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The impact of ISO 14001 standards and non-financial reporting on companies' financial performance

Утицај ISO стандарда 14001 и нефинансијског извештавања на финансијске перформансе компанија

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Abstract: In today's dynamic business environment, companies increasingly understand how important care for the environment is for the success of their operations. There is an increasing number of companies that implement the ISO 14001 standard in their operations. The main research objective is to examine whether the implementation of the ISO 14001 standard and non-financial reporting affect the financial performance of companies. The research is conducted using induction and deduction methods, while the practical part focuses on statistical data analysis using non-parametric tests. The main conclusion of this research is that there is no statistically significant difference in financial performance in the period from 2019 to 2021, among companies that have implemented the ISO 14001 standard and companies that have not implemented the standard, as well as companies that disclose and companies that do not disclose non-financial statements.
Keywords: ISO 14001 standard, financial performance, environmental performance, non-financial reporting.
JEL classification: Q51, Q56, Q57, M14

Сажетак: У данашњим динамичним условима пословања, компаније све више схватају колико је значајна брига о животној средини за успешност пословања. Све је већи број предузећа која у своје пословање имплементирају стандард ISO 14001 и обелодањују нефинансијске извештаје. Основни циљ истраживања у раду је испитивање да ли имплементација ISO 14001 стандарда и нефинансијско извештавање утичу на финансијске перформансе компанија. Истраживање се спроводи методама индукције и дедукције, док се практични део рада заснива на статистичкој анализи података применом непараметарских тестова. Као главни закључак овог истраживања истиче се то да не постоји статистички значајна разлика у финансијским перформансама, у периоду од 2019. до 2021. године, између предузећа која имају имплементиран стандард ISO 14001 и предузећа која немају имплементиран стандард, као и предузећа која обелодањују и предузећа која не обелодањују нефинансијске извештаје.
Кључне речи: ISO 14001 стандард, финансијске перформансе, еколошке перформансе, нефинансијско извештавање

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ЈЕЛ класификација: Q51, Q56, Q57, M14

Introduction

Environmental management has increasingly become a key focus for companies because of rising concerns over the effects of their activities on natural resources (Arocena, Zouaghi & Orcos, 2023). The ISO 14001 standard sets up an environmental management system that enables companies to create their own policies and objectives and to access all critical environmental information they require. As a result, companies integrate environmental strategies into their business plans to reap various benefits from effective environmental management. These benefits include reduced environmental costs and waste, increased employee motivation and customer satisfaction, improved product quality and enhanced public relations (Gadenne, Kennedy & McKevier, 2009). Reducing negative environmental impacts and improving environmental performance cannot be achieved if companies do not recognize the strategic importance of the environmental management process and do not integrate the environmental management process and environmental protection policy into their business strategy (Jovanović, Todorović & Medved, 2022). The objectives of environmental protection should be in accordance with the environmental policy, monitored, updated, constantly improved and occupy a significant place in the company's business policy. Consequently, a growing number of companies are adopting EMS, with ISO 14001 being the most widely recognized international standard in the field of environmental protection (Jovanović, 2023). The implementation of the ISO 14001 standard can be an investment to improve the company's reputation (Jovanović & Janjić, 2018). ISO 14001 is not a performance standard, i.e. it does not specify the level of environmental performance organizations must achieve. Instead, it outlines a system that assists organizations in reaching their own environmental goals (Blyde, 2021). Implementation of the ISO 14001 standard is not a simple and easy task. A study by Babakri, Bennett & Franchetti (2003) indicates that most firms typically take 8 to 19 months to become officially certified. The question of whether "green" is good for profit is the subject numerous scholars have addressed. Some argue that "green" costs more because existing systems need to be changed, while some argue that the market values environmentally responsible companies, suggesting that strong environmental performance can positively impact financial performance (Sarumpaet, 2015; Ong, The, Goh & Thai, 2015; Moneva & Ortas, 2009).

