possible early sign of gait dysfunction.

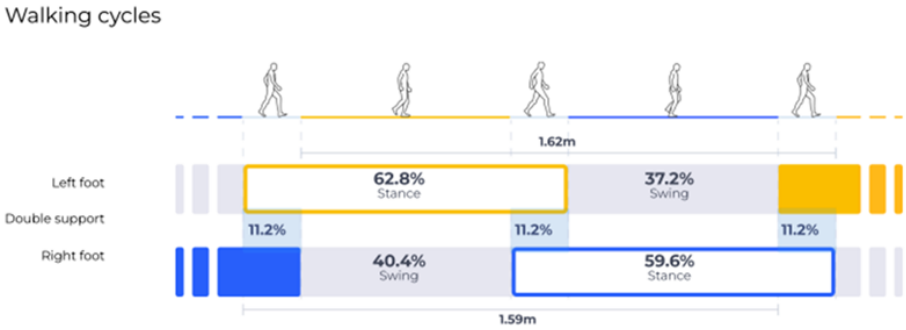


Patient B
The gait analysis shows very good symmetry (96%), meaning both legs work almost equally during walking. Cadence (106 steps/min) is within the normal range, indicating a steady and efficient rhythm. Walking speed (4.5 km/h) also falls within typical adult values. Overall, the results reflect a stable and functional gait pattern.



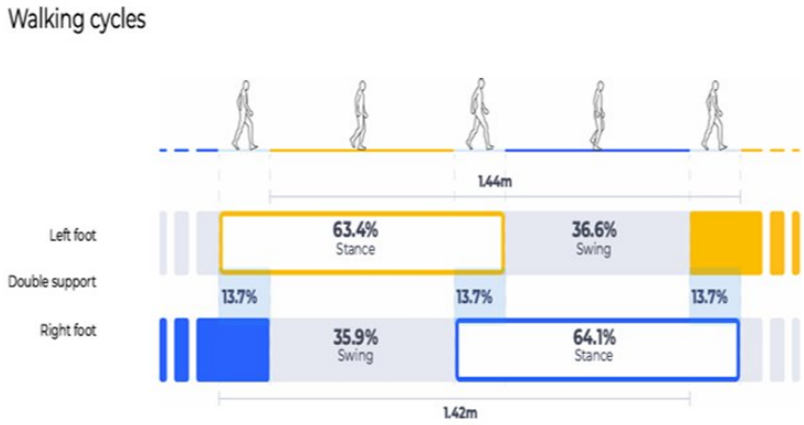
This figure shows the percentage durations of the different running phases: stance, swing and double support phase, and the length of the cycle. As in the rest of this document, the left foot is represented in orange and the right foot in blue; stance times are in a darker colour, while swing phases are in a lighter colour. Double support is located between the two feet, in grey. Finally, the cycle lengths are at the top for the left side (orange) and at the bottom for the right side (blue)

Patient A: The figure shows that during walking, the stance phase accounts for the largest portion of each step (about 60% of the cycle), while the swing phase occupies the remaining ~40%. There are also short periods of double support (about 11%), during which both feet are briefly on the ground. The left and right steps are slightly different in length (1.62 m for the left, 1.59 m for the right), indicating small natural asymmetries in gait. Overall, the measurements highlight how weight is transferred between the feet and how each phase contributes to a complete walking cycle.



Patient B

The walking cycle shows balanced stance and swing phases between both feet. The left foot spends 63.4% in stance and 36.6% in swing, while the right foot shows very similar values (64.1% stance, 35.9% swing). The periods of double support (13.7%) are equal on both sides, indicating stable and symmetrical gait mechanics. Overall, the results indicate a consistent, well-coordinated walking pattern.



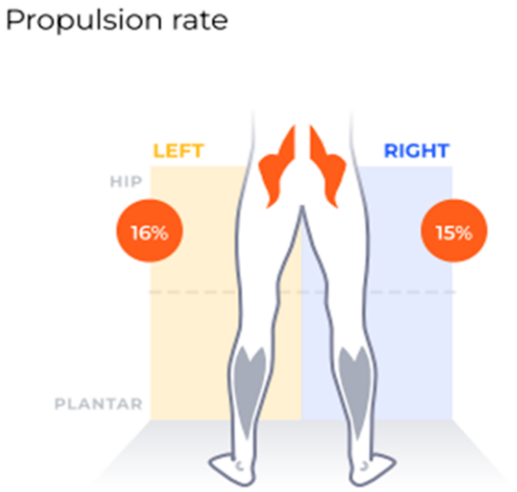
This diagram represents the displacement of the centre of support (black line) at the foot during the support phase. We can assess pronation and supination of the foot by measuring the displacement of the centre of support at key moments in the stride sequence (heel and toe landing, heel and toe lift-off).
This information is supplemented by the duration of each phase (between key moments), expressed in milliseconds (as above) when the cursor is in the "Absolute" position and in percentages of the support time when it is in "Relative".

Patient A: The centre-of-pressure progression shows clear differences between the two feet. Propulsion is significantly shorter on the left (53 ms) and much longer on the right (226 ms), indicating an asymmetrical push-off phase. In contrast, the flatfoot phase is longer on the left (518 ms) and shorter on the right (316 ms), suggesting a delayed transition through mid-stance on the left. Loading response times (L 102 ms, R 96 ms) are nearly symmetrical and within normal variation. Overall, the data indicate a temporal imbalance between the two feet, mainly during flatfoot and propulsion phases, which may reflect functional asymmetry and should be considered when planning treatment.

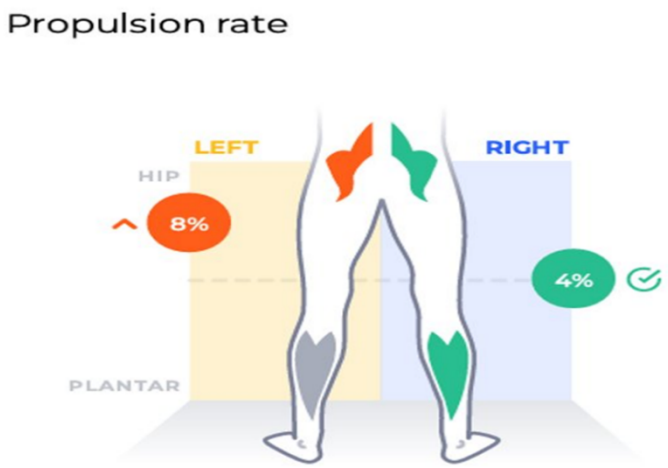
Patient B
The gait line shows very similar movement patterns between the left and right foot. The timing of each phase—loading, flatfoot, and propulsion—differs only slightly, indicating good overall symmetry. A slightly longer flatfoot phase on the left side may reflect mild stability or control adjustments, but no major imbalance is seen. Overall, the results suggest a stable and well-coordinated gait.

The propulsion ratio is the ratio of the propulsion speed (foot speed at lift-off of the toes) to the average stride speed (average foot speed during swing phase). Using this ratio, we can determine whether the speed of foot movement is generated more by the plantar flexors or the hip flexors. We can then highlight the muscle group and the deviation from perfect balance. In this example, the hip flexor muscles are mainly used, so the feet accelerate during the swing phase in a quasi-symmetrical way, with a 6 percentage-point difference between the left and right feet.

Patient A: The propulsion ratio indicates that both feet rely more on the hip flexors than the plantar flexors to generate forward movement. The left foot shows 16% additional hip contribution, and the right 15%, which is almost symmetrical. Overall, this suggests balanced but hip-dominant propulsion, with the swing-phase acceleration primarily driven by the hips rather than the ankle muscles.

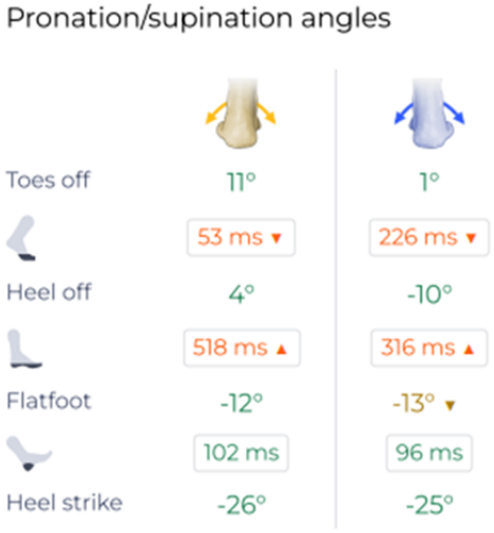


Patient B
The propulsion rate shows a slightly higher push-off effort on the left side (8%) than on the right (4%). This means the left leg contributes more power during the final phase of the step. The difference is small and suggests only a mild asymmetry in push-off strength, with overall propulsion remaining balanced and functional.

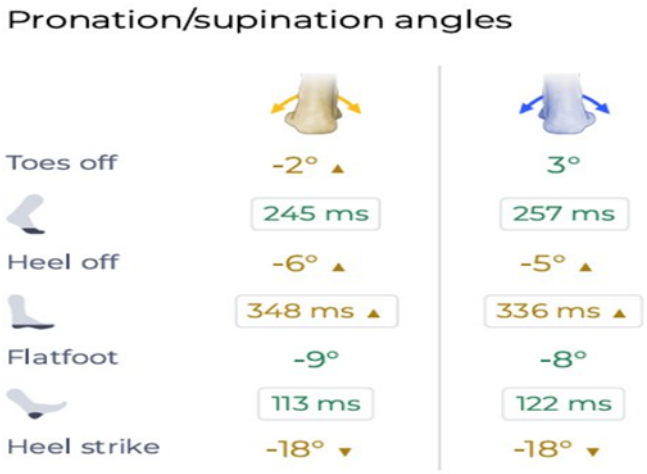


During the stance phase, we measure pronation/supination angles at the four key moments of the step sequence: heel landing, toe landing, heel lift-off, and toe lift-off. This angle corresponds to the lateral inclination of the foot in relation to the ground. We propose a corridor of normality (green) based on the literature and adapted to Digitsole Pro, in consultation with health professionals, representing the sequence of a healthy subject, to compare the mean value (black line) and the variability (grey lines) of your patient. This example shows a normal foot placement on the right and a quasi-normal placement on the left, with a slight pronation tendency. Then, viewing the movement from flat-foot to heel-off, the feet are slightly pronated compared to the normal values. During the propulsion phase, there is very slight supination on the left, leading to normal values at toe-off. On the right, there is a very slight pronation, which better corresponds to a normal roll-off leading to a normal toe-off, although in the pronated part of this norm. On the Digital Gait Line, on each side of the graph, we find the duration of each phase of the sequence: loading, flat foot, and propulsion. As this representation is dynamic, the spaces corresponding to these durations, along with the juxtaposition of the curves of the angles during the sequence, allow one to appreciate their symmetry.

Patient A: Foot placement is largely within normal limits, with minor asymmetries. The left foot shows a slight pronation tendency, especially from flat-foot to heel-off, while the right foot follows a more normal pattern with minimal pronation during roll-off. Overall, the gait is mostly normal, with a slight left pronation and minor temporal asymmetries between the feet, especially during propulsion.

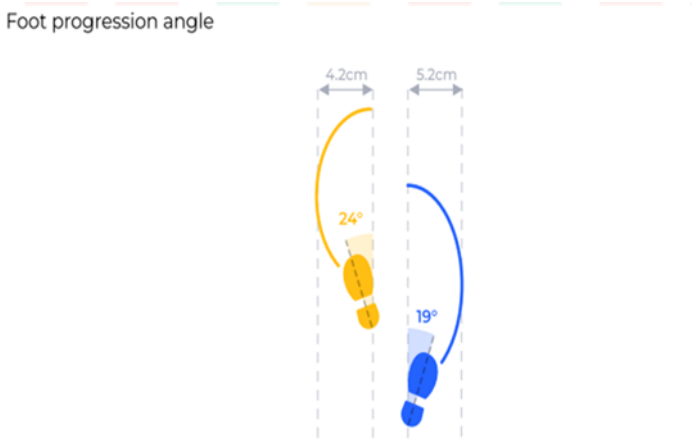


Patient B
The angles of the left and right foot are very similar in all phases. This indicates symmetrical, stable foot movement without significant deviations.
The right foot pushes off slightly more efficiently, as it transitions into mild supination during the propulsion phase.

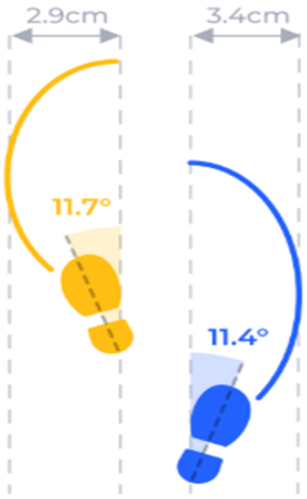


The Step Progression Angle (SPA) is expressed in degrees and corresponds to the foot's orientation relative to the patient's gait trajectory. To be precise, it is a question of opening or closing the feet. A healthy person is supposed to walk with a slight outward opening of the feet. Step Progression Angle and Circumduction are represented on this graph. This is the maximum lateral distance the foot travels during the swing phase, relative to the line joining two consecutive landings of the same foot. For a healthy subject, this value is close to zero. It will then tend to be high for subjects with a neurological/spastic type of limp.
Patient A: The patient demonstrates a slight gait asymmetry and reduced foot symmetry, likely related to hip/leg alignment issues. Observation and analysis suggest that the patient may be walking with the legs slightly turned or misaligned, which may contribute to uneven loading and differences in propulsion. Regular targeted

exercises for hip mobility and leg alignment are recommended to improve gait symmetry and reduce asymmetry over time.



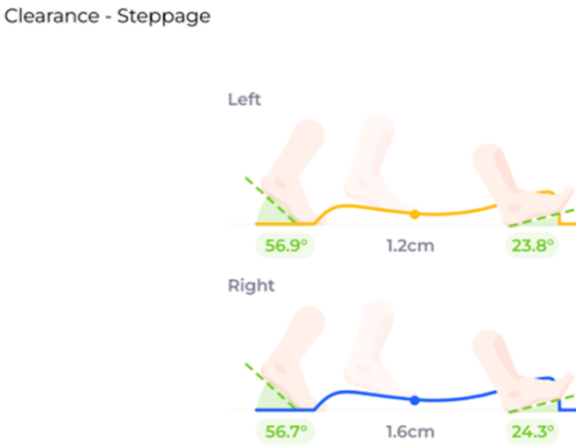
Patient B: The left foot displays an outward angle of 11.7°, while the right foot shows a very similar outward angle of 11.4. The step width is also indicated: 2.9 cm on the left and 3.4 cm on the right. Overall, the results suggest symmetrical and consistent gait mechanics, with both feet pointing outward to a similar degree.



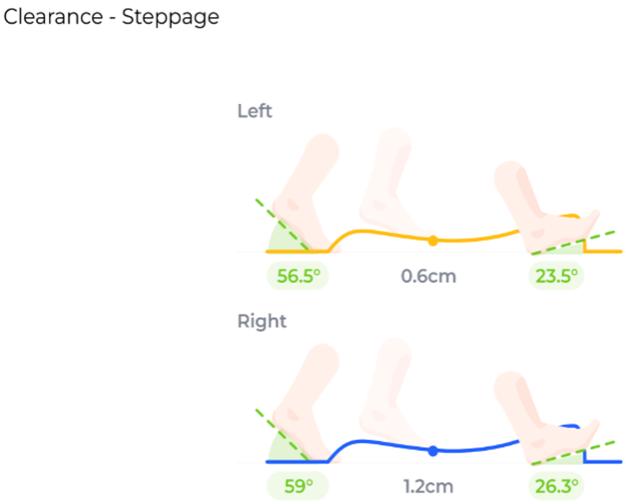
In this graphic representation, we see the Clearance, the minimum distance between the toes and the ground during the swing phase of the step. The question here is having information on the free passage of the step; indeed, with a height that is too low, the foot could encounter an obstacle during the swing phase, at the very least causing a loss of balance and, in the worst case, a fall. On the left, the propulsion angle is shown. It is the plantar flexion angle between the ground and the foot in the sagittal plane at toe off. This angle is related to the capability to generate good propulsion, so it should be different from 0. Finally, on the right, you can find the Step page, also known as the angle of attack. This is the angle between the foot and the ground in the sagittal plane at heel strike. A healthy person does not place the foot flat or walk with the toes.

Patient A: The toe clearance during the swing phase is adequate, with the left foot at 1.2 cm and the right at 1.6 cm, indicating a low risk of tripping. The propulsion angles are similar for both feet (L 56.9°, R 56.7°), showing effective push-off capability. The

steppage (angle of attack) at heel strike is also balanced (L 23.8°, R 24.3°), indicating proper foot placement without flat-foot landing. Overall, swing phase and foot-ground angles are largely normal and symmetrical, suggesting safe and functional gait in terms of clearance and propulsion.

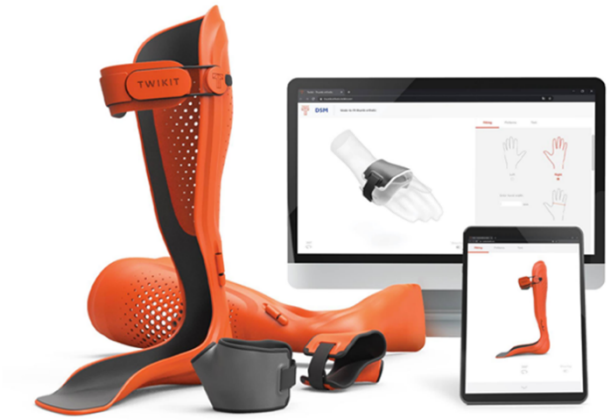


Patient B:
The left foot lifts 0.6 cm off the ground with ankle angles of 56.5° during push-off and 23.5° during landing. The right foot shows slightly higher clearance at 1.2 cm, with similar ankle angles (59° at push-off and 26.3° at landing).
Overall, both sides demonstrate low clearance but fairly symmetrical movement, with the right foot lifting slightly higher during swing.



These results can be widely used in orthopaedic technology to improve diagnostics, treatment, prevention, and patient care with orthopaedic equipment.
The data can be integrated into orthopaedic research to develop new technologies, such as 3D-printed orthopaedic braces made from synthetic and biodegradable polymers.
Additive manufacturing (3D printing) is increasingly used to produce orthopaedic braces, enabling the creation of personalised, precisely tailored products for each patient's anatomy.

This allows for improved comfort, reduced weight, and faster production than traditional methods such as casting, sheet moulding, or lamination.



The main additive manufacturing techniques for the production of orthopaedic technical devices are: binder jetting, direct energy deposition, material extrusion, material jetting, powder bed fusion, sheet lamination, and vat photopolymerisation.
The main materials used in 3D printing orthopaedic devices: PEEK (polyether Ether Ketone), PE (polyethene), PC (polycarbonate), PET (polyethene terephthalate), PP (polypropylene), TPE (thermoplastic elastomer), TPU (thermoplastic polyurethane), ASA (acrylonitrile-styrene-acrylate), PA (polyamide), PLA (polylactic acid), ABS (acrylonitrile-butadiene-styrene).
The printed splints feature high precision, smooth surfaces, and light weight, making them convenient for patients to use daily after various injuries and illnesses.
They can be individually adjusted to the body's anatomy, which helps ensure better rehabilitation and comfort.

3. CONCLUSIONS

1. The use of orthopaedic braces is justified and appropriate. Braces are needed to stabilise the affected area, reduce pain, improve function, and prevent the progression of the condition and its potential complications, especially as people age.
2. Digitsole smart equipment is a significant and promising solution in the field of orthopaedic technology, as it combines biomechanical data collection, advanced analysis and personalised treatment capabilities. Integrated pressure, motion, and temperature sensors enable accurate assessment of foot loads, gait characteristics, and functional disorders in real-world conditions, which is especially important when designing and adjusting orthopaedic braces.
3. 3D technologies allow for precise adaptation of braces to the individual anatomy of each patient, ensuring greater comfort, functionality and more effective treatment results. In addition, 3D technologies shorten production time, reduce the likelihood of errors, and enable the creation of lightweight, aesthetically pleasing orthopaedic technical devices.

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DETECTING AND MANAGING FLAT FEET IN CHILDREN: A COMPLEX APPROACH

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ABSTRACT
This paper presents the complex phenomenon of flat feet (pes planus) in children by providing a comprehensive process, from detecting flat feet in children to adapting behavioural patterns in parents and children to address the challenges posed by flat feet. The empirical research consisted of two stages: the detection of flat feet in children using an innovative Elinvision scanner and interviews with parents of children whose feet showed symptoms of pes planus. The analysed cases revealed four different parental behavioural patterns, ranging from Ignorance to Providing complex support to the child, with intermediate models such as Quick solution and Seeking specialised help. Empirical research unequivocally shows that tools for managing flat feet cause discomfort for children; thus, this issue requires a complex, multi-stakeholder approach.

Keywords: *flat feet; children; parental behaviour patterns; Elinvision scanner; 3D printing*

1. INTRODUCTION
A child's foot, which consists of 26 bones connected by joints, ligaments, and muscles, is a complex and constantly developing part of the body whose main purpose is to support body weight, aid movement, and ensure balance. Although a child's foot is similar in structure to that of an adult, it is not yet fully mature and changes as the child grows. One of the most important elements of the foot is ***the arch***. It acts as a natural shock absorber when moving. The arch of a child's foot is still developing, so at an early age, the foot often appears flat. This is due to the soft fat pad in the sole and muscles and ligaments that are not yet strong enough. Children's foot bones are initially partly made of cartilage, which makes them more flexible than those of adults. As the child grows, the bones gradually ossify, the muscles and ligaments strengthen, and coordination improves. These changes alter the shape and function of the foot, and the arch usually forms by school age, approximately by 6-10 years old [5].

Flat feet (pes planus) could be defined as a reduction or disappearance of the inner longitudinal arch of the foot when standing. It could be noted that all newborns are born with flat feet due to the fatty pad in the sole, underdeveloped muscles, and immature nerve-muscle control. As the child grows, muscles strengthen and physical activity increases, the arch of the foot gradually forms. Thus, the prevalence of flat feet (pes planus) in children aged 7–10 is a significant health problem, as the foot arch should already be formed at this age [14]. Studies show that the prevalence of flat feet in children decreases with age [12]. However, according to World Health Organisation (WHO) data, the prevalence of flat feet among children aged 7-10 is 16-22%.
It should be stated that the diagnosis of flat feet is more often indicative of a functional or structural foot problem rather than a temporary developmental stage [11]. It can have many long-term consequences, such as poor posture, knee and hip

pain, and increased fatigue, which can affect children's overall growth and quality of life [10].

Flat feet in children are classified as flexible and rigid [4]. *Flexible flat feet* are the most common form. They are characterised by the arch of the foot being visible when the foot is unloaded or when standing on the toes, but disappearing when standing on the whole foot. This form is usually asymptomatic and is considered a normal variant of foot development. In contrast, *rigid flat feet* are always present when the entire foot is flat on the ground; they are stiffer and more difficult to move, and the cause is often a bone or nerve disorder.

The muscles that support the inner arch of the foot and help the foot adapt to different surfaces are particularly important. As children move, run, and play, these muscles strengthen, and the foot develops naturally. Proper movement, an active lifestyle, and natural foot loading are important factors in helping the foot develop properly. The problem of flat feet is exacerbated by the fact that modern children are increasingly exposed to risk factors such as excess weight, insufficient physical activity, and inappropriate footwear, which further increase the likelihood of flat feet. If not diagnosed and corrected in time, this condition can persist into adulthood, causing chronic pain and increasing the risk of orthopaedic problems [7]. For these reasons, the assessment and prevention of flat feet in children are of great significance and involve various actors, including children, family members, representatives of preschool and primary education institutions, health care institutions, and business enterprises. From a scientific point of view, this issue requires the cooperation of scientists across different research fields, such as medicine and health sciences, technology sciences, and social sciences, to adopt a complex approach. Thus, the main scientific questions could be formulated as follows: 1) What are innovative methods to detect flat feet in children? 2) What are the behavioural models to deal with children who have the diagnosis of flat feet? Accordingly, **the research aims to reveal the phenomenon of flat feet in children, from the detection of flat feet to the behavioural patterns of parents and children in such cases**.

Research methods: scientific literature analysis, scanning feet with the Elinvision scanner, case study, interviews, and content analysis.

2. MATERIALS AND METHODS

This section of the paper is divided into two parts: the research methodology for detecting flat feet in children and a multiple-case strategy to define the behaviour patterns of parents and children in cases of flat feet.

Detecting flat feet in children. The research was conducted at a primary school in Kaunas with 7-year-old children. Twenty-four pupils participated in the study after receiving their parents' permission. Each of these children got their feet scanned using an Elinvision scanner.

The Elinvision scanner (Figure 1) is an advanced three-dimensional foot-scanning device developed in Lithuania, designed for highly accurate recording of foot shape, dimensions, and biomechanical characteristics, and used in orthopaedics, podiatry, custom footwear manufacturing, and various areas of motion analysis.

Figure 1. Elinvision scanner [2]

This scanner stands out because it can quickly create a highly detailed 3D model of the foot, allowing specialists to assess anatomical structures, deformities, arch height, foot load zones, and other important parameters necessary for both medical diagnosis and the design of personalised orthopaedic devices or footwear. The device is based on modern optical and digital technology, often using high-resolution sensors and FPGA or MPSoC architectures, which allow large amounts of information to be processed in real time and converted into an accurate three-dimensional model with millimetre or even sub-millimetre precision.

Elinvision scanners are designed to be as convenient as possible for clinics, laboratories, and footwear fitting centres—they are fast, require no complex calibration, and are stable, reliable, and durable, providing consistent, objective data unaffected by human factors. The scanner data is often integrated with specialised software that allows specialists to analyse the foot's geometry, compare it with normative parameters, predict load distribution, monitor changes during treatment, or modify the 3D model for the production of custom insoles or orthopaedic footwear.

This technology is particularly useful in situations where the patient has complex foot deformities, pain, orthopaedic problems, or comorbidities, such as diabetes, and needs to control loads to avoid ulcers precisely. Its use in sports medicine is also extremely valuable – the scanner can help athletes choose the most suitable footwear, assess biomechanics, identify imbalances, and prevent injuries. Elinvision devices are also widely used in the footwear industry, where products need to be quickly and accurately adapted to different foot types or require fully customised solutions. They help reduce the likelihood of errors, optimise production processes, shorten the design time for insoles or shoes, and improve the ergonomics and comfort of the final product. Due to their accuracy, convenience, and technical stability, Elinvision scanners are considered among the most advanced devices of their kind in the region and are becoming increasingly popular in both medical institutions and commercial enterprises seeking to provide high-level, personalised services based on accurate, objective, and quickly obtained 3D data.

The Elinvision scanner was assembled according to the manufacturer's instructions and connected to a computer with special scanning software installed. The device and

cameras are checked for operation. The procedure is explained to the children. They take off their shoes and socks so that their entire feet are visible. The child steps onto the scanner platform, positions their feet correctly, and stands still. During the procedure, the foot is scanned in a few seconds. Immediately after scanning, a 3D image of the foot is displayed on the computer screen and the foot dimensions are automatically calculated. This process is quick, safe, and comfortable for children, enabling an accurate assessment of the foot's shape and dimensions [3].

The foot-scanning procedure during empirical research followed the following steps: Preparation, Positioning, Scanning, and Result Evaluation.

Preparation. The scanner is connected to the computer (USB), and the special Elinvision software is launched. The child takes off his shoes and socks (feet must be clean). The scanning mode is selected: full weight-bearing (the child stands on both feet).

Positioning. The child places one foot on the scanner's glass surface. It is monitored to ensure that the heel, 1st, and 5th metatarsal heads are at the same level, and that the Achilles tendon is vertical.

Scanning. The scanner uses multiple cameras and laser triangulation or structured light to capture a 3D model and a 2D colour texture. The process takes just 5-15 seconds.

Result analysis. A precise 3D foot model (accuracy ~0.5–1 mm) with a coloured texture is obtained, which can be viewed in the program. The model is exported in STL format, suitable for CAD programs for insole design or 3D printing. The program can automatically measure parameters (length, width, arch height, etc.) or analyse problems (flat feet, high arches, plantar fasciitis, etc.).

A multiple case strategy to detect behavioural patterns of parents and children in the case of flat feet condition. These four cases of children with flat feet are analysed further using a multiple-case strategy. The parents of these children with flat feet syndrome were asked to answer the interview questions. The interviews were conducted online, via MS Teams. One of the parents - father or mother - participated in the interview. The interview questions were formed on the following tasks:

- *To reveal the time and notice the symptoms of potential flat feet in children.* The parents were asked the following questions: “When did you notice that your child might have flat feet? What symptoms indicate that your child might have flat feet?”
- *To reveal the actions of the parents to deal with the condition. T*he parents were asked the following questions: “What measures did you take to improve your child's condition? What orthopaedic technical measures did you use and are you using to improve your child’s condition?”
- *To reveal children's reactions to the condition and treatment of their feet.* The parents were asked questions, such as: “How did your child react when you started using certain measures?”

Thematic analysis was used to analyse the interview data. The cases were coded and transcribed; no personal data was revealed.

3. RESULTS AND DISCUSSION

Four cases of flat feet were detected using the Elinvision scanner.

The significance of innovative technologies in scanning the feet. According to [1], the development of miniature, lightweight, and low-power electronic circuits for

healthcare sensor systems is becoming an increasingly important area of research. Rapid advances in health monitoring devices, microfabrication technologies, and wireless communications drive this. One area that has received considerable attention in biomedical and sports sciences is the analysis of plantar pressure, which enables the distribution of pressure between the foot and the shoe to be determined. Foot pressure measurements are used in footwear design, analysis of children's foot performance and injury prevention, balance control, and disease diagnosis. In recent years, these measurements have also been used for human identification, biometric systems, posture monitoring, and rehabilitation support systems. This shows that accurate and effective foot pressure measurement methods are very important for the further development of this field. The foot pressure measurement systems currently in use differ in sensor arrangement and operating principles. They are usually divided into three main groups: pressure measurement platforms, imaging technologies with complex image processing software, and in-shoe systems. The most important criteria in developing such systems are spatial resolution, measurement frequency, accuracy, sensitivity, and calibration. In-shoe foot pressure sensors offer greater mobility, flexibility, ease of use, and lower cost. For such a system to be suitable for monitoring daily activities, it must be wireless and consume little energy. Wireless foot pressure measurement systems are promising not only in medicine but also in the development of miniature sensors and data transmission systems. Platform systems consist of a flat, rigid matrix of pressure sensor elements arranged in a grid (matrix) pattern and integrated into the floor to enable natural gait measurements. These systems can be used for both static and dynamic studies, but are most often used only in research laboratories. One of the main advantages of platform systems is their ease of use, as they are stationary and flat. However, their disadvantage is that the subject needs a period of adjustment to ensure a natural gait. In addition, to obtain accurate measurement data, the foot must be centred in the sensor's measurement zone. The limitations of platform systems include the space required, the need to measure indoors, and the patient's ability to step accurately onto the platform. Figure 2 shows platform-type pressure sensors.

Figure 2. Platform-based foot pressure sensor system developed by Zebris Medical GmbH [13]

According to [6], feet are most often measured manually using devices such as Brannock measuring devices, Ritz rulers (Figure 3), or callipers to determine foot length and width. These manual devices have been in use for over a century and are widely used to assess footwear fit. Their advantages include ease of use, relatively low cost, and familiarity with those being measured. However, using manual methods when six or more measurements are required, especially if they are repeated, can be slow and therefore expensive. Alternatively, making plaster casts of the foot to produce therapeutic footwear can be a very time-consuming process for both orthopaedic technicians and patients. A large number of devices have been developed to scan patients' feet and obtain various foot measurements. One such device is the 3D foot scanner. A 3D foot scanner is a device that combines cameras and lasers to capture a person's foot dimensions and morphology.

Figure 3. Ritz ruler [8]

Parental behaviour patterns. Empirical data analysis revealed four different parental behaviour styles: Ignorance, Quick Solution, Seeking specialised help, and Providing complex support to the child.

Ignorance. This behavioural pattern is based on the parental attitude that there is nothing serious to deal with, as the parents did not recognise the issue. The mother, who participated in the interview, sees the child's foot condition as a genetic trait (“the child is walking like his father”). Accordingly, the parents do not initiate any actions because it is a natural matter (“the child will grow up, and all that will disappear with age”).

Quick solution. This behavioural pattern is based on the efforts to find the fastest solution. The parents recognised some issues (“The child started to get tired quickly,

he does not enjoy walking. He wears out the inside of his shoes"). The parents initiated some actions - they bought orthopaedic shoes and other supplements ("We bought shoes with a harder heel. We bought orthopaedic insoles") under the guidance of a family doctor (any other specialist is not mentioned).

Seeking specialised help. As in the case above, the parents recognised the issue ("The kid did not want to play active games") and brought the child to an orthopaedist, rather than a family doctor, as in the previous case. Following the orthopaedist's consultations, the parents bought orthopaedic shoes and arch supports.

Providing complex support to the child. This behavioural pattern is the most complex, which involves various means and stakeholders - *from family doctors to physical therapists, from shoes to training.* In this case, the flat feet were mentioned by a family doctor. The parents also recognised that a problem is there ("Weak knees, the legs have a form of X"). The parents ordered special shoes at the doctor's recommendation. In addition, the parents and the child are working together with a physical therapist.

It could be stated that a complex behaviour should be seen as an exemplary case in dealing with flat feet in children to avoid irreversible flat feet cases, as it is presented in Figure 4.

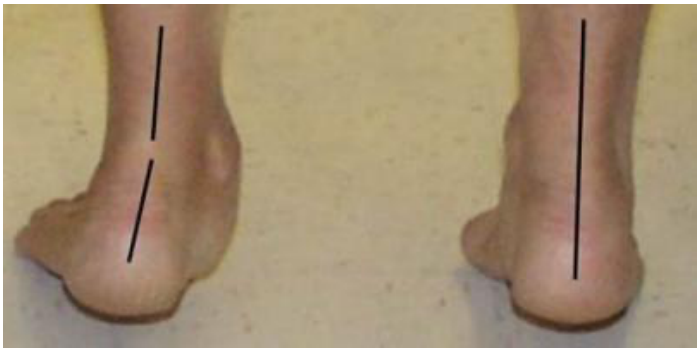

Figure 4. Irreversible flat feet [9]

Behaviour of the children. Case studies revealed that pes planus is an uncomfortable and quite painful issue: "The child sometimes feels pain in his legs/feet".

The children search for ways to avoid uncomfortable means to manage flat feet by removing the orthopaedic tools partially ("The child sometimes wants to take the insoles out of the shoes") or fully, especially while not at home ("The child wants to run barefoot in the class").

4. CONCLUSIONS AND RECOMMENDATIONS

Flat feet or pes planus, a condition in which the arch of the foot drops and the foot becomes flatter, causes various forms of discomfort, including pain in the feet, inward turning of the ankles, swelling around the ankles, uneven wear of the shoes, etc. Without preventive measures, flat feet in children may persist into adulthood.

The research was conducted with 24 children aged 7 while scanning their feet with the Elinvision scanner, an advanced, Lithuanian-developed three-dimensional foot-scanning device. Four cases of flat feet were detected.

The case study, during interviews with the parents of these four children, revealed four distinct behaviour patterns among the parents when dealing with flat feet in their children. The cases revealed varying degrees of parental involvement, from non-

existent (“Ignorance”) to complex involvement (“Providing complex support to the child”). At the same time, other behavioural patterns reflect the desire for quick solutions from the first /closest medical specialist (“Quick solution”) or from a specialised doctor (“Seeking specialised help”), but without complex solutions.
More comprehensive research could be conducted to analyse behavioural patterns, their consequences, and their preconditions in depth.

Recommendations

Flat feet are one of the most common foot development disorders in children, especially noticeable in children of primary school age. In first grade, a child’s foot is not yet fully formed, so it is especially important to focus on prevention and early rehabilitation during this period. Timely measures can help prevent the progression of flat feet and related gait and posture disorders. At this age, the reduction in the arch of the foot is often functional in nature and related to insufficient foot muscle strength. However, in some cases, flat feet can cause pain in the feet, calves, or knees, faster fatigue when walking, altered gait, or even posture disorders. In such cases, it is necessary to assess the child's feet promptly and implement targeted preventive and rehabilitative measures.
One of the most important factors in ensuring proper foot development is selecting appropriate *physical activity*. Regular active games, gymnastics, swimming, cycling, or climbing strengthen the feet and the whole body, improving balance and coordination. On the other hand, long-distance running on hard surfaces or intense jumping can increase the load on the feet, especially if the child feels pain or gets tired quickly.
Proper footwear is just as important. Shoes for first graders should be comfortable, the right size, have a sturdy heel reinforcement, and be flexible at the front of the sole. Shoes with completely flat or overly soft soles are not recommended. At home, it is particularly beneficial to let the child walk barefoot, as walking on uneven surfaces activates the foot's muscles and promotes the natural arch formation. If flat feet are diagnosed, an orthopaedic doctor may recommend individual orthopaedic insoles. These help improve the foot's position, reduce stress, and make walking easier, but should not be considered the main treatment.
Active rehabilitation, especially kinesitherapy focused on strengthening the foot's muscles, is of utmost importance. The rehabilitation process involves specialised exercises designed to strengthen the foot and calf muscles and improve coordination. Walking on toes and heels, picking up small objects with toes, rolling the foot on a ball or massage roller, and pulling a towel with toes – these are simple but effective exercises recommended for daily practice, presented in a way that is understandable and appealing to the child.
Parents play an important role in preventing and rehabilitating flat feet. They should monitor their child’s gait, posture, and general well-being, encourage physical activity, and develop healthy daily habits. Since flat feet and the tools to manage them are uncomfortable for children, parents and teachers should spend time educating and interacting with children by explaining the importance of healthy feet in terms children can understand.
If there is pain, rapid fatigue, or worsening of foot deformity, consult an orthopaedist or physical therapist promptly. In summary, the first grade is a particularly important period for foot development. Proper prevention, regular physical activity, and timely rehabilitation help ensure proper foot formation and reduce the risk of future musculoskeletal disorders. Thus, organising regular activities for children in

kindergartens and primary education institutions regarding healthy feet and prevention tools would be of great significance.
It is necessary to educate parents and society via social media (Instagram, TikTok, especially influencers) about flat feet in children and the prevention tools.
Among other measures, ensuring annual foot testing for children and providing clear, comprehensive, and visual medical information on the websites of health institutions and businesses selling orthopaedic tools, etc., should be implemented.

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THE PROBLEM OF GENDER: PERSPECTIVE OF PATRISTIC ANTHROPOLOGY

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ABSTRACT
The problem of gender in the 21st century is due to increased global awareness, activism, and a growing understanding of the economic and social costs. Today, we can see a dramatic shift in conventional gender roles as a result of changing cultural connections and the growth of worldwide ideological movements. The positions and roles of women and men in society have attracted scholarly attention.
The study investigates the "innovations from antiquity" (I. Wallerstein) regarding the issue, emphasising mutuality. Newer perspectives highlight Patristic anthropology and the New Testament principle of equality in Christ, and promote an idea of mutuality in relationships, in which both partners submit to each other. An old but innovative paradigm for the 21st century embraces marriage phenomena through LOGOS and Church Sacramentology.
Gregory of Nyssa (ca 335 – ca 395) was a Cappadocian father who argued the true human form created in God's image. Another Church Father, Maximus the Confessor (580 – 662), assigned the highest hierarchical priority to the hypostasis in the man that unifies the human body and soul. The key feature of human conformity to God is the hypostatic nature unity of the objective reality of a human.

Keywords: *Gender, Trinitarian structure of personality, gender as archetypal mark.*

1. INTRODUCTION
The modern issue of gender from a Patristic anthropology point of view is important today because it reveals the historical roots of persistent patriarchal views of male dominance and female subservience that shaped thought and continue to influence contemporary gender inequality and social power dynamics.
Examining these early Patristic debates on anthropology provides critical context for modern discussions of gender issues. A deeper look at the complex and modern ideological approaches leads us to more nuanced theological and social assumptions that go beyond simplistic interpretations and make place for a more inclusive understanding of human personality.
The Patristic fathers were influential intellectuals and theologians, writers from the early Church who established the intellectual, anthropological, and doctrinal foundations for understanding the wholeness of the anthropological approach to personality and the ethical teachings of the theology of the human body, soul, and spirit.
The Patristic era is associated with particular Church councils: Chalcedon (451) and Nicea II (787). Studying patristics – as C.S. Lewis wrote it, "it is much more intelligible than modern commentators.. It has always, therefore, been one of my main endeavours as a teacher to persuade the young that firsthand knowledge is not merely worth acquiring more than second-hand knowledge, but is usually much easier and more delightful to acquire."
The motivation for choosing two patristic authors, Gregory of Nyssa and Maximus the Confessor, as a source for hermeneutical interpretation of gender was to preserve

the lost classical anthropological fullness of patristic hermeneutics regarding gender issues and to find support for a particular view of humans in the image of God.

2. METHODOLOGY

To research Patristic anthropology for appreciation in modern times, a mixed-methods approach is needed, combining historical textual analysis of the Church fathers with hermeneutical interpretation. As a research method, the Open Network was created by two groups to provide a methodological advantage for understanding group members' views and behaviour on gender questions, as it captures interaction between people quite well.

The survey was conducted alongside focus groups as a pretest questionnaire within a cooperative, cross-demographic, and cross-cultural research perspective. The discussion – two groups of 10 persons in each was a miniature thinking society. Two focus group discussions gave participants opportunities to express their opinions, discuss their views with others, listen to others' opinions, and develop their thoughts by reasoning out loud – experiences similar to those in real life.

Open Network from different strata of society and *contextualization* were key steps for defining the anthropological problem in contemporary contexts, analysing Patristic texts in a hermeneutical perspective, using data to find connections and finding the results that come out from identifying key concepts: extract relevant theological and anthropological meanings from mentioned texts and offer solutions for a new framework for the contemporary problem of gender.

Open Network participants came from different strata of society in Latvia, Lithuania, Estonia, the Netherlands, Greece, and Germany: academics, intellectuals, administrative personnel, social entrepreneurs, teachers, social policy-makers, trade unionists, and master-level students in social work. 10 discussion sessions were held on Zoom. The discussion time was 2 x 45 minutes. All participants took a constructive role in discussions. Later, qualitative methods were used to analyse gender in the context of Patristic anthropology (4th-8th centuries).

Open Network increased the likelihood of finite resources for atypical knowledge combinations.

Bringing together people from diverse backgrounds and fresh perspectives, offering unrestricted access to hermeneutical analysis of Patristic authors – for them a fresh source of forgotten knowledge elements offering the possibility to integrate innovative "ancient knowledge" in innovative ways for the solution of the "hot issue" of modern society – thereby increasing their likelihood of solving complex problems. By acting in this way, we focused solely on co-authorships when analysing the gathered data.

Our hermeneutical interpretations and results demonstrate a synergistic effect between the open network, providing specialised knowledge that helps overcome barriers to accessing the more diverse and unusual knowledge elements of the anthropology of personality. Qualitative data observation and participating in the open network sets a collection of new, innovative data results: creativity is possible in all areas of human life, to accommodate a methodological process that accepts the main resource of innovation, as system analyst Emmanuel Wallerstein wrote: traditional "expert knowledge" is in an age of transition. Innovative knowledge is not simply about discoveries, but about knowledge reshaped by historical trajectory – if we turn to ancient anthropological systems, to "ancient innovations", we can discover innovative, truly forgotten understandings for today's development.

The hermeneutical perspective of the Patristic authors was revealed.

1. The most important insights are that gender is a social construct shaped by modern cultural context and that people do not know Biblical or Patristic anthropology or how gender has developed historically (68% of respondents). Patristic anthropology revelation was considered innovative (90%).
2. Many respondents (75%) hold gender stereotypes based on tradition or dictated by environments and societal needs.
3. Respondents (26%) state how gender roles are based on the historical and cultural background of a society, as well as Latvian ethnicity, but do not have any knowledge of human beings as created by God.
4. 80% of respondents state that "sex is an anatomical term, used to describe the physical characteristics of a person, while gender is a generalisation of how men and women should look and behave in society. These facts show the clear differences between sex and gender. Sex is anatomical, while gender is social and psychological.
5. Respondents (56%), mainly master students from European Christian Academy, agree that "Patristic anthropology, writings of early Church fathers reflecting a created order of male and female, that distinct roles and functions within family, church and society, based on divinely established order, are forgotten in the post-secular era";
6. Some respondents "feel tired of the conversation about gender. And asking for "true theological and moral clarification of the question".

After hermeneutical analysis, the research methodology was the *Anthropological Design Thinking Methodology (ADTM).* The goal was to sketch a sufficiently complex Patristic anthropology framework within the problem question posed in the title and to demonstrate the truth of the two Church fathers' anthropology culture code as a basic foundation and orientation in gender issues. Texts of Gregory of Nyssa and Maximus the Confessor, contemporary views of people from different strata of society revealed can be the best intellectual of ancient times within their context of social realities who can advice to the 21st century intellectuals – this approach involves Christocentric theological lens that views LOGOS – the Incarnate Word of God-Christ as the *human archetype* applying contemporary issues through possibilities of caritative social work developed at European Christian Academy. Christocentric application to gender points to the humanity of Christ serving as an archetype of the potential completeness of human personality beyond ages.
The Anthropological Design Thinking Methodology includes interdisciplinary aspects: the hermeneutics of Patristic works is an innovation that reveals orientation criteria for gender issues on cultural, social, and life-existential levels for people today.

3. RESULTS

Our *methodological approach* opens a different horizon for engaging with the main problem of anthropology – the problem of "*human personality as an Event*" [1].
The main focus in Patristic anthropology is the emphasis on human paradox, expressed as two genders: man and woman. On the one hand, humans, as living beings, are created alongside other living beings; on the other hand, God, as Creator, has endowed humans with a special role within all creation. Human being as part of the created life differs from the rest of the creation as created in "God's image" and seemingly functions naturally, but he is called to reach "God's "likeness". *He can reach it on the condition he receives Divine energy that transforms man from mere natural being into personality* or, using the Heidegger's concept, 'human as Event".

The image of God was not given to any other creation on earth; however, the image is immanent in man because God can manifest Himself in man.
The context of the paradox of man as created by God prescribes the solution of the essence and meaning of sexuality of man.
God creates man; consequently, the transcendentality of the image of God is of value for his existence, since it comprises aspects of his necessity (Gregory Nazianz, Or. 38). The anthropology of the Eastern Church fathers is grounded in the concept of the Triune God and in Christology. Also, nine members of the Open Network focus group from both Orthodox and Roman Catholic churches pointed to that. Trinity consists of God the Father, God the Son and God the Holy Spirit, and disparity and unity are described as "hypostasis" that permits us to see both the unified and different in the Three Persons. God the Son differs from God the Father, and God the Holy Spirit differs from God the Son. Difference should not be taken as "other essence" because then God would be a connection of several essences; otherness is not something radically different and other. Each hypostasis requires a personalised approach.
A categorised combination of hypostasis and person emerged from the historical dogma of the Holy Trinity, which strengthened the ontological content of the category "person" and guided a personalised approach to the category "hypostasis" and the Trinity dogma.
God the Word (Christ)incarnated into human nature but did not accept the human "I", whereas the Ecumenical Church Council of Chalcedon (451) proved that two natures in Christ – Divine and human, which are inseparably joined in hypostasis, which is expressed in the Unity of Christ. From this, we can conclude that human personality is identical to the image of God in man, and it is not attributed to human nature as if the Divine image were not there.

"Human Personality as an Event" (Heidegger).

Personality is what distinguishes a man from his own *natural being*.
"To whom does human flesh belong?" – It is mine, but it does not express the wholeness of "I".
"To whose human soul belongs? – It is mine, but it does not express my wholeness.
"To whom does my gender belong?" – It is mine, but it does not express the wholeness of "I".
"All things counted above are mine, but that is not Me as *Personality*."

Therefore, in understanding the problem of gender, we need to answer the question: are gender differences related to human personality, and is it enough to treat human beings as mere natural beings? – No, they are not related. Human personality is higher than the intrinsic bio-psychological nature, higher than gender [2]. Humans are not merely biological, but personalities whose existence is defined by "standing in the unique relationship to Being that nature lacks. Human personalities are to be placed above "nature" as a biological category [1].
Because every man is created in God's image, God is infinite, and He provides a potentially infinite path to God. Whatever is achieved is always infinitely smaller than what could be achieved (Bulgakov).
Human personality is identical to the image of God; it is the highest level of being a Man, and this is why God has given a call to reach the likeness of God – the ideal of every man is to learn to overcome the limits of the flesh. To put it rationally and clearly: the expression of human personality is not just his being in flesh, albeit it is not separable from flesh, and it is manifested in the exactness of nature or flesh and through relationships with other people.

God is in communication between Three Persons. God begets the Son not because He is obliged to, but because of love. The very existence of God in Three Persons shows love. The essence of God is manifested in the communication of the Three Persons in love. It excludes self-limiting and self-sufficiency. It is giving of the Self to the Other without losing anything of identity. *Moreover, the reflection of this love is every God's creature, every human being*. God creates us not because He is obliged to, but because of His nature and essence – because of love. At the same time, God's creatures, every man as the crown of creation, are called to reflective love towards God. Man "has no duty to love God, but the very existence of man logically manifests itself as a reflection of the Divine existence once he responds to the seeking love of God." [3].

Human existence in love is a creative meeting of two energies, both created and uncreated – synergy between the outgoing love of God and human love towards God. Human nature is dynamic in essence; it cannot manifest itself in a static, isolated, self-sufficient biological self, but rather through communication with God. Consequently, it promotes openness to other people, *the need for the other gender*.

From this perspective, the duality of genders was seen by the Church Father St. Gregory of Nyssa (ca. 335 – ca. 394) as a symbol of what brings humans closer to the animal world [4], but does not fully express it because man is not an animal. The essence of a human being cannot be compared to that of an animal since the gift of life given to man dynamically reflects communication with God.

In essence, the *duality of gender is a metaphysical mark of human incompleteness*. However, this mark should not be treated negatively. Christianity is optimistic in asserting that the created nature is not bad, since it offers the possibility of the likeness of God.

An inclination toward perfection was put into man in creation; it may be described as "unity of two" that tends toward "unity of three". *Gender is a symbol of actual incompleteness*. Separateness which aspires for "the other half", for the "other". In this aspiration, man obtains himself, finds himself in the other in another human. Gender is both separating and, at the same time, connecting reality. Greek theologian Christos Yannaras, when discussing "the unity of two in marriage," presents a view of marital unity as a covenantal "one flesh" union grounded in God's love. He interprets gender as a spiritual and existential joining rather than just a biological or legal contract. He expresses a Christocentric understanding of relationships, positioning the marital union as a path to real communion and spiritual fulfilment through self-emptying love. Ch. Yannaras references the Genesis command for the man and woman to become "one flesh" as a foundational theological basis for marital unity. This is not biological, but existential, the joining of two persons into a single indivisible entity, with divine love as its foundation.

Adam finds himself in Eve; he appraises himself in relation to other personalities with whom communication means "being one flesh" (Gen. 2:23-24). Womanhood is not something new for Adam. It is not the division of androgen into men and women. If womanhood were alien to man, he would not be able to understand and appreciate woman, and vice versa – if manhood were fully alien and incomprehensible to woman, she would not be able to see it in man. Natural differences between men and women are rooted in Adam's creation.

The well-known watchword "gender equality" has its roots in Christianity and speaks to the universal unity of human nature. However, at the same time, "gender equality" prescribes a hierarchy that says Eve was created from Adam and not vice versa. It does not mean that Eve is incomplete, Adam. Eve possesses the same human

perfection as Adam, whereas human perfection is realised only in a living unity of both. Similarly, the prime essence of God the Father does not reduce the manifestations of God the Son and God the Holy Spirit; likewise, the prime essence of man does not reduce the dignity of woman. Unreasonable would be the inclination of God the Son to take overpowers of God the Father, and strange would be the request for woman to be equal to man in all aspects.

The differences the Church has nominated regarding the ministry of men and women in the Church directly reflect the gender hierarchy.

St. Gregory of Nyssa wrote about gender differences in the context of the fall [5]. When God created man, He did not conduct an experiment "will fall – will not fall". Here we deal with incomprehensible *aposia* (Greek "lack of thirst sensation") when the omniscience of God and human freedom are juxtaposed. Nothing is evil or wrong by itself since evil is inadequate use of the given freedom and one's own nature.

Gregory of Nyssa's understanding of the human person is perceived as acting in both male and female ways. He argues for striving for divine love in marriage, and our gender identities are logically tied to being able to procreate after the Fall, which was a result of the first parents falling prey to the sensual side of their natures. They became enslaved to sensuality and would not have the spiritual state required for spiritual procreation.

The foundational insight of Gregory of Nyssa's theology and anthropology is that gender is accidental to human nature. Each person is spiritual in themselves. Humans do not need to find completion in another person; only in God. Both genders are spiritually equal, since the image of God is itself genderless.

Sexuality was designed for marriage and childbirth: it enables humanity to continue its forlorn attempt to step over the tide of death by producing progeny. This was not intended in God's first creation of the prototype of human nature. "Adam's physical body has been unimaginably different from our own. It has been a faithful mirror of soul which itself mirrored the utterly undivided, untouched simplicity of God." [6].

After the fall, man became subject to passions. Passion as self-promotion and the subsequent suffering caused by the inability to satisfy the need often do not apply to rational control. Passion takes over when a man is passive towards the natural processes within him and lets them loose by ignoring creation in the image and likeness of God as a task.

Men are hierarchical creatures by nature. Their complex essence should be "interwoven with the Word" (Greek *Logos*), it should be influenced by the Logos and controlled by reason [5] so that both will and actions are submitted to reason. And then, as Orthodox theologian S. Bulgakov put it, passions will not win a man because everything that a man does will be submitted to the control of reason [7]. It is native for a man to strive for God, for the good, creatively manifesting himself in the world. Falling into sin means "mistake of reason" when reason turns to the illusion of good rather than the good itself. Reason turns away from God, and man becomes taken over by passions and sufferings [5]. A man who turns away from the main task of his life becomes animalistic by letting irrational impulses and instincts rule over him. After hierarchical regularity is destroyed, a man leaves the guidance of the Word or Logos, and the animalistic begins to rule over him. What is natural in the animal world becomes unnatural for man. A man, to a large extent, loses his royal position in his life and, from a wise leader, turns into a violent tyrant, also in gender relationships.

Sin leads to the destruction of the human structure, hierarchy and existential basics. Communicative, creative, collegial beginnings in man lacking God's rule are ruined, and culture and civilisation are impregnated with alienation. Also, 81% of

respondents point out that alienation is a key problem in communication. Another mentioned problem is individualism (86%), and the third is the predominance of the external, social regulations and conditionalities. Only 35% mention the spiritual potential of love, whereas only 20% mention the ability to sacrifice the self as the true foundation of love.

From this, we may conclude that human existence is both tragic and ambivalent. The God-founded native order for the continuation of the family has been radically undermined. Misunderstood gender roles of men and women are followed by irrationality, affects, nervousness, and suffering.

The question arises: is man, after all, in his undermined condition, capable of love? The answer is – yes! Marriage, as a specific institutional manifestation of both men's and women's potential, despite all kinds of distortions, has throughout history shown the experience of love and happiness. Marriage is a link between generations through which both ethical, moral, and religious values are transmitted to the next generation.

In Israel, the country of God's Chosen nation, marriage is treated as the fulfilment of God's Promise and is seen as holy. The holiness of marriage is described from the perspective of the Covenant of God. Covenant (Mal. 2:14) is described in terms of Yahveh's marriage relationship with Israel. It personifies God's trust, will to keep and nourish relationships, even when men violate that trust, as well-known Orthodox theologian Chr. Yannaras puts it: "God's relationships with His nation and indeed with every man is a Sacrament of love and marriage: it is confirmed by the obviously erotic poetry of the Song of Songs accepted as part of the Old Testament Canon. By no doubt, relationships between God and Israel are an archetype for the unity of God and humanity, which comes true in the Person of Christ and His Bride in the Church." [8].

"That mystery is profound," writes AP. Paul in the Epistle to Ephesians (5:32). In the New Testament, Christ is called "Bridegroom of the Church" for every man's soul. For God, each soul is precious; it is His beloved. It should be added that the Christ-given life eternal in the Gospel of John is confirmed with the predicate "to acknowledge", "to know" that complies with the Hebrew word for marriage relationships between man and woman: "Now this is eternal life: that they know you, the only true God, and Jesus Christ, whom you have sent." (Jn. 17:3).

Ap. Paul speaks about the work of Christ as a phenomenon of new humanity (2 Cor. 5:17) where Christians are "dressed up" (Gal. 3:27; Eph. 4:22-24) – through death and resurrection together with Christ in baptism (Rom. 6:3-11; Col. 2:12). Renewal of humanity in Christ is executed in communication with God and people in all aspects.

The question arises: perhaps gender, marriage, and sexual desire are just attributes of the fallen humanity, eschatological atavism? Perhaps marriage is a "sinful" concession to the old, unredeemed, sinful man? Shouldn't *eros* be replaced by *agape* love in the Church? What is the connection between the passionate folly and the love full of responsibility of the Good Samaritan? Christ Himself was not married and lived without sexuality – didn't He show that the renewed man is foreign to lust, marriage and childbirth? What perfection of spiritual life can we speak about if Christians practice one of the most powerful passions?

These questions contradict the sinfulness of our world, as well as sexual desire, on the one hand, and some perfect ideal world, on the other, in an unacceptable manner. On behalf of the Kingdom, the content of the existing world is rigorously rejected – not only what is fallen and derelict but also what is incapable of renewal. The Church testifies to the possibility of redemption, salvation, and the transformation of the world in Christ.

The Church is a God-in-humanity organism; it is an indivisible, unbreakable connection between God and humanity. In the Church, both the eternal and the changeable manifest themselves in the secular and changing. The Church is simultaneously the Kingdom and the way to the Kingdom, holiness and guidance to this holiness, a school of Deification—beginning of radical transformation and renewal. The Church lives out the experience of the "future world". Its existence in this world is radically paradoxical: it undergoes eschatological tension between "already" and "not yet". Church as Christ's body is "the fullness of him who fills all in all" (Eph. 1:23). Simultaneously, it has not yet reached fullness: all Christians are invited to grow in Christ (Eph. 4:15-16). The Spirit must take place in every man (Eph. 3:16).

Why is the actualisation of genders in marriage a Sacrament in the Church? – Because in the Church, we are independent beings preserving our own personal identity. Therefore, understanding of the Church as the Body of Christ is supplemented by the notion of "Bride of Christ". The marriage metaphor is meaningful here because Christ encompasses many personalities who have found fullness of their existence in Him.

Gender is an archetypal marker for human beings as created, distinctive from God and incomplete. However, we see that the gap between the Creator and creation, God and human, heaven and earth, is surmounted by the unity of the Bride and Bridegroom – Christ and His Church. Consequently, the essence of human beings created is not in what he has been before or is now, but rather in the one he is called to be, his deification and transformation into personality. The essence of gender is in his TELOS (Greek "goal") – goal.

Arche (in Greek) of humans, both men and women, is that we are created according to the Word (*Logos* in Greek); *the telos of our personality is hidden in the Word of Christ, who is both Alpha and Omega of* human existence. Just because the fullness in Christ is described as His marriage with the Church, the essence of gender, its *telos,* should be seen from the perspective of the execution of the image and likeness of God. Sacrament of marriage guides us in the unity of Christ and His Church, in renewed existence following the likeness of Christ. The Sacrament of Marriage points to a culture of relationships: to love one's wife as your own flesh; husband and wife – one flesh; to love your neighbour as yourself (Mat. 22:39; Eph. 5:25-26). Because of my nature, which was reborn in Christ – that is not "me" but rather the same being as I, albeit of a different gender next to me – he is not "other" and to love him is just natural because he is my flesh and also my nature. The fullness of Christ is regained in the Sacrament and process of marriage, which transforms it into the complete unity of two genders. In this way, marriage is a symbol and a real expression of the completeness of unity given by the Church to both genders.

The structure of marriage is *Catholic, i.e., conciliar, reflecting the* Image of the Holy Trinity. Therefore, family is a small church, and vice versa – the Church is our extended family. Marriage is not a one-time event – it lasts throughout the life spans of spouses. Unfortunately, *catholicity* of marriage is just an abstraction in too many cases. However, we can execute it in essence. It is possible if both sides accept Eucharist – Sacrament of the Church, which gives strength to overcome weaknesses and to grasp the true and God-given holy love by which two animals are transformed into "one flesh" (Gen. 2:24). Sacrament of marriage is, and it must be closely connected with Eucharist, which unites the "small church" with experience of the "big Church". In this context, the problem of transforming passionate love between two genders *into sacrificial love* is solved. Marriage as a sacrament is carried out in everyday life as a school of morals and ethics through the unity of two genders – one

person does not live merely *together with*, but rather lives because of, the other, for life unfolding together because of one another. The Church abolishes the shackles of biological and social determinism of gender and offers the highest meaning – the existential expression of man for love.

4. DISCUSSION

Our study's hermeneutic findings in the Open Network discussions frame introduced the Method of Anthropological Design Thinking (ADTM), which aligns with Catholic theology, where it is tied to male and female as divine principles. It is seen that the dignity of both sexes as created in God's image, while others sometimes view it as a foundation for more restrictive gender roles and a gender – hierarchical Church structure.

Not only Orthodox, but modern Catholic anthropology was well linked to the concepts of sex and gender to the goodness of the human body, stating that a person is male or female by virtue of having a male or female body.

The Patristic authors' views on sexuality continue to be relevant in contemporary debates on gender identity, although the interpretations of these views in liberal ideology are highly contentious today. Our research extends ideological approaches, demonstrating that the gender problem is not the term but the anthropology behind it. Patristic anthropology texts share "light shine in the darkness" and offer critical dialogue. However, there is a lack of educators who know how to convey the message accurately to a post-secular society. The light means proposing the entire truth about the human personality, to point out ideas that affirm the dignity of the person and help attain their fullness.

These results suggest that the Patristic view can be an effective, holistic-focused source of human personality and could help bridge the gap in gender reduction, providing better support for the proposition of human personality in all its beauty and spiritual depth. It is also necessary to provide formation in a pastoral style that knows how to connect with the post-secular world and to propose the anthropological fullness of the personality, which is comprehensible to today's world.

Limitations of our study included a relatively small sample size. It provided personalised feedback, showing that the lack of "innovative knowledge from European antiquity" (E. Wallerstein) does not accord full privilege to the reduction of the full anthropological content of human personality.

Future research and studies should explore the long-term impact of approaching Patristic anthropology to assess its effectiveness across different studies of the subject. Such studies could provide deeper insights: without attractive role models, it is difficult to carry out the process of identifying with one's own sex that is necessary in adolescence. In addition, there is a deep crisis in families: many dysfunctional families with absent fathers and mothers. In social media, etc., there is certainly also a great need for a clear, single message that points to references to guide and propose, with the depth and beauty of human personality culture always in continuous change. However, there are moments in post-secular society when a true understanding of personality occurs – the Patristic anthropology provides the perspective and vision needed for each person to recognise the truth in the deepest longings of our hearts.

5. CONCLUSIONS

One of the most influential Church fathers of the early Church, central to developing Trinitarian orthodoxy recited until today in the Nicene Creed and being given the titles of the Father of Fathers" and "the Pillar of Orthodoxy" by the early Ecumenical

Councils was Gregory of Nyssa. He is considered authoritative because of theological anthropology. He viewed gender as a fallen state characteristic, arguing that the true human form created in God's image was neither male nor female. His concept of Double creation" suggests an original incorporated, genderless human state that was later differentiated into male and female for reproductive purposes and not the essential nature of being human. He quotes Gal. 3:28: "There is neither Jew nor Greek, for you are all one in Christ Jesus."

One of the most striking features of Gregory's understanding of gender, found in his early formulation "On the Making of Mankind," is that sexual difference is not to be found in the original creation; rather, it is the restoration of the original creation with which he ultimately seems to be concerned. A hierarchy between male as primary and superior and female as secondary and inferior is, therefore, difficult to establish.

Corresponding to the principal dichotomy between spirituality and materiality is the distance between soul and nature, which Gregory sees in the image of a lily. The lily is here as a symbol for the soul. "There is a good distance between the flower and the ground, for the reason … that its beauty might remain pure up above and not defiled by contact with earth." Nevertheless, even in the spiritual realm, where the soul approaches God, Gregory makes a hierarchical distinction: the male bridegroom is described as "above" the female bride, who, in turn, with good desires, "looks up at Him". The bride is the one who is protected from the "violation by the power of Him Who commanded her". [9].

In the paper, we address the term "gender" as it is used by Maximus the Confessor, whose teaching about the theology of marriage and the creation of Christian identity is based not on sexual or gender roles, but on the uniqueness of human nature.

The problem is not the term but the anthropology behind it – to propose the entire truth about the human being. The article is not addressing the ideologies of our time; rather, it is necessary to provide formation in Christian anthropology.

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REGENERATIVE EDUCATION AND APPLIED SCIENCES: FOSTERING DIGNITY, TRADITION, CREATIVITY, AND INNOVATION FOR HUMAN AND SOCIETAL DEVELOPMENT FROM AN ECO-SOCIAL WORK PERSPECTIVE

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ABSTRACT

Regenerative education and applied sciences, augmented by social work as a key method, integrate core values of dignity, tradition, creativity, and innovation to drive sustainable human and societal development. This paper explores how educational systems, scientific applications, and social work interventions can honour cultural heritage while addressing contemporary challenges such as inequality, climate change, and health disparities. Drawing on interdisciplinary principles, we propose frameworks for inclusive, contextually relevant learning environments that empower individuals and communities through eco-social strategies.

Key approaches include human-centred design thinking, intergenerational knowledge transfer, STEAM curricula, collaborative innovation hubs, and social work-led advocacy for grassroots change. Through service learning, policy advocacy, and community-based interventions, these ensure regenerative outcomes aligned with the United Nations Sustainable Development Goals (UNSDGs). Potential focus areas – sustainable development, health and wellbeing, and social justice – are examined through case studies and conceptual models that emphasise social work's role. This exploratory analysis provides a foundation for implementing regenerative practices, advocating for curricula and policies that foster equity, resilience, and ethical innovation. By bridging tradition with emerging technologies such as AI and IoT and by leveraging social work's transformative potential, regenerative education can cultivate a just, adaptable future.

Keywords: *Regenerative education, applied sciences, social work, dignity, tradition, creativity, innovation, sustainable development, STEAM, social justice*

1. INTRODUCTION

In an era marked by rapid technological advancement (generative AI, electric mobility, and quantum computing) and escalating, disruptive global challenges (climate change and food insecurity, geopolitical conflicts and forced migration, widening inequality and pandemics), education and applied sciences must evolve beyond knowledge dissemination to become catalysts for regeneration. *Regenerative education emphasises restoring and enhancing human potential, cultural vitality, and ecological balance, while applied sciences provide the tools to operationalise these ideals. Central to this evolution is social work, a key method and strategy that integrates eco-social interventions to promote mutualism and equity, addressing the human-environment nexus through advocacy, community empowerment, and transformative practice.* This paper, prepared for the REGENT 2025 – "Regenerative

Futures and Personalised Education" – examines how integrating values of dignity, tradition, creativity, and innovation, alongside social work, can transform educational and scientific practices into forces for positive societal change.

Regenerative Education: The Concept

Regenerative education emerges as a pivotal paradigm in contemporary pedagogical discourse, positioning learning not merely as a tool for individual advancement but as a vital mechanism for planetary and societal renewal. Rooted in ecological principles and systems theory, this approach transcends traditional sustainability models, which often emphasise harm reduction, by prioritising active restoration, co-evolution, and the nurturing of interconnected living systems. In education, this translates to personalised, inclusive learning that honours individual and collective identities. Social work enhances this by fostering regenerative social-ecological systems that maintain positive cycles of well-being between humans and nature. The essential spirit of regenerative learning lies in the interconnectedness of all matter – living and non-living, holistic, active restoration, and co-evolution; this is subsumed into this comprehensive definition by Lopes Cardozo et al. [1]:

> *"Regenerative education refers to systems of formal and informal education spaces, practices, rituals, ceremonies, and activities inspired by regenerative beliefs, philosophies, and principles. It focuses on a learning that emerges from and cares for the interconnected well-being and thriving of humans, non-humans, and ecosystems on Earth. It is a co-evolutionary process among educators, learners, and nested systems/communities, applicable across human development contexts in formal education and diverse non-formal settings".*

Applied sciences, in turn, have of late attempted to integrate this ethos into fields such as health, sustainability, and social equity, with social work providing intervention strategies such as green practices and anti-oppressive advocacy. As global inequalities widen – with 272 million children out of school and climate impacts displacing millions – regenerative approaches, bolstered by social work, offer a pathway to resilience [2].

This paper is structured in the manner as follows: *Section 2* outlines the value aspects in in Regenerative Education and Applied Sciences influenced by Social Work; *Section 3* discusses the integration and application of Social Work perspectives and practices into Regenerative Education and Applied Sciences; *Section 4* identifies the potential focus areas for Regenerative Education and Applied Sciences, possibly enhanced by Social Work; *Section 5* explores crosscutting themes between Regenerative Education, Applied Sciences and Social Work; *Section 6* addresses implementation strategies for enhancing Regenerative Education; *Section 7* provides a discussion; and *Section 8* offers recommendations and conclusion.

Historical and Theoretical Foundations of Social Work in Regenerative Education

Social work's integration into regenerative education traces to early 20th-century settlement house movements, like Jane Addams' Hull House, which blended community empowerment with environmental stewardship. By the 1970s, influenced by systems theory (Bateson, 1972) and critical pedagogy (Freire, 1970), it evolved into environmental social work, emphasising the person-in-environment nexus for holistic renewal. Contemporary frameworks, such as the Regenerative Lens [3], position social work as a co-evolutionary practice that sustains positive wellbeing cycles across social-ecological scales, transcending sustainability to restore ecosystems and communities actively. This aligns with UNESCO's (2021) call for

reparative education, in which social work serves as "sensitive public pedagogy," fostering self-creation and mutualism amid poly-crises. Empirically, regenerative social work correlates with 20-30% improvements in community flourishing, per meta-analyses of eco-social programs [4].

