

The impact of innovation on ESG performance

Утицај иновација на ESG перформансе

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Abstract

Purpose: The main objective of the paper is to explore how different types of innovations contribute to ESG performance in companies. The study aims to distinguish the specific effects of technological and organizational innovations on environmental, social, and governance dimensions, thereby clarifying their role in sustainable corporate development.

Methodology: To achieve the research objective, data were collected from 113 companies in Serbia during 2025. Structural Equation Modelling was applied to examine the relationships between types of innovations and ESG performance dimensions, enabling a precise assessment of their individual impacts.

Findings: The study confirms that innovations are essential for improving ESG performance. Technological innovations have the strongest impact on environmental outcomes, while organizational innovations are most influential in strengthening governance practices. Social performance is positively affected by both types of innovations, though to a lesser extent.

Originality/value: This research provides novel insights into the differentiated effects of innovation types on ESG dimensions, contributing to the literature by linking innovation strategies with sustainability outcomes in a transitional economy context. It highlights the importance of distinguishing between technological and organizational innovations when evaluating ESG performance.

Practical implications: The findings can help hotel managers and policymakers design innovation strategies that align with sustainability goals. Companies seeking to improve environmental outcomes should prioritize technological innovations, while those aiming to strengthen governance should focus on organizational innovations. These insights are particularly valuable for decision makers in emerging economies striving to balance competitiveness with ESG commitments.

Limitations: The study is limited to companies operating in Serbia, which may restrict the generalizability of findings to other contexts. Additionally, the analysis is based on cross-sectional data collected in 2025, preventing the assessment of long-term innovation effects. Future research should expand to comparative international samples and longitudinal designs.

Keywords: innovations, ESG performance, technological innovations, organizational innovations, Structural Equation Modelling.

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JEL classification: M14, O30, Q56

Сажетак

Циљ: Истраживање има за циљ да идентификује ефекте технолошких и организационих иновација на еколошке, друштвене и управљачке димензије, у контекстну одрживог корпоративног развоја.

Методологија: Подаци су прикупљени применом структурираног упитника на примеру 113 компанија у Србији током 2025. године. У истраживању је примењено моделирање структурних једначина како би се испитале везе између врста иновација и димензија ESG. Овакав приступ омогућава прецизну процену појединачних утицаја.

Резултати: Резултати истраживања потврђује да су иновације неопходне за побољшање ESG учинка. Технолошке иновације имају најјачи утицај на еколошке исходе, док организационе иновације највише утичу на јачање пракси управљања. На друштвени учинак позитивно утичу обе врсте иновација, мада у мањој мери.

Оригиналност/вредност: Ово истраживање пружа нове увиде у диференциране ефекте врста иновација на ESG димензије, доприносећи литератури повезивањем иновационих стратегија са исходима одрживости у контексту транзиционе економије. Истиче важност разликовања технолошких и организационих иновација приликом процене ESG учинка.

Практична примена: Резултати истраживања могу да послуже менаџерима у хотелима и креаторима друштвених политика у дизајнирању иновационих стратегија које су усклађене са циљевима одрживости. Компаније које желе да побољшају еколошке резултате требало би да дају приоритет технолошким иновацијама, док оне које желе да ојачају управљање треба да се фокусирају на организационе иновације. Ови увиди су посебно вредни за доносиоце одлука у земљама у развоју које теже да уравнотеже конкурентност са ESG обавезама.

Ограничења истраживања: Ограничење истраживања односи се на чињеницу да су у истраживању учествовале само компаније које послују у Србији. Ово ограничење узорка може имати утицаја на генерализацију налаза на друге контексте. Поред тога, анализа се заснива на попречним подацима прикупљеним 2025. године, што спречава процену дугорочних ефеката иновација. Будућа истраживања требало би да се прошире на упоредне међународне узорке и лонгитудиналне дизајне.

Кључне речи: иновације, ESG перформансе, технолошке иновације, организационе иновације, моделирање структурних једначина.