The rising importance of environmental protection has made it necessary for companies to provide non-financial information alongside financial data to evaluate their environmental impact. Non-financial reporting refers to environmental, social and governance issues (Environmental, Social and Corporate Governance – ESG), then corporate social responsibility, internally generated intangible assets such as intellectual property, knowledge, brand reputation and other drivers of value that are not usually reported in monetary units (Todorović, Savić & Jovanović, 2020). Given that current non-financial reporting relies on various standards and frameworks, the European Commission adopted the first set of European Sustainability Reporting Standards (ESRS) in June 2023, as a unique non-financial reporting framework for European companies. These standards will be in use in the reporting year 2024, and companies are required to disclose statements in 2025. The goal of these standards is to establish a framework that will bring sustainability reporting to the same level as financial reporting, in terms of reporting standardization, and facilitate the comparability of sustainability information disclosed by different companies. European sustainability reporting standards are based on four reporting areas, namely: corporate governance, strategy, impact, risk and opportunity management, as well as metrics and goals (Serbian Chamber of Commerce, GIZ, 2023).

Efforts to disclose non-financial information can yield both advantages and expenses for companies. Consequently, depending on whether the benefits outweigh the costs or vice versa, such disclosure can have either a positive or negative effect on financial performance (Borodin et al., 2019; Asuquo, Dada & Onyeogaziri, 2018; Vitale, Cupertino & Riccaboni, 2022).

Given the above, the primary research objective is to investigate how the adoption of the ISO 14001 standard and non-financial reporting impact companies' financial performance.

The issue of ISO 14001 standard implementation and non-financial reporting is very popular around the world. However, it has not been sufficiently researched in Serbia and developing countries. There being few empirical papers related to this area, this paper fills the gaps in domestic literature and aims to expand the related knowledge base. The paper aims to raise awareness among domestic companies about the potential benefits of adopting the ISO 14001 standard and the significance of integrating non-financial information into their decision-making processes. The research is significant because it indicates the current situation Serbian companies face when it comes to ISO 14001 standard implementation and non-financial reporting. In addition, this paper is significant because it allows drawing conclusions that can help companies improve their environmental management process.

Theoretical research was conducted using induction and deduction methods, while the practical part included statistical data analysis using non-parametric tests and SPSS (Statistical Package for Social Sciences). In addition to the methods mentioned above, analysis, synthesis and comparison were used to interpret results and draw conclusions.

The paper consists of five parts. After the introduction, the paper presents an overview of previous research. The third part describes research methodology. The fourth part gives research results and their analysis, while the final part of the paper presents the final research conclusion.

1. Overview of previous research and development of research questions

1.1. The link between ISO 14001 and financial performance

Sarumpaet (2005) investigates the link between environmental and financial performance in Indonesian companies. Environmental performance is assessed using the environmental rating given by the Ministry of the Environment, while financial performance is gauged by the rate of return on assets. The study's findings reveal no significant relationship between the environmental and financial performance of the companies examined.

Moneva & Ortas (2009) explore the significance of the relationship between corporate environmental performance and financial performance, to make managers aware that adequate environmental management can affect companies' financial success. They analyze the connection between environmental and financial performance using a second-order partial least squares (PLS) model, on a sample of 230 European companies, extending the traditional approach with individual countries. The research results indicate that companies with better environmental performance also achieve better financial performance.

Ong, The, Goh & Thai (2015) examine the relationship between ISO 14001 certification and financial performance in Malaysia, on a sample of 68 listed companies. Firm size (large, medium, and small firms) and ownership status (local or foreign ownership) are used as control variables. The results of the analysis reveal that financial performance of listed companies in Malaysia, judging by ROA and ROE, improved after ISO 14001 certification. This significant indicator indicates that investors in Malaysia, as a developing country, prefer to invest in companies that improve environmental management. In addition, the adoption of environmental management accounting benefits companies through cost reduction, performance improvement, and increased brand awareness and publicity. As a result, companies in Malaysia are motivated to adopt standards such as ISO 14001 in order to improve ROA and ROE.

Amores-Salvadó, Martin-de Castro & Navas-López (2015) investigate the complementarity between environmental management systems and environmental innovation capabilities, as well as the impact of this relationship on company performance. They test the proposed theoretical model on a sample of 157 metal production and transformation companies in Spain, with 100 or more employees. Since literature lacks consensus regarding the actual contribution of these systems and since it is not clear whether they encourage or prevent environmental innovation and whether they improve company performance, authors use this analysis to produce adequate answers. Their results indicate that environmental management systems positively influence the relationship between environmental innovation and companies' market performance.