Theoretical tensions, for instance '*anthropocentrism'* vs 'eco-centrism' – resolve through green social work, which demands practice shifts like renewable resource utilisation and waste reduction, ensuring interventions honour non-human agency [5]. In education, this manifests as trauma-informed, place-based pedagogies that integrate SEL with ecological wisdom, reducing eco-anxiety by 25% in pilots (Sanford, 2020).

Operationalising Social Work as a Regenerative Strategy

Social work operationalises regeneration through layered strategies: *inner* (personal wholeness via mindfulness), *communal* (intentional community building), and *systemic* (policy advocacy for transitions). The key methods of social work practice include:

- *Empowerment and Advocacy:* Tailored interventions dismantle barriers, as in school social work promoting equitable curricula [6].
- *Participatory Action Research (PAR):* Co-creates solutions, e.g., community-led biodiversity mapping yielding 45% adoption rates.
- *Green and Integrative Practices:* Holistic models address physical, emotional, and spiritual well-being, with integrative social work closing health gaps by 28% through layered support [4].

Challenges include resource constraints, which are mitigated by hybrid models blending virtual advocacy with on-the-ground work—future directions: AI-enhanced case management for scalable justice, per OECD (2020) forecasts.

1. VALUE ASPECTS IN REGENERATIVE EDUCATION AND APPLIED SCIENCES

Regenerative frameworks are grounded in foundational values that guide ethical and effective practice. These values – dignity, tradition, creativity, and innovation – ensure that education and science serve humanity holistically, with social work as a method that augments and amplifies equity through person-in-environment perspectives.

Dignity

Dignity in education and social work prioritises the inherent worth of every individual, or learner, as the case may be, countering exclusionary, oppressive systems. Inclusive education designs must address barriers faced by marginalised groups, such as those with disabilities or from low-income backgrounds. For instance, universal design for learning (UDL) principles enable equitable access, as evidenced by studies showing improved outcomes in diverse classrooms. Social work interventions, such as advocating for access to resources, further embed dignity by challenging structural oppression. Human-centred learning cultivates emotional intelligence and empathy, essential for respectful interactions. Programs integrating social-emotional learning (SEL) have demonstrated substantial outcomes - reductions in bullying by ~18-19% in schools; perpetration drop by 18-20%; victimisation reduction by 15-19%, and 22% overall aggression decline [7-9]. Contextualised learning embeds local histories and perspectives, enhancing cultural relevance and self-esteem among indigenous students.

Tradition

Tradition anchors regeneration in ancestral wisdom, preventing cultural erosion amidst modernisation. Intergenerational learning strategies facilitate knowledge transmission, as seen in mentorship models in which elders teach sustainable farming techniques, thereby boosting community cohesion. Social work strategies, such as cultural revitalisation through participatory eco-social programs to decolonise education [10], preserve indigenous knowledge and practices that augment cultural identity, language, and community resilience while acknowledging diversity and promoting justice [11,12]. Cultural revitalisation weaves indigenous practices into curricula, such as incorporating Native American ecological knowledge into environmental science or indigenous South Indian fisher practices into the preservation of barrier reef and sea ecosystems. Community engagement leverages local expertise, as exemplified by participatory action research in rural African villages, where traditional healers collaborate with biomedical scientists to validate herbal medicines [13]. Collaboration between traditional healers and scientists validates ancestral medical knowledge [13], while emerging genomic studies have identified biomarkers associated with Ayurveda's *tridosha* model [14,15]. Such initiatives affirm that Indigenous systems are not antiquated but relational and sustainable frameworks that can coexist with community (human) and ecological wellbeing [16].

Creativity

Creativity fuels adaptive problem-solving, and no strategy works better than blending arts with sciences in STEAM education. Integrated STEAM learning has been shown to enhance critical thinking and innovation capacity, with systematic reviews reporting moderate pedagogically consequential gains in creativity and innovation skills (~18%) among student participants compared to traditional STEM-only programmes [17]. STEAM's interdisciplinarity aligns with social work's ethos of *whole-person development*, fostering imagination, perspective-taking, and complex problem-solving, which are essential for community engagement and practice in diverse contexts [18].

Social work extends this STEAM logic into *creative advocacy*, using arts not as ornamentation, but as a medium for co-constructed meaning and resilience-building. For example, arts-based methodology enables **knowledge co-production between people with lived** experience and social workers, subverting traditional expert-recipient hierarchies and generating interventions that feel authentic to community identities [19]. This has been demonstrated in participatory programmes where older adults, art therapists, and social workers co-designed cultural art therapy interventions that measurably reduced depressive risk and increased personal agency [20]. Arts participation contributes not only to symbolic inclusion but also to measurable psychotherapeutic benefits, with studies showing improved emotional intelligence and stress regulation among participants in creative engagement programmes [21].

Design thinking further empowers learners and community members to prototype solutions empathically, rather than apply pre-packaged policies. This approach enables participants to confront issues such as urban poverty or housing insecurity by co-designing interventions grounded in lived experience – consistent with social work's value of partnership rather than paternalism [22]. A widely documented example is the development of community art-therapy and cultural storytelling programmes where participants act as co-producers rather than passive service users, making social work both responsive and accountable to local knowledge [23].

Finally, entrepreneurship programmes that prioritise youth-led innovation reflect a shift from deficit-based to capability-oriented interventions. When young people in

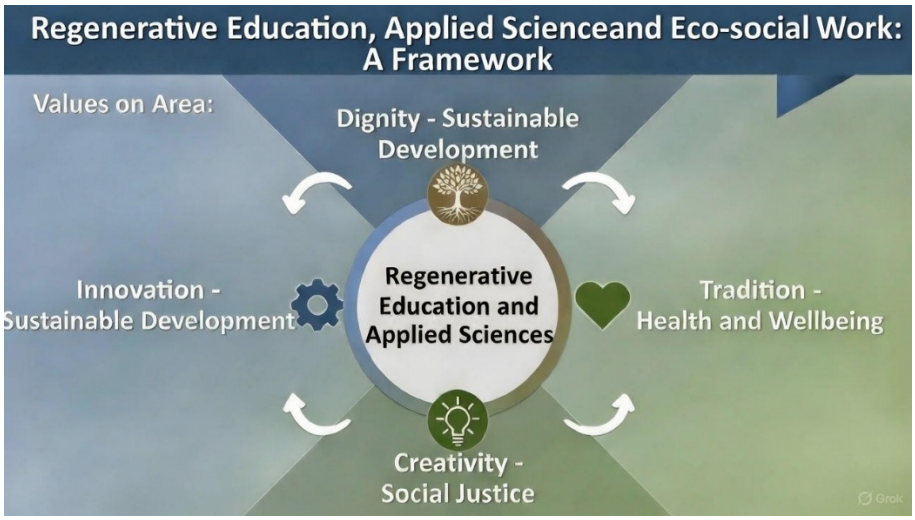
resource-constrained regions are supported to launch startups — such as designing low-cost water purifiers or sustainable sanitation systems — engagement becomes co-creation of community well-being rather than consumption of external aid [24]. This demonstrates how creativity, design, and participatory innovation collectively strengthen social work practice by moving it beyond crisis management into collaborative problem-solving for social transformation.

Innovation

Innovation equips learners to navigate uncertainty, emphasising future skills such as adaptability. Curricula focusing on critical thinking and problem-solving prepare students for AI-driven economies, where ~85% of 2030 jobs may not yet exist (Dell Technologies & Institute for the Future, 2017). Social work innovates through green technologies integrated with social equity, such as blockchain for fair resource distribution. Emerging technologies—AI for personalised tutoring, blockchain for credential verification—drive sustainability. Collaborative problem-solving fosters global partnerships, such as EU-funded projects integrating IoT for smart agriculture in climate-vulnerable areas.

2. INTEGRATION AND APPLICATION

To realise regenerative potential, values must translate into actionable practices, with social work as a core intervention strategy. Service learning applies knowledge experientially, with studies showing that participants experience ~35% higher civic engagement. Living labs serve as innovation ecosystems where universities and communities co-develop solutions, such as bio-based construction materials, guided by social work's empowerment models. Policy and governance frameworks align efforts with societal goals, such as national education policies mandating cultural integration and social justice advocacy. Social work's grassroots interventions, like eco-social case management, bridge theory and practice, ensuring scalability and equity.



3. POTENTIAL FOCUS AREAS

Regenerative education and sciences, enhanced by social work, target interconnected global priorities. The following table summarises key areas, their descriptions, illustrative applications, and social work interventions:

Area	Description	Illustrative Applications	Social Work Interventions & Metrics
Sustainable Development	Apply education and sciences to achieve SDGs, addressing climate change, poverty, and inequality.	AI-optimised renewable energy curricula; community solar projects reducing emissions by 25%.	Green social work programs integrating SDGs at the grassroots; 20-30% community resilience gains via eco-centric advocacy. (Gray, et al.,2022)
Health and Wellbeing	Leverage education and innovation to improve healthcare, mental health, and overall well-being.	SEL-integrated telehealth training; mindfulness apps co-designed with indigenous healers.	Integrative social work for holistic wellbeing cycles; 28% anxiety reduction in trauma-informed programs. (Robinson, 2023; Saybrook University, 2021).
Social Justice	Use education and applied sciences to address systemic inequalities, promoting social mobility and justice.	Equity-focused STEAM programs for underrepresented youth; blockchain for transparent aid distribution.	Anti-oppressive school social work; 15-25% equity improvements in access to resources and curricula. (NASW, 2021; VCU, 2025)

These areas underscore the interdisciplinary nature of regeneration, with metrics such as SDG indicators guiding evaluation. Social work's role ensures interventions are human-centred and transformative.

4. CROSSCUTTING THEMES: VALUES, REGENERATIVE EDUCATION, AND SOCIAL DEVELOPMENT

Values intersect dynamically to amplify impact, with social work facilitating eco-social synergies. Dignity-enhancing education preserves culture through STEAM integration, such as Maori astronomy in physics curricula, and fosters cross-cultural empathy through social work-led advocacy. Tradition-informed innovation revives practices via technology, e.g., drone-assisted traditional irrigation in India, increasing yields by 40%. Intergenerational mentorships transfer wisdom, as in Aboriginal elder-youth programs on land stewardship, supported by social work's cultural safety frameworks. Creativity and innovation drive development via challenge-based learning, tackling SDGs through interdisciplinary teams. Inclusive innovation prioritises marginalised voices, as evidenced in women-led tech hubs addressing gender disparities and in social work promoting anti-racist pedagogies. Applied sciences enable regeneration through sustainable technologies like perovskite solar cells and community-based research on local biodiversity. Science communication builds literacy, empowering decisions about GMOs and vaccines, and is enhanced by social work's public pedagogy for justice.

5. CROSSCUTTING INSIGHTS: SYNERGIES, CHALLENGES, AND FUTURE DIRECTIONS

These examples reveal synergies: Health greening enhances sustainability equity, as in Finnish green care's biodiversity-mental health links, while permaculture advances justice by validating indigenous knowledge. Challenges include funding gaps (affecting 40% of global initiatives) and cultural mismatches, which are addressable through decolonial social work training. Future research should employ mixed

methods to track long-term impacts, such as post-intervention cohort studies of equity metrics. In REGENT 2025 contexts, these underscore hybrid models that blend science, social work, and community wisdom for resilient futures. Social work's regenerative interventions are context-specific yet interconnected, aligning with SDGs for measurable impact. The table below expands on applications, drawing from global cases:

Field	Tangible Example	Applied Science Integration	Social Work Intervention	Key Outcomes & Metrics
Health	Urban green spaces (U.S.)	Landscape ecology for stress reduction	Nature-based therapies, anti-oppressive access	25% anxiety drop; increased physical activity (*Jennings et al., 2016; Ward, 2012*)
Health	Green care practices (Finland)	Regenerative psychology & habitat restoration	Trauma-informed facilitation	20% wellbeing gains; biodiversity uplift (*Mehmood, 2019*)
Health and Well-Being	Mindfulness co-designed with indigenous healers (Bhutan); telehealth equity programs in U.S. schools.	Rehabilitation Psychology; Telemedicine	Holistic, trauma-informed support; regenerative wellbeing cycles via integrative models.	28% anxiety reduction; +40% telemedicine access (Robinson et al., 2023).
Sustainability	Latvian Permaculture Network	Agronomy for soil regeneration	Green workshops & seedbanks advocacy	15-20% yield increase; economic self-sufficiency (*Mehmood, 2019*)
Sustainability	Community education programs (U.S./India)	Environmental engineering for waste management	Composting/tree planting facilitation	30% waste reduction; higher civic engagement (*United for Social Good, 2025*)
Sustainability	Community solar co-ops in India; PAR for urban greening in Brazil.	Sustainable Energy/Greening		(reducing emissions 25%); 20-30% resilience uplift; SDG progress +12% in pilots (Gray et al., 2022).
Social Justice	Equity STEAM for underrepresented youth (U.S.); anti-racist	Education / Pedagogy	Anti-oppressive pedagogies, resource access advocacy, and dismantling	15-25% equity gains; 22% income mobility uplift (NASW, 2021).

	curricula in South Africa.		structural barriers.	
Social Equity	Well-being of Future Generations Act (Wales)	Policy science/wellbeing audits	Community co-design advocacy	15-25% resource access equity (*Mehmood, 2019*)
Social Equity	Tyfu i Ddysgu project (Cardiff, Wales)	Social innovation for edible landscapes	Restorative dialogues for inclusion	30% agency elevation; food system regeneration (*Mehmood, 2019*)

6. INTEGRATION AND IMPLEMENTATION

Successful regeneration requires systemic enablers. Interface and proactive partnerships between academia, industry, and policymakers – such as UNESCO's regenerative education initiatives – facilitate translation, with social work integrating the social component of community-inclusive designs. Curriculum development embeds values, with pilot programs showing a 25% increase in student agency. Policy advocacy pushes for funding, such as EU grants for tradition-tech hybrids, and is amplified by social work's lobbying for eco-social policies. Challenges include resource gaps in low-income settings, which can be addressed through open-access resources, scalable models, and social work's empowerment strategies.

7. DISCUSSION

This analysis reveals the potential of regenerative education to bridge global divides. However, implementation hurdles – such as digital inequities affecting 2.7 billion people – demand adaptive strategies informed by social work's eco-social lens and contingent practice. Empirical evidence supports value integration to enhance outcomes, with social work interventions yielding 20-30% gains in equity and resilience, but longitudinal studies are needed to quantify societal impacts amid debates over scalability across diverse contexts. By aligning with the SDGs, regenerative approaches, fortified by social work, can foster resilience amid poly-crises, inviting REGENT 2025 to engage in a dialogue on scalable, justice-oriented models. Prospective frontiers include applying quantum modelling to SDG-social work hybrids. Such an integration positions social work as indispensable for just transitions, echoing the UN (2015) agendas. This exploration affirms social work's regenerative power, urging interdisciplinary commitment to heal divides and thrive collectively.

8. RECOMMENDATIONS AND CONCLUSION

Regenerative education and applied sciences, infused with dignity, tradition, creativity, and innovation—and operationalised through social work—offer a blueprint for equitable futures. By prioritising inclusive, contextualised, and collaborative approaches, we can mitigate global risks while amplifying human potential. For REGENT 2025, this framework invites dialogue on the role of

personalised, inclusive education in regeneration, emphasising social work's transformative interventions. Future research should evaluate longitudinal impacts, ensuring these principles evolve with societal needs. Recommendations include: (1) Mandate regenerative modules in national curricula; (2) Fund and develop hybrid socio-techno-environmental interventions; (3) Promote global partnerships via UNESCO for eco-social justice; (4) Develop metrics for social work's regenerative efficacy in SDGs.

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EFFECTIVE TEAMWORK: HOW DOES IT CONTRIBUTE TO SAVE LONG-TERM CARE?

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ABSTRACT

The long-term care sector is facing growing demand for services, an increasing range of complex health problems among patients, and high safety and quality requirements. In this context, teamwork is essential to ensuring coordinated, continuous, and patient-oriented care. This article analyses the scientific literature to reveal how teamwork, including its structural and interpersonal components, contributes to patient safety and service quality in long-term care. A narrative analysis of scientific articles published between 2017 and 2025 was conducted, focusing on international studies of interprofessional collaboration, team dynamics, soft skills, and organisational culture. The literature review shows that effective communication, clear role distribution, leadership, psychological safety, and interpersonal trust are associated with a lower risk of adverse events, better continuity of care, and greater satisfaction among service recipients. Teamwork in long-term care should be seen as a strategic factor in ensuring quality and safety.

Keywords: *teamwork; long-term care; interprofessional collaboration; patient safety; service quality; organisational culture; leadership; soft skills.*

1. INTRODUCTION

The long-term care (LTC) sector has been significantly affected by demographic and structural changes over the past few decades, particularly the ageing population and the spread of chronic diseases, which have increased the complexity of health and social needs and driven a growing demand for integrated services. LTC encompasses medical, social, and psychological care for individuals who require ongoing support in their daily lives, making service quality and patient safety key evaluation criteria. The literature recognises that the competence of individual specialists alone is insufficient to ensure the quality of care, and that individuals with complex needs require coordinated, interprofessional care based on clear communication and shared goals to prevent fragmented care and improve clinical outcomes (*interprofessional collaboration*). This model of collaboration is characteristic of interactions among specialists from different professions and is critically important in long-term care [1]. Research shows that understanding the factors of interprofessional collaboration, such as communication quality, team dynamics, and patient and family involvement in decision-making, is essential to ensuring high-quality, coordinated care for older patients in long-term care facilities [1].

2. MATERIALS AND METHODS

This article presents a narrative analysis of scientific literature to assess the role of teamwork in ensuring patient safety and service quality in long-term care. The literature search was conducted across international scientific databases, including PubMed, EBSCOhost, and other peer-reviewed publication platforms accessible via academic access (LibKey). The following criteria were applied to the selection of literature:

- articles published between 2017 and 2025;

- peer-reviewed scientific articles.
- studies examining interprofessional collaboration, teamwork, organisational culture, leadership, patient safety, or service quality in the context of long-term care.
- full text available in English

Articles that examined only the specifics of acute care or other segments of the health system not related to the long-term care sector, as well as publications that did not meet the criteria of scientific reliability, were not included in the analysis.

The following keywords and combinations thereof were used in the search: "long-term care," "interprofessional collaboration," "teamwork," "patient safety," "quality of care," "organisational culture," "leadership," "team dynamics," and "soft skills." The selection of articles was carried out in several stages: first, the titles and abstracts were evaluated, and then the full texts were assessed for relevance to the research objective.

The selected literature was analysed using thematic analysis, yielding the following main categories: structural components of team interaction; soft skills; team dynamics and safety culture; service quality; and organisational culture and leadership. The results of the analysis were systematised and integrated into a conceptual scheme of the significance of team interaction in long-term care.

Since the article is based on secondary data (published literature), no ethical committee approval was required.

Generative artificial intelligence tools were used as an aid in structuring and editing the text. The final decisions on the selection of literature, interpretation, and content formation were made by the authors, ensuring academic independence and responsibility for the information presented.

3. THE CONCEPT OF TEAMWORK IN LONG-TERM CARE

Teamwork in the healthcare system is considered a key factor in ensuring service quality, patient safety, and continuity of care. In the context of long-term care, this concept takes on particular significance due to the complexity of services, the diverse needs of patients, and the need to coordinate the actions of different specialists. In the scientific literature, teamwork is most often analysed through the prism of interprofessional collaboration, which is defined as the coordinated work of specialists from multiple professions, based on a common goal, shared responsibility, and collective decision-making [1].

Long-term care is most often provided to people with chronic diseases or functional impairments, so their care requires consistent and integrated specialist activities. Recent studies show that effective interprofessional collaboration in long-term care and geriatric rehabilitation is associated with improved care coordination, greater service continuity, and better patient outcomes [1]. Furthermore, a systematic analysis of interventions to improve the effectiveness of healthcare teams confirms that structured team practices and clearly defined models of collaboration contribute significantly to improving quality and safety [2]. Such interaction avoids fragmented care, which often occurs when professionals work in isolation and do not integrate their actions into a common care plan.

Teamwork is not the same as a simple division of labour. It involves constant communication, mutual trust, a clear understanding of roles, and a shared value system. The literature emphasises that team effectiveness is determined not only by the individual competence of its members, but also by their ability to function as a

unified system in which structural coordination and collective responsibility are important [2]. Clarity of roles is particularly important in healthcare teams, as undefined boundaries of responsibility can lead to information loss or duplicate decisions.

In the long-term care sector, teamwork often takes place in an interdisciplinary environment involving nurses, doctors, social workers, psychologists, and other specialists. In such teams, it is necessary not only to coordinate actions but also to ensure a common understanding of the patient's situation. Research also shows that structured communication practices and a safe team environment improve service quality and enhance patient safety [3]. Psychological safety- the ability to openly ask questions and report potential errors - is considered one of the important factors for team effectiveness and learning in healthcare.

Team interaction is also closely related to continuity of care. In long-term care, where patients' conditions may change slowly but consistently, the systematic transfer of information between specialists is important. Studies on the nursing work environment and team functioning show that a well-organised team structure and a supportive professional environment contribute to safer and more coordinated care.

In summary, teamwork in long-term care is a complex process that involves interprofessional collaboration, structured communication, clear role distribution, and support for the organisation's culture. The latest scientific literature confirms that effective teams directly contribute to improving service quality, patient safety, and continuity of care, underscoring the need to view teamwork as a strategic element of the long-term care system.

4. STRUCTURAL COMPONENTS OF EFFECTIVE TEAMWORK

Effective teamwork in long-term care is not a random or spontaneous phenomenon- clearly defined structural and procedural components determine it. The scientific literature emphasises that team effectiveness in the healthcare context depends on interrelated factors: communication quality, role clarity, leadership, trust, shared goals, and decision-making models [1, 3]. The harmony among these elements is particularly important in long-term care, where specialists interact continuously and address not only clinical but also social and psychological needs.

Communication is considered an essential element of teamwork, directly affecting patient safety and the quality of care. Studies show that team communication training, which emphasises trust and psychological safety, improves team members' ability to exchange information and solve problems effectively, thereby being associated with improved patient safety and team performance [2]. In the context of long-term care, information about changes in a patient's condition, behavioural characteristics, or social circumstances must be communicated consistently and accurately between shifts and different specialists.

The quality of communication is closely linked to the relationships and cooperation between team members. Open, respectful, and constructive communication increases trust and strengthens cooperation, while hierarchical barriers or fear of expressing opinions can weaken team effectiveness and reduce psychological safety. The quality of interprofessional collaboration is related not only to individual competencies but also to organisational conditions, such as team operating standards and clear communication protocols [1].

An equally important component of effective team interaction is a clear definition of roles and distribution of responsibilities. Long-term care teams include representatives

of various professions, so undefined boundaries of responsibility can lead to duplication of activities or failure to perform important tasks. Research shows that clearly defined roles and functions reduce the likelihood of conflict, promote cooperation, and increase team effectiveness [1,3].

Leadership is also among the most important factors determining team effectiveness, especially when it promotes open communication, trust, and shared decision-making. Systematic review data show that transformational and supportive leadership are significantly associated with higher-quality care, better team climate, and greater job satisfaction among employees [4]. In addition, positive leadership styles are associated with nurse engagement and organisational commitment, thereby strengthening teamwork and reducing employee turnover [5]. Research also confirms that leadership indirectly influences patient outcomes by improving the work environment and team collaboration. In long-term care, where services are consistently provided over a long period, the role of the leader is a key factor in creating a culture of collaboration.

Trust among team members is another prerequisite for effective interaction. Psychological safety- an environment in which employees feel free to express their opinions and report potential errors without fear of negative consequences - is considered an important component of team learning and safety culture. Research shows that psychological safety in healthcare teams is associated with better information sharing, greater employee engagement, and a lower risk of errors (O'Donovan & McAuliffe, 2020). Studies conducted in nursing homes also confirm that managerial support and open communication strengthen safety culture and teamwork [2]. This shows that a trust-based environment is an important prerequisite for patient safety and quality in long-term care.

Effective teams are also characterised by clearly defined common goals and collective decision-making. The literature emphasises that shared values and goals strengthen team identity and coordinated action [4]. When team members share a common understanding of patient care goals, decision consistency increases, and the risk of fragmented care decreases. In long-term care, shared goals include not only stabilising the clinical condition but also maintaining independence, quality of life, and dignity. This collective, patient-centred approach sets the stage for better organisational and clinical outcomes.

In summary, effective teamwork in long-term care is based on structural and procedural components, such as communication, clear roles, trust, leadership, and shared goals, which interact to create the conditions for safe, coordinated, and patient-centred care.

5. THE IMPORTANCE OF SOFT SKILLS IN LONG-TERM CARE TEAMWORK

In the context of long-term care, the effectiveness of teamwork depends not only on structural organisational factors, but also on the personal and interpersonal competencies of team members. These competencies, often referred to as soft skills, include emotional intelligence, empathy, conflict management skills, constructive dialogue, self-reflection, and psychological resilience. Scientific literature emphasises that these skills are essential for a safe and effective team environment, as they directly affect the quality of interprofessional collaboration and employees' psychological well-being [6, 7].

Emotional intelligence is considered one of the most important prerequisites for teamwork. Studies show that higher levels of emotional intelligence among nurses are significantly associated with lower levels of burnout and better interpersonal communication [6]. In long-term care, where employees often face complex emotional situations, the ability to recognise and regulate emotions becomes an important professional resource that helps maintain constructive teamwork and empathetic relationships with patients.

Constructive dialogue and the ability to manage disagreements are integral to interdisciplinary teamwork. Research on psychological safety shows that teams where employees feel safe expressing their opinions and report potential errors have better information sharing and greater involvement in decision-making [7]. Such an environment creates conditions for constructive conflict resolution and ensures safer patient care.

Psychological resilience is also an important soft skill, especially in the long-term care sector. Meta-analytic studies show that higher resilience levels are associated with lower emotional exhaustion and burnout among healthcare workers [8]. Resilience enables employees to maintain professional stability and participate effectively in team activities even under constant emotional stress.

Interpersonal trust within a team is formed through consistent, respectful communication and the assumption of responsibility. The literature on psychological safety emphasises that such a culture promotes open communication, error prevention, and collaboration [6, 7]. In long-term care, trust among team members is essential to ensure coordinated, patient-centred care.

In summary, soft skills are essential to teamwork in long-term care. Emotional intelligence, empathy, conflict management, psychological resilience, and trust-based communication form the basis for effective interprofessional collaboration. Research confirms that these competencies are associated with a lower risk of burnout, a better team climate, and safer patient outcomes [6, 8].

6. TEAM DYNAMICS AND PATIENT SAFETY IN LONG-TERM CARE

Patient safety in long-term care is a key indicator of service quality, closely linked to the team's operating model and organisational culture. Patient safety in long-term care facilities encompasses not only the prevention of clinical errors but also the reduction of the risk of falls, inappropriate medication administration, communication breakdowns, and other adverse events. Systematic reviews show that ensuring safety in the long-term care sector depends on complex factors, among which teamwork and safety culture play an important role [9]

Team dynamics include patterns of interaction, communication structure, level of trust, and ability to respond in a coordinated manner to changing situations. Kim [10], analysing patient safety measurement tools in nursing homes, found that safety culture assessment is often associated with team aspects such as information sharing, management support, and interprofessional collaboration. The study data show that institutions where employees have a positive view of team communication and collaboration practices have better safety indicators and a lower frequency of adverse events.

In long-term care, safety culture, shaped by daily team practice, is particularly important. A systematic review by Świtalski [9] emphasises that interventions focused on strengthening employee collaboration, improving communication, and implementing structured safety processes are associated with positive patient safety outcomes. The authors point out that strengthening safety culture in long-term care

facilities is not limited to developing formal policies but also requires consistent team involvement and collective responsibility.
Team dynamics are also related to the decision-making process and response to risk situations. Garay [11] emphasises in their systematic review that interventions aimed at strengthening nursing staff safety culture often include team training programs, reflective discussions, and structured meetings. Such measures help to improve mutual understanding, clarify responsibilities, and strengthen trust within the team. This is particularly important in long-term care, where subtle changes in patients' conditions can require a rapid, coordinated response.
An important aspect of team dynamics is the continuity of information transfer. Shift work is common in long-term care facilities, so inaccurate or poorly structured information transfer can pose a significant safety risk. Kim [10] emphasises that safety assessment tools often include indicators of communication between shifts and the quality of information transfer, which are considered essential elements of safety culture. This shows that structured information sharing is inseparable from team dynamics and patient safety.
In addition, the microclimate and mutual support within the team influence employee engagement in safety processes. Świtalski [9] notes that interventions that encourage active employee participation in safety initiatives and open discussion of incidents contribute to the long-term strengthening of a safety culture. Such an environment allows employees to feel responsible for the overall results and reduces the fear of reporting possible mistakes.
In summary, team dynamics in long-term care are essential for patient safety. Studies show that strengthening safety culture, structured information transfer, interprofessional collaboration, and team interventions are associated with better safety indicators [9, 10, 11]. Therefore, patient safety in long-term care should be viewed as the result of collective teamwork, which requires a systematic approach to organisational culture and team functioning.

7. THE IMPACT OF TEAMWORK ON SERVICE QUALITY AND SERVICE RECIPIENT EXPERIENCE

The quality of long-term care services is a multidimensional concept encompassing clinical outcomes, service continuity, safety, individualised care, and the subjective experience of service recipients. Teamwork in this context acts as a systemic quality assurance factor, as it is through interprofessional collaboration that interventions are coordinated, care is planned, and outcomes are evaluated. Systematic review data show that effective interprofessional collaboration is associated with better patient outcomes and positive patient-reported quality indicators [3, 13].
One of the most important aspects of long-term care quality is the individualisation of care. Since service recipients often have complex medical and psychosocial needs, an interprofessional team enables the integration of diverse professional perspectives and the development of a holistic care plan. An analysis of the effectiveness of the person-centred care model shows that individualised, person-centred care is associated with better quality of life and fewer behavioural symptoms in nursing homes [12]. This confirms that teamwork focused on individual needs directly impacts the experience of service recipients.
The experience of service recipients is closely related to how well the team works together. Kaiser [13] found that interprofessional collaboration positively impacts patient-reported outcomes, including satisfaction with services and perceived quality

of care. In long-term care, this manifests as consistent information provision, clearly coordinated decision-making, and patient involvement in care planning. When professionals communicate with each other and share responsibility, service users are more likely to experience care as consistent and focused on their needs.

Teamwork also influences service efficiency and clinical outcomes. A systematic review [3] emphasises that collaboration between long-term care physicians and other medical specialists is associated with better quality of care and improved quality-of-life indicators. This suggests that structured and clearly defined teamwork allows for more efficient use of available resources and reduces the risk of fragmented care.

Quality assurance in long-term care also includes specialised interventions designed to meet complex patient needs. Liu [14] analysed the effectiveness of palliative care interventions in long-term care facilities and found that coordinated, team-based interventions are associated with better quality-of-life indicators and greater satisfaction among service recipients and their relatives. This confirms that, in the long term, quality care is inseparable from interprofessional teamwork.

In addition to objective quality indicators, teamwork also influences service recipients' subjective assessments. Kim [10] emphasises that safety and quality assessment tools in nursing homes often include aspects of team communication and collaboration, which are considered important components of a culture of quality. This shows that service recipients' experience and perceptions of quality are closely related to the team's operating model.

In summary, teamwork in long-term care has a multifaceted impact on service quality and service recipients' experience. It contributes to individualised care, better clinical outcomes, improved quality of life, and greater satisfaction among service recipients [3,13]. Therefore, teamwork in the long-term care system should be viewed not only as an organisational principle, but also as an essential quality assurance strategy.

8. THE ROLE OF ORGANIZATIONAL CULTURE AND LEADERSHIP IN STRENGTHENING TEAMWORK

Organisational culture and leadership are key factors shaping the quality of teamwork in long-term care facilities. Organisational culture encompasses shared values, norms, behavioural patterns, and attitudes toward quality and safety, while leadership serves as the mechanism through which these values are put into practice. Research shows that leadership style is directly linked to service quality indicators, employee engagement, and patient outcomes [4]

Sfantou [4] emphasises in their systematic review that transformational leadership is associated with higher-quality supervision, a better team climate, and greater job satisfaction among employees. Transformational leaders encourage collaboration, maintain open communication, and involve employees in decision-making. In the context of long-term care, this leadership model is particularly important because patients' complex needs require coordinated, interprofessional interaction.

Organisational culture is also closely related to employee motivation and their attitude toward teamwork. A systematic review by Specchia [5] shows that positive leadership styles are associated with greater job satisfaction among nurses and a better organisational climate. Employee satisfaction and emotional engagement are important components of team interaction, as they determine the quality of cooperation and mutual trust. In long-term care, where teams work continuously and closely, the organisational environment significantly affects interaction stability.

The link between leadership and safety culture is particularly relevant in nursing homes. A study [2] showed that a strong safety culture is associated with managerial support, clear communication, and the promotion of teamwork. Managers who actively participate in quality improvement processes and support employee initiatives help create a safer, more coordinated team environment. This shows that leadership in long-term care is not only an administrative function but also an instrument for shaping culture.

[5] emphasise that leadership influences the work environment and, through it, patient outcomes and quality of care. A positive work environment encourages collaboration, clearly defined responsibilities, and professional autonomy, fostering effective teamwork. In long-term care facilities, such an environment helps to reduce staff turnover, strengthen mutual trust, and ensure a consistent care process.

Organisational culture also influences how a team responds to challenges and change. Leaders who encourage open dialogue, reflection, and learning from experience create an environment where team interaction becomes dynamic and focused on continuous improvement. Such a culture allows for more effective integration of new practices and adaptation to changing long-term care needs.

In summary, organisational culture and leadership are key factors that strengthen teamwork in long-term care. Transformational and supportive leadership, clear values, and a positive organisational climate create conditions for effective interprofessional collaboration, increase employee engagement, and improve service quality [2, 4, 5]. Therefore, leadership in long-term care organisations should be viewed as a strategic factor in strengthening teamwork and ensuring quality.

9. CONCLUSIONS

An analysis of scientific literature from 2018–2025 suggests that teamwork in long-term care is one of the most important prerequisites for a safe and high-quality service system. Interprofessional collaboration, based on clear communication, structured role distribution, and collective decision-making, is associated with better clinical outcomes, lower risk of adverse events, and greater satisfaction among service recipients.

A review of the literature has shown that both structural and interpersonal factors determine the effectiveness of team interaction. The quality of communication, continuity of information transfer, psychological safety, and clear common goals form the systemic basis for coordinated supervision. Soft skills- emotional intelligence, empathy, conflict management, and psychological resilience—strengthen the team microclimate and reduce the risk of burnout and errors.

Team dynamics and safety culture in long-term care are closely related. Organisations that promote open communication, collective responsibility, and reflection achieve more stable quality and safety indicators. This confirms that patient safety results from collective teamwork.

Finally, it was found that organisational culture and leadership act as strategic factors in strengthening teamwork. Supportive and empowering leadership creates an environment in which teamwork becomes a sustainable mechanism for improving quality. Therefore, in long-term supervision, teamwork should be viewed as an essential strategy for ensuring quality and safety, with a focus on people and their long-term needs.

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CHALLENGES IN ENSURING THE DIGNITY OF OLDER ADULTS IN INSTITUTIONAL SETTINGS

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ABSTRACT
This article discusses the challenges of ensuring the dignity of older adults in institutional settings. Elderly social work clients, especially those nearing the end of life, are a particularly vulnerable group, so preserving and ensuring their dignity is of particular importance. Ensuring clients' dignity is important to clients themselves and their loved ones. The author of this article focuses on three main issues. First, the concept of dignity as an ethical-philosophical category is discussed. Second, the connection between social work practice and the preservation of clients' dignity is explored. Third, the main challenges related to ensuring the dignity of elderly clients in institutional settings are presented.

Keywords: *dignity, right to dignity, social work, social worker, institution, older adult, care.*

1. INTRODUCTION
Postmodernism describes the characteristics of contemporary society, which lives under conditions of globalisation, rapid technological development, and technogenic civilisation. Social transactions in such a society are based on a humanistic approach that emphasises the value and dignity of every person, and social relations are grounded in this fundamental value.
Thus, dignity becomes a fundamental element in fields of science and practice that delve into social phenomena, and social work is no exception. Social workers recognise that the essence of social work as a profession is to help individuals solve their problems without violating their dignity [1]. In social work, the interaction between the social worker and the client is grounded in ethical and moral principles. One of the main tasks in social work is empowerment, which aims to reduce a person's helplessness and to recognise the value and dignity of every individual. This goal becomes particularly relevant at the end of a person's life, when they are no longer in their home environment but in an institutional setting.
Therefore, this article aims to discuss the challenges of ensuring the dignity of older adults in institutional care from a social work perspective, both theoretical and empirical.
To achieve this objective, the following tasks were formulated:

1. to discuss the concept of dignity as a value and an ethical-social phenomenon;
2. to highlight the relationship between social work as a profession and dignity;
3. to identify the challenges arising in social work practice when seeking to ensure the dignity of elderly clients at the end of life in an institutional setting.

The following research methods were applied in preparing the presentation:

- analysis of scientific literature and document content,
- systematic review;
- meta-analysis.

The article consists of three parts. In the first part, the author discusses dignity as a theoretical issue, delving into the concept of this ethical-philosophical category. The second part examines the relationship between social work as a profession and the safeguarding of clients' dignity. In the third part, the author highlights the challenges that arise in social work practice when seeking to ensure clients' dignity at the end of life in an institutional setting.

2. THE PROBLEM OF THE CONCEPT OF DIGNITY AS AN ETHICAL-PHILOSOPHICAL CATEGORY

Finding an answer to the question of how to define the concept *of "dignity*" is not simple. Humanity has been attempting to conceptualise this concept since the dawn of civilisation. First and foremost, it is worth analysing what lies within the semantic field of this concept.

Human dignity is one of the most important categories in ethics and philosophy, occupying a significant place in both moral philosophy and contemporary human rights theory. Although this concept is widely used in political, legal, and social discourses, its definition remains complex and ambiguous. In the philosophical tradition, *dignity* is most often associated with the recognition of human worth, moral autonomy, and uniqueness. However, different philosophical schools offer varying interpretations of this category, raising the question of how exactly to understand dignity as an ethical and philosophical category.

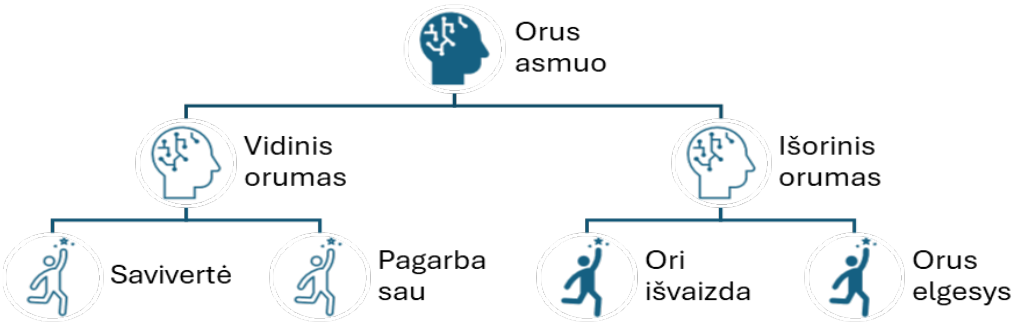

Fig. 1. Semantic concept of human dignity (source: *Žodynas.lt*)

The online dictionary *Žodynas.lt* [2] provides the following definition of the word *"dignified*": a dignified person feels their own worth and respects themselves. It is noted here that a person can possess dignity not only internally—that is, as a dignified personality—but dignity can also be observed externally: one's appearance or behaviour can be dignified. Thus, when conceptualising the notion of dignity from a philological perspective, one can find a close connection in the semantics of this concept with such notions as *respect* and *value/self-worth*.

Respect is a feeling of esteem expressed by one person toward another. This concept is derived from the word *"honour,"* which means glory and a good reputation. *Žodynas.lt* states that honour must be earned: a person can earn it through their actions or achievements. It can be assumed that not everyone is honourable; a person must earn this recognition from society or the community. Meanwhile, *value* is defined as a positive quality; significance. The concept *of self-worth* is understood as a person's inner sense of their own value.

The concept of dignity has a Latin equivalent, *dignitas*, which has several meanings: self-respect and dignity; worth and significance; grandeur and majesty; high rank;

decency; beauty; luxury [3]. Thus, the definition of the concept of dignity suggests that *dignity* and *worth* manifest as a person's inner experience, as a personal characteristic. In contrast, *honour* more often manifests as an external factor, as the positive treatment of a person by those around them.

After analysing the concept of dignity from a philological perspective, the question arises: how do other academic disciplines define it? Dignity is closely linked to honour, and both are considered moral categories [4]. M. Andrašūnienė [5] defines the term *"dignity"* from the perspective of social work. The author asserts that dignity is a person's internal sense of self-worth that develops as the individual reaches a certain age, and that this internal sense regulates the person's appropriate and honourable behaviour. Educator L. Jovaiša [6] notes that a person's internal sense of self-worth develops when they feel valued while working, interacting with others, i.e., participating in social transactions.

According to A. Meškauskienė [7] argues that the contemporary concept *of dignity* is based on the philosophy of I. Kant, which links the notion of human dignity to the concept of freedom. The author argues that human dignity is linked to a person's rights and freedoms as a human being and/or as a citizen, and that the only social system capable of protecting human dignity and freedoms is democracy. It is precisely autonomy and freedom that make a person a person and endow them with dignity.

One of the most important developers of the concept of dignity is the German philosopher Immanuel Kant. In his moral philosophy, human dignity is linked to rationality and moral autonomy. Kant argued that a person possesses dignity because they are capable of acting in accordance with a moral law that they establish for themselves. According to Kant [8], a person cannot be treated merely as a means to an end but must always be regarded as an end in themselves. This idea has become one of the fundamental principles of contemporary human rights philosophy. In the Kantian tradition, dignity is a universal quality inherent to all human beings, independent of social status, abilities, or other external factors.

According to N. Mažeikienė and J. Ruškė [9], dignity manifests itself as a fundamental characteristic of the person. The semantics of this concept include such meanings as worthiness, self-respect, personal autonomy, and a person's ability to command respect from others.

Another important contemporary interpretation of dignity is associated with Martha Nussbaum and her capabilities theory. M. Nussbaum [10] emphasises that human dignity is linked to the ability to realise essential human capabilities, including thinking, emotional expression, social relationships, and political participation. If a person is not provided with the conditions to realise these capabilities, their dignity is violated. This theory expands the traditional concept of dignity and links it to social and political conditions.

V. Šlapkauskas [4] argues that a duality can be observed in the conceptualisation of dignity: first and foremost, dignity is a person's sense of their own worth, which is established through their relationship with society. On the other hand, society, through its relationship with the individual, expresses respect for them and honours their dignity.

Despite differing interpretations, most philosophers agree that dignity is closely linked to the principle of respect for the individual. This idea is also reflected in contemporary declarations of human rights. For example, the Universal Declaration of Human Rights states that all human beings are born free and equal in dignity and

rights. This indicates that dignity is considered a fundamental principle upon which the entire system of human rights is based.

Nevertheless, it is worth questioning whether dignity, as a moral or social characteristic, can be attributed solely to humans. E. Venckienė [11] argues that the term "dignity" describes not only humans; God can also be considered such an object. Furthermore, dignity as a quality can even be attributed to a thoroughbred horse or a work of art. Nevertheless, from a theological and biological perspective, dignity does not depend on an individual's behaviour or will; it is not a social phenomenon. The essence of dignity consists of the biological characteristics of the individual; that is, one acquires the right to dignity not because of the social role one plays, but because the very fact of human birth grants this right [11].

Thus, the problem of dignity as an ethical-philosophical category arises due to its differing interpretations. Some philosophers regard dignity as a universal quality inherent in human nature, while others associate it with social conditions and the realisation of human capabilities. Despite these differences, dignity remains one of the most important concepts in moral philosophy, helping to justify the recognition of human value and rights. An analysis of this concept allows for a better understanding of the foundations of moral norms and the place of the human being in society.

Having discussed the various positions of authors conceptualising dignity, it is worth examining the relationship between dignity and social work as a profession.

3. THE RELATIONSHIP BETWEEN SOCIAL WORK AS A PROFESSION AND THE PRESERVATION OF CLIENTS' DIGNITY

Social work as a profession is closely linked to the protection of human rights and human dignity. Social workers work with various vulnerable groups in society, such as people living in poverty, people with disabilities, seniors, children, and/or families at social risk, among others. Therefore, one of the most important principles of this profession is the recognition and preservation of the client's dignity. The protection of dignity in social work means respect for the person, their autonomy, rights, and individuality, regardless of their social status or life circumstances.

When discussing the relationship between dignity as a moral category and the social work profession, one first encounters the field of law. The law does not speak of dignity, but of a person's right to dignity. The law does not define the concept of dignity, but national and international legal acts emphasise that a person's right to dignity is protected.

No one grants a person the right to dignity; the state does not grant it either; this right is inherent to the very essence of the person [12]. The right to dignity exists regardless of a person's gender, race, or nationality, or their social status. In the Universal Declaration of Human Rights, the human right to dignity is recognised as a natural right. The Declaration establishes that the dignity of all people is the foundation of freedom, universal justice, and peace [11]. In a democratic society, a person is considered valuable, but this value is not tied to any specific activity; rather, it is a matter on which modern society has agreed. Therefore, it is the duty of every democratic state to protect the dignity of every person, regardless of their mental or physical condition [11]. The enshrinement of human dignity and human rights in legislation can be viewed as a mandatory "minimum standard of social morality" [4].

A. Vaišvila [12] notes that legal documents do not define the concepts of dignity, the right to dignity, or decency, which leads to misunderstandings regarding this nuance in legal practice. V. Šlapkauskas [4] suggests treating a person's right to dignity (and

other rights) as tools that define the relationship between a person and another person, and that characterise the content of a person's general dignity.
We will now discuss how dignity is treated in social work practice.
In social work, social transactions centre on the relationship between the social worker and the client. In this relationship, the client's needs become the cornerstone—the identification and addressing of needs ensure the success of social assistance. In this context, the relationship between the social worker and the client is a crucial factor, as the social worker acts here as a professional with authority, while the client is a person in need of assistance and support, whose dignity and self-esteem are often compromised. This raises the question of what professional requirements are placed on the social worker to ensure the client's dignity is not violated.

Fig. 2. Ensuring client dignity in social work practice (source: IFSW, 2018)

Social work theory emphasises that human dignity is a fundamental principle of professional ethics. The International Federation of Social Workers (IFSW) states in its ethical principles that social work is based on respect for the inherent dignity and worth of the human person. This means that social workers must act in ways that prevent clients from being discriminated against, stigmatised, or devalued. In professional practice, this is manifested through ensuring confidentiality, involving the client in decision-making, and respecting their choices.
The important connection between social work and human dignity is emphasised in international and national legal documents. For example, the Universal Declaration of Human Rights states that all human beings are born free and equal in dignity and rights (United Nations, 1948). This principle also applies in the field of social services, where the aim is to ensure that every person receives assistance without losing their self-worth.
The Law on Social Services of the Republic of Lithuania also emphasises that social services must be provided with respect for human rights, dignity, and autonomy [13]. The Code of Ethics for Social Workers in Lithuania [1] states that social work is based on a system of values, with *respect for the inherent worth and dignity of all people* listed as the foremost value. A social worker aims to empower the client to solve emerging problems on their own, thereby strengthening and even restoring the client's damaged dignity and self-esteem.

R. Prakapas [14] asserts that a social worker dedicates themselves entirely to the client's needs, i.e., the professional relationship between the social worker and the client is grounded in the principles of professional ethics, specialised skills, and professional knowledge. In order to show respect for the client and not violate their dignity, the social worker acts in the professional relationship with dedication, empathy, concern for the other's well-being, sincerity, devotion, commitment, and clear communication.

R. Tidikis [15] asserts that social work practice is grounded in ethical principles and presents *humanity* as the first and most important principle. According to the author, this principle encompasses such personal qualities as "sociality, spirituality, solidarity, compassion, kindness, goodness, honesty, and justice," among others. Assistance to the client is grounded in respect for them and the upholding of justice.

According to R. Oželis [16], the goal of social work as a profession is to defend the human person as a value. Assistance is provided to everyone in need, as all individuals are treated with equal dignity.

In social work practice, the preservation of dignity is often linked to the principle of empowerment. This principle means that the social worker not only provides assistance but also encourages the client to actively participate in solving their own problems. According to M. Ayne [17], empowerment helps people regain control over their lives and strengthens their self-esteem. In this way, social work becomes not only the provision of assistance but also a process of strengthening human dignity.

However, in practice, social workers often encounter situations in which the client's dignity is threatened. This can occur due to institutional constraints, bureaucratic procedures, or societal stereotypes about recipients of social assistance. Therefore, a social worker's professionalism is demonstrated by the ability to balance institutional requirements with the principle of respect for the individual. Scholars emphasise that in social work practice, it is important to adhere to ethical standards continually and reflect on one's own activities [18].

In summary, social work as a profession is inseparable from the protection of human dignity. Social workers must be guided by ethical principles, legal documents, and professional values that ensure respect for every client. Preserving dignity in social work means not only providing assistance but also strengthening a person's self-esteem, independence, and active participation in society.

Thus, social work is a profession whose foundation lies in human relationships grounded in ethical principles. Assistance is provided to anyone who needs it, as everyone is considered dignified and worthy of respect.

4. CHALLENGES IN SOCIAL WORK PRACTICE IN ENSURING CLIENTS' DIGNITY AT THE END OF LIFE IN AN INSTITUTIONAL SETTING

The end-of-life period is one of the most sensitive stages of a person's life, when it is particularly important to ensure respect for the person's dignity, autonomy, and emotional needs. In social work practice, this most often occurs in institutional settings—such as nursing hospitals, nursing homes, or palliative care facilities.

Fig. 3. Challenges in ensuring the dignity of clients in institutional settings

In such institutions, social workers face various challenges that can make it difficult to preserve clients' dignity at the end of life. These challenges are related to:

- the limitations of institutional rules,
- ethical dilemmas,
- a lack of resources,
- complex emotional relationships with clients and their loved ones.

When working with clients in an institutional setting, social workers must adhere not only to ethical principles but also to administrative and regulatory requirements (R. Tidikis, 2002). Although in such a context the social worker is bound by legal and administrative frameworks, they cannot disregard the moral principles of humanity, as in such cases their assistance is ineffective.

Authors N. Mažeikienė and J. Ruškė [9] note that in social work, it is essential to deeply understand the dignity that individuals in disadvantaged situations perceive and experience. Only then can social workers better understand their clients and be more empathetic.

One of the most important challenges in this context is balancing institutional requirements with the client's individual needs. Institutional settings often have strict procedures and rules designed to ensure the organisation and safety of services, but these can limit a client's autonomy. According to S. Banks [19], social workers often face situations where administrative requirements or organisational structures may conflict with the ethical goal of respecting the client's individuality and freedom of choice. At the end of life, it is particularly important for a person to maintain a sense of control over their life; therefore, overly strict institutional regulation can threaten their dignity. At any stage of life, it is very important for a client to feel respected and accepted, and for their opinion to matter.

J. Charenkova [20] notes in her article that it is not easy to preserve clients' dignity in an institutional setting. Care facilities are often criticised for human rights violations, a paternalistic attitude of staff toward the elderly, and an environment that limits clients' initiative. Often, a client nearing the end of life is treated as a passive service recipient, lacking agency and their own wishes.

Another significant challenge in this context is the ethical dilemmas involved in decision-making about treatment or care. Social workers often have to mediate between clients, family members, and medical staff. Sometimes, family members may have a different opinion from the client, while medical staff may be guided by professional criteria that do not always align with the client's wishes. In such situations, the social worker must defend the client's interests and promote respect for their autonomy. The World Health Organisation emphasises that the goal of palliative care is not only to alleviate physical pain but also to ensure a person's psychological, social, and spiritual well-being [21].

Ensuring a client's dignity at the end of life also involves respecting their privacy and preserving their self-esteem. In an institutional setting, a person often loses some privacy because life takes place in shared spaces and daily care is provided by others. Therefore, social workers must strive to preserve the client's personal space as much as possible and respect their habits, cultural, and religious values. This is also emphasised in the Law on Patients' Rights and Compensation for Damage to Health of the Republic of Lithuania, which stipulates that a patient has the right to respect for their dignity, privacy, and autonomy [22].

Another significant challenge is the limited human and financial resources in care or treatment institutions. Care or nursing facilities often face staff shortages, so social workers and nursing staff must care for a large number of clients. As a result, it can be difficult to provide sufficient individual attention to each person. Research shows that time constraints and heavy workloads can reduce the ability to provide personalised care and emotional support to clients [17]. However, it is precisely individual attention, respectful communication, and listening to the client's needs that are essential elements of preserving dignity at the end of life.

Thus, when providing end-of-life care in institutional settings, complex challenges arise in ensuring that individuals' dignity is not compromised. In summary, ensuring clients' dignity at the end of life in an institutional setting is complex in social work practice due to a range of organisational, ethical, and social factors. Social workers must constantly seek a balance between institutional requirements, client autonomy, and family expectations. Despite these challenges, professional ethics and legal principles oblige social workers to strive to ensure that every person at the end of life is treated with respect, maintains their self-worth, and experiences the highest possible quality of life.

5. CONCLUSIONS

1. An analysis of the scientific literature and document content suggests that dignity is a multifaceted concept open to interpretation. Dignity is a person's perception of their own worth in society. Some philosophers view dignity as a universal trait inherent in human nature, while others associate it with social conditions and the realisation of human potential. Despite these differing perspectives, dignity remains one of the most important concepts in moral philosophy, helping to justify the recognition of human worth and rights.
2. Social work as a profession is inseparable from the protection of human dignity. Social workers must adhere to the principles of professional ethics, legal documents, and professional values that ensure respect for every client. Preserving dignity in social work means not only providing assistance but also strengthening a person's self-esteem, independence, and active participation in society.
3. Although the primary goal of social work as a practical activity is to preserve an individual's dignity and respect their rights, when a person enters an institutional

setting at the end of life, significant challenges arise. In institutional settings, one encounters situations in which a person's dignity is disregarded, there is a lack of space for privacy and individuality, and respect is absent. In institutional settings, social connections play a significant role in preserving a person's dignity and serve as a prerequisite for a high-quality, fulfilling life.

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SKILLS AND LABOUR MARKET INTEGRATION OF THE UKRAINIAN REFUGEES IN LITHUANIA: SKILL MATCHING, EMPLOYMENT AND SKILL FORMATION PATTERNS

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ABSTRACT
The paper explores patterns of skill formation and labour market integration of the war refugees from Ukraine in Lithuania by looking into how the matching of the skills and competences acquired in Ukraine with the skills needs in the labour market of Lithuania facilitates smooth employment of refugees and how refugees themselves navigate the processes of their integration in the labour market and skill formation system. A mixed-methods research methodology that includes surveys of refugees from Ukraine, as well as semi-structured interviews with them and with representatives of employers. There are also personal strategies of refugees in the areas of employment and skill development, paying particular attention to their future plans and related opportunities to use the human capital acquired in Lithuania for potential employment and career development in Ukraine.

Keywords: *Skill formation, labour market integration, war refugees from Ukraine, skill matching*

1. INTRODUCTION
The paper explores patterns of skill formation and labour market integration of the war refugees from Ukraine in Lithuania by referring to the findings of the Horizon Europe research project SKILL PARTNERSHIPS FOR SUSTAINABLE AND JUST MIGRATION PATTERNS (SKILLS4JUSTICE) HORIZON-CL2-2023-TRANSFORMATIONS-01-03 No. 101132435. The following research questions are discussed: 1) To what extent and how does the matching of the skills and competences acquired in Ukraine with the skills needs in the labour market of Lithuania facilitate the smooth employment of refugees? 2) How do refugees themselves navigate the processes of their integration, particularly, what concerns of matching their skills with labour market needs? [1].

A mixed-methods research methodology that includes surveys of refugees from Ukraine, as well as semi-structured interviews with them and with representatives of employers.

First, we examine the implications of skill matching for the labour market integration of Ukrainian refugees and their enrolment in the skill formation system. Afterwards, personal strategies of refugees in the area of employment and skill development are explored, with particular attention to their plans and related opportunities to use the human capital acquired in Lithuania for potential employment and career development in Ukraine.

2. INTEGRATION CONTEXT

The Russian aggression against Ukraine launched in February 2022 also increased the number of job search applications from abroad – in 2022 the number of job searchers increased by 18,3 percent compared to 2021, when 20 thousand war refugees from Ukraine were registered as job searchers in the National Employment Service (Employment Service under the Ministry of Social Security and Labour of the Republic of Lithuania 2023) [2]. Official statistics reveal a highly effective and successful integration of Ukrainian refugees of both sexes and across different age groups into Lithuania's labour market. The share of refugees registered as job seekers at the National Employment service has been rather low (Fig.1). The volume of employed refugees has been rather steadily increasing (Fig. 2). This can be explained by the high acceptance of these refugees by society, employers and labour market governance system, important shortages of skilled workforce and reciprocal generally positive experiences of employment of Ukrainian nationals for both employers and migrant workers from the previous years before the war [3].

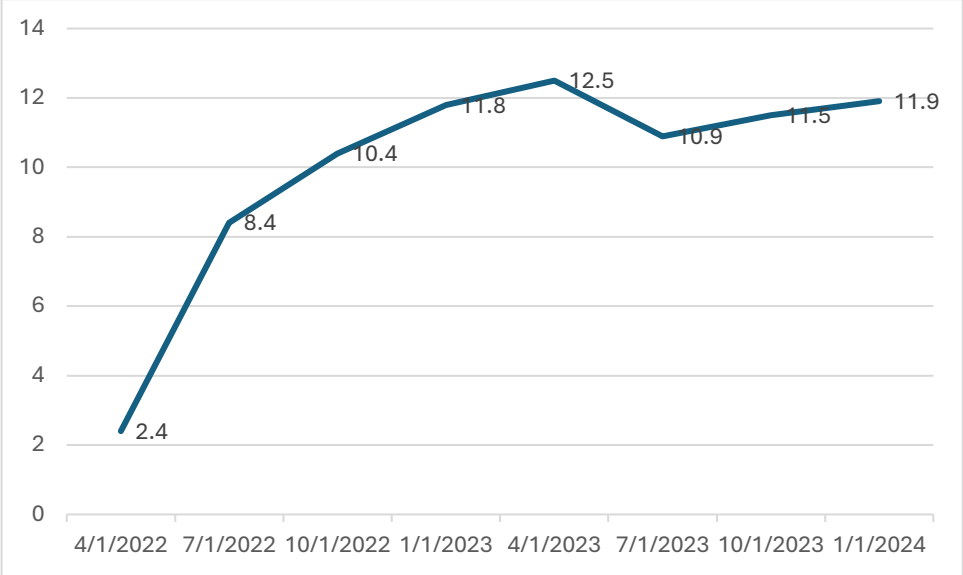

Figure 1. Share of the Ukrainian refugees registered as unemployed at the National Employment Service (Employment Service under the Ministry of Social Security and Labour of the Republic of Lithuania 2024).

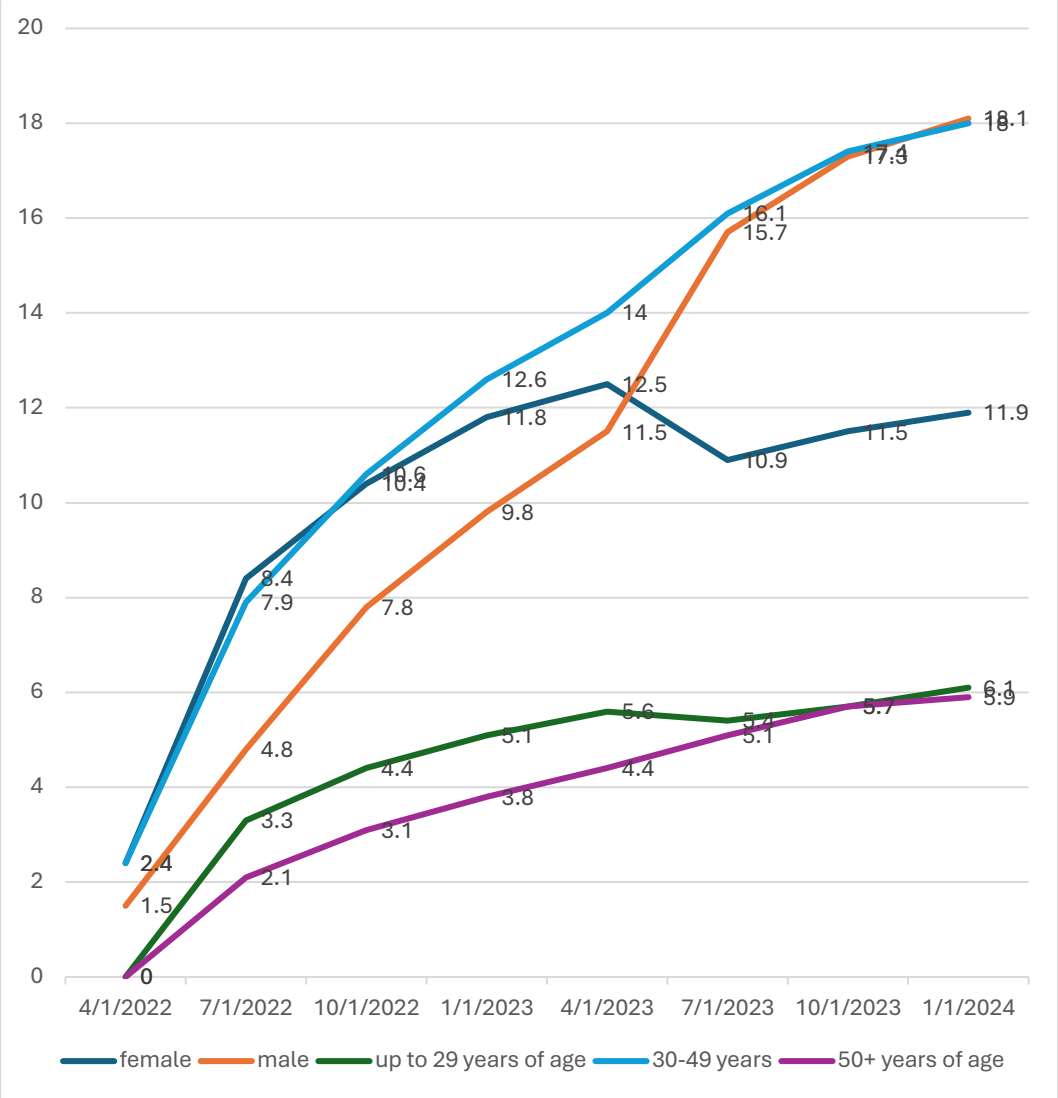

Figure 2. The volume of employed Ukrainian refugees by sex (above) and age group. Source: Employment Service under the Ministry of Social Security and Labour of the Republic of Lithuania, 2024

Three quarters (20,8 thousand, or 75,7 per cent) of the Ukrainian war refugees were employed in skilled positions as skilled workers, machinery operators, drivers of road transport, and service and sales sector workers. 2,1 thousand Ukrainian refugees were employed in high-skilled jobs – managers, healthcare specialists, engineers, IT specialists (Employment Service under the Ministry of Social Security and Labour of the Republic of Lithuania 2024).

3. INTEGRATION OF UKRAINIAN REFUGEES IN THE LABOR MARKET: SECTORAL PERSPECTIVE

Road freight transport sector. Trucking companies used to employ drivers from Ukraine quite intensively before the war, mainly because of their high level of competence. The beginning of the war in February 2022 was accompanied by a significant decrease in the number of Ukrainian drivers, as many returned to military service. The resulting driver shortage was addressed by hiring third-country nationals from Central and South Asia and other regions.

Construction. A similar situation has developed in the transport sector: before the war, Ukrainians, together with Belarusians, formed the backbone of the employed workforce from third countries; after the war, their employment decreased significantly. Construction sector organisations note that Ukrainian workers, as well as Belarusians, are adapting and improving their qualifications in the workplace to meet EU requirements for the quality of work.

Metalworking and mechanical engineering. Before the war, expectations for wages of workers and operators from Ukraine had increased significantly, even exceeding those for local workers. The reduction in the employment of workers from Ukraine and Belarus after the outbreak of the war significantly reduced the share of third-country workers in the sector's enterprises. The employment of Ukrainian refugees is seen, above all, as a manifestation of solidarity and civic responsibility. Enterprises are open to employing Ukrainian refugees, value their work, and try to attract workers from Ukraine by offering housing and helping their families to transport them to Lithuania. Businesses also employ unskilled and low-skilled refugees, providing them with on-the-job training and further employment. Employers also offer Lithuanian language courses to refugees. Despite simplified immigration and employment procedures for Ukrainian refugees, these procedures remain overly bureaucratic and time-consuming for industrial enterprises compared to those in neighbouring countries, forcing many enterprises to hire Ukrainian workers through Polish intermediary agencies, thereby increasing employment and integration costs.

Healthcare. Ukrainian refugees with healthcare qualifications face obstacles to the recognition of their qualifications in Ukraine and to obtaining a license to work in regulated professions such as nursing, mainly due to a lack of knowledge of the Lithuanian language. To address this issue, Ukrainian refugees start working as assistants and support staff and obtain licenses for their professional qualifications in nursing and healthcare after acquiring language skills and passing exams. One of the key challenges that healthcare providers face when hiring specialists from Ukraine is communication, as a significant portion of patients do not speak Russian.

4. INTEGRATION OF UKRAINIAN REFUGEES INTO VOCATIONAL AND HIGHER EDUCATION SYSTEMS

Ukrainian youth who arrived after February 2022 were successfully integrated into vocational and higher education programs across various fields and disciplines, including healthcare, education, engineering, construction, business, and public services.

In many cases, their motivation to participate in education and training focused not only on employment in Lithuania but also on acquiring human capital that would be useful upon returning to their homeland after the war.

The focus on short-term integration into the Lithuanian labour market may also explain the high popularity of short-term advanced training programs that lead to new qualifications among Ukrainian refugees.

Nevertheless, Ukrainian refugees often face difficulties in having their diplomas and qualifications recognised, especially in regulated professions. Another major challenge is communication and language issues, as well as the creation of groups of Ukrainian students in higher education institutions. Lithuanian educational institutions and service providers cooperate with Ukrainian educational institutions, for example, by assisting them in training paramedics and in training students from Ukraine in this field.

Hospitals also employ Ukrainian specialists in professional positions that do not require patient contact, such as ultrasound and laboratory work. However, employing Ukrainian specialists requires hospitals to ensure adequate support and guidance from local staff, especially in reporting and completing documentation. Creating conditions for teamwork between local specialists and Ukrainians is a key solution. Sometimes the employment of specialists from Ukraine requires redistributing work within teams, with Lithuanian specialists assigned responsibility for preparing and completing documentation, while specialists from Ukraine perform patient procedures.

In some cases, additional training is provided in areas where the requirements for the qualification of medical professionals in Lithuania are stricter compared to Ukraine, or in areas of competence deficit, for example, compliance with hygiene standards in accordance with national and European standards. The technological progress of medical services in Lithuania compared to Ukraine is another obstacle faced by Ukrainian specialists, as some of them lack the competencies necessary to work with modern equipment, technologies, and hospital work organisation. Medical professionals do not see the employment of specialists from Ukraine as a sustainable solution to the acute shortage of qualified specialists in the health sector, recognising that most of these specialists will return to their country after the war.

Explored integration cases with skills matching illustrate very smooth and effective integration, overall satisfaction with working and living conditions, wages and career prospects (interviews with a carpenter in the woodworking industry, 8 welders in a machine-building company, a specialist in road freight logistics, a specialist in sewing machines in the textile industry, 4 meat processing operators working in the meat processing industry).

Arrival in Lithuania is accompanied by a change of profession, which very often leads to overqualification in job search (a financial/insurance specialist works as a beautician and realises his potential in his own business in the confectionery industry). In these cases, the interviewed refugees appreciate the companies' support throughout the employment process and note that they mostly develop their skills in the workplace. So far, they do not notice a significant contribution of working in Lithuania to their human capital or personal development.

Overqualification is mainly caused by the lack of recognition of higher education and professional qualifications obtained in Ukraine.

Refugees themselves admit that the procedures for recognising qualifications are sometimes difficult to understand, lengthy, and overly bureaucratic.

Refugees also face difficulties gaining access to Lithuanian language instruction, especially in small towns. The workload, long distance to educational institutions, family responsibilities and fatigue after work also challenge language learning.

The main expectation and condition for return to Ukraine is the end of the war and related hostilities. There is a fear of return associated with unsafe living conditions after the war (threat of weapons proliferation, destroyed houses and living quarters, concerns about the possibilities of finding a livelihood, especially work). In case of successful integration into the Lithuanian labour market, especially in combination with higher education obtained in Lithuania, there are doubts about the prospects of reintegration into the Ukrainian labour market, including concerns about the demand for and recognition of higher-level qualifications (for example, in the field of logistics).

5. CONCLUSIONS

The relatively successful integration of Ukrainian refugees into the Lithuanian labour market was largely determined by the alignment of their human capital with the labour market's needs, prior positive experience with labour immigration to Lithuania, and support from politicians and civil society.

Ukrainian refugees with additional vulnerable groups (people with special needs) often face the same difficulties in integrating into the labour market and the education system as local disadvantaged groups—for example, the lack of a positive cultural attitude among businesses towards employing people with special needs.

Insufficient access to learning Lithuanian remains one of the main problems in the integration of immigrants and refugees into the labour market, especially in the public and service sectors.

Among employers, there is a fairly strong understanding and positive attitude towards the potential return of Ukrainian refugees to their homeland after the war.

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