ЈЕЛ класификација: M14, O30, Q56

Introduction

The dynamic nature of the business environment, driven by rapid changes in consumer habits and technological advancements, implies that only innovative companies can successfully adapt and remain competitive (Josimović et al., 2024). Innovation enables firms to meet market needs more efficiently than competitors by creating new products and optimizing processes, thereby allowing them to retain a larger share of consumer surplus or transfer it to consumers. As Kay (1993) emphasizes, innovation represents a central source of competitive advantage. However, the accelerated pace of technological development intensifies competition, stimulates the emergence of new markets, products, and services, and significantly shortens product life cycles, suggesting that innovation should be viewed not as a permanent, but as a difficult-to-sustain source of competitiveness (Josimović et al., 2025). The sustainability of innovation depends both on competitors' ability to imitate practices and on the availability of resources.

In addition, demographic shifts such as migration and population aging, combined with the convergence of consumer preferences and growing environmental awareness, compel enterprises to engage more intensively with sustainable practices. Excessive and uncontrolled resource exploitation has made the promotion of sustainability a societal

priority, further requiring companies to align with the concept of sustainable business. Under such circumstances, firms are driven to seek new, more efficient alternatives to maintain competitive advantage, or to combine existing alternatives in ways that exploit their synergistic effects (Josimović et al., 2024). This shift redirects the impact of innovation from purely economic and financial outcomes toward non-economic performance. A promising alternative that reconciles both requirements is innovation aimed at improving ESG performance - environmental, social, and governance outcomes—as the three dimensions of the ESG framework. Green innovations exemplify such an approach, serving as a valuable mechanism for mitigating resource and environmental constraints while advancing the sustainable development of industry (Wang & Li, 2020).

Although opponents of the ESG concept argue that companies have only one responsibility, maximizing profits (Radivojević et al., 2022), numerous empirical studies demonstrate that firms adhering to ESG principles can achieve competitive advantage and improve business performance (Alsayegh et al., 2020). This has been well documented across industries (Wu et al., 2020; Radivojević et al., 2022; Pimić et al., 2024). Unlike adherents of neoclassical theory, who emphasize profit as the sole objective, these studies show that environmental outcomes are also essential for superior profitability. In other words, companies can achieve high profits by implementing and promoting sustainability practices.

Positive effects of such practices are typically realized through enhanced corporate image and reputation (Liu & Hamori, 2020), which in turn improve competitiveness and market share by increasing demand for products and services. Business improvements are also frequently achieved through resource savings, reduced energy consumption, lower waste generation, and decreased emissions of harmful substances. These outcomes are largely the result of technological and organizational innovations. Hence, achieving and sustaining significant ESG performance is inseparable from a company's capacity to innovate. Put differently, the ability to innovate business processes is a prerequisite for conducting business in line with sustainable behavior (Ortiz-Villajos & Sotoca, 2018).

Despite this observation, limited scholarly attention has been devoted to examining the direct impact of innovation on firms' ESG performance. This gap in the literature represents a research void that the present study seeks to address. Moreover, empirical evidence suggests that the effect of innovation on firm performance is highly context-dependent (Anokhin & Schulze, 2009). Factors such as firm age, type of innovation, and cultural environment substantially shape the extent to which innovation influences performance outcomes. Existing studies therefore do not allow for universal or definitive conclusions, underscoring the importance of macroeconomic circumstances in which firms operate. Accordingly, the aim of this research is to identify the impact of innovation on ESG performance in general, and more specifically within enterprises in the Republic of Serbia. The specific macroeconomic conditions, primarily stemming from social developments of the late twentieth century and inefficiencies of the privatization process necessitate an examination of these effects under such circumstances.

While prior studies have extensively examined the role of innovation in enhancing competitiveness and sustainability, limited attention has been devoted to its direct impact on ESG performance, particularly in transition economies such as Serbia. This gap underscores the need for empirical investigation into how innovation shapes ESG outcomes under specific macroeconomic conditions.

Accordingly, the present study aims to explore the relationship between innovation and ESG performance in Serbian enterprises. The paper is structured as follows: Section 2 reviews the relevant literature, Section 3 outlines the methodology, Section 4 presents the empirical findings, and Section 5 discusses implications. Section 6 is conclusion.

1. Literature review

Numerous empirical studies show that innovations have great potential to influence the performance of companies (Hervas-Oliver et al., 2018; Son et al., 2018; Ahmad & Wu, 2022). In recent years, the growing focus on sustainable corporate behavior has spurred increased research into how innovation impacts a company's ESG performance (Xu et al., 2021; Daugaard & Ding, 2022; Sofie & Augustine, 2024). Studies on the impact of innovations on environmental performance dominate the literature. The findings of such conducted studies (Choe 2022; Zhang, 2021; Zheng et al., 2022) can be summarized in the following conclusion: innovations have a great potential to significantly reduce the negative effects of a business on the environment during the production process and save resources, which is closely related to their impact on the environment and society. This is mainly achieved through resource and energy savings (Choe, 2022), which are related to technological progress (Zheng et al., 2022). In other words, the authors contend that innovation contributes to enhanced ESG outcomes, with a pronounced effect on environmental performance.

However, when talking about innovation, it should be borne in mind that innovation is a multi-layered phenomenon (Kleinknecht et al., 2002), and that different types of innovations can have different impacts on the performance of a company (Damanpour et al., 1989). Innovation can be understood as the creation and exploitation of new and existing knowledge that connects market and technological opportunities (Dougherty, 1992). The multidimensional nature of innovation has led to the absence of a universally accepted classification within the scholarly literature. The prevailing typology typically differentiates between product, process, and organizational innovations. In the context of sustainability-oriented development, however, an alternative categorization that distinguishes technological, organizational, and social innovations has gained prominence (Salamzadeh et al., 2022). This framework broadly converges with the conventional classification, while simultaneously underscoring the wider societal dimension of sustainable innovation. Within this perspective, technological innovations encompass both product and process innovations as defined in the prevailing typology. Technological innovations focus on activities at the organizational level that reduce vulnerabilities and improve technological efficiency through changes in products, processes, or infrastructure.

Organizational innovation involves integrating sustainability into an organization's culture, processes, and strategy (Dukanac et al., 2025).

In the literature, particular emphasis is placed on the influence and importance of technological innovations on firms' ESG performance (Wang et al., 2024). Thus, research by Huang et al. (2023) shows that digital innovations have a positive impact on ESG performance of companies. The positive impact of technological innovations on ESG performance of companies can also be found in the papers of Yang et al. (2024), Liu et al. (2024), Cao et al. (2023), as well as Huang et al. (2023). The results of these studies indicate that the positive impact is mainly achieved through the reduction of carbon emissions and savings in consumption of resources. The findings of these authors, consistent with previous findings, imply that technological innovations drive ESG performance primarily by improving the environmental dimension of the concept. Accordingly, this provides the foundation for proposing a hypothesis:

H_{1.1} Technological innovations have a positive impact on environmental ESG performance of companies operating in the Republic of Serbia;

In the literature, few studies have addressed the impact of these innovations on the other two dimensions of the concept. Such is the research of Zheng et al. (2022). These authors have shown that green innovation, which is mainly associated with technological progress, has a positive impact on all three dimensions of the ESG concept. Similar findings were presented by Asadi et al. (2020), Dicuonzo et al., (2022), as well as Wang et al. (2024). Xu et al. (2021) have demonstrated the positive impact of innovation on the environmental and social dimensions of the ESG concept. In light of these findings, Daugaard & Ding (2022) and Sofie & Augustine (2024) point out that innovation is an intrinsic driver for improving overall ESG performance. Accordingly, this provides the foundation for proposing a hypothesis:

H_{1.2} Technological innovations have a positive impact on social ESG performance of companies operating in the Republic of Serbia;

Wang et al. (2023) confirmed that digital transformation enhances the quality of corporate governance. Similarly, Dedeić & Brnjas (2013) validated the hypothesis that the application of modern technologies, particularly information technologies, significantly accelerates improvements in corporate governance. Comparable findings were reported by Buglea et al. (2025), who examined the relationship between digital transformation as a proxy for technological innovation and non-financial performance metrics (ESG), including governance. Their results indicate a positive impact of technological innovations on governance performance. A positive relationship between technological innovations, specifically digitalization and digital transformation and corporate governance performance was demonstrated by Jelovac et al. (2022). Accordingly, this provides the foundation for proposing a hypothesis:

H_{1.3} Technological innovations have a positive impact on governance ESG performance of enterprises operating in the Republic of Serbia;

González-Blanco et al. (2018) examined the influence of non-technological innovation encompassing organizational and marketing innovation on the environmental performance of Spanish manufacturing firms. The study found a significant positive effect of technological innovation on environmental outcomes, thereby supporting the hypothesis that such innovation enhances environmental performance. Similar findings were presented by Sancak (2023). Accordingly, this provides the foundation for proposing a hypothesis:

H_{2.1} Organizational innovations have a positive impact on environmental ESG performance companies operating in the Republic of Serbia;

Gebhardt et al. (2023) analyzed the impact of organizational innovations on ESG performance, with particular emphasis on their effect on social performance. Their findings indicate that organizational innovation significantly enhances social outcomes. Similarly, Dey et al. (2020) established that organizational innovation facilitates the adoption of social practices, which constitute key components of the social dimension of ESG performance in SMEs. The findings of these authors suggest that:

H_{2.2} Organizational innovations have a positive impact on social ESG performance of enterprises operating in the Republic of Serbia;

Liang & Li (2023), through their analysis of organizational resilience, demonstrated that organizational innovations enhance governance performance, thereby reinforcing overall ESG outcomes. Complementary evidence is provided by Sierdovski et al. (2022), who, in the context of sustainable business practices, showed that the development of organizational innovation capacities improves organizational performance via strengthened ESG results. Their findings particularly underscore the advancement of management performance, as firms strive for greater efficiency and effectiveness in processes and products. Accordingly, this provides the foundation for proposing a hypothesis:

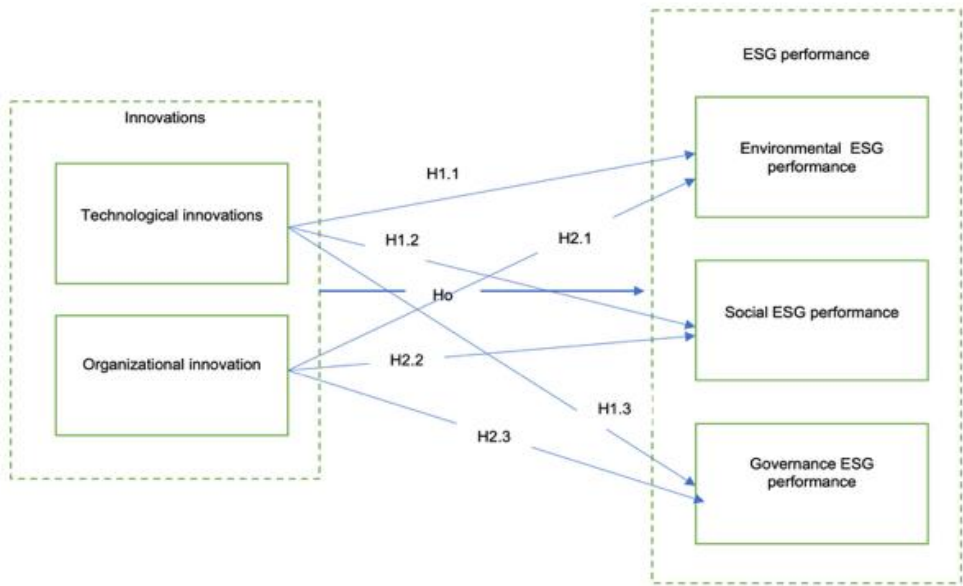
H_{2.3} Organizational innovations have a positive impact on governance ESG performance of companies operating in the Republic of Serbia.

However, in contrast to these studies, there are authors, such as Afum et al. (2021), Zhao et al. (2021), Zheng & Iatridis (2022), who question the impact of innovation on the dimensions of the ESG concept. Thus, Zhao et al. (2021) point to a negative impact of these innovations, particularly on the social dimension of the ESG concept, while the evidence from Afum et al. (2021) is difficult to interpret. The findings of the research are in a similar vein (Ahmad & Wu, 2022). By analyzing the literature in this area, Ahmad & Wu (2022) concluded that no generalizable finding can be established regarding the impact of innovation on ESG performance. Their findings suggest that the overall impact of innovation on business performance is an aggregate effect resulting from both positive and negative intermediary effects that need to be further moderated by contextual factors. This attitude is consistent with (Rosenbusch et al., 2011). Given the limited academic literature explicitly addressing how organizational innovations affect ESG performance - particularly regarding how these two types of innovations influence the dimensions of the ESG concept - the aim of this research is justified. An exception is the research by Zhu & Huang (2023), which documented the positive impact of organizational innovation on ESG performance.

However, these authors did not study the impact of these innovations on individual dimensions of the concept, but rather analyzed them at an aggregated level.

Based on the hypotheses, the proposed research model is presented in Figure 1.

Figure1: Research model



Source: Authors

2. Research methodology

The lack of data regarding the ESG performance of companies operating in the Republic of Serbia means that the ESG performance must be expressed through latent variables. In other words, data on ESG performance concerning all three dimensions of the ESG concept are collected using a questionnaire, developed from relevant literature. Table 2 shows the items from the questionnaire and their sources.

Table 1: Questionnaire

Variables	Item	Source	FL	AVE	CR
Technological innovations (TI)	The company is proactive in new product and/or service development.	Yang et al., (2019). Nikolic et al., (2022)	0.945	0.74	0.92
	The company introduces new products or services.		0.873		
	The company introduces numerous changes in business processes.		0.811		
	The company introduces innovations in logistics processes.		0.809		

Organizational Innovation (OI)	The company innovates in the organizational structure.	Nikolić et al., (2022).	0.852	0.68	0.91
	The company adopts modern management methods.		0.783		
	The company innovates its marketing strategies.		0.901		
	The company innovates its quality management system.		0.794		
	The company innovates the HRM system		0.791		
	The company innovates information systems.		0.852		
Environmental performance (EV)	The company has a number of environmental certifications.	Asadi et al., (2020).	0.753	0.62	0.80
	Company's overall environmental performance has improved over the past five years.		0.771		
	Consumption of resources, e.g. Water, electricity and gas have decreased over the past three years.		0.846		
	The company's regulations are in line with environmental regulations.		0.798		
Social performance (CR)	The customers' motivation has increased during the last 3 years	Asadi et al., (2020). Barbosa et al., (2024).	0.783	0.65	0.81
	The customers' satisfaction has increased during the last 3 years.		0.873		
	The company provides more social or environmentally friendly services in the community		0.762		
	The company serving more beneficiaries (disadvantaged people) or solving environmental issues		0.814		
Governance performance (GG)	The company is characterized by transparent reporting	Cantele et al., (2024).	0.873	0.64	0.90
	The company applies key sustainability performance indicators.		0.762		
	Fair business practices are promoted		0.806		
	Clearly defined procedures are in place to mitigate the risk of corruption among board members.		0.815		
	There are clearly defined procedures for the fair management of conflicts of interest among internal stakeholders.		0.738		

Source: Authors

The validity of the questionnaire was tested using factor analysis, i.e. convergent and divergent validity testing, as well as the internal consistency of items using the reliability coefficient. The adequacy of the sample was confirmed by KMO measure of 0.834, as well as the Bartlett's sphericity test ($\chi^2 = 253$, $p < 0.001$). Participants received an email

containing a link to the questionnaire. The research analyzed a sample of companies from different industries operating in the Republic of Serbia. The sample includes large companies according to the IAS classification criterion that have implemented certain ISO standards related to the ESG concept, such as ISO 9000, 14000, and 26000. This avoids the influence of industry-specific characteristics on both innovation and ESG, because different industries face different pressures for innovation and ESG compliance under EEC regulations. The survey included 113 companies that met the above criteria. The data was collected in 2025. Items from the questionnaire were evaluated using a Likert scale from 1 - strongly disagree, to 5 - strongly agree.

3. Results of the analysis

Before testing the hypotheses, we assessed the fit of the proposed model. As shown in Figure 2, the goodness-of-fit statistics were calculated for the five-factor measurement model. Table 1 also presents the results of the factor analysis. All items exhibited factor loadings above 0.60, with no cross-loadings exceeding 0.30, which justified their retention for subsequent analyses. The reliability coefficients ranged from 0.80 to 0.91, indicating strong internal consistency. Model fit indices were satisfactory: Comparative Fit Index (CFI) = 0.91, Bentler-Bonett Normalized Fit Index (NNFI) = 0.91, and Root Mean Square Error of Approximation (RMSEA) = 0.024. Average Variance Extracted (AVE) values ranged between 0.62 and 0.74, confirming good convergent validity. Overall, these results suggest a strong fit between the hypothesized measurement model and the observed data. Divergent validity was assessed using the Fornell-Larcker criterion, with results shown in Table 2. As indicated, the values along the main diagonal exceeded the inter-factor correlations, thereby supporting the discriminant validity of the questionnaire.

Table 2: Divergent validity

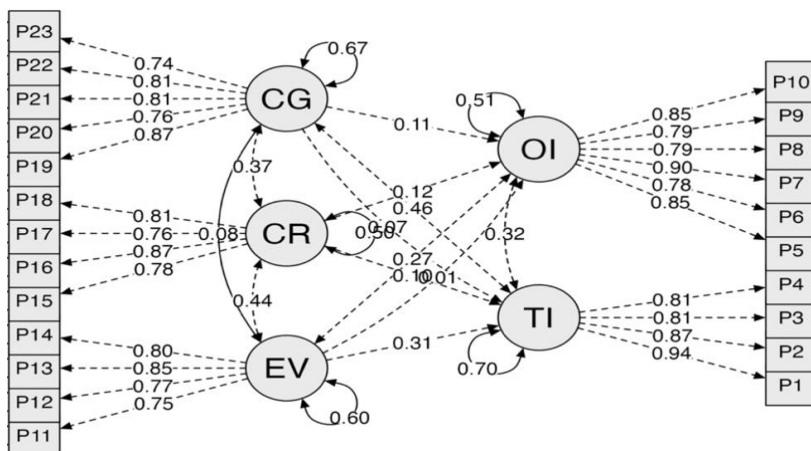
	TI	OI	EV	CR	GG
TI	0.860				
OI	0.421	0.825			
EV	0.154	0.087	0.787		
CR	0.183	0.112	0.034	0.806	
GG	0.123	0.276	0.054	0.097	0.800

Note: All correlation coefficients are statistically significant

Source: Authors

The hypotheses were tested using structural equation modelling, with results reported in Table 3 and illustrated in Figure 3. The model demonstrated acceptable fit, as indicated by the following indices: Comparative Fit Index (CFI) = 0.90, Bentler-Bonett Normalized Fit Index (NNFI) = 0.90, and Root Mean Square Error of Approximation (RMSEA) = 0.025, thereby confirming the validity of the proposed model.

Figure2: Research model



Source: Authors

Table 3: Structural equation modelling results

Latency factor	Coefficient	St. error	Z-Test	p-value	Result
EV - TI	0.311	0.008	38.875	0.000	H _{1,1} is accepted.
EV - OI	0.011	0.001	11.000	0.000	H _{1,2} is accepted.
CR - TI	0.096	0.021	4.571	0.000	H _{1,3} is accepted.
CR - OI	0.121	0.011	11.000	0.000	H _{2,1} is accepted.
CG - TI	0.065	0.003	21.667	0.000	H _{2,2} is accepted.
CG - OI	0.114	0.018	6.333	0.000	H _{2,3} is accepted.

Source: Authors

The structured estimates presented in Table 3 demonstrate that all hypotheses are supported.

4. Discussion of the results with possible implications

The results presented in Table 3 are consistent with expectations. All the proposed hypotheses can be accepted as valid, given that the p-values exceed the significance threshold at the 0.05 confidence level. These findings confirm that innovations play a significant role in achieving ESG performance, in line with the conclusions of numerous authors such as Xu et al. (2021) and Wang et al. (2024), who emphasize that innovation is critical to identifying win-win strategies through which economic growth can be attained in a sustainable manner. However, the findings call for a more nuanced analysis of their individual effects, particularly considering the limited resources and capacities that companies can allocate to innovation. As noted by Leonidou et al. (2013), innovations typically demand substantial resources and capacities, while their benefits are often not immediately observable, which influences firms' willingness to implement them. The

results of this study indicate that technological innovations are the most influential, exerting the strongest impact on environmental ESG performance. This outcome is expected, given that such innovations directly enhance resource efficiency and contribute to the reduction of emissions, waste, and energy consumption. Due to their material nature, technological innovations exert a more pronounced effect on environmental outcomes compared to the so-called soft organizational components. This finding corroborates the arguments of Amores-Salvadó et al. (2014), as well as the empirical evidence reported by Cao et al. (2023). At the same time, it contrasts with the conclusions of González-Blanco et al. (2018), who emphasize that non-technological innovation contributes to achieving better environmental performance.

The smallest impact of these innovations on governance ESG performance can be explained by the fact that the digitalization processes are largely completed and that the effects of digitalization are not felt to the same extent as at the beginning of their implementation. The reason for this can also be sought in the fact that technological innovations require integration into the management process for their effects to be felt on organizational improvements. A lack of effective integration may cause less impact. This can be a good motive for future research. The statistical significance of these innovations on governance performance can be explained by increased transparency, improved communication in the enterprise and agility. A somewhat stronger impact on environmental performance compared to governance performance can be explained by the fact that innovative processes and products, through enhancing corporate reputation and/or transferring efficiency gains into donations to the local community, contribute to the improvement of environmental outcomes of companies operating in the Republic of Serbia.

Regarding the impact of organizational innovation on the individual dimensions of the ESG concept, the findings are consistent with expectations. Similar to technological innovations, but in the opposite direction, organizational innovations exert the least influence on environmental performance. This result contrasts with the study of González-Blanco et al. (2018), who argue that organizational innovation has the greatest effect on environmental outcomes. However, the intangible nature of organizational innovations largely explains their limited environmental performance, as they are primarily directed toward improving managerial processes, establishing new stakeholder relationships (in terms of intellectual capital), enhancing communication, and strengthening organizational culture. Consequently, these innovations exert their strongest influence on governance performance, a conclusion supported by the findings of Liang & Li (2023) and Sierdovski et al. (2022). Organizational innovation directly reshapes institutional frameworks, processes, and cultural practices that underpin good governance, thereby exerting a stronger and more direct impact on governance than technological innovation. The same reasoning applies to their significant effect on social ESG performance: by promoting ethical standards, respecting external stakeholders, and introducing criteria of socially responsible behavior, organizational innovations enhance the consistency and scope of socially responsible activities. This, in turn, strengthens corporate reputation and positively contributes to the improvement of the social dimension of ESG. This is in line with Dey et al. (2020) and Gebhardt et al. (2023).

Understanding both the intensity of the impact of innovations on ESG performance and the channels through which these impacts are realized is crucial for balancing the complexity of implementation with their expected effects. With the rational use of limited resources, companies in the Republic of Serbia must make strategic choices depending on the outcomes they seek to achieve. In summary, technological innovations exert the strongest influence on environmental performance, yet they demand the greatest resources and capacities from firms. Conversely, organizational innovations require fewer resources and capacities, but their effects are most evident in strengthening governance performance and least pronounced in environmental protection.

Conclusion

The research confirms the positive impact of innovation on ESG performance. More specifically, technological innovations exert the strongest influence on environmental outcomes, while organizational innovations have the greatest effect on governance performance. These differences can be explained by the material nature of technological innovations, which directly improve resource efficiency and reduce emissions, and the intangible nature of organizational innovations, which reshape managerial processes, stakeholder relations, and governance structures. Taken together, the findings highlight the importance of innovation as a strategic lever for advancing sustainable business, while also underscoring the need for a holistic approach that integrates both technological and organizational innovations to achieve balanced improvements across all dimensions of the ESG framework.

What this study does not reveal, but sets the foundation for future research, is the reasons behind the inefficient integration of technological innovations into managerial processes, which would strengthen their effects on the other two dimensions of the ESG concept. The study also leaves room for similar research, primarily to encourage the use of more objective and quantitative measures of ESG performance. Due to the lack of available ESG data, the study relies on subjective assessments. Although the validity of the questionnaire was tested, the subjectivity of responses inevitably influences the results and, consequently, the conclusions. When interpreting the findings, it is necessary to take into account the limitations arising from the sample. Although the sample included a relatively large number of companies, the requirement that firms had implemented ISO standards related to the ESG concept restricts the generalizability of the results. Therefore, future research is recommended to include a more heterogeneous sample.

The research directly examined the impact of innovation on ESG performance. Nevertheless, it is well established that a variety of factors can shape the effects of innovation. Future studies are therefore encouraged to investigate intermediary and conditional variables, such as regulatory frameworks, organizational culture, and leadership, that may moderate or mediate the relationship between innovation and ESG outcomes. Moreover, the present study did not address the dynamic interactions between innovation and ESG performance over time. Subsequent research could expand the scope by employing causal methods to explore these dynamics, thereby providing deeper insights

into the long-term implications of different innovative strategies for sustainable business. While the study offers valuable evidence on the role of innovation in enhancing ESG performance in the Republic of Serbia, it also underscores the importance of further research that acknowledges its limitations and broadens the analytical framework to strengthen understanding of the causal links between innovation and ESG performance.

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