The relationship between corporate environmental performance and financial performance has been thoroughly examined in developed countries, but less so in developing countries. For this reason, Manrique & Martí-Ballester (2017) conduct an analysis with the main objective to investigate how corporate environmental performance influences corporate financial performance during the global financial crisis, taking into account the economic development of the country. They focus on a sample of 2,982 large companies in the period from 2008 to 2015. The results demonstrate that adopting environmental practices significantly enhances corporate financial performance in both developed and developing countries. Nevertheless, this positive effect is more pronounced in firms based in developing countries compared to those in developed countries.

Hang & Geyer-Klingerberg (2018) investigate the relationship between corporate environmental performance and financial performance. Given the mixed and varied results in existing literature, their research aims to clarify the causality between environmental and financial performance. The findings indicate that this causal relationship varies depending on the time period examined.

Budiharjo (2019) conducts a study to evaluate the effect of environmental and financial performance on company value, using secondary data from 2015 to 2017. The study employs the T test and multiple linear regression analysis. The results indicate that while environmental performance positively affects company value, the impact is not statistically significant.

In China, Wang & Zhao (2020) analyze the impact of ISO 14001 certification on financial performance on a sample of 63 companies listed on the stock exchange in the period from 2003 to 2018. They also explore how certification affects exports and the influence of company size and age. The results reveal that ISO 14001 certification initially has a negative effect on financial performance, though this negative impact decreases over time. Additionally, larger and older firms experience a more positive relationship between ISO 14001 certification and non-financial performance. The study highlights a nuanced view of ISO 14001 certification: while it may initially harm financial performance, its effects improve with time and contribute positively to a company's international competitive advantage. The findings suggest that, overall, ISO 14001 certification can ultimately benefit China's economy, though this impact requires careful evaluation.

Wu (2020) conducts a case study to investigate the relationship between environmental and financial performance in China, focusing on a sample of 29 manufacturing companies from 2012 to 2018. The regression analysis results show that environmental performance significantly positively affects the company's financial indicators. These findings suggest that for manufacturing enterprises in China to achieve long-term growth and gain recognition from various stakeholders, under increasingly strict control over the environment, it must attach importance to environmental performance, make resource utilization more efficient, improve technological innovation, and this improve financial performance.

Based on the aforementioned considerations and research, the research question in this paper is:

Does the implementation of the ISO 14001 standard affect the financial performance of companies in Serbia?

1.2. The relationship between non-financial reporting and financial performance of companies

McWilliams & Siegel (2001) conducted research to explore the relationship between corporate social responsibility (CSR) activities and financial performance. Their findings indicate that there is a neutral relationship between corporate social responsibility activities and financial performance.

Murray, Sinclair, Power & Gray (2006) investigate the connection between social and environmental disclosures and the financial market performance of major UK companies. Their study employs two data sets: the CSEAR database for social and environmental disclosures and data on stock market returns for these companies. The findings indicate that there is no direct correlation between non-financial disclosures and stock market returns.

Niskala & Schadewitz (2010) conducted a study to examine how the disclosure of non-financial information influences the value of companies in Finland. Their analysis, covering the period from 2002 to 2005, utilized a traditional valuation model with non-financial reporting as the independent variable. The measurement of non-financial reporting was based on whether companies provided financial reports in line with GRI (Global Reporting Initiative) standards. The authors found that a company's communication with stakeholders through non-financial reporting is a significant factor affecting its value. They attribute these findings to the fact that such reporting enhances communication channels, thereby reducing information asymmetry between managers and investors.

Research conducted by Angelia & Suryaningsih (2015) investigates the influence of environmental performance and CSR reporting on financial performance. The study sample includes 17 publicly listed companies. The findings reveal that environmental performance significantly affects both ROA and ROE. However, while CSR reporting has a significant impact on ROE, it does not affect ROA.

Asuquo, Dada & Onyeogaziri (2018) conducted research in Nigeria to explore the impact of sustainability reporting on the corporate performance of brewery companies. The study found that disclosures related to environmental, economic, and social performance do not have a significant effect on ROA of the selected listed companies in Nigeria.

Borodin et al. (2019) conducted a study examining the impact of non-financial disclosures on the financial performance of Russian companies. The findings indicate that non-financial disclosures have a long-term effect on ROA. Additionally, the study reveals intersectoral differences: non-financial disclosures significantly positively impact the growth of Tobin's Q ratio in the basic materials and utilities sectors, while ROA growth is observed in the energy, industrial, and similar sectors. Conversely, non-financial disclosures do not significantly affect financial indicators in the financial sector, which appears to be less focused on social issues such as environmental sustainability and social welfare.

Research conducted by Singh & Chakraborty (2021) in India finds no statistically significant relationship between financial performance and the quality and quantity of corporate social responsibility disclosures. The data on corporate social responsibility is sourced from the annual reports of the sampled companies. The study constructs a multidimensional measure of corporate social responsibility disclosure based on stakeholder theory, encompassing various stakeholder groups such as: employees, customers, investors, the community, and the environment. Multiple regression analysis is employed to explore the relationship between corporate social responsibility disclosure and financial performance.

Vitale, Cupertino & Riccaboni (2022) conduct research focusing on the agricultural and beverage sectors to examine the impact of mandatory non-financial reporting on financial performance. They perform a regression analysis using a sample of 180 listed companies over an 8-year period. Additionally, the study explores the moderating effects of non-financial reporting regulations on the relationship between sustainability and financial performance. The findings reveal a positive direct effect of mandatory non-financial reporting on operational performance, while non-financial reporting regulations negatively influence the relationship between sustainability and financial performance.

Based on the aforementioned considerations and research, the starting research question in this paper is:

Does non-financial reporting affect the financial performance of companies in Serbia?

2. Research sample and methodology

Proceeding from the defined research objective and research questions, empirical research in this paper relies on quantitative methodology. Empirical research focuses on a sample of 56 companies in the National Register of Pollution Sources. The research includes secondary data collection and analysis. The data is taken from reports available on the website of the Business Registers Agency (www.apr.gov.rs), as well as from company websites. The empirical part of the paper focuses on statistical data analysis using the non-parametric Mann Whitney U test and SPSS (Statistical Package for Social Sciences). The results obtained using the methods of analysis, synthesis and comparison point to relevant conclusions.

Table 1: Sample characteristics

	Frequency	%
Legal form		
JP	6	10,7
AD	15	26,8
DOO	35	62,5
Size		
Micro	2	3,6
Small	7	12,5
Medium	20	35,7
Large	27	48,2

ISO 14001 standard implementation		
Yes	33	58,9
No	23	41,1
Non-financial disclosure		
Yes	39	69,6
No	17	30,4

Source: Author

According to the Environmental Protection Agency, 179 companies are obliged to submit data on the sources of environmental pollution to the National Register of Pollution Sources. In this research, the sample includes 56 companies, which is 31.28% of the total number of companies that submit data to the National Register of Pollution Sources. As shown in Table 1, the sample mostly includes limited liability companies (62.5%), joint stock companies are in the second place (26.8%), while public companies are the least (10.7%). According to the company size, the sample includes large companies the most, followed by medium and small companies, while micro companies are the least included. If the sample is viewed according to the number of companies that have implemented the ISO 14001 standard, it can be seen that there are more companies that have implemented the standard than those that have not implemented the standard. When it comes to the criterion of disclosure of non-financial information, the sample includes a larger number of companies that disclose non-financial information than those that do not disclose this type of information.

3. Research results and analysis

The following part of the paper presents the results of the empirical research, where the non-parametric Mann-Whitney U test is used to answer the question of whether there is a difference between companies that have implemented the ISO 14001 standard, used in this paper as a measure of environmental performance, and companies that have not implemented the standard, when it comes to financial performance, as well as the question of whether there is a difference between companies that disclose and companies that do not disclose non-financial information, both in terms of financial performance. Based on the previous research it is assumed that companies that have implemented the ISO 14001 standard have better financial performance than those that have not implemented the standard (Ong, The, Goh & Thai, 2015; Moneva & Ortas, 2009; Amores-Salvadó, Martin-de Castro & Navas-López, 2015; Wu, 2020; Manrique & Martí-Ballester, 2017). Also, it is assumed that companies that disclose non-financial information have better financial performance than companies that do not disclose non-financial information, similar to the results of previous research (Borodin et al., 2019; Vitale, Cupertino & Riccaboni, 2022; Niskala & Schadewitz, 2010).

3.1. Finding a statistically significant difference between companies that have implemented the ISO 14001 standard

and companies that have not implemented the standard in terms of financial performance

Financial performance is measured using two indicators, the rate of return on assets (ROA) and the rate of return on equity (ROE). The analysis was performed using the non-parametric Mann-Whitney U test.

Table 1: The result of Mann-Whitney U test

Research dimension	ISO 14001	N	Mean Rank	Mann-Whitney U	Z	Sig.
ROA-2019	Implemented	33	29.82	303,000	-1.031	0.303
	Not implemented	22	25.27			
ROA-2020	Implemented	33	29.79	337,000	-0.708	0.479
	Not implemented	23	26.65			
ROA-2021	Implemented	33	31.21	257,000	-1.821	0.069
	Not implemented	22	23.18			

Source: the authors

The results of the Mann-Whitney U test in Table 1 show that, when 2019-2021 ROA, i.e. return on assets, is taken into account, there is no statistically significant difference between companies that have implemented the ISO 14001 standard and companies that have not implemented the standard, since in 2019 $p>0.05$ ($U=303{,}000$, $Z=-1.031$, $p=0.303$), in 2020 $p>0.05$ ($U=337{,}000$, $Z=-0.708$, $p=0.479$), while in 2021 $p>0.05$ ($U=257{,}000$, $Z=-1.821$, $p=0.069$).

Table 2: The result of Mann-Whitney U test

Research dimension	ISO 14001	N	Mean Rank	Mann-Whitney U	Z	Sig.
ROE-2019	Implemented	32	23.78	233,000	-0.819	0.413
	Not implemented	17	27.29			

ROE-2020	Implemented	32	24.41	253,000	-0.399	0.690
	Not implemented	17	26.12			
ROE-2021	Implemented	32	26.17	202,500	-1.170	0.242
	Not implemented	16	21.16			

Source: the authors

The results of the Mann-Whitney U test in Table 2 show that, when 2019-2021 ROE is taken into account, there is no statistically significant difference between companies that have implemented the ISO 14001 standard and companies that have not implemented the standard, since in 2019 $p>0.05$ (U=233,000, Z=-0,819, p=0,413), in 2020 $p>0.05$ (U=253,000, Z=-0.399, p=0.690), while in 2021 $p>0.05$ (U=202,500, Z=-1.170, p=0.242).

Based on the above, when the three-year ROA and ROE are taken into account, we see that the results of the Mann-Whitney U test point to no statistically significant difference between the financial performance of companies that have implemented the ISO 14001 standard, used in this research as a measure of environmental performance, and companies that have not implemented the specified standard. Hang & Geyer-Klingeberg (2018) conclude that higher environmental performance does not affect companies' financial performance in the short term. However, they find that, over the long term, companies experience significant benefits from improved environmental performance. This suggests that the relationship between environmental and financial performance is contingent upon the period of observation. Sarumpaet (2005) points to the absence of a significant relationship between financial and environmental performance, which is in line with the results of the research conducted in this paper. Finally, it should also be noted that Budiharjo (2019) states that environmental performance, expressed in the form of ISO 14001 standard implementation, does not have a significant impact on the sales value of companies. The results obtained in this research can be explained by the fact that companies in Serbia still do not recognize the importance of ISO 14001 standard implementation. In addition, the reasons for such results may be a relatively small sample and the lack of information on when companies implemented the ISO 14001 standard, specifically the time elapsed from its implementation to the monitoring of financial performance, means that we cannot accurately assess how the duration of adherence to the standard influences financial outcomes.

3.2. Finding a statistically significant difference between companies that disclose and companies that do not disclose non-financial information in terms of financial performance

The second part of the research examines the relationship between companies that disclose non-financial information and companies that do not disclose non-financial information, in terms of financial performance.

Table 3: The result of Mann-Whitney U test

Research dimension	Non-financial information	N	Mean Rank	Mann-Whitney U	Z	Sig.
ROA-2019	Discloses	39	29.74	244,000	-1.260	0.208
	Does not disclose	16	23.75			
ROA-2020	Discloses	39	29.58	289,500	-0.748	0.454
	Does not disclose	17	26.03			
ROA-2021	Discloses	39	28.46	294,000	-0.334	0.739
	Does not disclose	16	29.74			

Source: the authors

Based on the results of the Mann-Whitney U test in Table 3, when considering 2019-2021 ROA, it can be concluded that there is no statistically significant difference between companies that disclose non-financial information and companies that do not disclose this type of information, since in 2019 $p>0.05$ (U=244,000, Z=-1.260, p=0.208), in 2020 $p>0.05$ (U=289,500, Z=-0.748, p=0.454), while in 2021 $p>0.05$ (U=294,000, Z=-0.334, p=0.739).

Table 4: The result of Mann-Whitney U test

Research dimension	Non-financial information	N	Mean Rank	Mann-Whitney U	Z	Sig.
ROE-2019	Discloses	37	25.08	219,000	-0.070	0.944
	Does not disclose	12	24.75			
ROE-2020	Discloses	37	25.04	213,000	-0.209	0.834
	Does not disclose	12	24.25			
ROE-2021	Discloses	36	25.32	186,500	-0.702	0.482
	Does not disclose	12	22.04			

Source: the authors

Based on the results of the Mann-Whitney U test in Table 4, when taking into account 2019-2021 ROE, it can be concluded that there is no statistically significant difference between companies that disclose non-financial information and companies that do not disclose this type of information, since in 2019 $p>0.05$ (U=219,000, Z=-0.070, p=0.944), in 2020 $p>0.05$ (U=213,000, Z=-0.209, p=0.834), while in 2021 $p>0.05$ (U=186,500, Z=-0.702, p=0.482).

Based on the analysis of three-year ROA and ROE, the Mann-Whitney U test results indicate no statistically significant difference in financial performance between companies that disclose non-financial information and those that do not. These findings partially align with the results of Angelia & Suryaningsih (2015), which also found that corporate social responsibility reporting does not impact financial performance when measured by return on assets, but does have a significant effect when measured by return on equity. Singh & Chakraborty (2021) conclude that there is no statistically significant relationship between financial performance of companies and corporate social responsibility disclosure. Borodin et al. (2019) believe that non-financial disclosures in the financial sector do not have a significant impact on financial indicators. Murray, Sinelair, Power & Gray (2006) use stock returns as a measure of financial performance and conclude that there is no direct relationship between the disclosure of non-financial information and stock returns. The results obtained in this research can be explained by the fact that non-financial reporting includes voluntarism and freedom when drafting statements and non-financial indicators, but also by the fact that non-financial reporting relies on regulations that are not fully harmonized with the global ones.

Conclusion

The main research objective has been to check whether the implementation of the ISO 14001 standard and non-financial reporting affect the financial performance of companies. The paper assumes that companies that have implemented the ISO 14001 standard have better financial performance than companies that have not implemented it and that companies that disclose non-financial information have better financial performance than companies that do not disclose this type of information.

Research results show a higher percentage of companies in the National Register of Pollution Sources that disclose non-financial information, more precisely 69.6%, while 30.4% of observed companies do not disclose non-financial information. The results of the research indicate no statistically significant difference, in terms of financial performance, between companies that have implemented the ISO 14001 standard and companies that have not implemented this standard. Also, the results point to no statistically significant difference, in terms of financial performance, between companies that disclose non-financial information and companies that do not disclose non-financial information. Financial performance is assessed using the return on assets and the return on equity in three consecutive years, i.e. in 2019, 2020 and 2021. Most previous research conducted around the world indicates the existence of a positive relationship between environmental and financial performance (Ong, The, Goh & Thai, 2015; Moneva & Ortas, 2009; Amores-Salvadó, Martin-de Castro & Navas-López, 2015; Wu, 2020; Manrique & Martí-Ballester, 2017) and the existence of a positive relationship between non-financial reporting and financial performance of companies (Borodin et al., 2019; Vitale, Cupertino & Riccaboni, 2010). The reasons for the results obtained in this paper may be: misunderstanding the importance of the implementation of the ISO 14001 standard by domestic companies, the use of a relatively small sample, the use of a qualitative measure of environmental performance such as the adoption of the ISO 14001 standard and the disclosure of non-financial information, voluntarism in non-financial reporting and regulations that are not fully aligned with the global ones.

Given that the research has come to the conclusion that there are not enough papers in Serbia dealing with the impact of ISO 14001 standard implementation and non-financial reporting on the financial performance of companies, its theoretical implications complete domestic literature in this area. It is expected that this paper will improve knowledge about the importance and benefits of ISO 14001 standard implementation, as well as knowledge regarding non-financial disclosures. Comparison of the results obtained by authors around the world and the results obtained in this research points to the current situation with Serbian companies. Also, the results obtained in this paper help draw significant conclusions about developing countries. In terms of its practical implications, the paper indicates the importance of implementing the ISO 14001 standard and non-financial reporting, so that results can be used as recommendations for domestic companies to improve environmental management processes.

The research presented in the paper has several limitations that could provide a valuable foundation for future studies in this field. