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## Forewords

It is with great pleasure and anticipation that I introduce the inaugural issue of the "Journal of Economics, Innovative Management, and Entrepreneurship." This moment marks the genesis of a scholarly platform dedicated to advancing the frontiers of knowledge in the dynamic realms of economics, innovative management, and entrepreneurship.

In an era defined by rapid technological advancements, globalization, and a continuously evolving business landscape, the need for a multidisciplinary approach to understanding and addressing economic challenges has never been more critical. This journal aspires to be a catalyst for intellectual exchange, bringing together researchers, scholars, and practitioners to share their insights, theories, and practical experiences.

Economics, as the fundamental study of resource allocation and decision-making, intersects with innovative management and entrepreneurship, which are vital components driving progress and development. Our journal seeks to explore the intricate relationships between these fields, shedding light on how innovations and entrepreneurial initiatives shape economic landscapes and vice versa.

As the Editor-in-Chief, I am honored to be a part of this initiative, and I extend my gratitude to the esteemed editorial board, reviewers, and contributors who have played pivotal roles in bringing this journal to fruition. Their commitment to scholarly rigor and intellectual excellence is reflected in the diverse range of articles presented in this inaugural issue.

The research featured in this journal spans a wide spectrum, encompassing theoretical frameworks, empirical studies, and practical applications. From examining the impact of technological disruptions on traditional business models to exploring the role of entrepreneurship in fostering economic development, each article contributes to the rich tapestry of knowledge in our chosen fields.

I encourage scholars, practitioners, and enthusiasts alike to engage with the content of this journal, fostering a vibrant community of thinkers and doers dedicated to advancing the frontiers of economics, innovative management, and entrepreneurship. The diverse perspectives shared within these pages aim to inspire new ideas, provoke thoughtful discussions, and ultimately contribute to the evolution of these dynamic disciplines.

This inaugural issue is just the beginning of a journey that promises to be intellectually enriching and academically stimulating. As we embark on this endeavor, I invite you to join us in the exploration of economic intricacies, innovative management strategies, and the entrepreneurial spirit that drives positive change in our world.

Prof. Nataliya Bhinder  
Editor-in-Chief  
Journal of Economics, Innovative Management, and Entrepreneurship

Research article

# Prospects for modernization of social and labor relations and reduction of conflicts and social tensions in the workplace

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**Abstract:** This research paper explores the transformative landscape of the modern workplace, focusing on the dynamic interplay between the modernization of social and labor relations and the resolution of conflicts. Examining various approaches and scenarios, the study delves into the adoption of flexible work arrangements, integration of technology, and heightened emphasis on diversity and inclusion as pivotal strategies shaping contemporary work environments. Challenges such as technological disruption, globalization, and shifting workforce expectations are considered, highlighting the need for adaptive solutions. The paper underscores the significance of open communication, employee empowerment, and participatory decision-making in fostering positive social and labor relations. A proactive and comprehensive conflict resolution framework, including training programs, mediation services, and clear policies, is delineated as essential for addressing disputes constructively. The role of empathy, diversity appreciation, and transparent communication in conflict resolution is emphasized. In conclusion, the research emphasizes that successful modernization efforts demand a holistic understanding of diverse employee needs. It argues for organizations to remain agile, continually adapting policies to create inclusive, engaging, and equitable workplaces. The resolution of conflicts, guided by human-centric values, becomes integral to this transformative journey, enriching the workplace experience for individuals, organizations, and society as a whole.

**Keywords:** social and labor relations; conflict; social tension; modernization; improvement

## 1. Introduction

Social and labor relations refer to the interactions and dynamics between employers and employees within a society or an organization (Sodhi & Plowman, 2002). These relations are a critical aspect of the economic system, influencing the distribution of resources, income, and power (Legchilina, 2019). Understanding social and labor relations involves examining the roles, rights, and responsibilities of employers, employees, and the broader society.

Scientific issues related to the modernization of social and labor relations in order to strengthen the social capital of the country and its regions define new directions of economic thinking and are constructed as a coherent paradigm. This problem actualizes the need to form a new concept of social development that is based on a deep reshaping of the essence and driving forces of modernization transformations.

Conflicts and social tensions in the workplace are inherent aspects of social and labor relations, often arising from differences in perspectives, interests, and power dynamics (Andriushchenko & Yevdokimova, 2019). Understanding and managing these conflicts are crucial for maintaining a healthy work environment and promoting positive social and labor relations. We found that key aspects of the place of conflicts and social tensions in the workplace within the context of social and labor relations include sources of conflicts (differences in goals and values, power imbalances, poor communication) (Hyatt & Gruenglas, 2023); productivity and well-being (reduces productivity, employee well-being) (Castellini et al., 2023); conflict resolution mechanisms (mediation, communication channels, conflict resolution training) (Brummans et al., 2022); legal and ethical considerations (Hyatt & Gruenglas, 2023); diversity and inclusion (Randel, 2023); organizational culture (Ferine et al., 2021); and leadership role (Babalola et al., 2018).

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Obviously, conflicts and social tensions are inevitable in the workplace, but proactive measures, including effective communication, conflict resolution mechanisms, and a positive organizational culture, can help manage and mitigate their impact on social and labor relations. Resolving conflicts in a constructive manner contributes to a healthier work environment, improved employee satisfaction, and overall organizational success. Also, we insist that it is closely related to modernization of social and labor relations.

According to the recent findings, the modernization of social and labor relations involves adapting traditional approaches to better align with contemporary societal, economic, and technological changes. The main ideas underlying this modernization are related to flexibility and adaptability (Vallas, 1999), technology integration (Theron, 2013), digitalization (Theron, 2013; Trushkina & Rynkevych, 2020), inclusion and diversity (Randel, 2023), work-life balance (Borgia et al., 2022), skills development (Theron, 2013), continuous learning (Trushkina & Rynkevych, 2020), social responsibility (Lopuschnyak et al., 2021), international cooperation (Hu et al., 2021), and performance-based reward (White, 2018). Therefore, the modernization of social and labor relations reflects a broader recognition of the dynamic nature of the workforce, technological advancements, and the need for more inclusive, adaptable, and sustainable approaches to employment and organizational management.

In the general scientific sense, any modernization is a long process of qualitative renewal of the basis of the formation of certain relations (Whyman et al., 2014). The set of models of social modernization proposed by science is quite limited. Conceptually, they can be represented as a linear, partial, multi-line, and actor models (Fedorova & Holovashchenko, 2023; Orlovska & Morozova, 2019). According to the linear model, modernization consists of the following main phases: formation of the forces and concentration of supporters interested in the implementation of modernization (Trushkina & Rynkevych, 2020); consolidation of the elite oriented towards the achievement of goals of modernization (Ozga, 2020); the integration of society around the ideas of modernization and readiness of its members to positively perceive the implemented changes (Marks, 2009).

Partial model occurs mainly through interaction of societies, penetration of higher order social values with a lower level of socio-economic development (Ahmad & Bajwa, 2021; Hu et al., 2021; Legchilina, 2019). At the same time, multi-linear model of modernization interprets it as a complex endogenous-exogenous process with many epicenters, which does not predict systemic social transformation and, therefore, cannot significantly change the internal space of any country (Antoniuk & Bui, 2019; Orlovska & Morozova, 2019). The actor model of modernization is based on the ideas of using the mechanisms of social integration and actualization of tasks of a person's free choice of certain shifts in social life (Fedorova & Holovashchenko, 2023).

The urgent need for the development of new paradigms for the modernization of social and labor relations appears at the stage when, firstly, the proposed models do not correspond to the multidimensional and contradictory reality and create difficulties of a methodological analysis, assessment and prediction of socio-economic processes (Antonyuk & Pidorycheva, 2018); secondly, due to socio-economic instability, deep systemic crises, changes in the basic institutions of social development (Ossewaarde, 2018). Thirdly, it deals with the conditions under which complex tasks have to be solved, and the changes in the implementation of geopolitical, structural, and investment policies are necessary (Geary & Nyiawung, 2022; Luo & Van Assche, 2023).

Currently, there is practically no coherent model of modernization of social and labor relations, which would concentrate the vision prospects for the development of this area and mechanisms for its implementation through reduction of conflicts and social tensions in the workplace. Thus, the purpose of the research is to carry out a detailed analysis of conflicts and social tensions in the workplace and to describe the theoretically grounded propositions about improvement of the current approaches to social and labor tensions.

It addresses the research objectives as follows:

- 1) to characterize the normative basis of resolution of social and labor conflicts;
- 2) to outline the stages of the comprehensive procedure for resolving social and labor conflicts;
- 3) to formulate scientifically based proposals for modernization of social and labour relations, in particular resolution of conflicts in the workplace.

## 2. Materials and Methods

The methodological basis of the research includes general scientific and special methods of scientific knowledge, chosen with consideration of aim and objectives. They included formal legal method (Helmersen, 2021), system and structural analysis (Nazarko et al., 2017), structural and functional method (Gust-Bardon, 2015), comparative method (Kan et al., 2016; Vivek & Nanthagopan, 2021), ethnographic methods (Jayathilaka, 2021; von Lehn, 2019), subjectivity assessment or Q methodology (Tran et al., 2021; Tran & Järvinen, 2022).

Firstly, we applied formal legal method that refers to the systematic and structured approach employed in research, especially within the field of law, economics, politics, and sociology. Such research involves the study and analysis of legal sources to answer legal questions, address legal issues, or contribute to the development of legal doctrine (Helmersen, 2021). The formal legal method encompasses a set of principles and procedures designed to ensure rigor, accuracy, and reliability in scientific research (Dominicé, 1997).

The application of system and structural analysis ensured the disclosure of the normative basis for the resolution of social and labor conflicts, definition of the concept and types of social and labor conflicts. System and structural analysis includes the approaches used to study and understand complex phenomena, systems, or structures. These methods provide systematic ways to examine relationships, patterns, and interactions within a system or structure. The method comprises system approach and its applications (Searcy et al., 2008), structural approach and hierarchical arrangement of its components (Nazarko et al., 2017). Such system and structural analysis provide valuable insights into the functioning and behavior of complex systems or structures, and researchers often use them in combination to achieve a more comprehensive understanding of the phenomena under investigation.

Then, structural and functional method was applied to distinguish and characterize the stages of the conciliation procedure of resolution of social and labor conflicts, implementation mechanism of the right to strike under the official legislation, and modernization of contemporary social and labor relations. Structural analysis involves studying the physical properties and behaviors of structures, materials, or systems (Nazarko et al., 2017). Researchers use structural analysis to assess how different components within a system interact and respond to various forces. At the same time, functionalism is a theoretical perspective that helped us views the society as a system with interrelated parts, each contributing to the stability and functioning of the whole. The functional method involves examining the functions of social institutions, norms, and structures in maintaining social order, social and labor relations in particular (Gust-Bardon, 2015). Structural and functional approach analyzes how social structures contribute to the functioning and stability of society. This method considers how various institutions and norms serve specific functions in maintaining social balance (Potts et al., 2016).

Also, we used comparative method to compare doctrinal provisions, acts, legislation and management practices in different countries regarding the resolution of conflicts in the workplace (Vivek & Nanthagopan, 2021). The comparative method in researching social and labor relations involves systematically analyzing and contrasting different cases, contexts, or entities to identify patterns, differences, and similarities. This approach allows researchers to gain insights into the social and labor relations of various groups, organizations, or societies. Comparative research is particularly valuable for understanding how different factors influence social and labor dynamics, contributing to a broader understanding of patterns and variations in these relations (Kan et al., 2016). The method of theoretical and practical modeling made it possible to formulate proposals for improvement of social and labor relations, and, therefore, enhance the productivity of business activities.

Applying ethnographic methods involves studying economic behaviors and practices within a specific cultural or social context (Jayathilaka, 2021). This approach emphasizes immersion and long-term engagement to understand economic activities in their natural setting. Ethnographic methods in economic research concern the systematic study of economic phenomena within their natural social and cultural contexts (von Lehn, 2019). Ethnography is a qualitative research approach that emphasizes immersive fieldwork, participant observation, and in-depth engagement with the subjects under study. This method allowed us to understand economic behaviors, practices, and structures by exploring the social and cultural dimensions that shape them. In economic research, ethnographic methods are employed to go beyond numerical data and uncover the meanings and contexts behind economic activities. Ethnographic methods are employed in social and labor relations research to investigate the intricate social dynamics, cultural influences, and lived experiences

within the context of workplaces, organizations, or broader societal settings. Ethnography involves immersive fieldwork, participant observation, and in-depth engagement with individuals and groups, providing a holistic understanding of the complexities involved in social and labor relations (Jayathilaka, 2021).

Subjectivity assessment or Q methodology combined quantitative and qualitative elements to study subjectivity (Tran et al., 2021; Tran & Järvinen, 2022). Participants ranked and discussed a set of statements, allowing us to identify shared patterns of opinion on economic issues. Subjectivity assessment in research refers to the process of evaluating or understanding the subjective experiences, perspectives, or opinions of individuals or groups (Tran & Järvinen, 2022). It involves acknowledging and exploring the subjective nature of human experiences, attitudes, and interpretations. Subjectivity assessment is often used in qualitative research to capture the richness and complexity of human perspectives, emphasizing the idea that individuals bring their unique subjectivities to their experiences.

These methods offered diverse tools for researchers to explore economic phenomena beyond numerical measures. By incorporating them we managed to give a richer understanding of the social, cultural, and individual dimensions of economic behavior and decision-making.

### 3. Results

Definition of conflicts in the workplace allows to understand which specific controversial issues are possible application of specific methods of resolving these disputes, including a strike. As noted by Edwards and Hodder (2022), legal definition of a conflict is one of the key points for understanding this institution of labor law in any national legal system. Overton and Lowry (2013) define a social and labor conflict as unresolved differences between the parties of the social dialogue regarding establishing or changing working conditions, concluding, changing and implementing collective agreements, contracts, agreements, as well as the application of labor legislation, which are being resolved with the help of conciliation procedures.

Social and labor conflicts are characterized by unique features that distinguish them from other types of conflicts. These peculiarities arise from the specific context of the workplace and the interaction between employers, employees, and other stakeholders (Baillien et al., 2017; Liao & Pandeli, 2023). Figure 1 shows the key peculiarities of social and labor conflicts in the workplace.

*Employment relationship* often involves a power imbalance between employers and employees. This imbalance can contribute to tensions and conflicts related to issues such as wages, working conditions, and job security (Edwards & Hodder, 2022).

*Collective nature* is related to collective action within the workplace. Social and labor conflicts often manifest collectively, involving groups of employees, unions, or workers' associations advocating for their rights or interests (Hann et al., 2019; Ilesanmi, 2017). Collective bargaining and negotiations are common features in labor conflicts.

*Workplace environment.* Labor conflicts can have a direct impact on workplace productivity. Strikes, work stoppages, or disruptions can interrupt regular business operations, affecting both employers and employees (Sasikala et al., 2021).

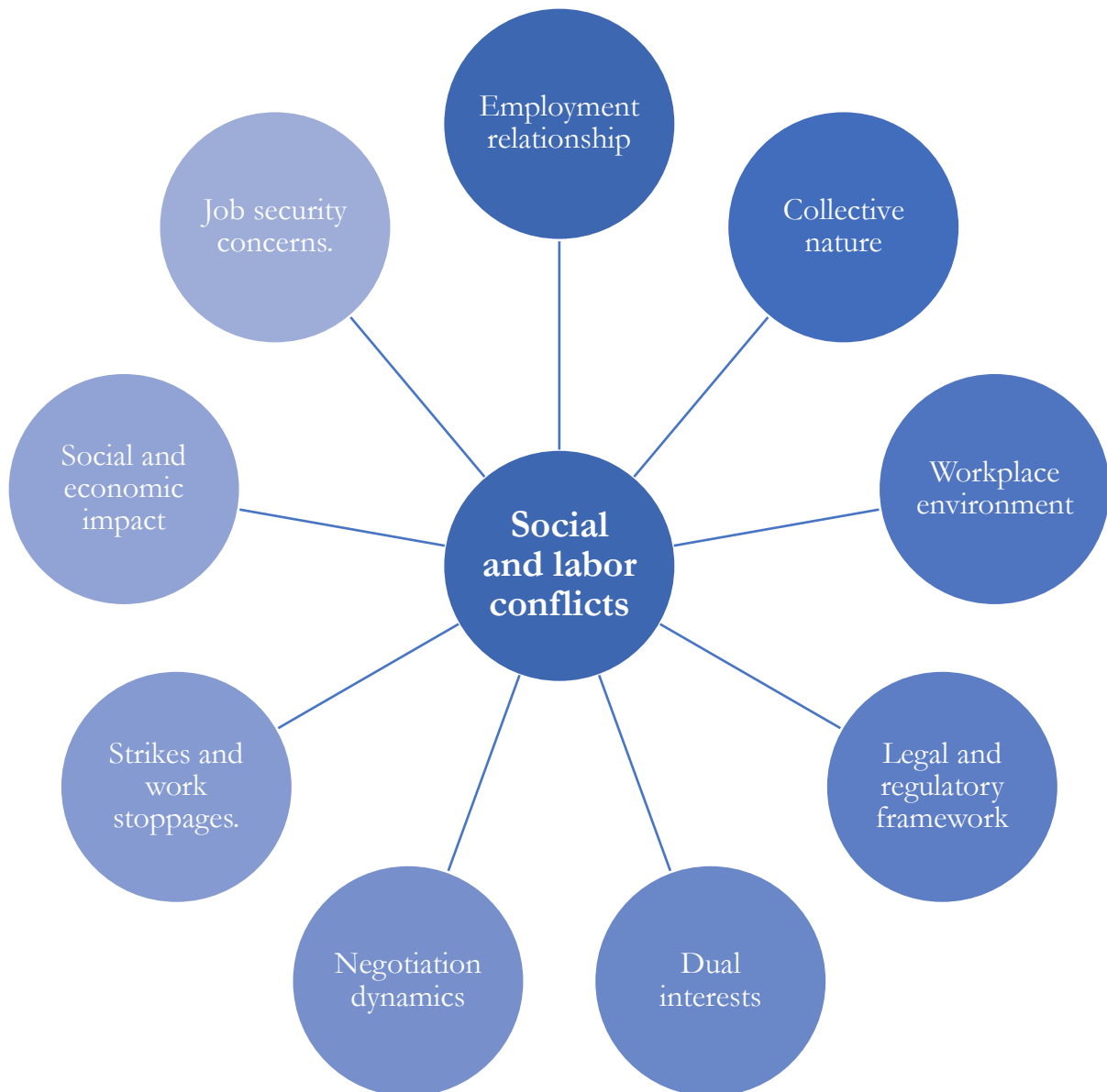
*Legal and regulatory framework* means that social and labor conflicts are subject to specific legal frameworks and labor laws. Resolving these conflicts may involve adherence to legal procedures, negotiations, or, in some cases, intervention by labor regulatory authorities (Avgar, 2020).

*Dual interests* concern the fact that conflicts often arise due to divergent interests between employers seeking profitability and employees seeking fair wages, benefits, and favorable working conditions (Wheatley, 2012). Balancing these dual interests is a common challenge.

*Negotiation dynamics.* The negotiation process in social and labor conflicts often involves collective bargaining, where representatives of employees negotiate with employers to reach agreements on terms and conditions of employment (Olekalns & Rees, 2020).

*Strikes and work stoppages.* One of the peculiarities of labor conflicts is the potential for employees to engage in strikes or work stoppages as a form of protest or pressure (Noh & Hebdon, 2023). This tactic is aimed at drawing attention to their grievances and influencing negotiations.

*Social and economic impact* means that social and labor conflicts can have wider social and economic implications beyond the workplace. Strikes or industrial actions can affect local communities, suppliers, and even the national economy (Prenzel & Vanclay, 2014).



**Figure 1.** Key peculiarities of social and labor conflicts.

*Job security concerns.* Job security is a common concern in social and labor conflicts. Employees may fear job loss due to factors such as layoffs, restructuring, or outsourcing, leading to heightened tensions (Nemțeanu & Dabija, 2023).

Understanding these peculiarities is essential for stakeholders, including employers, employees, and policymakers, to effectively manage and address social and labor conflicts in a way that promotes fairness, equity, and a positive work environment.

At the same time, it is necessary to analyze the types of conflicts and social tensions in the workplace. Table 1 shows the classification of conflicts that can arise in the workplace among employees.

**Table 1.** Classification of conflicts and social tensions in the workplace.

Type of conflict or social tension	Descriptions
Interpersonal conflict	Differences in personalities, communication styles, or work approaches can lead to conflicts (Javeria et al., 2023); Misunderstandings, poor communication, or lack of effective communication can result in conflicts (Hyatt & Gruenglas, 2023).



Task-related conflict	Varied approaches to completing tasks or projects can lead to disagreements (Haq, 2011); When individuals or teams have conflicting goals or priorities (Lawless & Trif, 2016).
Role uncertainty conflict	Lack of clarity regarding roles and responsibilities can cause conflicts between team members (Schmidt et al., 2014).
Organizational structure conflict	Issues arising from the organization's structure and the distribution of power and authority (Ferine et al., 2021); Conflicts can arise when there is competition for limited resources (Di Pietro & Di Virgilio, 2013).
Workload conflict	Disagreements may occur when team members feel that the workload is not distributed fairly (Uwannah et al., 2022).
Value conflict	Conflicts arising from different personal or cultural values among team members (Glilekpe et al., 2022).
Conflict of interest	Conflicts may arise when individual goals or interests conflict with the goals of the organization (Arend, 2019).
Discrimination and harassment conflicts	Conflicts stemming from discrimination, harassment, or unequal treatment in the workplace (Castellini et al., 2023).

It's essential for any organizations to address conflicts proactively through open communication, conflict resolution strategies, and creating a positive work environment. Conflict, when managed effectively, can lead to positive changes and improved collaboration within a team.



**Figure 2.** Fundamental approaches to resolving conflicts and social tensions in the workplace.

A lot of researches concern the approaches to resolving conflicts in the workplace (Liao & Pandeli, 2023). We found that resolving conflicts and addressing social tensions in the workplace is crucial for maintaining a healthy and productive work environment (Ferine et al., 2021; Monyei et al., 2023). Figure 2 shows some approaches to help manage and resolve such issues.

It is worth mentioning that each workplace is unique, so a combination of these approaches may be necessary to effectively manage conflicts and social tensions. It's also important to adapt strategies based on the specific nature of the issues and the individuals involved

In our research, we proceed from the fact that the innovation is a condition for modernization of social and labor relations; and, therefore, it is appropriate to introduce the concept of social and labor innovation as a complex phenomenon of systemic functioning and development of the labor market with social innovations according to each of the basic dimensions - economic, social, organizational, technological, institutional, psychological (Rehman, 2017). A series is characteristic of social innovations regard attributive features characteristic of innovations in general, among which we highlight the novelty, which is reflected in new knowledge regarding the regulation and development of social and labor relations (De Spiegelaere & Van Gyes, 2012); high risks of implementation of the final result under regulation and uncertainty (Giuffrida et al., 2021); complexity and the parity of a number of innovations, expressed in their complementarity and diffusion character (De Spiegelaere & Van Gyes, 2012). At the same time, social and labor innovations are characterized by a certain specificity, namely:

- mostly intangible in nature (services, processes, values), therefore there is not always a clear and quick economic effect of indisputable attributive property of social innovations (De Spiegelaere & Van Gyes, 2012);
- lack of universality due to the national (cultural, territorial, industry, motivational, educational, etc.) specificity of labor models and the economic space as a whole, which determined the emergence and nature of specific social innovations (Rehman, 2017);
- significant adaptability of the social innovation mechanism to the changing environment, which causes a significant modification of the implemented innovations of social and labor relations (Vallas, 1999);
- the limited diffusion of modernization changes, the structuring of the economic space of the labor market, in particular, the dispersion of recipients who implement process innovations, which create their novelty in modernization processes (De Spiegelaere & Van Gyes, 2012);
- a limited (discrete, broken) innovation cycle in which there is no commercialization stage, which does not automatically ensure investment demand (Berg et al., 2023).

It is also worth noting that under systemic social instability, the threats and risks accompanying the implementation of the planned directions of modernization of social and labor relations inevitably increase (Danford et al., 2005). At the same time, as Giuffrida et al. (2021) rightly observe, nowadays the social production of risk is simplified, modern social risks are becoming compact, which means that the risk can be concentrated in compact objects. Consequently, we can state that the multiplicity of risks, their spread to almost all subjects of social and labor relations, who face risks and threats. Depending on the source (external, internal) risks take the form of high resistance of the external environment, inability of the labor market regulation system (mechanism) to adapt to modernization changes (Theron, 2013).

Current and potential sources of such risks in the national economy is the destruction of the foundations and rejection of labor values, culture and social and labor relations (Glilekpe et al., 2022); lagging behind traditions from economic dynamics of development; lack or ineffectiveness of facilitating institutions involves in implementation of social innovations, imperfection, contradiction (De Spiegelaere & Van Gyes, 2012), and, therefore, ineffectiveness, of labor legislation, which are inconsistent with the goals and requirements of labor market modernization; the weakness of trade unions, their lack of consolidation as representatives and defenders of interests; limited social dialogue (Venkataraman, 2023). Findings indicate the underdevelopment and extremely low prevalence of norms of social responsibility of business, as emphasized by Lopuschnyak et al. (2021). Today, a trap has formed in the economy - a self-reproducing system of destructive production of social capital,

which in turn lays the foundations for the narrow reproduction of the labor force in each of its subsequent cycles, the opposition of the main subjects of social and labor relations and the threats of a social explosion, limits the social base (and, therefore, the support of society) of modernization of the economy (Prenzel & Vanclay, 2014), which includes, among others, socially unacceptable reforms and generally inhibits the innovative progress of the country.

The modernization of social and labor relations faces several challenges, reflecting the dynamic nature of the workplace, evolving societal expectations, and the impact of technological advancements (Trushkina & Rynkevych, 2020). They include the following:

- *Technological disruption.* Rapid technological advancements, such as automation and artificial intelligence, can lead to job displacement and changes in job roles, challenging traditional labor relations (De Stefano & Doellgast, 2023).
- *Globalization.* Increased globalization can result in outsourcing, offshoring, and a more competitive job market. This can impact job security and create challenges in maintaining fair labor practices (Chaykowski, 2002).
- *Gig economy and flexible work arrangements.* The rise of the gig economy and flexible work arrangements presents challenges in defining and protecting workers' rights, benefits, and job security (Lindell et al., 2022).
- *Skills mismatch.* Rapid changes in technology may lead to a skills gap, making it challenging for workers to keep up with the evolving demands of the job market (Theron, 2013; Trushkina & Rynkevych, 2020).
- *Diversity and inclusion.* Creating inclusive and diverse workplaces is a challenge that requires addressing biases and promoting equal opportunities for all individuals, irrespective of their backgrounds (Randel, 2023).
- *Work-life balance.* Balancing work and personal life has become increasingly challenging, leading to issues related to employee burnout, stress, and mental health (Borgia et al., 2022).
- *Erosion of traditional employment models.* Traditional employment models with long-term commitments are being challenged by more fluid and contingent work arrangements, making it difficult to establish stable labor relations (Trushkina & Rynkevych, 2020).
- *Social and political changes.* Shifts in societal attitudes and political ideologies can impact the perception of labor relations, with potential changes in labor laws and regulations (Prenzel & Vanclay, 2014).
- *Worker empowerment and activism.* Increased worker empowerment and activism can lead to demands for better working conditions, fair wages, and improved employee rights, challenging traditional employer-employee power dynamics (Sasikala et al., 2021).
- *Data privacy and security.* The collection and use of employee data for various purposes, such as performance evaluations or health monitoring, raise concerns about privacy and security (Gusarov & Melnyk, 2023).
- *Training and professional development.* Ensuring that the workforce is adequately trained and continually developing the skills needed for modern jobs can be a persistent challenge (Trushkina & Rynkevych, 2020).
- *Communication gaps.* Effective communication between employers and employees is crucial. Miscommunication or lack of transparency can lead to misunderstandings and conflicts (Hyatt & Gruenglas, 2023).
- *Economic uncertainty.* Economic downturns and uncertainties can impact job stability, wage growth, and overall employment conditions, influencing labor relations (Giuffrida et al., 2021).

We agree that successfully addressing these challenges requires a comprehensive and adaptable approach, involving collaboration between employers, employees, governments, and other stakeholders. It also involves ongoing efforts to understand and respond to the changing nature of work and the broader societal landscape.

#### 4. Discussion

Modernizing social and labor relations in the workplace involves adapting to the changing dynamics of work, addressing emerging challenges, and fostering a positive and inclusive

work environment. Our findings enabled us to present several scenarios oriented towards description of efforts to modernize social and labor relations.

#### ***Adoption of Flexible Work Arrangements***

The adoption of flexible work arrangements is a key strategy for modernizing social and labor relations in the workplace. This approach recognizes the evolving needs and preferences of employees, aiming to create a more adaptable and inclusive work environment. These arrangements include remote work opportunities, flextime and flexible schedules, compressed workweeks, work-life balance and job sharing, part-time and reduced hours, and hybrid work models (Lee et al., 2023; Wang & Xie, 2023). Some studies insist on technology integration to adopt flexible work arrangements since advanced communication and collaboration technologies is crucial for the success of flexible work arrangements (Soga et al, 2022). Video conferencing, project management tools, and cloud-based platforms enable seamless remote collaboration. Also, the adoption of flexible work arrangements often requires a cultural shift within the organization (Seo & Kim, 2023). Leadership plays a crucial role in promoting a culture that values flexibility, trust, and individual contributions. By adopting flexible work arrangements, organizations aim to create a more adaptive and supportive workplace, acknowledging the diverse needs of their workforce and promoting a healthy work-life balance. This approach contributes to the modernization of social and labor relations by aligning organizational practices with the changing expectations of employees in the contemporary workforce.

#### ***Integration of Technology and Automation***

The integration of technology and automation is a key strategy for modernizing social and labor relations in the workplace. This approach involves leveraging advanced technologies to streamline processes, enhance productivity, and adapt to the evolving demands of the modern workforce. The integration of technology and automation contributes to the modernization of social and labor relations through streamlined work processes, increased efficiency and productivity, job enrichment, data-driven decision-making, flexible work tools that facilitate digital employee engagement initiatives, and adaptive work environment (De Stefano & Doellgast, 2023; Zirar et al., 2023). In addition, special attention is drawn towards workers' skill development and upskilling, improved employee well-being, introduction of workforce analytics, effective project management (Theron, 2013; Zirar et al., 2023). Some findings indicate the advanced communication and collaboration technologies enable remote work and virtual collaboration. This flexibility in work arrangements supports a modern and adaptable approach to labor relations, accommodating diverse employee needs (Vuchkovski et al., 2023). According to Lee and Kim (2023), the integration of technology contributes to an enhanced overall employee experience. From onboarding processes to day-to-day tasks, technology can simplify workflows, reduce administrative burdens, and create a positive workplace environment. And it is worth mentioning that ethical considerations are very important in the use of technology (Parmer, 2023). They establish guidelines to ensure fair and responsible use, addressing concerns related to privacy, bias, and the impact of technology on the workforce. By integrating technology and automation, organizations not only improve operational efficiency but also contribute to the modernization of social and labor relations by fostering a work environment that is adaptive, supportive, and aligned with the changing expectations of the workforce.

#### ***Emphasis on Diversity and Inclusion***

Diversity and inclusion acknowledge the importance of creating a work environment that values and respects differences among employees, promoting equity and equal opportunities (Randel, 2023). This approach is oriented towards diverse workforce composition, inclusive hiring practices, organization of diversity training programs, development and implementation of policies and procedures that promote equity. To foster inclusivity, organizations strive for diverse representation in leadership positions (Confetto et al., 2023). This helps break down barriers, sets positive examples, and promotes a culture where everyone believes they have the opportunity to advance based on merit. A commitment to diversity and inclusion involves maintaining a zero-tolerance policy for discrimination, harassment, and bias (Randel, 2023). Clear reporting mechanisms and swift resolution processes are in place to address any incidents promptly. A number of findings are devoted to formation of cultural competence among employees. At the same time, organizations ensure that physical and digital work environments are accessible to individuals of all abilities. This includes accommodations for people with disabilities and the use of technology that adheres to accessibility standards. Emphasizing diversity and inclusion in the workplace not only reflects a commitment to social responsibility but also contributes to the modernization

of labor relations by creating an environment where all individuals feel valued, respected, and empowered to contribute their unique perspectives and talents.

#### ***Employee Empowerment and Participation***

Employee empowerment and participation involve granting employees a greater degree of influence, autonomy, and involvement in decision-making processes. By doing so, organizations can create a more collaborative, engaged, and inclusive work environment. Employee empowerment and participation include participatory decision-making, building open communication channels to facilitate dialogue between management and employees, establishing feedback mechanisms, and employee involvement in goal setting (Brummans et al., 2022; McCarthy et al., 2023). Also, empowering employees is associated with providing opportunities for continuous learning and development (Trushkina & Rynkevych, 2020). Some researchers state that granting employees autonomy allows individuals to leverage their strengths and creativity, contributing to a more innovative and adaptive workplace (De Spiegelare & Van Gyes, 2012). Moreover, we found that employee empowerment and participation contributes to cross-functional collaboration, access to relevant information about the organization's goals, strategies, and performance, providing tools and platforms that facilitate collaboration, communication, and information-sharing (Colvin, A. J. S. (2004). We agree that by embracing employee empowerment and participation, organizations not only enhance job satisfaction and motivation but also contribute to the modernization of social and labor relations by fostering a workplace culture that values collaboration, innovation, and the unique contributions of each employee.

#### ***Transparent Communication***

Transparent communication involves open, honest, and clear interaction between all levels of an organization, creating an environment where information is readily shared, and employees feel informed and engaged (Barker Scott & Manning, 2022). In modernization of social and labor relations transparent communication contributes to the modernization of social and labor relations on the basis of open dialogue between employees and management, clear articulation of organizational policies, expectations, and goals, providing regular updates and announcements, inclusive decision-making processes. Some scientific works show that transparent communication involves providing timely and constructive performance feedback to employees, crisis communication, accessible leadership to employees (Hyatt & Gruenglas, 2023). Also, transparent communication involves acknowledging both successes and challenges, training on communication skills, and establishing feedback mechanisms (Barker Scott & Manning, 2022; Hyatt & Gruenglas, 2023). In addition, transparent communication is built on ethical practices and culture of trust within the organization (Parmer, 2023). By prioritizing transparent communication, organizations not only modernize social and labor relations but also foster a positive and inclusive work environment. It creates a foundation for collaboration, understanding, and shared commitment, aligning with the evolving expectations of the contemporary workforce.

#### ***Collaborative Workplace Culture***

Collaborative workplace culture being a key component in modernizing social and labor relations within an organization emphasizes teamwork, open communication, and a shared sense of purpose among employees. It is oriented towards teamwork and synergy, building open communication, cross-functional collaboration, shared knowledge and resources, inclusive decision-making (Nugroho, 2018). Since technology plays a crucial role in fostering collaboration, collaborative tools and platforms, such as project management software, communication apps, and shared document repositories, to facilitate seamless teamwork, especially in remote or dispersed work environments, are important for formation of effective workplace culture (Ferine et al., 2021). Also, collaborative workplace culture requires adaptability and flexibility, leadership support for collaboration, and conflict resolution through collaboration (Barker Scott & Manning, 2022). Hence, collaborative workplace culture is a cornerstone in the modernization of social and labor relations. It creates an environment where employees feel empowered, valued, and connected.

#### ***Proactive Conflict Resolution***

Proactive conflict resolution is a strategic and preventative approach to managing conflicts in the workplace. It is a crucial element in modernizing social and labor relations, aiming to address potential conflicts before they escalate and to create a positive and harmonious work environment. Proactive conflict resolution is associated with implementing strategies to prevent conflicts (clear communication, well-defined roles and responsibilities, and establishing expectations for behavior and performance), conflict resolution training, establishment of conflict resolution policies, open communication channels, and mediation

services (Brummans et al., 2022; Ferine et al., 2021; Janekarn et al., 2021). Proactive conflict resolution requires cultivation of a positive work culture, leadership modeling, emphasis on empathy and understanding. Also, it is worth stating that use of technology is important for conflict resolution (Barker Scott & Manning, 2022). Obviously, proactive conflict resolution contributes to the modernization of social and labor relations by creating a workplace culture that values open communication, collaboration, and constructive conflict management. It deals with the contemporary understanding that conflicts are natural but manageable aspects of the workplace, and when addressed proactively, they can lead to positive outcomes for both individuals and the organization as a whole.

#### ***Ethical and Social Responsibility***

Ethical and social responsibility is widely applied to manage disputes and fostering a positive and responsible organizational culture. Recent findings show that ethical and social responsibility in conflict resolution concern fairness and impartiality, respect for individual rights and dignity, involvement of inclusive practices that consider the perspectives of diverse individuals. Special attention is paid towards transparency and open communication, adherence to legal and regulatory standards, avoidance of retaliation, and balancing between individual and organizational interests (Brummans et al., 2022). Ethical conflict resolution prioritizes the well-being of employees (Hyatt & Gruenglas, 2023). This includes providing resources for mental health support, stress management, and ensuring that resolution processes take into account the potential impact on individuals' overall well-being. Also, ethical and social responsibility is associated with long-term solutions and prevention, environmental and social impact assessment, and stakeholder involvement. Some findings suggest that ethical and socially responsible conflict resolution is characterized by a commitment to continuous improvement (Prenzel & Vanclay, 2014). Therefore, ethical and social responsibility in conflict resolution are integral components of a modern and responsible organizational approach. These principles guide organizations to address conflicts in ways that are fair, transparent, and considerate of individual and collective well-being, fostering a workplace culture characterized by integrity and accountability.

#### ***Adaptive Leadership***

Adaptive leadership is a dynamic and proactive approach that focuses on navigating change, fostering innovation, and addressing challenges in the workplace (Babalola et al., 2018). In the context of modernizing social and labor relations and resolving conflicts, adaptive leadership plays a crucial role in guiding organizations through the complexities of a rapidly evolving work environment. Adaptive leadership requires embracing change, flexibility, continuous learning and development for organization teams, calculated risk-taking and innovation (Kuluski et al., 2021). In addition, adaptive leadership touches upon effective communication, building collaborative networks within the organization, formation of situational awareness, application of ethical decision-making, and resilience and persistence (Seibel et al., 2023). Adaptive leadership fosters a learning culture (Kuluski et al., 2021) where mistakes are viewed as opportunities for improvement. Leaders encourage employees to share their experiences, learn from setbacks, and contribute to a culture of continuous improvement. In addition, in the modern workplace, adaptive leaders stay abreast of technological advances (Babalola et al., 2018). They leverage technology to enhance communication, streamline processes, and support conflict resolution efforts, ensuring that the organization remains technologically relevant. Thus, adaptive leadership is a holistic and forward-thinking approach that aligns with the demands of the contemporary workplace.

These scenarios illustrate the diverse strategies and initiatives that organizations can adopt to modernize social and labor relations, creating a workplace that is responsive to the needs of both employers and employees in the contemporary business landscape.

## **5. Conclusions**

The modernization of social and labor relations, coupled with effective conflict resolution strategies, represents a pivotal paradigm shift in contemporary workplaces. This research paper has delved into various approaches and scenarios that encapsulate the multifaceted nature of these transformations. From the adoption of flexible work arrangements to the integration of technology and a heightened emphasis on diversity and inclusion, organizations are navigating a dynamic landscape to foster more adaptive and inclusive work environments.

The literature explored the challenges and opportunities associated with these changes, acknowledging the profound impact of technological disruption, globalization, and the



evolving expectations of a diverse workforce. Moreover, the paper highlighted the significance of open communication, employee empowerment, and participatory decision-making as key enablers of positive social and labor relations. These elements collectively contribute to a workplace culture that values transparency, fairness, and continuous improvement.

The resolution of conflicts, another integral aspect of this modernization journey, necessitates a proactive and comprehensive approach. By implementing conflict resolution training, mediation services, and clear policies, organizations can create a foundation for addressing disputes in a constructive manner. Encouraging empathy, embracing diversity, and promoting a culture of open dialogue are essential components of conflict resolution strategies that align with the overarching goal of modernized social and labor relations.

As we navigate the complexities of the contemporary workforce, it is evident that successful modernization efforts require a holistic understanding of the diverse needs and expectations of employees. Organizations must remain agile, continually adapting policies and practices to create inclusive, engaging, and equitable workplaces. The empowerment of employees and the cultivation of a culture that values collaboration and individual contributions are central tenets in this transformative journey.

To conclude, the resolution of conflicts and the modernization of social and labor relations are not mere organizational goals but reflections of a commitment to human-centric values. By addressing conflicts with empathy, leveraging technology responsibly, and embracing diversity, organizations can forge a path toward sustainable success. In this new era of work, where the human experience takes center stage, the journey toward modernization becomes a collective endeavor, enriching the workplace for the benefit of individuals, organizations, and society as a whole.

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Research article

# Sustainable development of transport infrastructure in the system of national economy

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**Abstract:** This research article investigates the sustainable development of transport infrastructure within the national economy, emphasizing the critical intersection of economic growth, environmental responsibility, and social equity. The study explores theoretical frameworks and practical approaches employed in the planning, implementation, and management of sustainable transport systems. The role of integrated transportation planning, multimodal systems, green infrastructure, and smart technologies is analyzed to assess their impact on reducing congestion, minimizing emissions, and enhancing overall accessibility. Examining the effectiveness of public-private partnerships, regulatory measures, and community engagement, the research delves into the challenges and opportunities associated with achieving sustainable transport infrastructure. Additionally, the article explores the significance of smart traffic management systems, fleet modernization, and incentives for environmentally friendly modes of transportation. The regulatory measures and standards implemented to guide sustainable practices are scrutinized, focusing on their role in shaping a transportation landscape that aligns with broader sustainability objectives. The findings aim to provide insights for policymakers, urban planners, and researchers, offering a comprehensive perspective on the complex dynamics involved in fostering a sustainable transport infrastructure system within the national economy.

**Keywords:** transport infrastructure; sustainable development; effects; benefits; conventional and applicable approaches

## 1. Introduction

Transport infrastructure plays a crucial role in the development and functioning of a national economy since transport is one of the most important infrastructure branches of material production, which provides production and non-production needs of national economy and population in all types of transportation (Zhang & Cheng, 2023). Transport system is one of the basic branches of the economy, which ensures its stable functioning of necessary conditions for defense capability, national security, state integrity, raising the standard of living of the population (Skorobogatova & Kuzmina-Merlino, 2017). Today, the transport sector is significant and important segment for the country's economy, because the entire transport sector is effective and coordinated system is a driving force for the overall development of the country.

Development and integration processes as well as increased competition in the market of transport services require new approaches to the development of transport relations, the creation of new technologies and improving the quality of services (Komornicki & Goliszek, 2023). Current economies are characterized by increasing the role of transport (Turan et al., 2023), which provides vital activities for population, functioning and development of the state, preservation of its defense capability, the possibility of achieving the country's foreign economic goals. Transport industry is a set of subjects of economic activity regardless their forms of ownership that develop and produce products (perform work and provide services) of certain types that have a homogeneous consumer or functional purpose (Lai, 2020; Skorobogatova & Kuzmina-Merlino, 2017).

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Transport is the most important and most powerful branch of any industry countries in the world. The structure of the country's transport complex is formed under the influence of many factors. Several factors can significantly influence the transport system in a country, impacting its efficiency, accessibility, and overall performance. These factors are interconnected and can vary based on geographical, economic, social, and political contexts. Key factors include: geography and topography (Felbermayr & Tarasov, 2021); quality and extent of transport infrastructure, including roads, railways, airports, seaports, and public transit (Zhang & Cheng, 2023); economic development (Komornicki & Goliszek, 2023); urbanization (Chanieabate et al., 2023); population density (Jasim et al., 2022); advancements in transportation technology, such as electric vehicles, autonomous vehicles, or intelligent transportation systems (ITS) (Oladimeji et al., 2023); government policies and regulations (Zhang & Cheng, 2023); political stability and effective governance (Marcucci & Stathopoulos, 2012); environmental issues (Alghuson, 2023); cultural preferences and social behaviors (Loyola et al., 2019); international trade and globalization (Rahman et al., 2021); vulnerability to natural disasters, such as earthquakes, floods, or hurricanes (Alghuson, 2023); and fluctuations in energy prices and the availability of energy resources (Voitko et al., 2022). Understanding and addressing these factors is essential for effective transport planning and policy-making. A holistic approach that considers the interplay of these factors can contribute to the development of a resilient, sustainable, and efficient transportation system in a country.

Also, it is necessary to analyze the category of transport itself and outline its features. Thus, transport refers to a set of means intended for the movement of people, goods, signals and information from one place to another (Hashchuk & Tymoshenko, 2020). We found that transport possesses certain features:

transport is the main component connecting production and consumption of products (Felbermayr & Tarasov, 2021);

transport does not produce the latest products, but is a continuation of manufacturing process within the circulation, it only moves products already manufactured by other sectors of the economy (Olabanji & Mpfu, 2022);

transport, through circulation processes, forms additional production of processes and affects the formation of product prices due to its costs of maintenance and operation (Zhang & Cheng, 2023);

transport products do not include raw materials. Unlike industrial sectors of the economy, transport does not use at all raw materials, but, despite this, consumes a huge amount of fuel, electricity, oil and other consumables (Voitko et al., 2022);

transport, the development of which precedes the introduction of production, in turn, affects the location, qualification and cooperation of this production (Komornicki & Goliszek, 2023);

money circulation in the transport sector is different from their circulation in industry and agriculture (Rahman et al., 2021);

transport regulates the production and sale of products and, thereby, takes participation in the labor division in the economy (Rahman et al., 2021; Skorobogatova & Kuzmina-Merlino, 2017);

transport and exchange of goods mutually affect each other in the process of circulation in the economy, having at the same time a close mutual connection (Rahman et al., 2021; Zhang & Cheng, 2023);

transport actively affects various spheres of the state, economy and society, namely: financial sector, national defense, social mutual relations in society, cultural development (Loyola et al., 2019).

In reference literature, the term “infrastructure” is defined as a set of specific forms, methods and processes, as well as structures, buildings, various communications that provide general conditions and normality functioning of economic, social, ecological and other areas vital activities of society, its reproduction and development (Wang et al., 2018). These conditions are created by a complex of industries and spheres of the economy, a system of technical-technological, organizational-economic, social, communication interconnections of all infrastructure elements (Koval et al., 2021). Some researchers consider infrastructure as a combination of activities and relevant subjects engaged in maintenance of social production (Scholten et al., 2023). Infrastructure emerges through the improvement of productive forces of society, deepening of social division of labor (Wang et al., 2018). Also, infrastructure of a high degree of development allows to apply all production potentials (Khadim et al., 2021), minimize production time intervals and accelerate the transition of products to sphere of circulation, deliver material goods to the consumer and satisfy its demand (Koval et al., 2021).

At the same time, transport infrastructure refers to the physical and organizational structures, facilities, and systems that support the movement of people, goods, and services from one location to another (Scholten et al., 2023). It is a critical component of a country's or region's overall infrastructure and plays a fundamental role in enabling economic activities, trade, and social interactions. Transport infrastructure encompasses various modes of transportation, including roadways, railways, airports, seaports, and public transportation systems.

The importance of transport infrastructure for any country is extremely high. It affects economic, defense, socio-political and cultural functions that are important for the state (Ševčenko-Kozlovska & Čižiūnienė, 2022). The economic role of transport lies, first of all, in the fact that it is an organic link of each production, carries out continuous and mass delivery of all types of raw materials, fuel and products from points of production to points of consumption, and also carries out labor division, specialization and cooperation of production. Rational location of production development of new territories and natural resources are impossible without transport.

Findings show that positive impact of transport infrastructure concern various aspects of a country's economy, society, and environment (Komornicki & Goliszek, 2023). The recent research state that positive impacts of well-designed and planned transport infrastructure include economic growth and market access (Donaldson & Hornbeck, 2016); employment opportunities (Laborda & Sotelsek, 2019); trade facilitation both international and regional (Rahman et al., 2021); reduced transportation costs and, as a result, logistics efficiency (Wheat et al., 2019); urban and rural development (Chanieabate et al., 2023); development of tourism industry (Hrushka et al., 2021); improved social interaction (Lee et al., 2020); emergency response (Alghuson, 2023); and improved quality of life by reducing travel times, congestion, and stress associated with transportation challenges (Hybel & Mulalic, 2022).

Sustainable development of transport infrastructure involves the strategic planning, design, and implementation of transportation systems that meet the current needs of society while safeguarding the well-being of future generations and the environment (Abu-Eisheh et al., 2020). This approach encompasses various principles to minimize negative impacts and enhance the overall resilience, efficiency, and inclusivity of transportation networks. One key aspect is the reduction of environmental harm, focusing on mitigating air pollution, greenhouse gas emissions, and noise. Sustainable development seeks to integrate renewable energy sources, promote energy-efficient technologies, and minimize disruption to natural habitats, fostering a transportation system that is environmentally responsible.

In addition, sustainable development of transport infrastructure emphasizes social inclusivity and equity (Pagliara et al., 2020). It prioritizes accessible and affordable transportation services for all members of society, considering diverse needs, abilities, and socioeconomic backgrounds. This includes the promotion of public and active transportation options, such as buses, trains, cycling, and walking, to reduce dependency on individual motorized vehicles. Engaging local communities and stakeholders in the decision-making process ensures that the infrastructure addresses their concerns and needs. Additionally, sustainable transport infrastructure aims to enhance overall resilience to climate change, incorporating climate-adaptive design principles to withstand extreme weather events (Alghuson, 2023). By integrating smart and innovative technologies, fostering multi-modal connectivity, and fostering community engagement, sustainable development of transport infrastructure aims to create a balanced and resilient transportation system that benefits society, the economy, and the environment in the long term (Chakwizira, 2022; Du et al., 2022).

Considering the importance of sustainable development of transport infrastructure in the system of national economy, the research aim is to identify the mechanisms of the impact of transport infrastructure on the economic growth and to describe the role sustainable development of transport infrastructure plain in a country.

To achieve this aim, the following objectives have been defined: (1) to analyze approaches to defining the concept and main characteristics of transport infrastructure; (2) to investigate the relationship between the development of transport infrastructure and economic growth of the country; (3) to characterize the sustainable development of transport infrastructure; (4) to formulate recommendations for improving the policy of development of transport infrastructure in s country.

## 2. Materials and Methods

We used general scientific and special methods research, in particular methods of theoretical generalization; deductions; logic analysis and synthesis; methods of analogies, system approach; statistical analysis and formalization. Also, the descriptive method was applied to define the main concepts of transport infrastructure; historical and comparative analysis was used for the analysis of national market of transportation system, assessment of the development of cooperation between different countries; correlation analysis was introduced to determine the impact of investments in transport infrastructure for the economic growth. In addition, we used expert assessments and forecasts during the development of scenarios of sustainable development of transport infrastructure.

Various experts from different fields contributed to the research. We involved experts and professionals who specialize in designing and optimizing transport system, in particular civil engineers, transportation engineers, urban planners, environmental scientists, economists, geographers, traffic engineers, professionals in logistics and supply chain management, and legal experts who specialize in transportation law. Such interdisciplinary research teams were essential to address the complex and interconnected challenges associated with transportation planning and development.

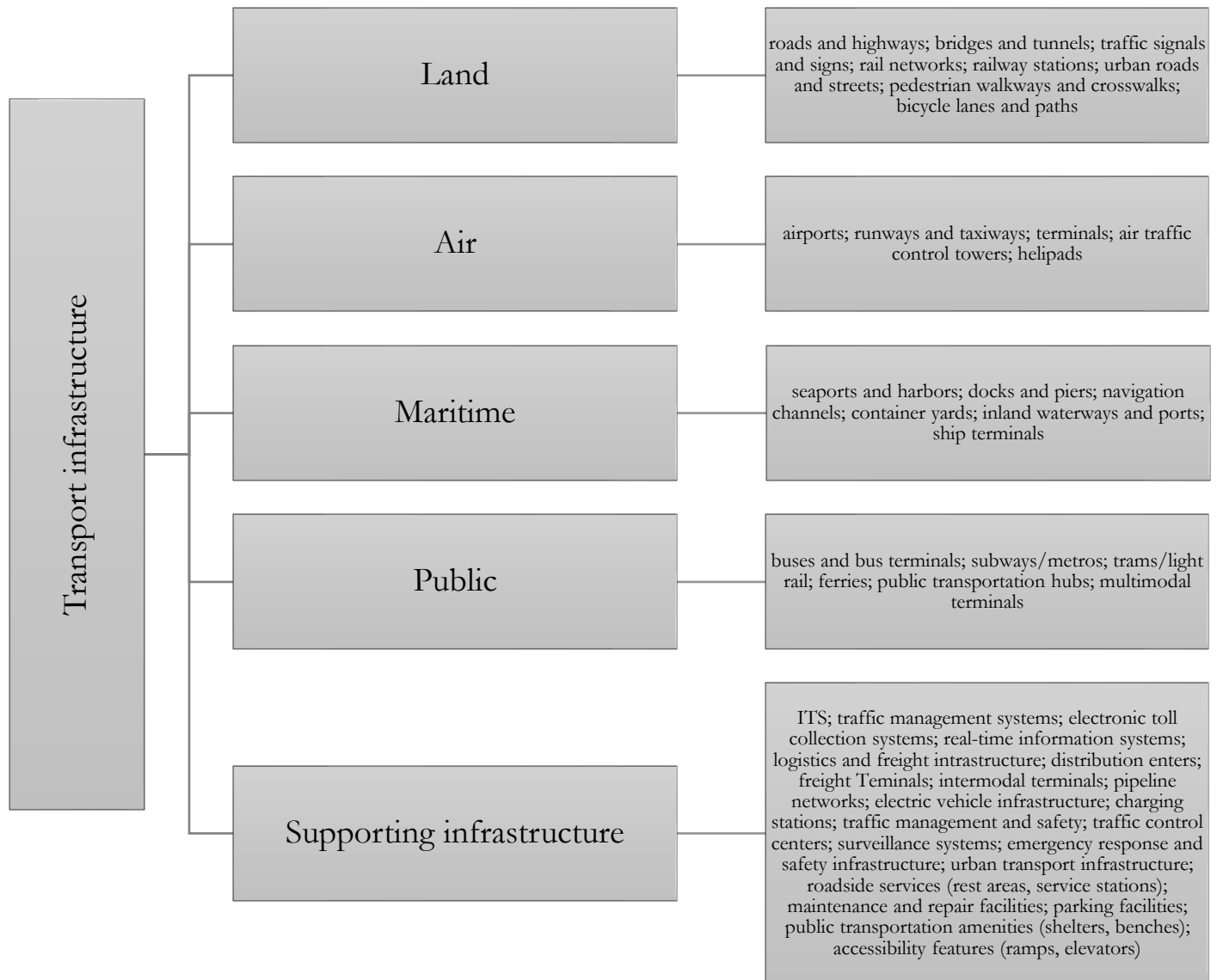
## 3. Results

Transport infrastructure is a subsystem of the market economy, integral component of the entire state or regional infrastructure of economy, without which economic sectors and links cannot function the main production and production area of various types of markets (Felbermayr & Tarasov, 2021). According to Komornicki and Goliszek (2023), transport infrastructure includes means of communication (road, rail, water, air, etc.), a complex of engineering structures, buildings and related devices which ensures the functioning of transport infrastructure elements, and also the necessary means of transportation, management and mutual connection.

Čuš-Babič et al. (2022) believe that the transport infrastructure is a totality of transport communications, passenger service facilities and freight transportation, maintenance and repair facilities, which provide the needs for the provision of transport services, i.e. movement cargo and passengers. Rahman et al. (2021) define transport infrastructure as one of elements of the market infrastructure, the purpose of which is to combine into a single whole production, consumption, processes of distribution of goods and their circulation. At this, the transport infrastructure is considered from the point of view functioning of the regional economy, i.e. it must provide the fastest possible rotation of material, financial and information resources within the framework of the formed spatial (at the level region) of the network structure, taking into account that all elements, including transport infrastructure, in this structure are related to each other as on regionally and at higher levels of functioning. At the same time, Rahman et al. (2021), Skorobogatova and Kuzmina-Merlino (2017) emphasize that the transport infrastructure is designed to ensure constant and high-quality transportation of goods and passengers within the framework of national economy, relying on a certain set of conditions (components), that have developed in a country, to which we refer: normative and legal support, material support, financial and economic development spheres, human resources, organizational conditions.

Other findings show that the transport infrastructure consists of all types of transport, with their parts and links, communication routes, variable composition of motor vehicles, machine maintenance facilities and transport and logistics companies working in the field of transportation people and goods (Ngampravatdee et al., 2023). Transport infrastructure, which is the basis of transport complex of the region, contributes to the formation of the transport network and serves for the transportation of goods and passengers (Hybel & Mulalic, 2022). It participates in formation of the organizational structure of the transport complex, ensuring efficient use of vehicles (Wheat et al., 2019).

On the basis of the analysis of the definitions, we come to the conclusions that transport infrastructure includes a number of components that can be divided into five groups: land transport infrastructure, air transport infrastructure, maritime transport infrastructure, public transport infrastructure, supporting infrastructure. Figure 1 presents the components of transport infrastructure in details. These groups offer a simplified overview of the various components within transport infrastructure, aiding in the understanding of their distinct roles and functions.



**Figure 1.** Components of transport infrastructure.

Land transport infrastructure refers to the physical and organizational structures that facilitate the movement of people, goods, and services over land. It encompasses various modes of transportation, primarily focusing on roads and railways, as well as the associated components that support land-based transportation systems (Gonzalez-Navarro et al., 2023). Air transport, often referred to as aviation, is a mode of transportation that involves the movement of passengers and goods through the air using aircraft (Trinh et al., 2022). The air transport system is a complex network of infrastructure, services, and regulations designed to ensure the safe and efficient operation of air travel (Mazzola et al., 2022). Maritime transport infrastructure refers to the facilities, structures, and systems that support the movement of ships and vessels for the transportation of goods, passengers, and commodities by sea. This infrastructure is critical for international trade, connecting ports worldwide and facilitating the efficient and safe flow of maritime traffic (Li et al., 2023). The findings indicate that public transport infrastructure refers to the physical and organizational components that support the movement of passengers using shared or public modes of transportation (Bureau, 2011). This infrastructure is designed to provide accessible, efficient, and sustainable transportation options for the general public. And supporting transport infrastructure refers to various facilities, services, and technologies that play a vital role in ensuring the efficient and safe functioning of transportation systems (Komornicki & Goliszek, 2023). These elements are essential for maintaining and enhancing the overall performance, reliability, and sustainability of the transportation network.

Transport infrastructure exhibits various characteristics that collectively define its functionality, effectiveness, and impact on the overall transportation system. According to recent findings, the key characteristics of transport infrastructure include:

- *Accessibility.* Infrastructure should facilitate seamless connections between different modes of transport, regions, and urban areas, ensuring accessibility for people and goods (Gutiérrez et al., 1998).
- *Efficiency.* Well-designed infrastructure minimizes travel times and costs for both passengers and freight, contributing to economic efficiency (Netirith & Ji, 2022).
- *Safety standards.* Infrastructure must comply with safety regulations and standards to protect users and the environment from accidents and hazards (Batarlienè, 2020).
- *Environmental impact.* Sustainable transport infrastructure minimizes environmental impact, considering factors such as emissions, energy consumption, and land use (Alghuson, 2023).
- *Capacity.* Infrastructure should be designed to accommodate current and future demands, ensuring it can handle increases in traffic and usage (Burinskiene, 2022).
- *Reliability.* Infrastructure should be resilient to natural disasters, accidents, and other unforeseen events, minimizing disruptions to transportation networks (Conceição et al., 2023).
- *Integration.* Effective transport infrastructure integrates different modes of transportation, allowing for smooth transfers and efficient movement of goods and people (Netirith & Ji, 2022).
- *Incorporation of technology.* Modern infrastructure incorporates advanced technologies, such as ITS and automation, to enhance efficiency, safety, and user experience (Oladimeji et al., 2023).
- *Flexibility.* Infrastructure should be adaptable to changing circumstances, such as shifts in transportation patterns, technological advancements, and urban development (Conceição et al., 2023).
- *User-centric design.* Consideration of diverse user needs, including accessibility for individuals with disabilities, to ensure inclusivity and equitable access (Batarlienè, 2020; Conceição et al., 2023).
- *Contribution to economic growth.* Transport infrastructure plays a vital role in supporting economic activities, trade, and investment, contributing to overall economic development (Donaldson & Hornbeck, 2016).

Effective and well-maintained transport infrastructure is fundamental for supporting economic activities, enhancing mobility, and improving the overall quality of life for communities. These characteristics collectively contribute to the success and sustainability of transportation networks.

According to experts, contribution to economic growth (77,5 %), reliability (85,9 %), safety standards (92,5 %), efficiency (89,1 %), and accessibility (76,5 %) have the biggest impact upon transport infrastructure. Figure 2 shows experts' assessment of transport infrastructure impact by categories.

One of the important elements of the transport infrastructure is international transport corridors (Sładkowski & Cieśla, 2018). Their main characteristics include: legislative – normative; clearly the specified territory of transportation routes (car, railway, water), which has the appropriate infrastructure (buildings, structures, equipment, service points, control and management equipment of movement and other components). Some findings indicate that an international transport corridor refers to a designated route or passage that facilitates the seamless movement of goods, services, and people across multiple countries (Alam et al., 2022). The establishment of international transport corridors is often driven by the aim of improving trade and economic cooperation among nations, reducing transportation costs, and promoting efficient logistics and supply chain management (Rahman et al., 2021). These corridors serve as vital channels for the smooth flow of goods between different regions, fostering economic growth, and creating opportunities for international collaboration and development.

Typically, international transport corridors involve the coordination and cooperation of multiple countries, as they traverse national borders. Governments, international organizations, and private stakeholders often collaborate to develop, upgrade, and maintain



the infrastructure along these corridors. Additionally, the establishment of standardized procedures, customs facilitation, and regulatory frameworks are crucial for ensuring the efficient functioning of international transport corridors. These corridors contribute not only to economic development but also to diplomatic and geopolitical cooperation by fostering connections and partnerships among nations along the route.

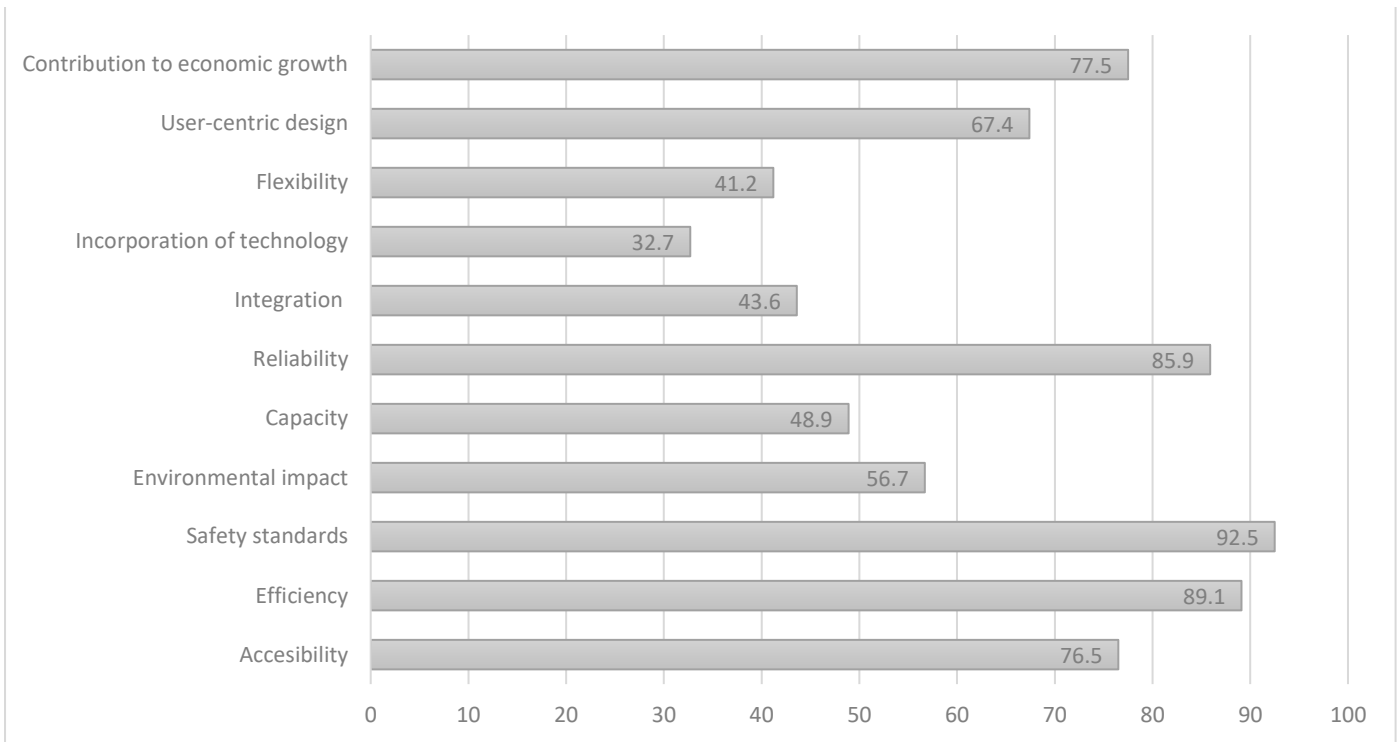


Figure 2. Experts' assessment of transport infrastructure impact by categories.

The accumulation of infrastructure significantly contributes to economic growth of countries. This is evidenced by numerous studies in macroeconomics literature (Vlahinić Lenz et al., 2018). The following directions of influence of infrastructure on development of the national economy: (1) infrastructure acts as one of the factors of production (Zhang & Cheng, 2023); (2) infrastructure provides effective influence of other factors on production; infrastructure that acts in the quality of one of the incentives for the accumulation of the influence of factors on production (Lai, 2020); (3) infrastructure acts as one of the main drivers of demand for national level (Du et al., 2022; Zhang & Cheng, 2023); (4) infrastructure is a component of development policy of national industry (Nenavath, 2023). Table 1 summarizes the effects of transport infrastructure upon economic growth.

Table 1. Effects of transport infrastructure upon economic growth.

Effect of transport infrastructure	Description
Trade facilitation (Rahman et al., 2021)	Efficient transport infrastructure enables the smooth movement of goods, reducing transportation costs and facilitating trade. This, in turn, stimulates economic activity and contributes to increased production and consumption.
Investment attraction (Donaldson & Hornbeck, 2016)	Well-developed transport networks make a country more attractive to investors, as they provide easier access to markets and resources. This can lead to increased foreign direct investment and domestic business expansion.
Job creation (Laborda & Sotelsek, 2019)	The construction, maintenance, and operation of transport infrastructure create job opportunities, both directly and indirectly. This includes jobs in construction, logistics, and related service industries.
Regional development (Hrushka et al., 2021)	Transport infrastructure connects different regions within a country, reducing regional disparities. Improved connectivity can lead to the development of previously isolated areas, promoting balanced economic growth.



Efficient logistics (Wheat et al., 2019)	Well-designed transport systems enhance the efficiency of logistics and supply chains. This results in faster and more reliable movement of goods, reducing delays and increasing overall productivity.
Urbanization and rural development (Chanieabate et al., 2023)	Improved transport infrastructure often leads to urbanization as people migrate to urban centers with better accessibility. This can contribute to the development of cities as economic hubs
Technological advancements (Koval et al., 2021; Oladimeji et al., 2023)	The development of transport infrastructure often involves the adoption of advanced technologies, driving innovation and technological progress within the country
Cultural exchange (Loyola et al., 2019)	Improved transport infrastructure facilitates easier movement of people, fostering cultural exchange and interaction. This can contribute to a more interconnected and culturally diverse society

Therefore, the effects of transport infrastructure on national growth are multifaceted, influencing economic, social, and environmental aspects. Strategic planning and sustainable development practices are essential to harness the positive impacts while mitigating potential drawbacks. We asked experts on the effects of transport infrastructure and the findings show that trade facilitation, job creation, and investments are of the biggest significance. At the same time, experts consider technological advancements and cultural exchange affects economic growth less significantly.

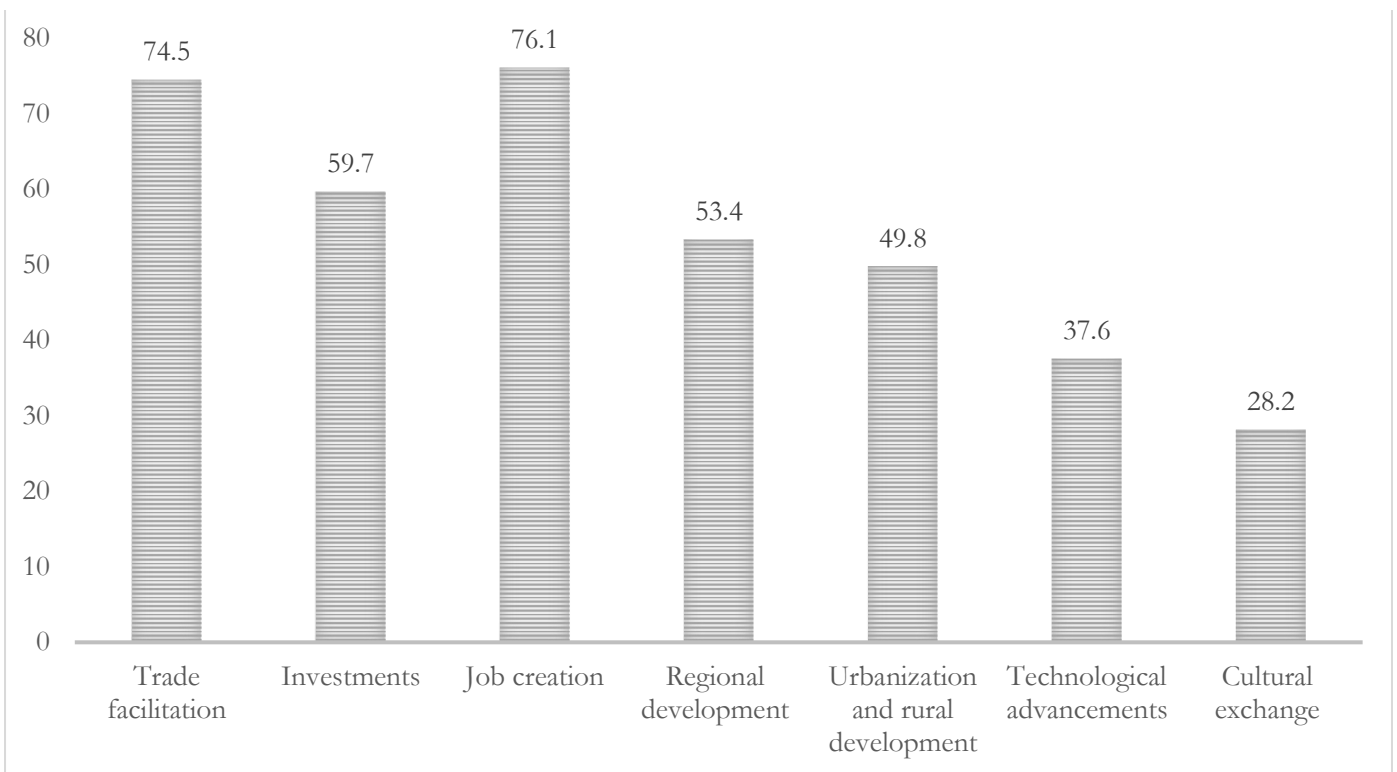


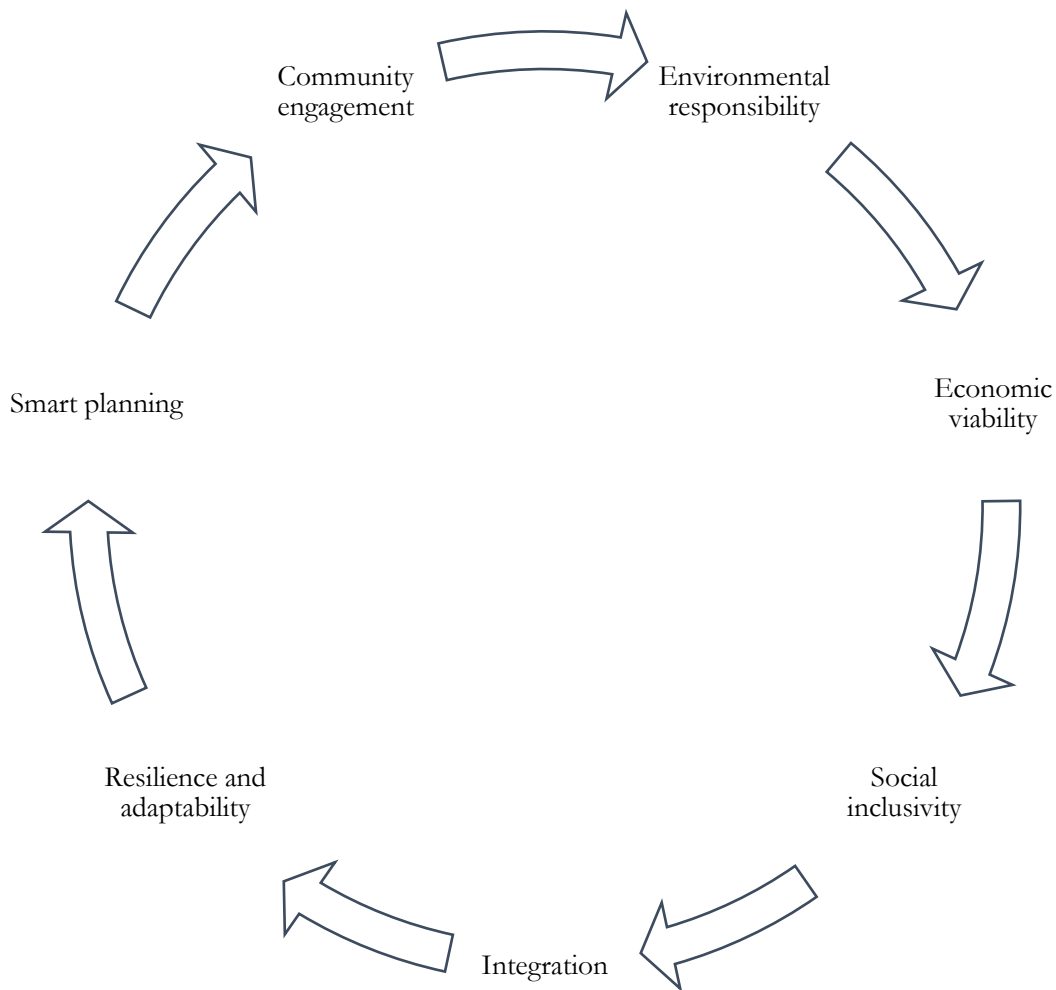
Figure 3. Experts' assessment of effects of transport infrastructure upon economic growth.

At the same time a number of research are devoted to sustainable transport infrastructure. Badassa et al. (2020) state that sustainable transport infrastructure refers to systems and facilities designed, constructed, and operated with a focus on minimizing negative environmental impacts. This includes measures to reduce carbon emissions, energy consumption, and ecological disruption while promoting the use of renewable energy sources and environmentally friendly construction materials (Kapur et al., 2021). Wang et al. (2018) suggest that sustainable transport infrastructure involves economically viable solutions that consider the long-term financial implications and benefits. This definition emphasizes the importance of cost-effectiveness, efficient resource utilization, and the creation of infrastructure that generates economic value over its lifecycle. Also, sustainable transport infrastructure aims to create inclusive and equitable systems that cater to the diverse needs of communities (Pagliara et al., 2020). This includes considerations for accessibility, affordability, and safety, ensuring that infrastructure development does not disproportionately impact vulnerable or marginalized groups. Conceição et al. (2023) define sustainability in transport

infrastructure as a construction that involves building resilient and adaptable systems capable of withstanding the impacts of climate change, natural disasters, and evolving technological trends. It deals with future-proofing infrastructure to ensure its continued functionality and relevance over time. In addition, we found that sustainable transport infrastructure is characterized by integrated and multimodal connectivity, promoting seamless movement of people and goods across various modes of transportation (Mashingaidze & Mutonhodza, 2024). This involves the development of interconnected networks that facilitate a shift towards more sustainable modes of transport, such as public transit, cycling, and walking, while minimizing reliance on single-occupancy vehicles.

These definitions collectively highlight the multifaceted nature of sustainable transport infrastructure, encompassing environmental, economic, social, and adaptive considerations. Achieving sustainability in transport infrastructure requires a holistic approach that addresses the interconnected challenges and opportunities associated with transportation systems (Kramar et al., 2019; Sami & Sara, 2023).

Sustainable transport infrastructure is characterized by several key features that prioritize environmental, economic, and social considerations. Figure 4 shows the essential characteristics of sustainable transport infrastructure.



**Figure 4.** Experts’ assessment of effects of transport infrastructure upon economic growth.

*Environmental responsibility* deals with minimization of negative impacts on the environment, including reduced carbon emissions, minimal habitat disruption, and responsible use of resources (Alghuson, 2023). Also, some researchers demand that the infrastructure incorporates environmentally friendly design principles, such as the use of renewable energy sources, energy-efficient technologies, and eco-friendly construction materials (Abu-Eisheh et al., 2020).



*Economic viability* means the fact that sustainable transport infrastructure is economically viable, considering both initial construction costs and long-term operational expenses (Komornicki & Goliszek, 2023). It prioritizes efficient resource utilization, life-cycle cost analysis, and the creation of value for the community and economy. The development and maintenance of sustainable transport infrastructure contribute to job creation (Laborda & Sotelsek, 2019), supporting local economies and enhancing social well-being.

*Social inclusivity* suggests that sustainable transport infrastructure prioritizes accessibility for all, ensuring that it meets the diverse needs of various demographic groups, including people with disabilities and those from marginalized communities (Batarlienè, 2020). It also addresses safety as a paramount consideration, encompassing measures to protect pedestrians, cyclists, and motorists (Conceição et al., 2023).

*Integration* across different modes of transportation creates connectivity between public transit, cycling, walking, and private vehicles (Netirith & Ji, 2022). Moreover, the infrastructure includes intelligent traffic management systems to optimize traffic flow, reduce congestion, and enhance overall transportation efficiency (Kramar et al., 2019).

*Resilience and adaptability* are orientation towards counteractions to the impacts of climate change, including extreme weather events and rising sea levels (Conceição et al., 2023). In addition, the infrastructure incorporates adaptable and future-proof technologies, allowing for easy integration of emerging transportation trends and innovations (Badassa et al., 2020).

*Smart planning* means that sustainable transport infrastructure aligns with smart urban planning principles, promoting compact, mixed-use development that reduces the need for extensive travel and supports local communities (Bamwesigye & Hlavackova, 2019).

*Community engagement* involves the active participation of the local community in the planning and decision-making processes, ensuring that the infrastructure meets the specific needs and preferences of the people it serves (Koval et al., 2021; Loyola et al., 2019).

These characteristics collectively contribute to the creation of transport infrastructure that balances economic development with environmental stewardship and social inclusivity, fostering a sustainable and resilient future. Figure 5 shows the experts assessments of effects of sustainable transport infrastructure. The findings demonstrate that community engagement and smart planning have the biggest effect. At the same time, environmental responsibility is characterized by less effect according to the respondents.

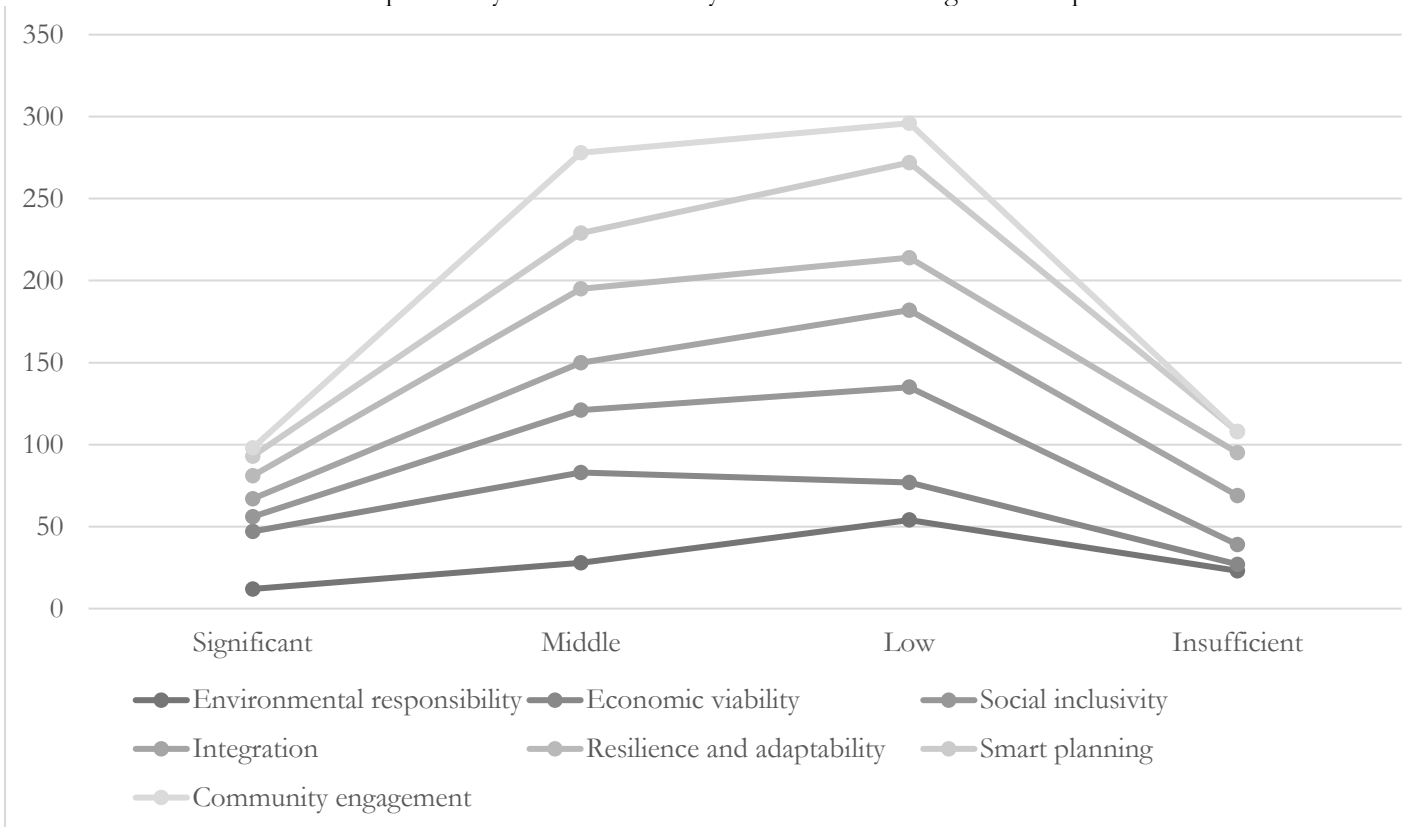


Figure 5. Experts' assessment of effects of sustainable transport infrastructure.

Therefore, implementing sustainable transport infrastructure is imperative for addressing pressing global challenges and fostering long-term societal well-being. By prioritizing environmentally responsible practices, sustainable transport infrastructure helps mitigate climate change by reducing carbon emissions, minimizing habitat disruption, and promoting the use of renewable energy sources (Alghuson, 2023). Economically, it ensures cost-effective solutions that create value, generate employment, and support local economies. Socially, sustainable transport infrastructure enhances accessibility for all, prioritizing safety, inclusivity, and community engagement (Koval et al., 2021). Moreover, it encourages efficient and integrated multimodal connectivity, reducing congestion and enhancing overall transportation efficiency (Conceição et al., 2023). Embracing sustainability in transport infrastructure is not just an ethical imperative; it is a strategic investment in a resilient, adaptable, and equitable future that balances economic growth with environmental stewardship and social progress that successfully addressing these challenges requires a comprehensive and adaptable approach, involving collaboration between employers, employees, governments, and other stakeholders (Badassa et al., 2020). It also involves ongoing efforts to understand and respond to the changing nature of work and the broader societal landscape. At the same time, to implement sustainable transport infrastructure it is necessary to develop specific recommendations that will consider the needs of all the stakeholders of the national economy.

#### 4. Discussion

Implementing sustainable transport infrastructure in a national economy involves considering various conceptual and applicable approaches that focus on environmental, social, and economic aspects. Theoretical approaches to achieve sustainable transport infrastructure include integrated transportation planning (Ghafouri-Azar et al., 2023; Schwedes & Hoor, 2019); multimodal transport systems (Kramarz & Przybylska, 2021); green infrastructure development (Alghuson, 2023); smart technologies (Chakwizira, 2022); public-private partnerships (PPPs) for sustainable infrastructure (Ndlovu & Newman, 2022); behavioral change and demand management (Loyola et al., 2019); life cycle assessment (LCA) and environmental impact assessment (EIA) (Abu-Eisheh et al., 2020); social equity and accessibility (Batarliené, 2020).

*Integrated transportation* planning emphasizes comprehensive planning that integrates various modes of transportation, land use, and urban development (Schwedes & Hoor, 2019). The goal is to create a seamless and efficient transportation system that reduces congestion, lowers emissions, and enhances accessibility (Ghafouri-Azar et al., 2023). Governments can adopt integrated planning frameworks that involve collaboration between transportation departments, urban planners, and environmental agencies. This ensures that transportation solutions align with broader sustainability goals.

*Multimodal transport systems* such as public transit, cycling, walking, and shared mobility, helps reduce reliance on individual car use (Kramarz & Przybylska, 2021). Investments in public transit, cycling infrastructure, and pedestrian-friendly urban spaces are essential (Donaldson & Hornbeck, 2016). Policies that encourage the integration of different modes, like bike-sharing programs or seamless transit connections, support the development of a multimodal transportation system.

*Green infrastructure development* focuses on creating transportation infrastructure that minimizes environmental impact and promotes ecological sustainability (Alghuson, 2023). Incorporating green design principles in infrastructure projects, such as green roofs, permeable pavements, and wildlife corridors, helps mitigate the environmental impact. Additionally, promoting the use of electric vehicles and renewable energy sources contributes to greener transportation.

*Smart technologies* can optimize transportation systems, enhance efficiency, and reduce environmental impact. Integrating smart technologies like intelligent traffic management systems, real-time information for commuters, and the use of data analytics for transportation planning can improve overall system efficiency and reduce emissions (Chakwizira, 2022).

*PPPs for sustainable infrastructure* involves collaboration between public and private sectors to finance, design, and operate sustainable transportation infrastructure projects (Ndlovu & Newman, 2022). Governments can encourage private sector involvement through well-structured PPPs, ensuring that the projects adhere to sustainability criteria. This approach can help overcome funding challenges and bring in innovative solutions.

*Behavioral Change and Demand Management* encourage changes in travel behavior and demand management strategies to reduce the overall need for transportation and promote sustainable modes (Loyola et al., 2019). Implementing measures like congestion pricing, promoting telecommuting, and providing incentives for using sustainable transportation modes can influence individual behaviors and reduce the demand for private car travel.

*LCA and EIA* consider the environmental impact of transportation projects throughout their entire life cycle, from construction to operation and decommissioning (Abu-Eisheh et al., 2020). Governments can mandate LCA and EIA as part of the planning and approval process for infrastructure projects. This ensures that the environmental consequences are thoroughly assessed, and sustainability measures are incorporated (Kapur et al., 2021).

*Social equity and accessibility* emphasize the importance of providing accessible and equitable transportation solutions for all members of society (Batarliené, 2020). Prioritizing public transit in underserved areas, ensuring affordability, and addressing the needs of vulnerable populations in transportation planning contribute to social equity and accessibility.

Implementing these conceptual approaches requires a coordinated effort from governments, private sector stakeholders, and the community. Successful implementation often involves a combination of policies, regulations, incentives, and public awareness campaigns to drive sustainable change in the transportation sector.

At the same time, sustainable transport infrastructure in a national economy is implemented through a number of applicable approaches that can be translated into actionable initiatives. These practical strategies are the following: investment in public transit (Raza et al., 2023); promotion of non-motorized transportation (Das et al., 2022; Shah et al., 2023); incentives for electric vehicles (EVs) (Alghuson, 2023; Chakwizira, 2022; Du et al., 2022); congestion pricing (Cipriani et al., 2019); urban planning for transit-oriented development (TOD) (Ghafouri-Azar et al., 2023); fleet modernization and efficiency programs (Wheat et al., 2019); smart traffic management systems (Chakwizira, 2022; Raza et al., 2023); community engagement and education (Babaei et al., 2023); regulatory measures and standards (Jelti et al., 2023).

*Investment in public transit* is oriented towards the increase funding for the development and maintenance of reliable and extensive public transit systems, including buses, subways, light rail, and commuter trains. This investment is typically initiated through a comprehensive planning process that begins with a thorough assessment of transportation needs within a community or region (Koval et al., 2021; Loyola et al., 2019). Governments and transportation authorities identify areas facing congestion, evaluate existing transit infrastructure, and anticipate future demands. Based on these findings, strategic plans are developed to outline the objectives and priorities for improving public transit. Project proposals are then formulated, detailing the scope, costs, and expected outcomes of specific initiatives. Securing funding is a critical aspect of implementation, involving budget allocations from government sources, grants, public-private partnerships, and sometimes dedicated transit-related taxes or fees. Stakeholder engagement is essential during this phase, ensuring that the proposed projects align with community expectations. Regulatory approvals, including environmental impact assessments and necessary permits, are obtained to move forward with the proposed transit infrastructure projects.

Once funding and approvals are secured, the implementation phase kicks off with the design and engineering of transit infrastructure. This involves creating detailed plans for routes, stations, and associated facilities, with a focus on cost estimation and accuracy. Construction follows, with tenders issued and contracts awarded through a competitive bidding process. Rigorous project management and oversight are crucial to ensure that construction adheres to specifications, timelines, and budget constraints. The integration of smart transit systems, such as real-time tracking and electronic ticketing, enhances operational efficiency and user experience (Raza et al., 2023). After construction, thorough testing and commissioning take place, ensuring the safety and reliability of the transit system before gradually introducing services to the public. Ongoing maintenance, routine monitoring, and continuous evaluation of performance complete the implementation cycle, allowing for adjustments and improvements as needed. Throughout this process, collaboration among various stakeholders, including government entities, private sector partners, and the public, remains pivotal for the successful implementation of public transit investments.

*Promotion of non-motorized transportation* involves a multifaceted approach aimed at creating infrastructure, policies, and incentives that encourage walking, cycling, and other sustainable modes of travel (Shah et al., 2023). The implementation begins with urban planning that prioritizes the development of pedestrian and cycling-friendly infrastructure. This includes

the construction of dedicated bike lanes, pedestrian pathways, and shared spaces designed to enhance safety and accessibility. Many agents are to collaborate to integrate non-motorized infrastructure into existing urban landscapes, creating a comprehensive network that connects residential areas, business districts, and public spaces. Implementing traffic-calming measures, such as reduced speed limits and traffic signal prioritization for pedestrians and cyclists, also contributes to the promotion of non-motorized transportation. In addition, public awareness campaigns are launched to educate residents about the benefits of walking and cycling, fostering a cultural shift toward embracing these modes as viable and healthy alternatives to motorized transport (Alghuson, 2023).

Policy interventions play a crucial role in the promotion of non-motorized transportation. Local governments may enact zoning regulations that encourage mixed-use developments, ensuring that essential services, workplaces, and recreational areas are situated within convenient walking or cycling distances (Das et al., 2022). Incentive programs, such as bike-sharing initiatives and subsidies for purchasing bicycles or related equipment, further encourage the adoption of non-motorized modes. Legislative measures may include the implementation of strict parking policies to discourage car use in city centers and the designation of car-free zones. Collaboration with businesses and employers to provide amenities such as bike storage facilities and showers for cyclists contributes to a supportive environment for non-motorized commuting. Ultimately, successful implementation requires ongoing community engagement, monitoring of infrastructure usage, and a commitment to refining policies and infrastructure based on feedback and evolving transportation needs.

*Incentives for EVs* are typically implemented through a combination of financial, regulatory, and infrastructure support measures (Chakwizira, 2022). Governments may offer financial incentives such as tax credits, rebates, or grants to reduce the upfront cost of purchasing an electric vehicle. Additionally, subsidies for installing home or workplace charging stations may be provided to enhance charging infrastructure. Regulatory measures may include exemptions or reductions in vehicle registration fees, tolls, or access to congestion zones for electric vehicles. In some cases, preferential treatment, such as priority parking or access to high-occupancy vehicle lanes, is granted to EV owners. Collaboration with the private sector, including partnerships with automakers and utilities, can also play a role in offering discounts or special financing options for electric vehicles. The aim is to create a supportive ecosystem that not only makes electric vehicles more financially attractive but also addresses concerns related to charging infrastructure and operational convenience, thereby encouraging a broader adoption of sustainable transportation alternatives (Du et al., 2022).

*Congestion pricing* plays a pivotal role in fostering sustainable transport infrastructure by addressing traffic congestion, reducing emissions, and encouraging the adoption of eco-friendly transportation modes (Cipriani et al., 2019). By imposing fees during peak hours or in congested areas, this strategy incentivizes commuters to shift towards public transit, carpooling, cycling, or walking, thereby diminishing the reliance on individual vehicles. The resulting decrease in traffic congestion not only enhances transportation efficiency but also contributes to improved air quality and reduced carbon emissions. Moreover, the revenue generated from congestion pricing can be reinvested into sustainable transportation projects, funding initiatives such as public transit expansion, cycling infrastructure, and pedestrian-friendly urban spaces. Overall, congestion pricing stands as a powerful tool to optimize road capacity, promote environmental sustainability, and shape more resilient and efficient urban transportation systems.

*Urban planning for TOD* is a key component of sustainable transport infrastructure, designed to create vibrant, efficient, and environmentally friendly urban environments (Bamwesigye & Hlavackova, 2019). TOD focuses on strategically locating and designing development projects, such as housing, commercial spaces, and recreational areas, around public transit hubs. This approach encourages residents to use public transportation options, reducing dependence on private vehicles and mitigating traffic congestion. In a TOD system, transit stations become focal points for mixed-use developments, creating pedestrian-friendly neighborhoods where people can live, work, and access amenities within walking distance of transit nodes (Ghafouri-Azar et al., 2023). The planning process involves collaboration between urban planners, transportation authorities, and local communities. Zoning regulations are often adjusted to allow for higher-density developments near transit stations, fostering a more compact urban form. Pedestrian and cycling infrastructure are prioritized to enhance accessibility to transit nodes and promote sustainable modes of transportation. Additionally, green spaces and public areas are integrated into the urban fabric to create a

sense of community and improve the overall quality of life. By fostering dense, walkable communities centered around transit, TOD not only contributes to reduced car dependency but also promotes social interaction, economic vitality, and a more resilient and sustainable urban environment.

*Fleet modernization and efficiency programs* play a vital role in the development of sustainable transport infrastructure by addressing the environmental impact of transportation fleets. This strategy focuses on upgrading and optimizing vehicle fleets, both in the public and private sectors, to reduce emissions, enhance fuel efficiency, and embrace cleaner technologies. In the context of public transportation, fleet modernization involves replacing older, less fuel-efficient vehicles with newer models that adhere to higher environmental standards (Wheat et al., 2019). This may include the introduction of electric buses or vehicles powered by alternative fuels, contributing to a reduction in greenhouse gas emissions and air pollutants. Efficiency programs within fleet management encompass initiatives aimed at optimizing the operational performance of vehicles. This can involve implementing maintenance schedules to ensure vehicles operate at peak efficiency, utilizing telematics and data analytics for route optimization, and adopting eco-driving practices. Furthermore, integrating smart technologies into fleet management systems can enhance overall efficiency by providing real-time information on fuel consumption, vehicle performance, and emissions.

*Smart traffic management systems* are integral components of sustainable transport infrastructure, leveraging advanced technologies to optimize traffic flow, enhance efficiency, and reduce environmental impact (Chakwizira, 2022). These systems incorporate real-time data analytics, sensors, and intelligent algorithms to monitor and manage traffic patterns dynamically. By providing real-time information to commuters, these systems enable better decision-making, reduce congestion, and minimize travel time. Additionally, smart traffic management contributes to lower fuel consumption and emissions by facilitating smoother traffic flow and minimizing idling times (Raza et al., 2023). Through adaptive signal controls, predictive modeling, and integration with other smart city technologies, these systems support a more sustainable urban transportation landscape, aligning with the goals of reducing environmental impact and enhancing the overall efficiency of the transportation network.

*Community engagement and education* are crucial elements in the development of sustainable transport infrastructure, fostering a sense of inclusivity, awareness, and shared responsibility among residents (Babaei et al., 2023). In the context of sustainable transportation, community engagement involves involving local residents, businesses, and stakeholders in the planning and decision-making processes. Public forums, workshops, and outreach programs are organized to gather input, address concerns, and build a shared vision for transportation initiatives. Education plays a pivotal role in raising awareness about the benefits of sustainable transport modes, such as public transit, cycling, and walking. Campaigns may focus on the environmental, health, and economic advantages of reducing reliance on private vehicles. Furthermore, educational initiatives provide information on alternative transportation options, safety measures, and the broader impact of sustainable transport choices. By actively involving the community and fostering a deeper understanding of sustainable transport practices, infrastructure projects can gain broader support, encouraging behavioral shifts and creating a more resilient and environmentally conscious urban environment.

*Regulatory measures and standards* are essential components of a sustainable transport infrastructure system, providing a framework to guide and enforce environmentally responsible practices (Jelti et al., 2023). Governments often establish regulations to set emission standards for vehicles, encouraging the adoption of cleaner technologies and reducing the environmental impact of transportation. Additionally, fuel efficiency standards may be implemented to incentivize the use of energy-efficient vehicles. Zoning regulations and land-use policies play a role in promoting sustainable urban development and transit-oriented design, encouraging compact and walkable communities. Some jurisdictions also introduce measures like congestion pricing or road tolls to manage traffic flow and reduce the environmental footprint of individual car travel. By enforcing these regulations, authorities aim to align transportation practices with sustainability goals, promote the use of public transit, and create a more eco-friendly and efficient transport system. Continuous monitoring and updates to these regulatory frameworks are essential to adapt to evolving technologies and ensure sustained progress towards a more sustainable transportation landscape.

Therefore, the implementation of sustainable transport infrastructure is a multifaceted endeavor that requires a comprehensive and collaborative approach. From theoretical frameworks to practical measures, creating a transport system that is environmentally responsible, socially equitable, and economically viable demands strategic planning,



innovative solutions, and ongoing commitment. Integrating concepts such as integrated transportation planning, multimodal systems, green infrastructure, and smart technologies is essential to build a resilient and efficient network. Additionally, public-private partnerships, regulatory measures, and community engagement play vital roles in overcoming challenges and fostering widespread adoption of sustainable transportation practices. As we strive towards a future with reduced emissions, enhanced accessibility, and improved urban livability, it is imperative to continue investing in and refining sustainable transport infrastructure, recognizing its pivotal role in shaping resilient and environmentally conscious societies.

## 5. Conclusions

Sustainable development of transport infrastructure within the national economy stands as a multifaceted challenge and opportunity, requiring a nuanced understanding of the interconnected realms of economics, environment, and societal well-being. Through an exploration of theoretical frameworks and practical approaches, it becomes evident that fostering sustainable transport infrastructure is not merely a technical endeavor but a transformative process that necessitates a holistic and integrated perspective.

Theoretical approaches, such as integrated transportation planning and multimodal systems, underscore the importance of cohesion in development strategies. The idea of integrating various modes of transportation, land use, and urban planning into a unified framework has shown promise in creating more efficient, accessible, and environmentally responsible transport systems. However, the translation of these theoretical frameworks into actionable policies and projects requires a concerted effort from governments, urban planners, and community stakeholders.

Practical approaches, ranging from investments in public transit to incentives for electric vehicles, form the backbone of actualizing sustainable transport infrastructure. Investment in public transit, as seen in numerous successful case studies, is pivotal for reducing dependency on individual cars and promoting more sustainable commuting habits. The promotion of non-motorized transportation, through the development of cycling infrastructure and pedestrian-friendly urban spaces, not only contributes to environmental sustainability but also fosters healthier and more livable cities. Incentives for electric vehicles, coupled with the expansion of charging infrastructure, accelerate the transition towards cleaner and greener transportation options.

Smart traffic management systems emerge as technological solutions that optimize existing infrastructure and improve overall transport efficiency. These systems, employing real-time data and intelligent algorithms, have the potential to significantly reduce congestion, enhance safety, and contribute to a more fluid and sustainable traffic environment. The incorporation of such smart technologies aligns with the broader goals of creating resilient and adaptable transport systems capable of addressing the evolving needs of growing urban populations. In addition, PPPs have demonstrated their effectiveness in financing, designing, and operating sustainable transport projects. The collaboration between government entities and private sector stakeholders can overcome financial constraints, stimulate innovation, and expedite the implementation of critical infrastructure projects. However, the success of PPPs depends on robust governance structures, clear regulatory frameworks, and a shared commitment to sustainability.

Also, regulatory measures and standards play a pivotal role in shaping the direction of sustainable transport infrastructure. From emission standards to land-use policies, these regulations guide the behavior of stakeholders within the transport sector. They set the bar for vehicle efficiency, influence urban development patterns, and, when well-crafted, contribute to the creation of a transport system aligned with environmental and societal sustainability. We found that community engagement and education are oriented towards sustainable transport initiatives. An informed and engaged community is more likely to embrace and actively participate in the transition towards sustainable transportation practices. Local input is critical in ensuring that projects align with the unique needs and values of the community, and education campaigns foster a deeper understanding of the benefits associated with sustainable transport choices.

In conclusion, the sustainable development of transport infrastructure is a dynamic and ongoing process that requires a delicate balance between various stakeholders, innovative technologies, and evolving societal expectations. The integration of sustainable principles into the transport sector is not just an imperative for environmental conservation; it is an



investment in the resilience, efficiency, and well-being of our communities. As we move forward, it is paramount to build on the insights from theoretical approaches and practical implementations, leveraging the collective wisdom gained to create transport systems that truly serve the needs of the present without compromising the ability of future generations to meet their own.

Further studies could explore several avenues to deepen our understanding and refine sustainable practices within the transportation sector, including long-term impact of sustainable transport infrastructure projects; comparative analyses of sustainable transport practices across different nations or regions; behavioral aspects of sustainable transport adoption; and the role of emerging technologies, such as autonomous vehicles, artificial intelligence, and blockchain, in enhancing sustainable transport infrastructure. Investigating these areas, researchers can contribute to the ongoing refinement of sustainable transport infrastructure, ensuring that future initiatives are informed by a comprehensive understanding of their economic, environmental, and social implications.

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Research article

# Implementation of international project management at the educational establishment

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**Abstract:** This research article concerns the critical domain of the implementation of international project management within educational establishments. Recognizing the transformative potential of global engagement, the study centers on the development and execution of a comprehensive internationalization strategy. A nuanced exploration of the role of strong leadership and governance structures serves as a focal point, emphasizing the necessity of visionary leadership and transparent governance for successful international project management initiatives. The research underscores the strategic importance of a dedicated international office or department, acting as a central hub for expertise, coordination, and oversight in the complex landscape of cross-cultural collaboration. Furthermore, the study examines the integration of a global mindset among stakeholders, emphasizing the infusion of international perspectives into the curriculum and the facilitation of student and faculty mobility. Technological integration emerges as a pivotal enabler, balancing advancements with the need for flexibility in diverse technological landscapes. The findings of this research offer a comprehensive framework for educational establishments seeking to navigate the dynamic challenges and opportunities associated with international project management. The insights presented contribute to the broader discourse on globalizing education and position educational institutions to excel in an interconnected and interdependent world.

**Keywords:** international project; educational establishment; management; efficiency; organizational and pedagogical conditions

## 1. Introduction

Modern global trends require transformations of national systems of higher education. Higher education began to go far beyond the boundaries of higher education institutions within one country (de Wit & Altbach, 2021). Opportunities for students of higher education and teachers are increasing significantly. Double graduation, study of foreign languages, participation in international programs and projects, as well as carrying out scientific activities in partnership with foreign higher education institutions, which, in particular, involves the publication of joint monographs, holding round tables, conferences, seminars, lectures, bilateral publication of articles, work on a scientific project and cooperation with business – today's realities that must be taken into account in order to be competitive according to the relevant indicators in the international dimension.

The transition to the economy and digitization of knowledge (Roshchin et al., 2022), sustainable growth of the importance of innovations (Fourati-Jamoussi et al., 2021) lead to the use of management methodology of projects in education, as such, which provides educational institutions to the greatest extent effective competitiveness in the educational space. Managing a modern educational establishment is difficult complex task that requires new approaches from the management team, their key and updated competencies, mastery of educational methods of management (Mykhaylyshyn & Yakymiv, 2017). Organizational management acquires multi-vector progress in the process of overcoming established stereotypes on the innovative path of social development, having formed a generation of people who think and work in a new way.

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Development of education was studied in the papers of Liang and Chen (2012), Sousa and Rocha (2018) and others. Scientists usually associate the development of the education system with such factors as democratization (Apergis, 2018), person-centeredness (Gray & Woods, 2022), humanization (Lee, 2023), professionalism (Evans, 2008), digitalization (Roshchin et al., 2022), integration into the global educational environment and international cooperation (de Wit & Altbach, 2021), organizational culture (Zhu & Engels, 2014), and continuity of education (Bore, 2006). Various aspects of the problem of managing educational establishments, formulating the essence of its basic concepts, management team formation, development of professional competences and organizational culture are devoted to the works of Kutsak et al. (2023), Zhu and Engels (2014). Educational project management is the central topic of Cerezo-Narváez et al. (2019), Mahfoud (2021). At the same time, a number of works are devoted to international project management in education (Debych, 2020).

Innovative experience shows that the implementation of project activities in educational establishments allow to implement projects successfully, to combine various aspects of activities, to utilize fully potentials and improve financial opportunities of the educational establishment. Therefore, management of international projects differs from other management activities, requiring special skills, tools, organizational structure and culture and is a recognized special branch management (Amoah & Marimon, 2021). Project activity has become a stimulating factor in development of education system. Educational establishments use specialized programs, alternative methods and foreign experience. Through innovative approaches to the content of the international project activities, means of implementation of the project method, actual tasks are introduced through the growth of professional skills of teachers and multiplication of professional competencies of the management team of educational establishment.

## 2. Literature Review

An international project refers to a cross-border initiative that involves collaboration and coordination among individuals, organizations, or entities from different countries. These projects typically aim to address global challenges, share resources, and achieve common goals, requiring cooperation across national boundaries (Kurowska-Pysz & Szczepańska-Woszczyzna, 2017). According to Amoah and Marimon (2021), international projects can also be defined as multinational undertakings where activities, tasks, or objectives span multiple countries. They often involve participants from diverse cultural, legal, and economic backgrounds, requiring careful consideration of global factors such as international regulations, currency exchange rates, and geopolitical conditions. Also, other definition of an international project emphasizes global collaboration, where teams or stakeholders from various nations work together to achieve a shared project outcome (Yao, 2021). The collaboration may involve joint research, development, implementation, or delivery of products, services, or solutions, requiring effective communication and project management strategies tailored to the international context.

International projects in education refers to transnational research and academic collaborations (Ward et al., 2021). In this context, educational institutions from different countries come together to conduct joint research, develop academic programs, or address global issues. Such projects contribute to the internationalization of education and the advancement of knowledge through collaborative efforts across borders. We found that international projects in education exhibit several distinctive characteristics that set them apart from domestic or local initiatives, particularly cross-cultural collaboration among individuals, institutions, or organizations (Gyasi et al., 2021); global curriculum development (Munna, 2022); language diversity (Henderson, 2005); technological integration (Roshchin et al., 2022); exchange programs (Munna, 2022); global problem-solving (Henderson, 2005); cross-border funding and resources (Kurowska-Pysz & Szczepańska-Woszczyzna, 2017); and interdisciplinary approach (Munna, 2022).

International project management in education demands a set of specific skills, knowledge, and attributes to navigate the complexities of cross-cultural collaboration and address the unique challenges associated with global educational initiatives. Figure 1 shows main requirements for international project management in education. By possessing these skills and attributes, international project managers in education can effectively lead projects that contribute to global collaboration, cross-cultural understanding, and advancements in education on an international scale.



**Figure 1.** Requirements for international project management in education.

Managing international projects in educational institutions involves a strategic approach that addresses the unique challenges associated with cross-border collaborations. We found that general framework of management of international projects in educational establishments typically include specific stages (Henderson, 2005; Muszyńska & Marx, 2019; Munna, 2022; Kurowska-Pysz & Szczepańska-Woszczyzna, 2017). They are the following:

*Needs assessment and goal setting* deals with identification of the specific educational goals and objectives that the international project aims to achieve.

*Project planning* is to develop a comprehensive project plan that outlines timelines, milestones, and deliverables. It refers to the impact of cultural, linguistic, and regulatory differences on project implementation.

*Stakeholder engagement* is oriented towards identification and engagement of relevant stakeholders, including faculty, students, administrators, and external partners.

*Cross-cultural training* provide cross-cultural training for project participants to enhance cultural competence and promote effective communication and addresses cultural nuances, etiquette, and potential challenges to ensure smooth collaboration.

*Legal and regulatory compliance* is introduced to ensure compliance with international and local regulations governing education, visas, and other legal requirements. Collaboration with legal experts navigates regulatory frameworks and obtain necessary approvals.

*Budgeting and financial management* is to develop a budget that considers currency exchange rates, travel expenses, and other international financial considerations.

*Technology integration* means leveraging technology for virtual collaboration, online learning platforms, and communication tools.

*Risk management* identifies potential risks associated with international collaboration, including cultural misunderstandings, language barriers, and geopolitical factors.

*Monitoring and evaluation* establishes monitoring mechanisms to track progress against project milestones. Regularly evaluations of the effectiveness of the project is oriented towards achieving its educational goals.

*Quality assurance* is to implement quality assurance measures to ensure the delivery of high-quality education and adherence to established standards.

These stages can effectively manage international projects, fostering global collaboration and contributing to the advancement of education on a global scale.

In addition, implementing international projects in education comes with a set of challenges, many of which stem from the diverse and complex nature of cross-border collaborations. Findings show that these challenges include cultural differences (varied cultural norms, values, and communication styles) (Jones et al., 2020); language barriers (differences in language proficiency among participants that hinder effective communication and collaboration) (Henderson, 2005); logistical issues (challenges related to the planning, coordination, and execution of various activities involved in the project) (Rajesh et al., 2023); financial considerations (managing budgets, navigating currency exchange rates, securing funding, and ensuring financial transparency) (Kurowska-Pysz & Szczepańska-Woszczyzna, 2017); technology limitations (inadequate access to technology, varying levels of technological proficiency, and compatibility issues) (Roshchin et al., 2022); resistance to change (resistance from stakeholders to new teaching methods, approaches, or collaborative models) (Hubbart, 2023); ethical considerations (decisions oriented towards cultural appropriateness, fairness, and inclusivity) (Baker & Niederman, 2023).

Successfully addressing these challenges requires proactive planning, effective communication, and a commitment to building resilient and adaptable international education projects. Additionally, ongoing evaluation and a willingness to learn from experiences contribute to improved project implementation over time.

Analysis of the the declared problem of international project management activity in educational establishments and its implementation in practice of management of educational systems, revealed a number of contradictions between:

- requirements put forward by society for the quality of management in education and the current state of development of project activities in them;
- theoretical substantiation of structural and content management components of project activity in the educational institution and lack of technological support;
- the need to manage international project activities in the educational establishment and the insufficient level of training of management subjects to implementation of innovative management activity;
- the need to update the image of the school in terms of market relations and lack of awareness by managers of the role of project activity in ensuring competitiveness of the educational institution.

Thus, the purpose of the study is to identify theoretical substantiation and experimental verification of organizational and pedagogical conditions for managing international project activities in the educational establishment.

Accordingly, the research objectives are:

1. To analyze the state of management of international project activities in educational institutions by the example of India and to outline the factors affecting such activities;
2. to verify the organizational and pedagogical conditions of management of international project activities in the educational establishments;
3. to develop recommendations for management of international project activities in educational establishments.

### 3. Materials and Methods

#### 3.1 Research design

To comprehensively investigate the implementation of international project management in education, a mixed-methods research design will be employed. The qualitative component will involve in-depth interviews with project managers, stakeholders, and participants engaged in international education projects. These semi-structured interviews will explore participants' experiences, challenges encountered during implementation, and successful strategies employed. Focus group discussions will complement individual interviews, fostering collaborative dialogue among participants and providing a platform to uncover shared perspectives and diverse insights. Additionally, document analysis will be conducted, reviewing project documentation, reports, and relevant materials to triangulate findings and gain a holistic understanding of the contextual factors influencing implementation.

To enhance the quantitative aspect of the research, a survey instrument will be designed to collect data from a broader sample of participants involved in international education projects. This survey will incorporate Likert-scale questions and open-ended items, capturing



quantitative data on project success metrics, financial considerations, and logistical challenges. The survey will be distributed to a diverse group of project managers, educators, and administrators involved in international projects, allowing for statistical analyses to identify trends and correlations. By integrating both qualitative and quantitative methods, this research design aims to provide a nuanced and comprehensive exploration of the implementation of international project management in education, offering valuable insights for practitioners, policymakers, and researchers in the field.

### 3.2 Participants

The expert group assembled for studying the implementation of international project management in education comprises individuals with diverse and extensive expertise in the fields of education, project management, cross-cultural collaboration, and international relations. The group includes seasoned project managers with a track record of successfully leading and overseeing international educational initiatives, bringing practical insights into the challenges and best practices of project implementation across borders. Their experiences encompass various educational levels, from primary to higher education, ensuring a comprehensive understanding of the unique dynamics at play in different academic contexts.

We involved 24 project management experts and the group includes educators with a deep understanding of international pedagogy and curriculum development. These individuals contribute insights into the academic aspects of international projects, addressing how educational content is adapted, delivered, and assessed in diverse cultural settings. The expert group further incorporates professionals with a background in intercultural communication, helping to analyze the cultural dimensions of international collaboration and communication challenges that may impact project implementation. Lastly, experts in international relations and global policy contribute perspectives on navigating regulatory frameworks, diplomatic considerations, and geopolitical factors that influence the successful execution of educational projects on a global scale. This composition ensures a well-rounded and interdisciplinary approach, fostering a comprehensive understanding of the complexities involved in implementing international project management in education.

### 3.3 Procedures

Studying the implementation of international project management in education involves several stages, each contributing to a comprehensive understanding of the challenges, successes, and best practices. Figure 2 shows the stages in our study, in particular preliminary, main, and concluding stages.

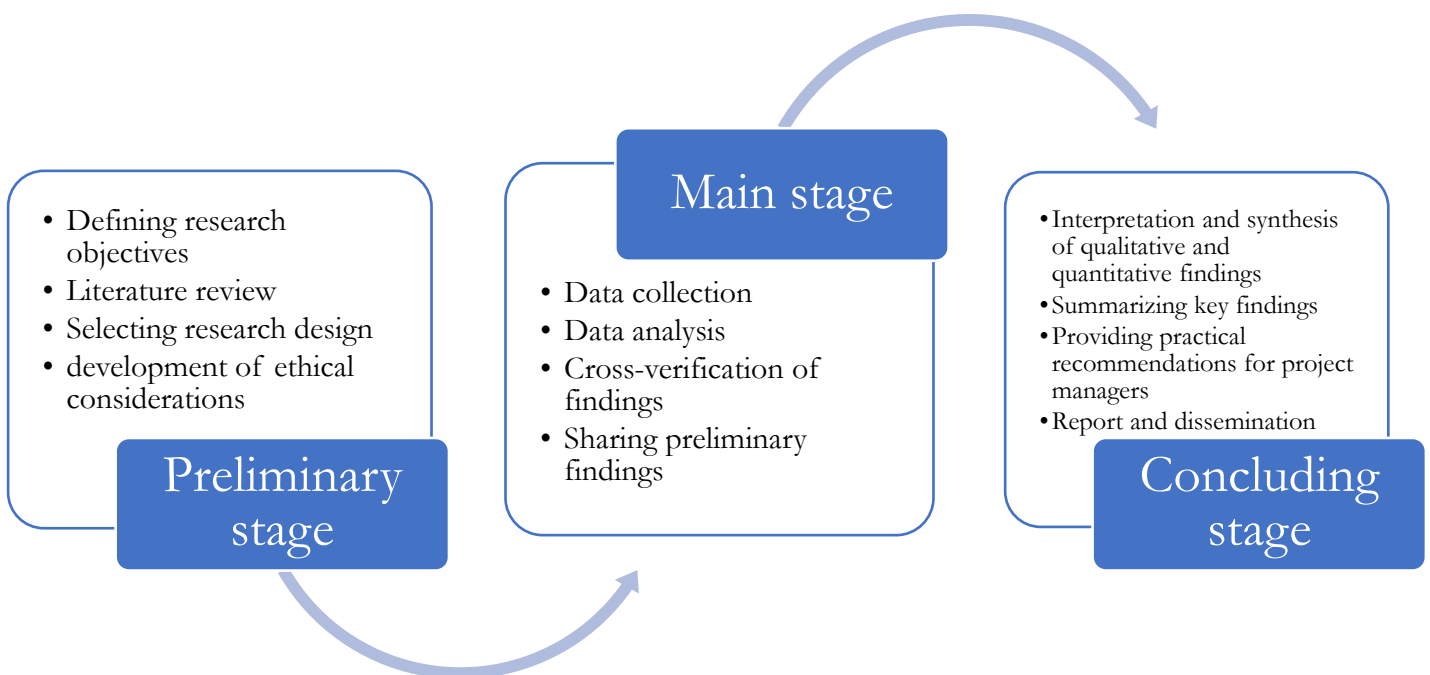


Figure 3. The stages of the research.



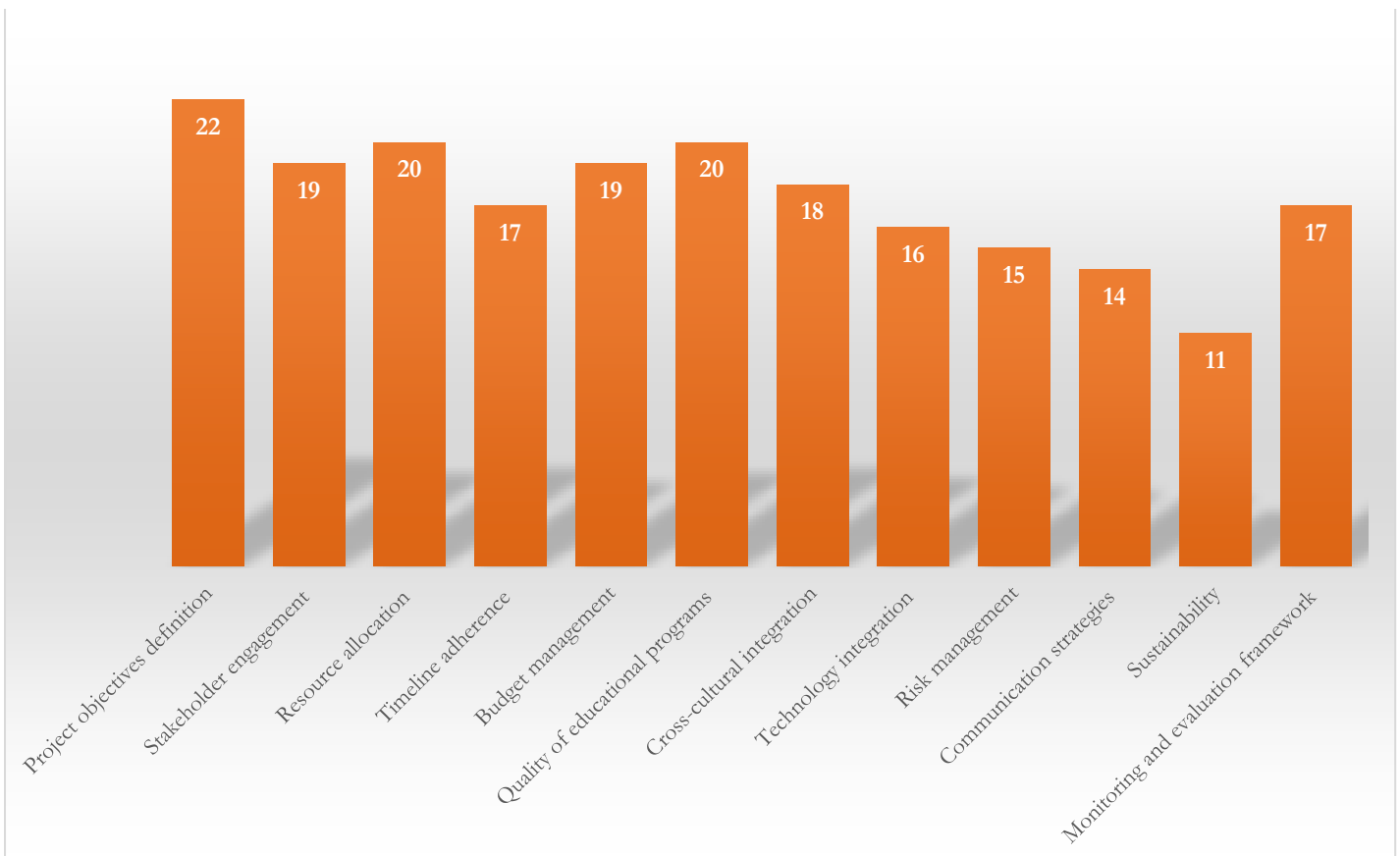
### 3.4 Data analysis

The implementation of international project management at the educational establishment involves several data analysis procedures to assess the effectiveness, challenges, and outcomes of the project. We applied the following data analysis procedures: quantitative analysis (using statistical tools and software to analyze factors such as project timelines, budget variances, and academic performance indicators); qualitative analysis (analysis of qualitative data obtained from interviews, focus groups, and open-ended survey questions, and thematic analysis or content analysis to identify patterns, themes, and trends related to the implementation of international project management); SWOT analysis (Strengths, Weaknesses, Opportunities, Threats analysis specific to the implementation of international project management that involved identification of internal and external factors influencing the project's success); feedback analysis (gathering feedback from participants throughout the project implementation to make iterative adjustments and improvements to the project management processes); report findings (compiling the findings into a comprehensive report that includes data visualizations, statistical summaries, and qualitative insights).

## 4. Results

### 4.1 Analysis of the state of management of international project activities in educational institutions

We found that state of management of international project activities in educational institutions is characterized by experts using the following criteria: project objectives definition, stakeholder engagement, resource allocation, timeline adherence, budget management, quality of educational programs, cross-cultural integration, technology integration, risk management, communication strategies, sustainability, monitoring and evaluation framework. Figure 5 shows the state of management of international project activities in educational institutions. The experts stated that main problems are connected with sustainability or assessment whether the project has the potential for long-term success and can adapt to changing circumstances. Also, a number of participants admitted that the use of wrong communication strategies, poor risk management, and lack of technology integration lead to inefficient management of international project activities in the educational establishments.



**Figure 5.** State of management of international project activities in educational institutions according to experts.

*4.2 Description of internal and external factors affecting management of international project activities in educational institutions*

The successful management of international project activities in the educational institutions is influenced by various internal and external factors. The findings show that internal factors include: leadership and governance, organizational culture, faculty competencies, resource allocation, communication and coordination, strategic planning, risk management, infrastructure and technology, institutional support services, flexibility and adaptability, evaluation and learning culture, and student and stakeholder engagement. Table 1 shows the importance of internal factors of the successful management of international project activities in the educational institutions. By addressing and optimizing these internal factors, educational institutions can enhance their capacity to manage international project activities effectively, leading to successful outcomes and the achievement of broader institutional objectives.

**Table 1.** Importance of internal factors of the successful management of international project activities in the educational institutions (by experts)

Internal factor	Description	Importance (number of experts)
Leadership and governance	The effectiveness of project management is heavily influenced by the leadership and governance structures within the educational institution. Strong and supportive leadership, along with clear governance frameworks, can facilitate decision-making, resource allocation, and project oversight.	18
Organizational culture	A culture that values collaboration, innovation, and openness to new ideas can foster successful project implementation.	16
Faculty competencies	The knowledge, skills, and expertise of faculty and staff involved in international projects are critical. Adequate training and development programs should be in place to enhance their competencies related to cross-cultural communication, international collaboration, and project management.	17
Resource allocation	Adequate allocation of financial, human, and technological resources is essential for the success of international projects.	18
Communication and coordination	Clear lines of communication, both vertically and horizontally, are necessary to ensure that all stakeholders are informed and aligned with project objectives.	12
Strategic planning	Projects should be integrated into the institution's strategic planning processes to ensure coherence and relevance	11
Risk management	The ability to identify, assess, and mitigate risks is essential for managing international projects.	13
Infrastructure and technology	This includes communication tools, project management software, and other technology solutions that facilitate collaboration across borders.	11
Institutional support services	The availability of support services, such as international offices, legal services, and project management offices, can enhance the management of international projects.	10
Flexibility and adaptability	The ability of the institution to adapt to changing circumstances and unexpected challenges is crucial.	11
Evaluation and learning culture	Regularly assessing the outcomes of international projects and incorporating lessons learned into future initiatives contribute to ongoing improvement.	12
Student and stakeholder engagement	Involving students and stakeholders in the planning and execution phases ensures that projects are aligned with their needs and expectations.	14

At the same time, the management of international project activities in educational institutions is influenced by various external factors that are beyond the institution's direct

control. These external factors can impact the planning, execution, and overall success of international projects, and they include regulatory environment, global economic conditions, political stability and geopolitical factors, cultural and language differences, global health and safety concerns, technological infrastructure of partner countries, market conditions and demands, international partnerships and collaboration, globalization trends, funding sources and economic support, public perception and reputation, legal and intellectual property issues, environmental factors, access to research and educational resources. Table 2 shows the importance of external factors affecting the management of international project activities in educational institutions according to experts.

**Table 2.** Importance of external factors of the successful management of international project activities in the educational institutions (by experts)

External factor	Description	Importance (number of experts)
Regulatory environment	The regulatory frameworks and policies of both the home and host countries can significantly impact international projects. Institutions need to navigate visa regulations, compliance with local laws, and other legal requirements, which can vary widely.	9
Global economic conditions	Economic conditions, such as exchange rates, inflation, and global economic trends, can affect the financial aspects of international projects. Fluctuations in currency values, for example, may impact budgeting and financial planning.	8
Political stability and geopolitical factors	Political stability in both the home and host countries is crucial for the success of international projects. Geopolitical tensions, changes in government policies, and international relations can introduce uncertainties that affect project planning and execution.	10
Cultural and language differences	Cultural and language variations present challenges in communication, collaboration, and understanding among project participants. Adapting to diverse cultural norms and linguistic differences is essential for effective international project management.	15
Global health and safety concerns	Events such as pandemics, natural disasters, or health and safety concerns can disrupt international projects. Institutions must consider the potential impact of these external factors on the health and well-being of project participants.	11
Technological infrastructure of partner countries	The technological infrastructure of partner countries may vary, affecting communication, collaboration tools, and access to resources. Differences in technology capabilities can pose challenges for the implementation of international projects.	14
Market conditions and demands	Economic and market conditions in the host country can influence the demand for educational services. Institutions must consider market trends, competition, and the needs of the target audience when planning international projects.	15
International partnerships and collaboration	The strength and stability of partnerships with international institutions or organizations can impact project success. Establishing and maintaining strong collaborative relationships are essential for effective cross-border initiatives.	15
Globalization trends	Ongoing trends in globalization, including increased interconnectedness and mobility, can create opportunities and challenges for international projects. Educational institutions must adapt to changing global dynamics and student mobility patterns.	7
Funding sources and economic support	The availability of funding sources and economic support, both from governmental and non-governmental entities, can influence the feasibility and sustainability of international	15



	projects. Changes in funding availability or conditions may impact project planning.	
Public perception and reputation	The public perception of the institution, both locally and internationally, can affect the success of international projects. A positive reputation may attract more partners and participants, while a negative image can hinder collaboration.	7
Legal and intellectual property issues	Legal considerations, including intellectual property rights and data protection laws, can affect the management of international projects. Institutions must ensure compliance with legal requirements in different jurisdictions.	8
Environmental factors	Environmental considerations, such as climate conditions and sustainability concerns, can impact international projects. Institutions may need to address environmental factors in project planning and implementation.	9
Access to research and educational resources	Availability and access to research materials, educational resources, and facilities in different countries can vary. Institutions must consider the adequacy of resources when planning and executing international projects.	16

#### *4.3 Verification of the organizational and pedagogical conditions of management of international project activities in the educational establishments*

The successful management of international project activities in educational establishments involves considerations of both organizational and pedagogical conditions. We found that organizational conditions for the successful management of international project activities in educational establishments encompass the establishment of strong leadership and governance structures (Fareed et al., 2023), the formulation and adherence to a clear internationalization strategy (Melin, 1992), and the cultivation of a positive and supportive institutional culture that values diversity and innovation (Yao, 2021). Additionally, an effective organizational structure that facilitates seamless communication and coordination (Jones et al., 2020), along with the allocation of adequate financial, human, and technological resources, is essential. The presence of a dedicated international office or department responsible for overseeing and coordinating international initiatives, coupled with robust project management processes and a proactive risk management framework, further ensures efficient execution and achievement of objectives. Building collaborative networks, providing legal and compliance support, and fostering a commitment to continuous improvement contribute to an organizational environment that fosters the success of international project activities, ultimately enhancing the global impact and reputation of the educational institution.

According to our survey, organizational conditions for the successful management of international project activities in educational establishments concern: leadership and governance, the existence of a clear internationalization strategy, positive and supportive institutional culture, organizational structure facilitating effective communication and coordination, the existence of an international office or department, risk management, building and maintaining collaborative networks, and legal support. Figure 6 shows the verification of organizational conditions for the successful management of international project activities in educational establishments by experts.

Pedagogical conditions for the successful management of international project activities in educational establishments involve the integration of global perspectives into the curriculum (Munna, 2022), the professional development of faculty to enhance cross-cultural competencies and project management skills (Kutsak et al., 2023; Zhu & Engels, 2014), and the active engagement of students in international projects to foster a sense of ownership and collaborative learning (Green, 2019). Additionally, the incorporation of technology for virtual collaboration and communication, language support to address linguistic diversity, and the implementation of effective assessment and evaluation mechanisms ensure that the educational value of international activities is maximized. By offering experiential learning opportunities, mentorship programs, and creating a flexible environment that accommodates diverse teaching and learning approaches, educational establishments can empower students and faculty to thrive in international project settings, contributing to the institution's commitment to holistic and globally-oriented education.

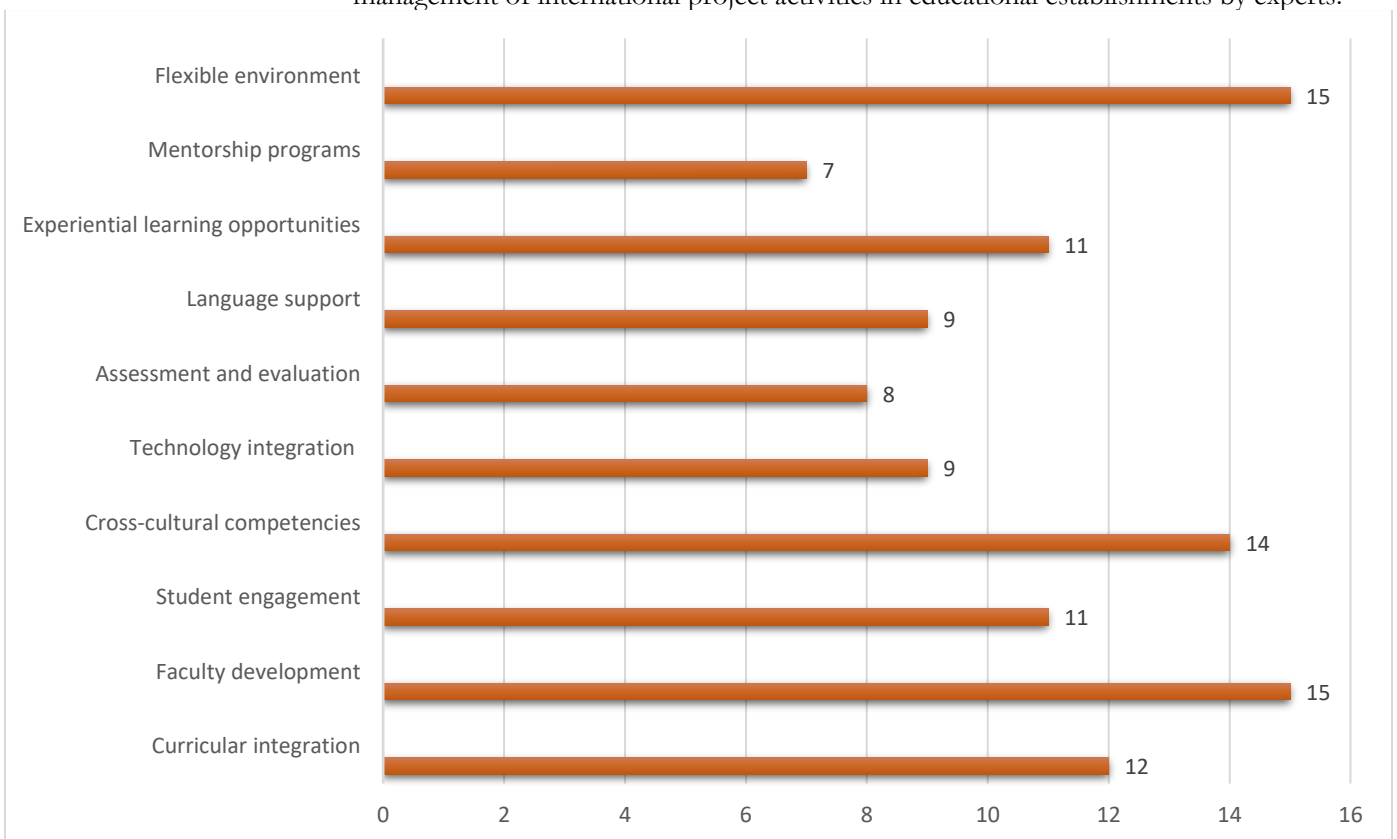
The survey experts stated that pedagogical conditions for the successful management of international project activities in educational establishments include the following: curricular

integration, faculty development, student engagement, cross-cultural competencies among students and faculty, technology integration, implementing effective assessment and evaluation mechanisms, language support, experiential learning opportunities, establishing mentorship programs, flexible environment for innovative teaching and learning.



**Figure 6.** Verification of organizational conditions for the successful management of international project activities in educational establishments.

Figure 7 shows the verification of organizational conditions for the successful management of international project activities in educational establishments by experts.



**Figure 7.** Verification of pedagogical conditions for the successful management of international project activities in educational establishments.

By addressing these organizational and pedagogical conditions, educational establishments can create a conducive environment for the successful management of international project activities. The integration of these factors contributes to a holistic approach that aligns with the institution's mission and goals. Therefore, we think that successful management of international projects in the educational establishments considering organizational and pedagogical conditions require the development of specific recommendations.

#### 4. Discussion

Managing international project activities in educational establishments requires careful planning, coordination, and a strategic approach. The survey enabled us to develop the recommendations for effective management of such projects.

##### ***Development of a clear internationalization strategy***

The development of a clear internationalization strategy is a foundational step in effectively managing international project activities in educational establishments. This strategy provides a roadmap that aligns the institution's goals with global initiatives, ensuring that international projects contribute to the overall mission and vision of the institution. Developing a clear internationalization strategy include needs assessment to understand why internationalization is important for the institution (Melin, 1992); defining the objectives and goals of the internationalization strategy (Alpenidze, 2015); involvement of key stakeholders, including faculty, students, administrators, and external partners, in the development of the internationalization strategy (Li & Xue, 2023); evaluation of the institution's resources, both financial and human, as well as its technological infrastructure, to determine the capacity for managing international projects (Moshtari & Safarpour, 2023); identification of specific regions or countries that align with the goals of the institution's internationalization efforts (Melin, 1992); development of a strategic action plan; integration of internationalization into curriculum and programs; promoting student and faculty mobility; implementation of evaluation and monitoring mechanisms.

##### ***Establishment of strong leadership and governance***

The establishment of strong leadership and governance is crucial for effectively managing international project activities in educational establishments (Fareed et al., 2023). Strong leadership provides vision, direction, and strategic oversight, while effective governance ensures that decision-making processes are transparent, accountable, and aligned with the institution's goals. Strong leadership and governance for managing international projects requires leadership vision and commitment; inclusion of internationalization in institutional mission; strategic planning for internationalization; adoption of inclusive decision-making processes; implementation of effective risk management; support for collaboration and partnerships (Gundersen et al., 2012). By focusing on strong leadership and governance, educational establishments can create an environment that effectively manages international project activities, contributing to the institution's global impact and enriching the educational experiences of students and faculty.

##### ***Faculty professional development***

The dynamic nature of international collaborations requires faculty members to acquire specific skills, competencies, and cultural awareness. Findings (Fomin, 2023; Kutsak et al., 2023; Zhu & Engels, 2014) show that they include strong cross-cultural communication skills to effectively engage with diverse stakeholders; training in global project management principles and practices; cultural competency training to navigate diverse cultural contexts; language proficiency; training on effective international collaboration techniques to build successful partnerships; integration of global perspectives into the curriculum; interdisciplinary collaboration training; engagement in professional networking and form international partnerships; legal and regulatory compliance training; diversity, equity, and inclusion training; emphasizing a culture of continuous learning and professional growth; establishing mentorship programs where experienced faculty guide those newer to international collaborations; technology training for virtual collaboration; training on evaluation and reflection practices. Faculty professional development helps educational establishments empower their educators to navigate the complexities of international project activities successfully. This, in turn, contributes to the institution's global reputation, enhances the educational experience for students, and fosters a culture of continuous improvement and innovation.

### ***Engagement of students actively in the planning and execution of international projects***

The active engagement of students in the planning and execution of international projects is a key strategy for successfully managing international project activities in educational establishments. Involving students in the process not only enriches their learning experiences but also contributes to the overall success and sustainability of global initiatives (Babaei et al., 2023; Choi et al., 2023; Prebanić & Vukomanović, 2023). It demands student participation in project design; formation of student project teams or committees; student-led initiatives; cross-cultural students' collaboration; integration into coursework allowing students to engage with the project as part of their academic curriculum; offering study abroad opportunities as part of international projects; encouragement of students to contribute to the project through research initiatives, academic papers, or presentations; facilitating collaborative research projects where students work alongside faculty members in addressing specific aspects of the international project; promotion of peer-to-peer learning within the student community; involvement of students in communication and outreach efforts related to the international project; integration of reflection and evaluation activities into the project; recognition and celebration of student contributions. Involving students in the planning and execution of international projects enhances the educational experience but also creates a culture of student empowerment, global citizenship, and collaborative learning.

### ***Integration of technology for collaboration***

Technology facilitates seamless communication, enhances collaboration, and streamlines project management across geographical boundaries. According to our findings (Adomako & Nguyen, 2023; Roshchin et al., 2022), to integrate technology for collaboration, educational establishments are to implement virtual collaboration platforms that enable real-time communication and interaction among project participants; to use project management software to streamline planning, scheduling, and tracking of international projects; to embrace cloud-based storage solutions for secure and accessible document sharing; to enable collaborative document editing tools that allow multiple users to work on documents simultaneously and to enhance teamwork; to organize video conferencing and webinars; to establish online communication channels, such as discussion forums, messaging apps, or project-specific communication platforms; to employ collaborative data analysis tools for projects that involve research or data-driven decision-making; to integrate language translation tools to overcome language barriers among international team members; to engage with global collaboration platforms designed to connect educational institutions worldwide; to create digital collaboration workspaces; to implement robust cybersecurity measures to safeguard project data and communications.

### ***Incorporation of global perspectives into the curriculum***

The incorporation of global perspectives into the curriculum is a fundamental strategy for effectively managing international project activities in educational establishments (Munna, 2022). This approach ensures that students are exposed to diverse cultural, social, and economic contexts, preparing them to navigate the complexities of an interconnected world. Key considerations for incorporating global perspectives into the curriculum are the following: integration of global learning objectives; development of multidisciplinary courses; incorporation of case studies to illustrate real-world applications of theoretical concepts; facilitation of cross-cultural experiences, such as study abroad programs, exchange initiatives, or virtual collaborations with students from other countries; globalization of elective courses; promotion of critical thinking about global issues; encouragement of reflective practices. Incorporating global perspectives into the curriculum helps educational establishments to prepare students to actively engage in international project activities with cultural sensitivity, adaptability, and a broader worldview.

### ***Implementation of effective assessment and evaluation***

Implementing effective assessment and evaluation strategies ensures that the goals of the projects are met, learning outcomes are achieved, and continuous improvement can be realized. In the context of international project activities these strategies are introduced through a number of measures (Melin, 1992; Tavares, 1999), such as defining clear objectives and expected outcomes for the international project; development of comprehensive assessment plans; employment of a variety of assessment methods; incorporation of formative and summative assessments; implementation of peer and self-assessment; assessment of intercultural competencies; considering project-based assessments; collecting qualitative and quantitative data; engagement of stakeholders in evaluation; implementing post-project evaluations; encouragement of continuous improvement. Implementing



effective assessment and evaluation strategies enhances the educational experience for students but also informs institutional strategies for future global initiatives.

### ***Fostering culture of flexibility and adaptability***

This ensures that institutions can navigate the dynamic and diverse challenges associated with global collaborations. The main approaches to cultivating a culture of flexibility and adaptability include open communication; cross-cultural training; innovation and creativity; flexible project plans; regular checkpoints and project reviews to assess progress and identify potential challenges; flexible educational environment; training opportunities to develop skills that enhance adaptability; formation of cross-functional collaboration; mechanisms for continuous feedback throughout the project; supportive organizational culture (Jalali Sohi et al., 2020; Romagnoli et al., 2022). By integrating these approaches, educational establishments can establish a culture that values flexibility and adaptability, enabling them to effectively manage the complexities and uncertainties inherent in international project activities. This culture not only enhances the success of individual projects but also positions institutions to thrive in an ever-evolving global landscape

Therefore, successful management of international projects in educational establishments requires a dynamic blend of strategic planning, adaptive leadership, and a commitment to fostering a global mindset. Embracing flexibility, continuous improvement, and cross-cultural collaboration positions institutions to navigate complexities, enrich educational experiences, and prepare students for a globally interconnected future

## **5. Conclusions**

The exploration of the implementation of international project management at educational establishments has unveiled a multifaceted landscape that demands strategic foresight, adaptive leadership, and a holistic commitment to global engagement. The findings of this research underscore the pivotal importance of a well-defined internationalization strategy as the linchpin for successful project management initiatives. Articulating clear objectives, aligning institutional goals, and creating a dynamic roadmap that encapsulates the diverse facets of global collaboration form the bedrock of this strategic imperative.

Crucially, the role of strong leadership and governance cannot be overstated. The efficacy of international project management within educational establishments hinges on the presence of leaders with a global vision and the ability to navigate the complexities of cross-cultural collaboration. Leaders must not only champion the cause of internationalization but also establish transparent governance structures that foster accountability and inclusivity. The creation of a dedicated international office or department emerges as a cornerstone, providing a centralized hub for expertise, coordination, and oversight.

One of the key takeaways from this research is the imperative to cultivate a global mindset among stakeholders. Education, in essence, becomes a dynamic exchange where cultural diversity is embraced, and students and faculty are equipped with the skills to thrive in an interconnected world. The integration of international perspectives into the curriculum and the promotion of student and faculty mobility emerge as powerful strategies for infusing a global ethos into the educational fabric. This research underscores that such initiatives not only enrich the educational experience but also contribute to the development of well-rounded, globally competent individuals poised to navigate the challenges of the 21st century.

Technological integration surfaces as a critical enabler for successful international project management. The digital landscape offers a myriad of tools for communication, collaboration, and project monitoring, bridging geographical gaps and facilitating seamless interaction among project participants. However, the research highlights the importance of balancing technological advancements with an awareness of the varying technological infrastructures in different regions. Institutions must adopt flexible and inclusive approaches that accommodate diverse technological capabilities.

Furthermore, the establishment of effective risk management mechanisms is paramount. International projects inherently involve navigating unfamiliar territories, whether legal, financial, or logistical. The ability to identify, assess, and mitigate risks is foundational for ensuring the success and sustainability of international initiatives. A proactive approach to risk management contributes to resilience in the face of unexpected challenges, ensuring that projects stay on course despite the uncertainties inherent in the global landscape.

Collaborative networks and partnerships emerge as catalysts for success in international project management. Establishing and nurturing relationships with international institutions, industry partners, and governmental agencies enriches the collaborative ecosystem. The

research emphasizes the need for institutions to actively seek and leverage partnerships that align with their goals, fostering a spirit of mutual benefit and shared success.

As educational establishments embark on international projects, it is imperative to embrace a culture of continuous evaluation and adaptation. Regular assessments of project outcomes, stakeholder feedback, and ongoing monitoring contribute to a culture of continuous improvement. Institutions must be agile and responsive, ready to refine strategies, embrace innovative approaches, and learn from both successes and challenges.

In conclusion, the implementation of international project management in educational establishments is a transformative journey that demands strategic vision, effective leadership, and a steadfast commitment to fostering a global mindset. The insights gleaned from this research provide a robust framework for institutions seeking to navigate the complexities of internationalization successfully. By integrating these findings into their practices, educational establishments have the opportunity not only to enrich the educational experiences of their stakeholders but also to position themselves as trailblazers in the global landscape of education. The research underscores that, as educational institutions venture into the realm of international project management, they embark on a journey that has the potential to redefine and elevate the impact of education on a global scale.

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Research article

# The use of modern technologies to form professional culture among future management specialists

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**Abstract:** This research article investigates the transformative impact of modern technologies on the development of professional culture among emerging management specialists. In an era marked by rapid technological advancements, the integration of digital tools, artificial intelligence, and virtual platforms is reshaping the landscape of management education and professional practice. This study employs a multi-faceted approach, combining qualitative and quantitative methods, to explore how technology influences the values, communication patterns, and decision-making processes within the professional culture of future management specialists. The research delves into the evolving dynamics of leadership values in the digital age and the extent to which technology-driven communication patterns shape the interactions among management professionals. Furthermore, it examines the impact of digital tools on decision-making autonomy, risk tolerance, and collaborative practices within management teams. The study also explores the role of technology in fostering continuous learning and professional development, considering the influence of online platforms, virtual mentorship programs, and adaptive learning technologies. Findings from this research contribute valuable insights to academia and industry, shedding light on the symbiotic relationship between modern technologies and the formation of professional culture among future management specialists. As organizations increasingly rely on digital solutions, understanding the nuances of this relationship becomes imperative for educators, practitioners, and policymakers seeking to cultivate a dynamic and adaptive management workforce.

**Keywords:** future management specialists; innovative technologies; challenges; model

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## 1. Introduction

Complications of modern economic, technological and political relations require, first of all, not only deep knowledge and personal abilities from managers, but also special professional training and qualifications in the field of management as a specific practical activity related to the process of decision-making, ability to use various resources, responsibility for the results of the entire entrepreneurial process (Muzam, 2023). The nature of the manager's work is determined in the context of the implementation of the functions of the manager, whose task is integration of management system into a single whole, coordination of actions of its links and ensuring unity and structure of the management system as a whole (Glaister, 2014). Consequently, training of future management specialists is logical and scientific understanding of the professional activity of managers as an organized, continuous and purposeful process aimed at the acquisition of knowledge, acquisition of special competences that form the culture of professional activity (Strelcow, 2023).

Modern scientific research on the state of professional training of the future managers testify that there are a number of contradictions associated with formation of professional culture of future specialists (Veselovská & Hudáková, 2023), in particular between employers' requirements for the level of managers' professional culture and its insufficient level; between necessity training of managers with a high level of professional formation of culture and insufficient research of its theoretical and methodological approaches to the development in professional training; between higher education requirements and poor systematicity in the professional orientation of educational training programs for future managers; between the content of future professional activity and content of professionally oriented disciplines.

The above presents new challenges for the higher education system, which involve a radical renewal of the methods of training highly professional managers and actualizes the problem of forming a culture of professional activity of future managers in the educational environment of the university.

## 2. Literature Review

World transformational processes associated with globalization and internationalization of the economic environment, information and communication megaspace require specialists with formed system of professional knowledge, abilities and skills and high professional culture (McLean, 2002). As a scientific problem, the concept of “professional culture” became an object of many scientists, which respectively caused the existence of a large number of definitions and methods of interpretation its essence and structure (Yatsura, 2023).

Interpretation of professional culture of management specialists can be approached from various theoretical perspectives. Firstly, it is organizational culture theory that focuses on the shared values, beliefs, and norms within an organization (Bloor & Dawson, 1994). It examines how these elements shape the behavior and decisions of management specialists. Secondly, it is Hofstede’s cultural dimensions theory and it identifies six cultural dimensions that influence behavior in organizations: power distance, individualism vs. collectivism, masculinity vs. femininity, uncertainty avoidance, long-term orientation vs. short-term normative orientation, and indulgence vs. restraint (Hofstede, 2011). Thirdly, professional culture of managers is associated with social identity theory that suggests that individuals categorize themselves and others into social groups based on shared characteristics (Ashforth & Mael, 1989). Fourthly, cultural intelligence theory involves the capability to work effectively in culturally diverse settings (Lee, 2023). This theory emphasizes the importance of understanding and adapting to different cultural contexts. Each of these theoretical approaches offers a unique perspective on the interpretation of the professional culture of management specialists, providing insights into different aspects of their behavior, decision-making, and interactions within the organizational context.

Thus, after examining different approaches to defining the concept of professional culture, we can claim that it is the basic formation that determines the principles of professional activity. In this context, culture is necessary to be considered as a means and a way of realizing the essential forces of a person in his social activities. According to Zarlenga et al. (2016), cultural activity is dynamic social phenomenon that changes conditions of social activity of the specialists, through their motives, incentives, goals of activity.

Also, it is worth mentioning that characteristic of cultural activity is creative activity, since it is connected with the process of realization, self-improvement, self-development of personality, and by its nature cultural activity is communicative activity, as an exchange of essential forces between people, as a dialogue between two cultures (internal and external) (Ellinas et al., 2017; Fietz et al., 2021). Therefore, one of the main purposes of professional culture is direct and design the activity of a specialist with the help of standards, samples, or algorithms (Pronzato, 2023).

Recent findings describe the structure of the professional culture of management specialists as a set of multifaceted and encompasses various elements that shape their beliefs, values, behaviors, and interactions within the organizational context (Kucharska, 2021; Szczepańska-Woszczyzna, 2018). Figure 1 shows the components of professional culture of management specialists.

*Values and beliefs* include leadership values and organizational vision since professional culture often revolves around certain leadership values, such as integrity, accountability, and strategic vision (Joseph & Kibera, 2019). These values guide the decision-making process and set expectations for managerial behavior.

*Communication patterns* refer to communication styles and they dictate the balance between formal and informal communication. Also, professional culture influences communication styles, emphasizing clarity, directness, collaboration, or consensus-building, depending on the organizational norms (Wiesenfeld et al., 1998).

*Decision-making processes* is oriented towards the degree of autonomy management specialists, their collaboration and consensus-building. Decision-making processes determine the organization’s risk tolerance and how management specialists approach decision-making under uncertainty (Szczepańska-Woszczyzna, 2018). This can impact innovation and the pursuit of new opportunities.



**Figure 1.** Components of professional culture of management specialists.

*Professional development* refers to continuous learning and mentorship programs. The culture may encourage a commitment to continuous learning and professional development, and the mentorship programs and leadership development initiatives contributes to the professional culture (Pyliaeva & Kochyna, 2020). These programs foster a sense of growth and career progression among management specialists.

*Team dynamics* emphasizes collaboration and teamwork or, alternatively, foster a more competitive environment among management specialists (Oyefusi, 2022). In addition, it is associated with professional culture values inclusivity and diversity that provide values diverse perspectives and adaptability.

*Professional ethics* adheres to professional ethics, integrity, and ethical decision-making are fundamental aspects of the culture (Pyliaeva & Kochyna, 2020).

Understanding the structure of the professional culture of management specialists involves analyzing the interplay of these elements, recognizing that they contribute to a collective identity and shared norms within the management community of an organization. This structure evolves over time and is influenced by leadership, organizational history, and external factors.

It should be noted that the professional culture of a specialist cannot be considered only as a system of special, narrowly professional knowledge, abilities and skills. These concepts are much broader and combine the entire spiritual potentials of personality, intellectual, emotional and practical-action components of its consciousness. Professional culture determines the cognitive interests of a student, conditions his outlook, value orientations, general life attributes (Peterlin et al., 2021). According to this view, professional culture should be considered as integrated personality quality. It is appropriate to resort to structural analysis from the standpoint of pedagogy not only the essence of the concept of professional culture of the individual, but also the process of its formation (Stukalenko et al., 2016), since one of the target instructions of education is training of students to social and professional self-determination.



Training of future managers at the educational institutions involves a comprehensive approach that addresses both theoretical knowledge and practical skills (Stupak, 2020). The requirements for training future managers encompass various elements to ensure graduates are well-prepared for the complexities of the professional world. They include effective curriculum development (Vance, 1988); experiential learning opportunities through internships and work placements of case studies and simulations (Armstrong & Mahmud, 2008); industry collaboration (O'Dwyer et al., 2023); soft skills development that refers to communication and interpersonal skills, leadership, adaptability, and ethical decision-making (Lamri & Lubart, 2023); global perspective (Stupak, 2020); ethics and social responsibility (Weber, 1990); continuous learning culture (Wallo et al., 2022); assessment and feedback mechanisms (Weber, 1990); innovation and creativity (Yatsura, 2023). By meeting these requirements, educational institutions can ensure that future managers are not only equipped with the necessary theoretical knowledge but also possess the practical skills and attitudes essential for success in the ever-evolving field of management.

Technologies of formation of professional culture among future management specialists encompass a diverse array of tools designed to cultivate a dynamic and adaptive learning environment (Yatsura, 2023). These technologies play a pivotal role in shaping the values, skills, and collaborative behaviors that are integral to the professional culture of management specialists. Learning Management Systems serve as foundational platforms, organizing course content, facilitating collaboration, and providing a structured space for assessments (Yudina, 2018). Virtual collaboration tools, such as video conferencing platforms and online collaborative tools, promote real-time interaction among students and educators, fostering teamwork and communication skills crucial for future managers (Morrison-Smith & Ruiz, 2020). Additionally, technologies like simulations and gamification engage students in interactive learning experiences, allowing them to apply theoretical knowledge to practical scenarios in a risk-free environment (Stupak, 2020). Social media platforms contribute to professional networking, connecting future management specialists with industry professionals and peers, thus expanding their exposure to diverse perspectives and industry trends (Morrison-Smith & Ruiz, 2020). These technologies collectively contribute to the development of a professional culture that values continuous learning, collaboration, and adaptability.

Moreover, adaptive learning systems and AI-driven personalized learning technologies cater to individual learning styles, tailoring educational content to the unique needs of each future management specialist (Fadieieva, 2023). Mobile learning apps provide flexibility, allowing access to educational resources on-the-go, supporting a culture of continuous learning outside traditional classroom settings (Morrison-Smith & Ruiz, 2020). Technologies like augmented reality and virtual reality offer immersive learning experiences, enabling future managers to simulate real-world scenarios and develop practical skills (Yudina, 2018). The integration of blockchain technology and AI analytics prepares management specialists for emerging trends, emphasizing transparency and data-driven decision-making (Walsh et al., 2021). Overall, these technologies collectively contribute to the holistic development of professional culture among future management specialists, fostering a tech-savvy and adaptive workforce equipped to navigate the complexities of modern management roles. Table 1 shows the analysis of innovative technologies used to form professional culture among future management specialists.

**Table 1.** Analysis of innovative technologies used to form professional culture among future management specialists.

Technology	Application
Learning Management Systems	provide a centralized hub for managing educational content, assessments, and collaboration tools; facilitate structured and organized learning experiences; provide an access to course materials; engage in discussions.
Virtual Reality and Augmented Reality	create immersive learning environments that simulate real-world scenarios; enhance experiential learning and practical skill development.
Online collaboration tools	enable remote teamwork and communication organize collaboration of students in virtual teams, engagement in online discussions, and work on projects.
Data analytics and business intelligence tools	help analyze and interpret data;



	provide insights into business trends, performance metrics, and decision-making processes; develop data-driven decision-making skills by using analytics tools to analyze business data; identify patterns and make informed managerial decisions.
Social media platforms	facilitate communication, networking, and knowledge sharing among individuals in the management field; contribute to the development of a professional online presence.
Artificial Intelligence and Machine Learning	personalize learning experiences; automate routine tasks; provide intelligent insights.
E-learning platforms and massive open online courses (MOOCs)	offer courses and certifications from universities and organizations worldwide; provide accessible and flexible learning opportunities.
Blockchain technology	ensure transparency, security, and traceability of transactions, which can be applied to various management processes.
Gamification	integrate game-like elements into learning experiences to enhance engagement and motivation; gamified training programs can simulate business challenges, fostering a competitive and engaging learning environment.
Adaptive learning systems	tailor educational content based on individual learner needs; optimize the learning experience; customize assessment.

The integration of these technologies in management education enhances the formation of a professional culture that is tech-savvy, adaptive, and aligned with the demands of contemporary managerial roles. By leveraging these tools, educational institutions can better prepare future management specialists for the challenges and opportunities presented by the digital age.

Therefore, the research objective is to determine and theoretically substantiate pedagogical conditions for the development of professional culture of future managers in the conditions of university and to identify key factors influencing the successful implementation of technologies in the educational process.

It addresses the following research questions:

- 4) What technologies are used to form professional culture among future management specialists?
- 5) What are the advantages of using innovative technologies to form professional culture among future management specialists?
- 6) What difficulties hinder the process of formation of professional culture among future management specialists?
- 7) What is the model of formation professional culture among future management specialists?

### 3. Materials and Methods

In the research concerning the use of modern technologies to form professional culture among future management specialists, the section Materials and Methods outlines the approach and tools employed to investigate the impact of modern technologies on the development of professional culture in emerging management professionals. The section is designed to provide transparency and reproducibility, allowing readers to understand how the study was conducted.

#### 3.1 Participants

The study included a diverse and representative sample of future managers enrolled in various management programs across reputable universities and business schools through the country (36 individuals). The participants ranged from undergraduate students majoring in business and management to graduate students pursuing advanced degrees in management-related disciplines. Also, the participants encompassed a spectrum of academic levels, including undergraduate, master's, and doctoral students. This diversity allowed for a comprehensive understanding of the impact of technology on professional culture across different stages of academic development. The age range of participants varied from traditional students entering higher education directly from high school to mature students



with prior work experience. We made the efforts to ensure gender balance and cultural diversity within the participant pool. This inclusivity aimed to account for potential variations in the adoption and perception of technology across diverse demographics.

### *3.2 Research Design*

The research design for a study investigating the use of technologies to form professional culture among future managers is a critical component that dictates the methodological approach and the structure of the investigation. A mixed-methods research design, combining both qualitative and quantitative elements, is deemed appropriate to provide a comprehensive understanding of the multifaceted relationship between technology use and the development of professional culture in aspiring managers. This design integrates the strengths of quantitative data, such as surveys measuring the frequency and perceived impact of technology use, with qualitative data obtained through in-depth interviews, capturing the nuanced perspectives and experiences of future managers in the context of professional culture formation.

### *3.3 Data Analysis*

The data analysis process for a research study on the use of technologies to form professional culture among future managers involves a systematic approach to interpreting both quantitative and qualitative data. In the quantitative strand of the analysis, statistical techniques were employed to identify patterns, relationships, and trends within the survey data. Descriptive statistics, such as means and frequencies, will be used to provide a summary of participants' responses regarding the frequency and extent of technology utilization in their professional development. Additionally, inferential statistics, such as correlation analyses, was conducted to explore potential relationships between the variables of interest, such as the correlation between the frequency of technology use and perceived impact on professional culture formation. This quantitative analysis aimed to generate numerical insights into the overarching trends in the participants' experiences with technology and its role in shaping their professional culture.

In the qualitative strand, thematic analysis was employed to identify recurring patterns, themes, and insights emerging from the in-depth interviews. The qualitative data were transcribed and coded, with codes grouped into broader themes representing the various ways in which technology impacts the formation of professional culture. Integrating the quantitative and qualitative findings will involve a comparative analysis, where patterns identified in the quantitative data will be explored further and contextualized through the qualitative narratives. This mixed-methods approach ensures a comprehensive understanding of the complex interplay between technology use and the formation of professional culture among future managers.

### *3.4 Ethical Considerations*

Ensuring ethical considerations is paramount in any research study, particularly one that explores sensitive topics such as the use of technologies to form professional culture among future managers. First and foremost, informed consent will be obtained from all participants, clearly outlining the purpose of the study, the voluntary nature of participation, and the potential risks and benefits associated with their involvement. Participants were informed that they had the right to withdraw from the study at any time without facing any consequences. Confidentiality and privacy were rigorously maintained; all collected data were anonymized, and any information that could identify individual participants will be kept confidential. This commitment to confidentiality extended to the reporting and dissemination of findings, ensuring that participants' identities are protected in all research outputs.

Additionally, the research design and procedures adhered to ethical guidelines and standards set by relevant institutional review boards and professional organizations. The study prioritized the well-being of participants, ensuring that their experiences with technology and the formation of professional culture are explored in a respectful and considerate manner. Given the potential sensitivity of the topic, efforts were made to minimize any potential psychological discomfort or stress among participants during data collection. Any potential conflicts of interest were transparently disclosed, and the research was conducted with integrity, honesty, and a commitment to advancing knowledge in an ethical manner. The research findings were reported accurately, and interpretations were grounded in the collected data, avoiding any form of manipulation or misrepresentation. By addressing these ethical considerations, the study aimed to contribute valuable insights to the field of management education while upholding the rights and well-being of the participants involved.



## 4. Results

### 4.1 Technologies used to form professional culture among future management specialists

The findings showed that online collaboration tools and gamification are the most frequently used technologies to form professional culture among future management specialists. At the same time, Artificial Intelligence and Machine Learning Blockchain technologies are the least frequently used in the educational process. Table 2 demonstrates the detailed analysis of innovative technologies used to form professional culture among future management specialists.

**Table 2.** Analysis of innovative technologies used to form professional culture among future management specialists.

Technology	Frequency of usage			
	Always	Often	Rarely	Never
Learning Management Systems	5	12	16	3
Virtual Reality and Augmented Reality	4	15	12	5
Online collaboration tools	12	24	0	0
Data analytics and business intelligence tools	2	13	18	3
Social media platforms	9	20	6	1
Artificial Intelligence and Machine Learning	1	17	11	7
E-learning platforms and massive open online courses (MOOCs)	3	16	15	2
Blockchain technology	0	4	19	11
Gamification	16	19	1	0
Adaptive learning systems	3	18	10	4

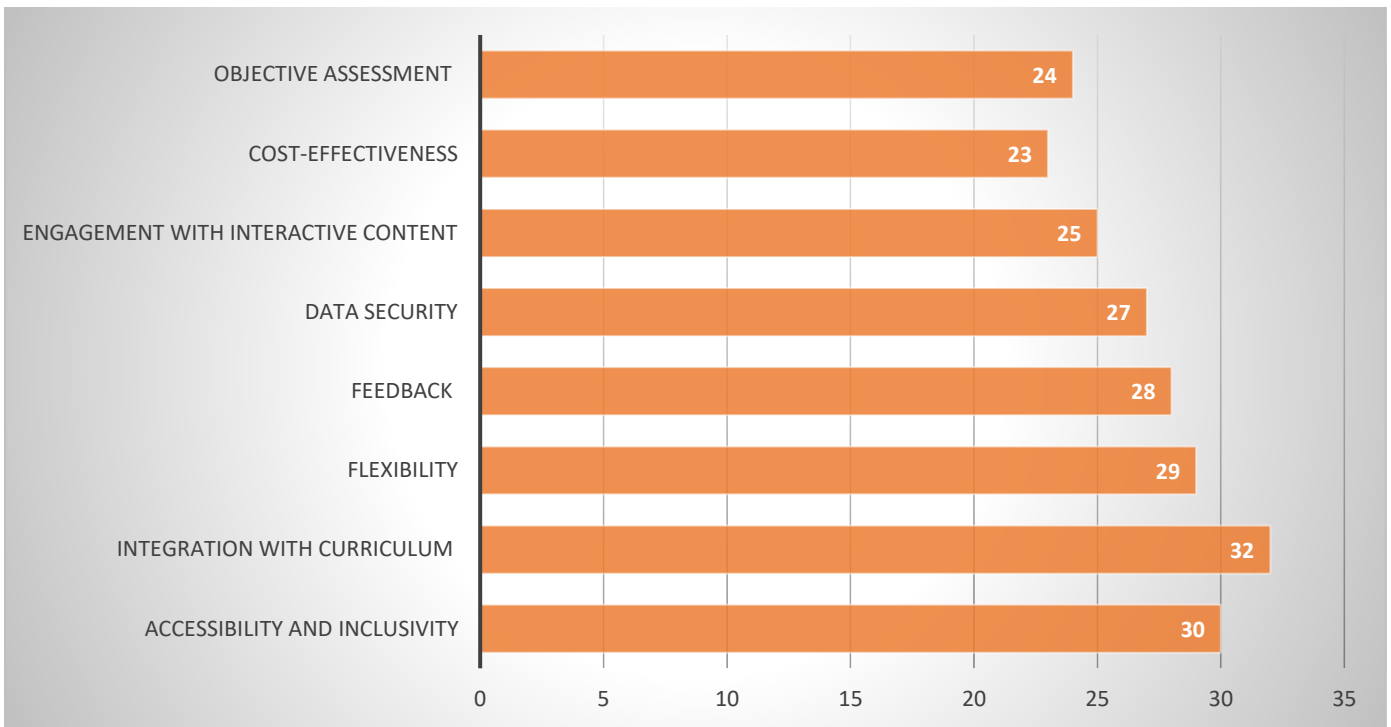
The choice of these technologies in management education requires careful consideration of several key requirements to ensure their meaningful integration and impact. The participants described the criteria to select technologies in the educational process. By addressing these requirements, educational institutions can harness the full potential of innovative technologies to form a professional culture among future managers. This holistic approach ensures that technology serves as an enabler, contributing to a dynamic and effective learning environment. Figure 2 shows the requirements to innovative technologies used to form professional culture among future management specialists based on participants' opinions.

### 4.2 Advantages of using innovative technologies to form professional culture among future management specialists

The survey showed that the integration of innovative technologies to form a professional culture among future managers brings forth numerous advantages, propelling organizational development and preparing leaders for the complexities of the modern business landscape. Firstly, these technologies enable immersive and dynamic learning experiences, fostering a culture that values continuous education and adaptability. Virtual and augmented reality tools, for instance, allow future managers to engage in lifelike simulations, providing hands-on experiences in decision-making, crisis management, and strategic planning. This not only enhances their skill set but also instills a proactive mindset towards embracing new challenges. Additionally, the incorporation of artificial intelligence and machine learning technologies facilitates data-driven decision-making, empowering future managers to make informed choices based on real-time insights. This contributes to a culture that values analytical thinking, strategic foresight, and the ability to navigate the complexities of a rapidly evolving business environment.

Secondly, the use of innovative technologies in communication and collaboration platforms fosters a culture that prioritizes connectivity and effective teamwork. Cloud-based collaboration tools, video conferencing platforms, and project management software create seamless virtual work environments, breaking down geographical barriers and promoting cross-functional collaboration. Future managers can leverage these technologies to engage in real-time discussions, share information, and work collaboratively on projects, cultivating a culture that values open communication, inclusivity, and the ability to work across diverse

teams. Moreover, the adoption of innovative technologies supports the creation of a flexible and adaptive work culture.



**Figure 2.** Requirements to innovative technologies used to form professional culture among future management specialists.

Remote work solutions, mobile applications, and digital communication tools enable future managers to balance work and life demands, contributing to a culture that values work-life integration, autonomy, and the ability to thrive in evolving work environments. In essence, the incorporation of innovative technologies not only equips future managers with essential skills but also shapes a professional culture that embraces change, values collaboration, and champions a forward-thinking approach to organizational success. Table 3 shows the analysis of advantages of using innovative technologies to form professional culture among future management specialists according to experts' opinions.

**Table 3.** Advantages of using innovative technologies to form professional culture among future management specialists according to experts' opinions.

Technology	Advantages
Learning Management Systems	<ul style="list-style-type: none"> <li>provide a centralized platform for managing educational resources, course content, and communication;</li> <li>allow for the creation of flexible learning paths, catering to the diverse needs and learning styles of future managers;</li> <li>offer anytime, anywhere access to learning materials;</li> <li>facilitate collaborative learning through discussion forums, group projects, and virtual collaboration spaces;</li> <li>enable the implementation of various assessment tools, including quizzes, assignments, and discussion participation metrics;</li> <li>provide administrators and instructors with insights into learner progress through analytics and reporting features;</li> <li>support the integration of multimedia elements, interactive modules, and gamified content.</li> </ul>
Virtual Reality and Augmented Reality	<ul style="list-style-type: none"> <li>enable the creation of realistic simulations that replicate professional environments;</li> <li>provide experiential learning opportunities by immersing learners in dynamic, interactive scenarios;</li> <li>facilitate remote collaboration among future managers, overcoming geographical barriers;</li> </ul>



	<ul style="list-style-type: none"> <li>• allow for interactive training modules where future managers can access relevant information, statistics, or contextual details related to their surroundings, fostering a culture of continuous learning and adaptability;</li> <li>• enhance soft skills, such as communication, leadership, and interpersonal skills;</li> <li>• develop technological literacy and an appreciation for innovation;</li> <li>• offer customizable learning paths, tailoring experiences to individual learner needs.</li> </ul>
Online collaboration tools	<ul style="list-style-type: none"> <li>• enable future managers to collaborate seamlessly regardless of geographical locations;</li> <li>• offer real-time communication channels, including instant messaging, video conferencing, and discussion forums;</li> <li>• facilitate efficient collaboration on projects;</li> <li>• allow future managers to plan, organize, and track tasks;</li> <li>• serve as repositories for shared knowledge and resources;</li> <li>• facilitate cross-functional collaboration, allowing future managers from different departments or disciplines to work together seamlessly;</li> <li>• support virtual meetings and workshops, enabling future managers to participate in interactive sessions without physical proximity;</li> <li>• enable inclusive decision-making by providing platforms for input from all team members.</li> </ul>
Data analytics and business intelligence tools	<ul style="list-style-type: none"> <li>• enable the monitoring of key performance indicators and performance metrics;</li> <li>• support strategic planning and forecasting;</li> <li>• allow future managers to identify areas for improvement and optimization;</li> <li>• foster a culture of innovation by providing insights into emerging trends and market dynamics;</li> <li>• facilitate cross-functional collaboration by providing a common data platform;</li> <li>• simplify complex data into understandable visual formats;</li> <li>• enable future managers to assess and mitigate risks effectively;</li> <li>• help future managers stay responsive to market changes.</li> </ul>
Social media platforms	<ul style="list-style-type: none"> <li>• provide future managers with expansive networking opportunities;</li> <li>• facilitate knowledge sharing and collaboration;</li> <li>• allows future managers to participate in professional conversations and share relevant content;</li> <li>• enable future managers to communicate effectively and establish thought leadership;</li> <li>• facilitate the building of professional communities;</li> <li>• allow for the rapid sharing of information;</li> <li>• provide opportunities for receiving feedback and recognition.</li> </ul>
Artificial Intelligence and Machine Learning	<ul style="list-style-type: none"> <li>• enable data-driven decision-making by analyzing large datasets to identify patterns and trends;</li> <li>• automate routine and repetitive tasks;</li> <li>• personalize learning experiences by analyzing individual preferences and learning styles;</li> <li>• predict talent needs, identify high-potential employees, and optimize workforce planning;</li> <li>• provide timely feedback and support;</li> <li>• provide advanced analytics for strategic planning;</li> <li>• offer ethical decision support by analyzing potential ethical implications of decisions.</li> </ul>
E-learning platforms and massive open online courses (MOOCs)	<ul style="list-style-type: none"> <li>• provide flexibility in learning, allowing future managers to access courses and resources at their own pace and convenience;</li> <li>• offer global accessibility, allowing future managers from diverse geographical locations to access high-quality educational content;</li> </ul>



	<ul style="list-style-type: none"> <li>• offer cost-effective alternatives to traditional education;</li> <li>• support lifelong learning by providing a continuous and evolving stream of educational content;</li> <li>• incorporate interactive and engaging content, such as videos, quizzes, and discussion forums;</li> <li>• include practical case studies and real-world applications of concepts.</li> </ul>
Blockchain technology	<ul style="list-style-type: none"> <li>• ensures transparent and immutable records;</li> <li>• provides enhanced security and data integrity through cryptographic principles;</li> <li>• enables decentralized collaboration by eliminating the need for intermediaries;</li> <li>• enhances supply chain transparency by providing an immutable record of transactions and product movements;</li> <li>• allows for cross-organizational collaboration through shared and verifiable data;</li> <li>• encourages innovation in business models.</li> </ul>
Gamification	<ul style="list-style-type: none"> <li>• captures the attention of future managers by incorporating game-like elements, such as challenges, rewards, and competition;</li> <li>• offers a playful environment for skill development;</li> <li>• provides interactive learning experiences;</li> <li>• offers real-time feedback and performance metrics;</li> <li>• encourages team collaboration and healthy competition;</li> <li>• encourages continuous learning and development;</li> <li>• involves problem-solving scenarios and challenges;</li> <li>• fosters a positive learning culture by making the learning process enjoyable and interactive.</li> </ul>
Adaptive learning systems	<ul style="list-style-type: none"> <li>• customize learning paths based on individual strengths, weaknesses, and learning preferences;</li> <li>• identify and focus on areas where future managers require improvement, streamlining the learning process;</li> <li>• provide continuous assessment and real-time feedback;</li> <li>• adjust the complexity and format of content based on individual progress;</li> <li>• optimize study time by focusing on areas that require attention;</li> <li>• encourage self-directed learning;</li> <li>• help prevent knowledge gaps by continuously assessing and addressing areas of weakness;</li> <li>• allow for real-time monitoring of progress;</li> <li>• incorporate interactive elements such as quizzes, simulations, and multimedia content.</li> </ul>

#### *4.3 Difficulties hindering the process of formation of professional culture among future management specialists*

Instructors face several challenges when attempting to form a professional culture among future managers within the educational process. Firstly, there is the hurdle of bridging the gap between theoretical knowledge and practical application. While classroom learning provides a foundation of concepts, future managers may struggle to translate these ideas into real-world scenarios. Instructors must design curriculum and learning experiences that emphasize hands-on application, simulations, and case studies to ensure that future managers not only comprehend theoretical concepts but also possess the skills to implement them effectively in professional settings. This challenge is compounded by the ever-evolving nature of business environments, requiring instructors to stay abreast of industry trends and continually update course content to reflect the current realities faced by future managers.

Secondly, cultivating a professional culture involves instilling soft skills such as communication, leadership, and emotional intelligence. These skills are crucial for effective management but are often more nuanced and challenging to teach than technical knowledge. Instructors face the task of creating environments that encourage the development of these interpersonal skills, which may involve integrating collaborative projects, group discussions,

and practical exercises into the curriculum. Additionally, assessing and providing constructive feedback on soft skills can be subjective, requiring instructors to develop comprehensive evaluation methods. Overcoming these challenges demands a holistic and multifaceted approach to education, where instructors go beyond traditional teaching methods to nurture a professional culture that extends beyond academic understanding and incorporates the interpersonal and practical skills essential for future managers. Table 4 shows the challenges hindering the process of formation of professional culture among future managers in the classroom according to experts' assessments.

**Table 4.** Challenges hindering the process of formation of professional culture among future managers.

Technology	Challenges hindering formation of professional culture
Learning Management Systems	<ul style="list-style-type: none"> <li>• If not designed and implemented thoughtfully, can become monotonous, leading to a lack of enthusiasm among future managers.</li> <li>• Maintaining learner engagement requires dynamic and interactive content, timely updates.</li> <li>• Future managers may have different learning preferences, and a one-size-fits-all approach may not effectively cater to their individual needs.</li> <li>• Resistance to change among instructors and learners, technical issues, and the need for comprehensive training can hinder the seamless adoption of Learning Management Systems.</li> </ul>
Virtual Reality and Augmented Reality	<ul style="list-style-type: none"> <li>• Main difficulty is the cost associated with implementing VR and AR technologies.</li> <li>• Designing immersive and effective experiences requires expertise in both the subject matter and the technology itself.</li> <li>• Virtual Reality and Augmented Reality technologies are continuously evolving, and the hardware and software available at any given time may have limitations in terms of graphics, interactivity, or compatibility.</li> <li>• Concerns related to health and safety must be addressed.</li> </ul>
Online collaboration tools	<ul style="list-style-type: none"> <li>• The abundance of communication channels, messages, and notifications within online collaboration platforms can lead to a sense of overwhelm for future managers.</li> <li>• Written communication lacks the nuances of face-to-face interactions, and the absence of non-verbal cues can lead to misunderstandings among team members.</li> <li>• Online collaboration tools often rely on asynchronous communication, making it challenging to create a real-time and interactive exchange of ideas.</li> </ul>
Data analytics and business intelligence tools	<ul style="list-style-type: none"> <li>• Future managers may face difficulties in interpreting the results accurately and translating them into strategic actions.</li> <li>• Inaccurate or incomplete data can lead to flawed analyses and misguided decision-making.</li> </ul>
Social media platforms	<ul style="list-style-type: none"> <li>• Social media often blurs the lines between personal and professional life.</li> <li>• Social media platforms are susceptible to data breaches and privacy issues.</li> <li>• Communication on social media platforms lacks the context and nuances of face-to-face interactions, which can lead to misunderstandings.</li> <li>• Future managers may face challenges in managing their digital reputation.</li> </ul>
Artificial Intelligence and Machine Learning	<ul style="list-style-type: none"> <li>• The introduction of Artificial Intelligence and Machine Learning may create concerns among future managers about the potential automation of tasks traditionally handled by humans.</li> <li>• Future managers may encounter difficulties in understanding and trusting AI-generated insights, particularly if the decision-making process lacks transparency.</li> <li>• Future managers may not possess the necessary technical expertise to fully comprehend the workings of AI systems, potentially leading to a lack of confidence in utilizing these technologies.</li> </ul>
E-learning platforms and massive open online courses (MOOCs)	<ul style="list-style-type: none"> <li>• E-learning and MOOCs require self-directed learning, which can be challenging for individuals who lack self-discipline or struggle with motivation.</li> </ul>



	<ul style="list-style-type: none"> <li>• Access to technology and reliable internet connectivity is not uniform across all regions and demographics.</li> <li>• E-learning and MOOCs often lack the interpersonal interactions present in traditional classrooms.</li> <li>• The credibility of E-learning platforms and MOOCs can vary, and future managers may face challenges in discerning the quality of the educational content.</li> </ul>
Blockchain technology	<ul style="list-style-type: none"> <li>• Blockchain technology is inherently complex, involving cryptographic principles, decentralized networks, and consensus mechanisms.</li> <li>• Existing organizational structures and processes may resist the significant changes that come with adopting blockchain.</li> <li>• The regulatory landscape surrounding blockchain is still evolving, and future managers may encounter challenges in navigating legal frameworks.</li> <li>• Blockchain networks may lack interoperability.</li> <li>• There may be educational gaps related to blockchain understanding and awareness among future managers.</li> </ul>
Gamification	<ul style="list-style-type: none"> <li>• Traditional workplace cultures may resist the incorporation of gamified elements.</li> <li>• Designing gamified elements that are relevant, meaningful, and align with professional development goals can be challenging.</li> <li>• Gamification often includes competitive elements, which can lead to stressful work environment.</li> <li>• Individuals have diverse learning styles, and gamification may not appeal universally.</li> </ul>
Adaptive learning systems	<ul style="list-style-type: none"> <li>• Individuals accustomed to traditional learning methods may resist the adoption of adaptive learning systems.</li> <li>• Designing and implementing adaptive learning systems that effectively customize content to individual learning needs can be complex.</li> <li>• Adaptive learning relies heavily on data collection to personalize content, which raises privacy concerns.</li> <li>• Adaptive learning systems primarily focus on individualized learning paths, which may lead to challenges in fostering collaboration and teamwork.</li> <li>• The effectiveness of adaptive learning relies on the availability of high-quality data.</li> </ul>

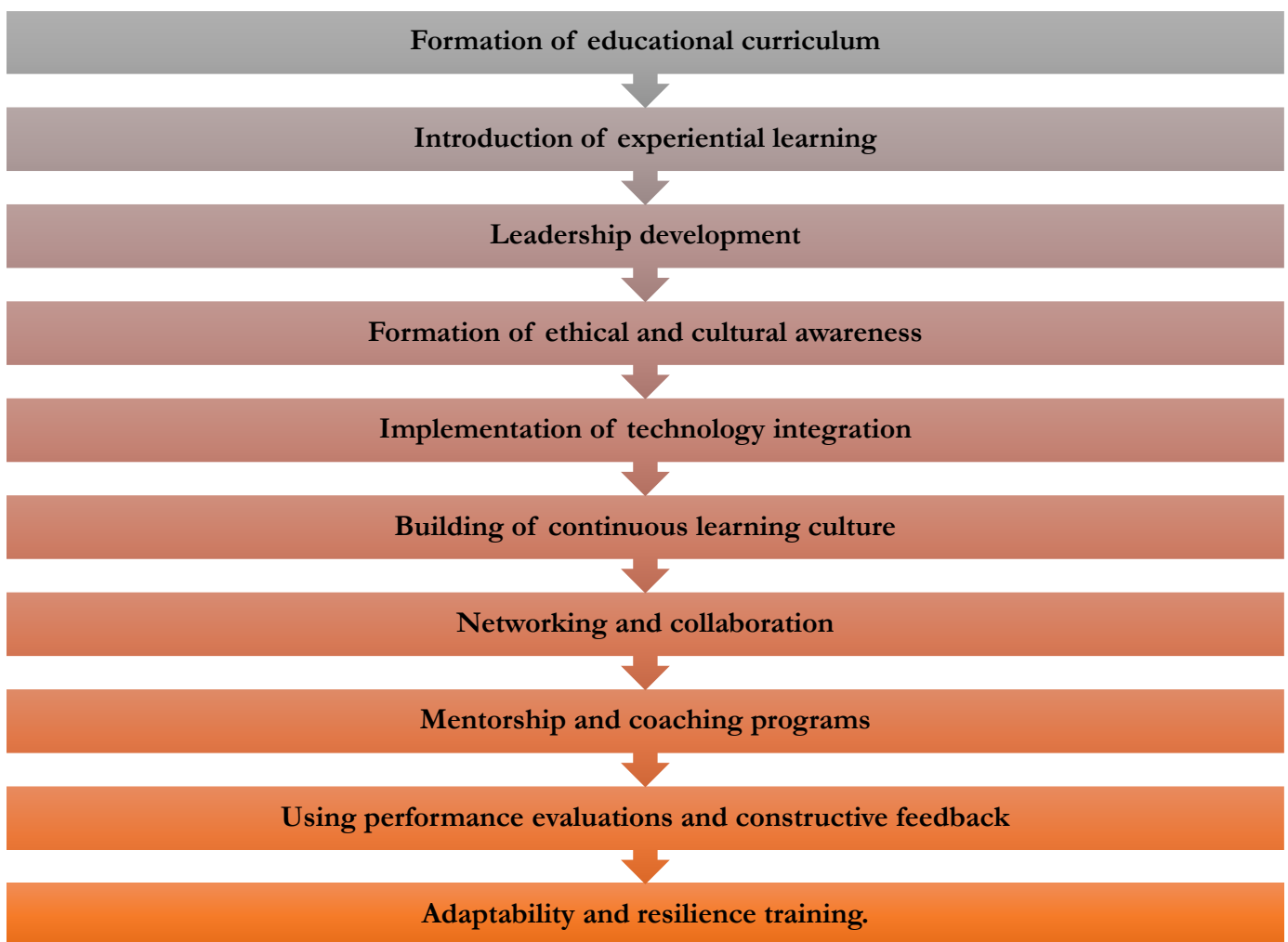
Building a model for the formation of professional culture among future managers is imperative as it provides a structured and systematic framework to guide the development of individuals within an organization. Such a model defines the values, behaviors, and competencies essential for success in managerial roles, aligning them with the organization's goals and industry requirements. By articulating the expectations for professional conduct, leadership qualities, and collaborative skills, the model serves as a roadmap for cultivating a cohesive and forward-thinking managerial culture. Moreover, it aids in the strategic integration of innovative practices, emerging technologies, and evolving industry standards into the professional fabric, ensuring that future managers are not only equipped with traditional skills but are also adaptive, ethical, and capable of leading in dynamic and diverse business environments. In essence, a well-constructed model for professional culture formation becomes instrumental in shaping the next generation of managers who can drive organizational success and contribute positively to the broader professional community.

## 5. Discussion

A pedagogical model refers to a comprehensive framework or approach that guides the design and delivery of educational experiences. It encompasses strategies, methodologies, and principles aimed at facilitating effective teaching and learning (Bertrand & Namukasa, 2023). This model outlines the teacher's role, instructional methods, assessment techniques, and the overall structure of the learning environment. It serves as a guiding structure to help educators create engaging and meaningful learning experiences for students.

The model of formation of professional culture among future managers is a comprehensive framework designed to systematically cultivate the values, skills, and behaviors essential for effective managerial roles (Yatsura, 2023). This model integrates educational, experiential, and cultural components to shape a holistic understanding of professional responsibilities. It outlines strategies for instilling leadership qualities, ethical decision-making, effective communication, and adaptability within future managers. The model addresses both traditional and contemporary aspects of management, emphasizing not only technical competencies but also the ability to navigate dynamic and diverse organizational landscapes. By incorporating emerging technologies, industry trends, and fostering a culture of continuous learning, this model ensures that future managers are well-equipped to lead with innovation, integrity, and resilience, contributing positively to both their organizations and the broader professional community.

The model of formation of professional culture among future managers typically comprises several interconnected components that collectively contribute to the development of well-rounded and effective managerial professionals (Kryshtanovych et al., 2021; Pyliaeva & Kochyna, 2020; Yatsura, 2023). Figure 3 shows the structure of the model of formation of professional culture among future managers.



**Figure 3.** Structure of the model of formation of professional culture among future managers

**Educational curriculum.** The educational component focuses on a structured curriculum that covers essential management theories, principles, and practical skills (Vance, 1988). It encompasses academic courses, workshops, and training sessions designed to provide future managers with a solid foundation in business, leadership, communication, ethics, and other relevant disciplines.

**Experiential learning** is a vital component that involves hands-on experiences such as internships, practical projects, and simulations. This component allows future managers to apply theoretical knowledge in real-world situations, fostering problem-solving skills, critical



thinking, and a deeper understanding of the complexities of managerial roles (O'Dwyer et al., 2023).

**Leadership development** is a key component that focuses on nurturing the leadership qualities essential for managerial roles (Joseph & Kibera, 2019). This includes training in decision-making, conflict resolution, team management, and strategic thinking. Leadership development programs may involve mentorship, leadership workshops, and opportunities to lead projects or teams.

**Ethical and cultural awareness** emphasizes the importance of ethical decision-making and cultural competence in managerial roles. It includes modules on business ethics, diversity and inclusion training, and cross-cultural communication to ensure that future managers are equipped to navigate diverse workplace environments with integrity and sensitivity (Pyliaeva & Kochyna, 2020).

**Technology integration.** Given the rapidly evolving technological landscape, this component focuses on integrating technology-related skills into the managerial skill set (Walsh et al., 2021). It includes training on data analysis, digital communication tools, project management software, and other relevant technologies to ensure that future managers are adept at leveraging technological advancements.

**Continuous learning culture.** The model encourages a culture of continuous learning, where future managers are instilled with the mindset of ongoing professional development (Pyliaeva & Kochyna, 2020). This includes promoting self-directed learning, providing access to resources like webinars and industry publications, and fostering a proactive approach to staying updated on industry trends.

**Networking and collaboration** components emphasize the importance of building professional connections, both within and outside the organization. Future managers are encouraged to participate in networking events, industry conferences, and collaborative projects to enhance their interpersonal and relationship-building skills (Morales-Huamán et al., 2023; Oyefusi, 2022).

**Mentorship and coaching programs** are crucial components that provide future managers with guidance from experienced professionals (Joseph & Kibera, 2019). These programs facilitate knowledge transfer, career advice, and personal development, contributing to the overall growth and success of future managers.

**Regular performance evaluations and constructive feedback mechanisms** are integrated components that enable future managers to assess their progress and identify areas for improvement. This ensures a continuous feedback loop for refining skills and behaviors aligned with the desired professional culture (Kryshtanovych et al., 2021; Stupak, 2020).

**Adaptability and resilience training.** In response to the dynamic nature of business environments, this component focuses on developing adaptability and resilience skills (Curzi et al., 2019). Future managers are exposed to scenarios that require quick decision-making, flexibility, and the ability to navigate uncertainties effectively.

These components work synergistically within the model of formation of professional culture among future managers, creating a robust framework that addresses the multifaceted aspects of managerial development.

## 5. Conclusions

This research has delved into the multifaceted realm of utilizing modern technologies to shape the professional culture among future management specialists. The evolving landscape of the business world, coupled with rapid technological advancements, necessitates a proactive approach to preparing the next generation of managers. The overarching goal of this study has been to explore the potential, challenges, and implications of integrating modern technologies into the formation of professional culture for aspiring management specialists.

The findings underscore the transformative impact of technology on the various dimensions of professional culture. One significant revelation is the role of Learning Management Systems in providing a centralized platform for learning, collaboration, and skill development. Learning Management Systems not only facilitates the dissemination of knowledge but also fosters a collaborative learning environment, instilling a sense of teamwork and shared learning objectives among future management specialists. The efficiency and accessibility offered by Learning Management Systems align with the contemporary demands of remote work and global collaboration, contributing to the cultivation of a dynamic and interconnected professional culture.



Virtual Reality and Augmented Reality have emerged as powerful tools for immersive learning experiences. The ability to simulate real-world scenarios in a risk-free environment enhances the practical skills of future management specialists. The integration of Virtual Reality and Augmented Reality in training programs fosters a culture that values innovation, adaptability, and hands-on problem-solving. As these technologies continue to advance, they hold immense potential in shaping a professional culture that thrives on experiential learning and creative problem-solving.

Online collaboration tools have been instrumental in breaking down geographical barriers and promoting a collaborative ethos among future management specialists. The seamless exchange of ideas, real-time collaboration on projects, and the ability to work across time zones contribute to a globalized professional culture. This shift towards collaborative technologies underscores the importance of interpersonal skills, effective communication, and cross-cultural understanding in the makeup of future management specialists.

Data analytics and business intelligence tools have been identified as key enablers in informed decision-making. By equipping future management specialists with the ability to extract meaningful insights from data, these technologies contribute to a culture that values data-driven decision-making. However, the research also highlights challenges such as information overload and the need for a nuanced understanding of data findings, emphasizing the importance of a culture that promotes data literacy and the strategic use of information.

Social media platforms play a dual role in shaping the professional culture among future management specialists. While providing avenues for networking, knowledge sharing, and brand building, social media also presents challenges related to privacy, maintaining a professional image, and balancing personal and work-related interactions. Navigating these challenges requires a cultural emphasis on responsible social media use, digital etiquette, and aligning online activities with organizational values.

Artificial Intelligence and Machine Learning bring a new dimension to the skill set of future management specialists. The research emphasizes the importance of overcoming resistance to AI adoption and fostering a culture that values the collaboration between humans and intelligent systems. The ethical considerations surrounding AI highlight the necessity of instilling a culture that prioritizes responsible AI practices, transparency, and ongoing education on the ethical implications of AI in decision-making.

E-learning platforms and MOOCs have emerged as flexible and accessible avenues for continuous learning. However, challenges such as ensuring content relevance, customization, and addressing the diverse learning styles of future management specialists underscore the importance of a culture that values adaptability, user feedback, and the integration of diverse learning resources.

Blockchain technology introduces a decentralized and secure framework for transactions, contract management, and data integrity. Its integration into the professional culture necessitates a cultural shift towards embracing innovative solutions, adapting to decentralized models, and addressing concerns related to regulatory frameworks.

In conclusion, the research establishes that the use of modern technologies is not merely a tool but a transformative force in shaping the professional culture among future management specialists. The identified challenges underscore the need for a cultural shift – one that values continuous learning, embraces innovation, prioritizes ethical considerations, and fosters a collaborative and adaptive mindset among aspiring management professionals. As organizations continue to navigate the complexities of the digital age, the integration of modern technologies into the formation of professional culture becomes not only a strategic imperative but a cornerstone for the success of future management specialists in a dynamic and interconnected global landscape.

Several limitations are inherent in the research on the use of modern technologies to form professional culture among future management specialists. The study's findings may be influenced by the specificity of the context in which the research was conducted, potentially limiting the generalizability of results to diverse industries and organizational structures. The sample demographics, focusing on particular educational institutions or career stages, may not fully represent the broad spectrum of aspiring management professionals. Additionally, the fast-paced nature of technological advancements poses a challenge to the research's currency, potentially overlooking the influence of the latest technologies. The reliance on self-reported data introduces the possibility of bias, and ethical considerations related to data privacy and emerging technologies may not be exhaustively explored. The study also lacks a longitudinal perspective, hindering a deeper understanding of sustained effects over time. Despite its contributions, these limitations underscore the need for caution in generalizing



the findings and highlight areas for further research to enhance the depth and breadth of insights into the role of modern technologies in shaping professional culture among future management specialists.

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Action research

# Models and strategies for implementation of social responsibility in modern enterprises

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**Abstract:** As contemporary enterprises navigate the complex landscape of global business, the imperative to embrace and effectively manage social responsibility has become paramount. This research article delves into the multifaceted dimensions of social responsibility within modern enterprises, exploring the evolving role of businesses in addressing societal and environmental challenges. The study employs a comprehensive review of existing literature, case analyses, and empirical investigations to illuminate the strategies and frameworks employed by enterprises in managing their social responsibility. The first section analyses the theoretical foundations of social responsibility management, emphasizing the evolving perspectives and conceptual frameworks that guide corporate behavior. It critically evaluates the integration of ethical considerations, stakeholder engagement, and sustainable business practices within the broader context of social responsibility. The second section investigates the practical implementation of social responsibility initiatives across diverse industries. The article examines successful models and identifies common challenges faced by enterprises in aligning their operations with socially responsible practices. It analyzes the impact of such initiatives on corporate reputation, stakeholder relations, and overall business performance. This research article contributes to the existing body of knowledge by offering theoretical insights, practical implications, and future considerations for businesses seeking to navigate the dynamic landscape of social responsibility.

**Keywords:** social responsibility; sustainability; management; strategies and framework

## 1. Introduction

In modern business conditions, based on the concept of environmental economy, which focuses on a harmonious combination of social, natural and economic priorities for the development of business structures, it can be noted that the main place in the system of basic values of the market economy belongs to socially responsible business (Nikolenko, 2020). Accordingly, the formation of the system and mechanism of social responsibility of companies provides an opportunity for the latter to obtain stable competitive advantages for the long term (Liu et al., 2021). Based on the special significance of the issues of socially responsible management of enterprises, declared in the world business community, it is very important to study the problems of the development of corporate social responsibility in the business space.

The topic of social responsibility is closely related to the concept of sustainable development (Mandilas et al., 2023). The point is to motivate and stimulate technical progress, while preserving the environment and natural resource potential, that is, a balanced solution to the socio-economic problems of present and future generations (Hariram et al., 2023). Thus, the sustainable development of society is a model that systematically integrates the three main components of society's development: economic, ecological and social (Cabezas et al., 2004). The concept of corporate sustainability is a kind of "microeconomic" level of the concept of sustainable development. It is considered as a model of corporate governance that covers its economic, social and environmental activities, optimizes risks and uses opportunities in these three areas of its development (Abello-Romero et al., 2023). Corporate sustainability is associated with value creation, environmental management and human capital management (Moreno-Monsalve et al., 2023).

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On the one hand, corporate sustainability refers to the integration of environmentally responsible practices and strategies into the core business operations of a company (Boarin & Martínez-Molina, 2022). This includes efforts to minimize the negative impact of the organization's activities on the environment, conserve natural resources, reduce carbon footprint, and promote the use of clean and renewable energy sources. On the other hand, corporate sustainability involves the long-term viability and resilience of a corporation's economic activities (Javanmardi et al., 2023). This includes responsible financial management, transparent business practices, and the creation of value for shareholders, employees, and other stakeholders over the long term. And importantly, corporate sustainability also encompasses social responsibility, emphasizing the ethical and fair treatment of employees, communities, and other stakeholders. This dimension focuses on fostering positive social impacts, such as promoting diversity and inclusion, ensuring fair labor practices, contributing to local community development, and addressing social inequalities. A socially sustainable corporation actively seeks to create a positive impact on society while conducting its business activities.

Scientific studies of the concept of “social responsibility”, its typology, formation factors and factors of development are extremely relevant in modern conditions, because society is starting to demand qualitative changes in their activities from business representatives. According to findings (Aguirre et al., 2023; García-Jiménez et al., 2017), almost 80 % of consumers are motivated to buy from companies that strive to make the world better. In addition, this business policy is also important for 75 % of shareholders and investors. For example, more than 70 % of investors indicate that efforts to improve the environment and societies influence their investment decisions.

The necessity to intensify the implementation of the principles of social responsibility in the life of society and economic institutions, caused by the need to create a positive image of domestic enterprises on international markets in the process of globalization and integration international processes (Dau et al., 2022), which determines the relevance of this study. Thus, the purpose of the research is to analyze the essence of social responsibility as necessary precondition for the effective functioning of the economic system and to develop management strategies to introduce social responsibility scheme within the modern enterprises.

## **2. The origin and forms of social responsibility in economics and management**

A dynamic economy leads to the fact that companies are designed to evolve because they can be left behind the progress and business (Villalobos Céspedes, 2020). At the beginning of the XXI century, the world that surrounds entrepreneurs is quite chaotic, and it lacks stability (Nikolenko, 2020; Park, 2017). Consequently, social responsibility is considered a management approach that ensures corporate sustainability and measures the company's impact on three areas of sustainable development of society (Bafas et al., 2023; Boarin & Martínez-Molina, 2022). As for the definition of the term “corporate social responsibility”, it is still the subject of theoretical discussions. This term is most widely used in business-society relations (Wirba, 2023). It is believed that business serves society, therefore bears responsibility to society and must meet certain expectations of society (Godos-Díez et al., 2018). It can be concluded that the social responsibility of the enterprise consists in its active and planned participation in the economic, ecological and social development of society, in cooperation with interested parties (Javanmardi et al., 2023).

Initially, it is necessary to analyze the historical development of the notion of social responsibility. In economics it has evolved over time, influenced by various economic theories and societal changes. While the concept has ancient roots, the modern understanding of social responsibility in economics gained prominence in the mid-XX century.

Classical economic thought, represented by figures such as Adam Smith, primarily emphasized the idea of *laissez-faire* capitalism, arguing that individuals pursuing their self-interest would unintentionally contribute to the overall welfare of society through the invisible hand of the market (Kitzmueller & Shimshack, 2012). During this period, the prevailing belief was that the primary responsibility of businesses was to maximize profits for shareholders.

Then, the economic turmoil of the Great Depression in the 1930s led to increased scrutiny of unfettered capitalism (Bahlieda, 2018). Scholars and policymakers began to question the adequacy of purely profit-driven models as widespread poverty and social inequality persisted (Kitzmueller & Shimshack, 2012). The works of economists like John



Maynard Keynes and the introduction of social welfare policies signaled a shift toward considering the broader societal impact of economic activities (Latapí Agudelo et al., 2019).

The aftermath of World War II brought about significant social and economic changes. The establishment of the United Nations and the recognition of human rights set the stage for a more holistic view of economic development (Kitzmüller & Shimshack, 2012). Economists like Karl Polanyi and E.F. Schumacher began to articulate ideas related to social responsibility (Latapí Agudelo et al., 2019), highlighting the importance of ethical considerations in economic decision-making.

The 1960s and 1970s witnessed a growing awareness of environmental and social issues associated with industrialization. Influential works like Howard Bowen’s “Social Responsibilities of the Businessman” and Milton Friedman’s “The Social Responsibility of Business is to Increase its Profits” reflected the emerging debate on the role of businesses beyond profit maximization (Acquier et al., 2011). Social responsibility gained recognition as a concept advocating that businesses have an obligation to consider and contribute to the well-being of society (Dau et al., 2022).

The latter part of the XX century and the early XXI century saw an acceleration of globalization and an increased focus on sustainable development. Concepts like triple-bottom-line accounting (considering economic, social, and environmental impacts) gained traction (Bafas et al., 2023; Mendes et al., 2023). International organizations, governments, and civil society began to call for businesses to adopt sustainable and socially responsible practices to address global challenges such as climate change, poverty, and inequality.

Therefore, the historical evolution of the notion of social responsibility in economics reflects a shifting paradigm from purely profit-centric views to a broader recognition of the responsibilities that businesses have toward society and the environment. This evolution has been shaped by economic events, societal changes, and the recognition of the interconnectedness of economic, social, and environmental factors.

Social responsibility in economics and management encompasses various forms that businesses can adopt to address societal and environmental concerns while conducting their operations. These forms can be broadly categorized into several dimensions, reflecting the multifaceted nature of corporate responsibility. They include corporate social responsibility (Wirba, 2023); environmental responsibility (Hariram et al., 2023); socially responsible investing (Sciarelli et al., 2021); ethical business practices (Rossi et al., 2021); stakeholder engagement (Pasko et al., 2021); philanthropy and community involvement (Wirba, 2023); diversity and inclusion initiatives (Wang, 2023); product responsibility (Al-Haddad et al., 2022); transparency and reporting (García-Rivas et al., 2023). Table 1 shows the descriptive characteristics of different forms of social responsibility in economics and management.

**Table 1.** Forms of social responsibility in economics and management.

Form of social responsibility	Descriptive characteristics
<b>Corporate social responsibility</b>	Corporate social responsibility involves a voluntary commitment by businesses to integrate social and environmental concerns into their operations and interactions with stakeholders. This can include initiatives related to ethical business practices, community development, environmental sustainability, and employee well-being. Corporate social responsibility programs are often tailored to align with the values and priorities of both the business and the communities it serves.
<b>Environmental responsibility</b>	Businesses engage in environmental responsibility by adopting practices that minimize their ecological footprint. This includes efforts to reduce carbon emissions, conserve natural resources, implement sustainable supply chain practices, and invest in renewable energy sources. Environmental responsibility aligns with the broader goal of achieving ecological sustainability and mitigating the impact of business activities on the environment.
<b>Socially responsible investing</b>	Socially responsible investing involves making investment decisions based not only on financial returns but also on the ethical and social impact of the investments. Investors consider factors such as environmental sustainability, ethical business practices, and social justice when selecting stocks or assets. Socially responsible investing reflects a growing awareness



	of the interconnectedness between financial success and responsible business conduct.
<b>Ethical business practices</b>	Ethical business practices encompass a wide range of behaviors that go beyond legal requirements to uphold moral standards. This includes fair labor practices, transparent business operations, honesty in marketing and advertising, and responsible sourcing. Ethical conduct fosters trust among stakeholders and contributes to a positive corporate reputation.
<b>Stakeholder engagement</b>	Social responsibility also involves actively engaging with and considering the interests of various stakeholders, including employees, customers, suppliers, and local communities. Effective stakeholder engagement includes open communication, fair treatment, and collaboration in decision-making processes, recognizing that businesses operate within a broader societal context.
<b>Philanthropy and community involvement</b>	Many businesses engage in philanthropic activities as part of their social responsibility efforts. This may include charitable donations, sponsorships of community events, and involvement in social initiatives that address local or global challenges. Philanthropy contributes to community development and reflects a commitment to social well-being.
<b>Diversity and inclusion initiatives</b>	Promoting diversity and inclusion within the workplace is another aspect of social responsibility. Businesses strive to create inclusive environments that embrace individuals of diverse backgrounds, cultures, genders, and abilities. These initiatives not only contribute to social equity but also enhance organizational creativity and performance.
<b>Product responsibility</b>	Ensuring the safety, quality, and ethical production of goods and services is a form of social responsibility. Businesses commit to producing products that meet ethical and safety standards, providing accurate information to consumers, and addressing any potential negative impacts associated with their products throughout their lifecycle.
<b>Transparency and reporting</b>	Transparent communication about a company's social and environmental performance is crucial for demonstrating accountability. Many businesses publish sustainability reports, detailing their social responsibility initiatives, environmental impact, and progress toward specific goals. This transparency fosters trust among stakeholders and allows for informed decision-making.

These various forms of social responsibility reflect a growing recognition that businesses play a crucial role in addressing societal challenges and contributing to sustainable development. Adopting a comprehensive and integrated approach to social responsibility is increasingly seen as essential for long-term business success and positive societal impact.

### 3. Practices of implementation of social responsibility

The implementation of social responsibility by businesses is of paramount importance as it aligns economic activities with ethical, environmental, and societal considerations. Embracing social responsibility is not merely a philanthropic gesture; it is a strategic imperative that enhances a company's reputation, stakeholder trust, and long-term sustainability. By integrating ethical business practices, environmental stewardship, and community engagement into their operations, businesses contribute to the well-being of society, foster positive relationships with customers and employees, and mitigate reputational risks. Socially responsible companies are better positioned to navigate the complexities of the modern business landscape, attract socially conscious consumers and investors, and adapt to evolving expectations from both regulatory bodies and the broader community. Ultimately, the implementation of social responsibility becomes a catalyst for innovation, resilience, and the creation of shared value, reinforcing the idea that responsible business conduct is not only ethical but also a strategic imperative for enduring success.

Social responsibility serves several functions within the context of businesses and organizations, reflecting a commitment to ethical conduct, sustainability, and positive societal impact. The include the following:

- Adherence of ethical standards and values (Rossi et al., 2021);
- Fostering stakeholder trust and relationships (Pasko et al., 2021);
- Enhancement of reputation management (Araújo et al., 2023);



Identification and mitigation of potential risks associated with environmental, social, and governance factors (Ahmad et al., 2023; Li et al., 2023);  
Attracting and retaining talent (Zainee, & Puteh, 2020);  
Adoption of innovative practices (Gallego-Álvarez et al., 2011);  
Cost savings and efficiency (Binh et al., 2022; Chen & Zhang, 2021);  
Aligning with legal and regulatory requirements (Yao, 2023);  
Community development (Mamo et al., 2023; Rudito et al., 2023).

We agree that social responsibility functions as a guiding principle that helps organizations navigate ethical challenges, build trust, manage risks, attract talent, and contribute positively to society (Bocean et al., 2022; Latapí Agudelo et al., 2019). Embracing social responsibility is not only a moral imperative but also a strategic approach for long-term success and resilience in a dynamic business environment.

In the context of implementation of social responsibility, researchers distinguish two separate blocs. The first one deals with social policy in a general sense and covers actions and measures that affect all aspects of the life cycle, ensuring the provision of everything with goods, housing and social infrastructure services, employment, adequate material support, expansion and strengthening of the material bases, coverage and strengthening of the future of the population, its manifestations and cultures, creation of social security systems to improve the lives of citizens (Razavi, 2022). The second block refers to the fact that the elements of social policy are the social protection, namely: the policy of social protection of the elderly and the disabled, youth and family policy (Lv et al., 2022).

Laws and morals are necessary, but absolutely insufficient, to control the behavior of companies effectively, especially in developing countries (Yao, 2023). The responsibility of all businesses for the conduct of social justice is necessary for politicians who respect human dignity, and also respect all those who are affected by this activity. Voluntary commitment of enterprises occurs on mutual achievement. This is important for the global community and for communities on a smaller scale.

Implementing social responsibility involves adopting a range of practices that align business operations with ethical, environmental, and societal considerations. These practices contribute to a company's commitment to sustainability, positive community impact, and responsible business conduct. Findings show that main practices of implementing social responsibility include:

(1) **Corporate governance** (Ahmad et al., 2023; Yao, 2023). Establishing transparent and ethical corporate governance practices is fundamental to social responsibility. This includes fair decision-making processes, accountability, and a commitment to ethical conduct at all levels of the organization.

(2) **Ethical business practices** (Araújo et al., 2023; Rossi et al., 2021). Adhering to ethical business practices involves conducting operations with integrity, honesty, and fairness. This includes fair treatment of employees, honesty in marketing and advertising, and ethical sourcing of materials.

(3) **Environmental sustainability** (Cabezas et al., 2004; Moreno-Monsalve et al., 2023). Businesses can implement environmental responsibility by adopting sustainable practices to reduce their ecological footprint. This involves minimizing waste, optimizing energy usage, and implementing eco-friendly initiatives, such as adopting renewable energy sources and reducing carbon emissions.

(4) **Stakeholder engagement** (Pasko et al., 2021). Actively engaging with stakeholders, including customers, employees, suppliers, and local communities, is crucial. This involves soliciting feedback, incorporating stakeholder perspectives into decision-making, and maintaining open lines of communication.

(5) **Community involvement** (Mamo et al., 2023; Rudito et al., 2023; Wirba, 2023). Engaging in community development initiatives and philanthropy demonstrates a commitment to the well-being of the communities in which a business operates. This can include charitable donations, sponsorships, and volunteer programs that address local needs.

(6) **Employee welfare and diversity** (Wang, 2023). Prioritizing the welfare of employees involves providing fair wages, safe working conditions, and opportunities for professional development. Promoting diversity and inclusion within the workplace is also a key aspect, fostering an environment that values and respects individual differences.

(7) **Supply chain responsibility** (Yu et al., 2023). Ensuring responsible sourcing and supply chain practices involves evaluating and addressing the social and environmental

impacts of the entire supply chain. This includes efforts to eliminate unethical labor practices, ensure fair wages, and minimize negative environmental impacts.

(8) **Innovation for social impact** (Gallego-Álvarez et al., 2011). Encouraging innovation that has a positive social impact is another crucial practice. Businesses can develop and implement innovative solutions that address societal challenges, contributing to the well-being of communities and the environment.

(9) **Continuous improvement and adaptation** (González-Ramos et al., 2023; Medne & Lapina, 2019). Social responsibility is an ongoing commitment that requires continuous improvement. Businesses should regularly review and update their practices, adapting to changing societal expectations, and seeking new opportunities for positive impact.

By integrating these practices, businesses can effectively implement social responsibility, contributing to sustainable and ethical business practices while addressing the needs of various stakeholders and the broader community.

#### 4. Models and strategies for implementation of social responsibility

A model for the implementation of social responsibility in business involves a systematic and comprehensive approach to integrating ethical, environmental, and societal considerations into organizational practices (Wang, 2023). This model typically includes strategies for stakeholder engagement, ethical business conduct, environmental sustainability, and community involvement. It emphasizes the importance of aligning corporate activities with the well-being of diverse stakeholders, such as employees, customers, suppliers, and the broader community. Transparency, accountability, and continuous improvement are integral components, as organizations strive to communicate their social responsibility efforts openly, measure their impact, and adapt to evolving societal expectations (García-Rivas et al., 2023). A successful implementation model also considers legal compliance, corporate governance, and the promotion of a positive corporate culture that values diversity and inclusion. It is introduced through a number of strategies. This holistic approach aims to create enduring value, build trust among stakeholders, and contribute positively to societal development while ensuring the long-term sustainability of the business.

To describe effective implementation of social responsibility in economics and management, it is necessary to describe basic models: American (Forte, 2013; Maignan & Ralston, 2002; Pesqueux, 2005), European (Forte, 2013; Maignan & Ralston, 2002; Ziogas & Metaxas, 2021), Japanese (Fukukawa & Moon, 2004; Roedder & Schmid, 2023; Wokutch, 1990), and Indian (Das & Pandey, 2022; Dixit et al., 2022; Kuriakose, 2022; Sharma, 2009). Table 2 presents the analysis of characteristics and strategies of different models of implementation of social responsibility.

**Table 2.** Characteristics and strategies of different models of implementation of social responsibility.

Model of implementation of social responsibility	General characteristics and strategies	Advantages
<b>American model</b>	<ul style="list-style-type: none"> <li>Stakeholder orientation;</li> <li>Long -term perspective;</li> <li>Ethical business practices;</li> <li>Community engagement;</li> <li>Environmental sustainability;</li> <li>Socially responsible investing;</li> <li>Employee well-being and diversity;</li> <li>Legal compliance and corporate citizenship;</li> <li>Transparency and reporting.</li> </ul>	<ol style="list-style-type: none"> <li>Innovation and entrepreneurship;</li> <li>Flexible business environment;</li> <li>Competitive market dynamics;</li> <li>Shareholder value maximization;</li> <li>Job creation and economic impact;</li> <li>Philanthropy and corporate giving;</li> <li>Dynamic corporate culture;</li> <li>Global leadership in corporate practices;</li> <li>Attracting foreign investment;</li> <li>Responsive to consumer preferences.</li> </ol>
<b>European model</b>	<ul style="list-style-type: none"> <li>Sustainable development;</li> <li>Social dialogue and partnerships;</li> <li>Effective corporate governance structures;</li> <li>Employee participation and rights;</li> <li>Social inclusion and diversity;</li> <li>Environmental responsibility;</li> </ul>	<ol style="list-style-type: none"> <li>Stakeholder engagement;</li> <li>Sustainable development;</li> <li>Corporate governance standards;</li> <li>Social dialogue and partnership;</li> <li>Legal frameworks and regulations;</li> <li>Inclusive work environments;</li> <li>Consumer trust and brand loyalty;</li> <li>Innovation for social impact;</li> </ol>



	<ul style="list-style-type: none"> <li>• Corporate citizenship;</li> <li>• Stakeholder engagement;</li> <li>• Social reporting and transparency;</li> <li>• Development of social responsibility standards and certifications;</li> <li>• Government and regulatory involvement.</li> </ul>	<ul style="list-style-type: none"> <li>(9) Global leadership in sustainability;</li> <li>(10) Government support for social responsibility.</li> </ul>
<b>Japanese model</b>	<ul style="list-style-type: none"> <li>• Stakeholder-oriented approach;</li> <li>• Long-term perspective;</li> <li>• Corporate ethics and integrity;</li> <li>• Employee well-being;</li> <li>• Lifetime employment;</li> <li>• Community engagement;</li> <li>• Product quality and safety;</li> <li>• Environmental sustainability;</li> <li>• Consensus decision-making;</li> <li>• Corporate social harmony.</li> </ul>	<ul style="list-style-type: none"> <li>(1) Long-term relationships and stability;</li> <li>(2) Employee loyalty and well-being;</li> <li>(3) Holistic approach to stakeholders;</li> <li>(4) Consensus decision-making;</li> <li>(5) Product quality and reliability;</li> <li>(6) Social harmony or “wa”;</li> <li>(7) Focus on environmental responsibility;</li> <li>(8) Contribution to the welfare of the communities in which they operate;</li> <li>(9) Innovation and continuous improvement;</li> <li>(10) Gaining a global reputation for their commitment to quality, reliability, and social responsibility.</li> </ul>
<b>Indian model</b>	<ul style="list-style-type: none"> <li>• Legal mandate;</li> <li>• Philanthropy and community development;</li> <li>• Ethical business practices;</li> <li>• Inclusivity and diversity;</li> <li>• Environmental sustainability;</li> <li>• Partnerships with NGOs and communities;</li> <li>• Education and skill development;</li> <li>• Healthcare initiatives;</li> <li>• Transparent reporting;</li> <li>• Employee engagement.</li> </ul>	<ul style="list-style-type: none"> <li>(1) Promoting accountability and transparency;</li> <li>(2) Engagement in philanthropy and community development initiatives;</li> <li>(3) Recognizing the diversity within society;</li> <li>(4) Adopting eco-friendly practices, sustainable resource management, and renewable energy initiatives;</li> <li>(5) Targeting towards education and skill development;</li> <li>(6) Engagement in healthcare initiatives, supporting medical facilities;</li> <li>(7) Offering fair wages, safe working conditions, and opportunities for professional development;</li> <li>(8) Emphasizing ethical conduct and moral responsibility in business operations;</li> <li>(9) Promoting fair and transparent business practices;</li> <li>(10) Demonstrating adaptability and innovation in addressing social challenges;</li> </ul> <p>Enhancement of company’s reputation on the international stage.</p>

The *American model* of social responsibility embodies a stakeholder-oriented approach, emphasizing the broader impact of businesses on society beyond shareholder interests (Forte, 2013; Maignan & Ralston, 2002). It recognizes the interconnectedness of corporations with diverse stakeholders, including employees, customers, communities, and the environment. This model promotes ethical business practices, transparency, and long-term sustainability (Forte, 2013). Community engagement and philanthropy play a significant role, as businesses are encouraged to actively contribute to local well-being. Emphasis is also placed on environmental responsibility, with a growing recognition of the importance of sustainable practices. The American model reflects a commitment to corporate citizenship, emphasizing the social contract between businesses and society (Pesqueux, 2005). While profit remains a central focus, the American model recognizes that achieving long-term success necessitates a balanced approach that incorporates ethical conduct, social impact, and environmental stewardship.

The *European model* of social responsibility is characterized by a comprehensive and inclusive approach that prioritizes sustainable development, corporate governance, and social justice (Maignan & Ralston, 2002). This model emphasizes the interdependence of economic, social, and environmental factors, advocating for responsible business conduct that considers

the interests of diverse stakeholders (Ziogas & Metaxas, 2021). European businesses actively engage in social dialogue and partnerships, fostering collaboration with employees, trade unions, and community representatives (Maignan & Ralston, 2002; Ziogas & Metaxas, 2021). Corporate governance is a cornerstone, ensuring transparent decision-making and accountability. This model places a strong emphasis on environmental sustainability, social inclusion, and diversity, recognizing the importance of ethical practices, worker rights, and inclusive workplaces. Government involvement, regulatory frameworks, and support for social responsibility standards contribute to creating a business environment that aligns with broader European Union goals for sustainability, inclusivity, and responsible corporate citizenship.

At the same time, the *Japanese model* of social responsibility is deeply rooted in a corporate culture that places significant emphasis on long-term relationships, harmony, and mutual benefits (Fukukawa & Moon, 2004). Renowned for its stakeholder-oriented approach, Japanese businesses prioritize the interests of various stakeholders, including employees, suppliers, and local communities. This model goes beyond mere profit maximization, fostering a commitment to contributing positively to society and preserving the environment. Corporate ethics and integrity are highly valued, with a focus on sustainable business practices and the well-being of employees. Japanese companies often engage in social initiatives, philanthropy, and community support, reflecting a holistic view of corporate social responsibility that extends beyond financial considerations (Fukukawa & Moon, 2004; Roedder & Schmid, 2023; Wokutch, 1990). The Japanese model underscores the importance of fostering trust, maintaining stability, and creating enduring value for both the business and its broader social context.

The *Indian model* of social responsibility is characterized by a multifaceted and holistic approach that intertwines traditional values with modern corporate practices (Das & Pandey, 2022; Dixit et al., 2022). Reflecting the principles of “Dharma” or righteous living, Indian businesses emphasize a sense of duty and responsibility towards society (Sharma, 2009). Social responsibility is enshrined in legal frameworks, encouraging companies to allocate a portion of their profits to social and environmental initiatives. Indian businesses often engage in philanthropy, community development, and projects that address pressing social issues (Kuriakose, 2022). Additionally, the Indian model recognizes the significance of ethical business practices, corporate governance, and the well-being of employees. Sustainability, environmental consciousness, and inclusivity are gaining prominence, aligning with the broader goals of building a socially just and equitable society. The Indian model of social responsibility, thus, blends cultural ethos with contemporary expectations, aiming for inclusive and sustainable development (Das & Pandey, 2022; Kuriakose, 2022; Sharma, 2009).

Therefore, the implementation of a model of social responsibility represents a pivotal and transformative commitment for businesses, reflecting a conscious effort to integrate ethical, environmental, and societal considerations into their core operations. Regardless of the specific regional or cultural model adopted, social responsibility serves as a guiding principle that transcends mere profit motives, fostering a holistic approach to business conduct.

The American model, with its emphasis on shareholder value and entrepreneurial spirit, propels innovation and agility, creating a dynamic business environment. European practices, rooted in sustainability and stakeholder engagement, showcase a comprehensive commitment to long-term well-being and responsible governance. The Japanese model, deeply ingrained in cultural values, emphasizes stability, loyalty, and collaborative decision-making, contributing to enduring relationships and harmonious workplaces. Meanwhile, the Indian model, propelled by a legal mandate and cultural ethos, focuses on philanthropy, inclusivity, and sustainable development, fostering social equity. Across these diverse models, common threads emerge, including a dedication to transparency, accountability, and engagement with diverse stakeholders. Successful implementation requires a strategic alignment of business objectives with societal needs, leading to a positive impact on communities, the environment, and the overall welfare of stakeholders.

As businesses worldwide deal with the complex challenges of the XXI century, the adoption of social responsibility models emerges not only as a moral imperative but as a strategic necessity. Companies that integrate social responsibility are better positioned to build trust, enhance brand reputation, attract talent, and navigate an ever-evolving global landscape. Ultimately, the implementation of a model of social responsibility represents a commitment to the sustainable and ethical evolution of business, contributing to a more resilient, responsible, and inclusive future.



## 5. Conclusions

It is evident that businesses are at a critical juncture where purposeful and ethical conduct is not merely an option but a strategic imperative. The diverse models discussed – American, European, Japanese, and Indian – each bring a unique set of values, principles, and practices, offering a rich tapestry of approaches for organizations to align their operations with societal expectations. The American model, characterized by a focus on shareholder value and individualism, showcases the dynamism of entrepreneurial spirit and innovation. However, it also underscores the need for a balance between profit motives and broader social considerations. This model champions flexibility, competitiveness, and responsiveness to market dynamics, setting a precedent for companies seeking to thrive in dynamic, ever-changing landscapes. In contrast, the European model places a profound emphasis on sustainability, stakeholder engagement, and responsible governance. The commitment to sustainable development aligns with global environmental goals, while the focus on social dialogue fosters inclusive decision-making. European enterprises, through this model, exemplify the capacity to navigate complexities by integrating social responsibility into their core values, ensuring longevity and resilience. The Japanese model, deeply rooted in cultural values such as long-term relationships, consensus decision-making, and social harmony, introduces a distinctive approach to social responsibility. Loyalty, stability, and holistic consideration of stakeholders define Japanese enterprises. This model emphasizes the interconnectedness of economic success and societal well-being, showcasing the potential for enduring relationships and collaborative problem-solving. In addition, the Indian model, marked by a legal mandate for social responsibility and a blend of traditional values, spotlights the role of philanthropy, inclusivity, and environmental sustainability. Indian enterprises are navigating the delicate balance between economic growth and social development, illustrating how legal frameworks can catalyze responsible practices, especially in a context where cultural ethos plays a pivotal role. Collectively, these models serve as strategic orientations, offering insights and lessons for enterprises seeking to implement social responsibility effectively. It is evident that successful implementation requires a nuanced understanding of regional contexts, cultural nuances, and the diverse expectations of stakeholders. Moreover, the dynamic global business environment demands flexibility, adaptability, and a commitment to continuous improvement.

The implementation of social responsibility is not a mere compliance exercise but a transformative journey that necessitates a fundamental shift in organizational mindset. Companies must move beyond conventional profit-centric approaches to embrace a holistic vision that integrates social, environmental, and economic dimensions. It is a paradigm shift where success is measured not only in financial terms but also in the positive impact an enterprise makes on society and the environment. The strategic importance of social responsibility becomes even more pronounced in the face of contemporary challenges such as climate change, social inequality, and a heightened focus on corporate ethics. Enterprises are increasingly recognizing that sustainability is not just a moral obligation but a strategic imperative. Integrating social responsibility into business models enhances resilience, fosters innovation, and establishes a foundation of trust with stakeholders. As businesses navigate a rapidly changing landscape, embracing social responsibility is not without its challenges. It requires a commitment to transparency, a willingness to adapt, and an acknowledgment of the interconnectedness of global challenges. Moreover, effective implementation demands a collaborative approach, involving not just organizational leadership but also active participation from employees, consumers, governments, and civil society. In conclusion, the models and strategies discussed in this research article illuminate the multifaceted nature of social responsibility in modern enterprises. The synthesis of diverse approaches demonstrates that there is no one-size-fits-all solution; instead, enterprises must tailor their strategies to align with their cultural context, stakeholder expectations, and long-term sustainability goals. The journey towards responsible business practices is ongoing, and the commitment to social responsibility is not just a trend but an enduring ethos that will shape the future of business in a socially conscious and environmentally sustainable world.

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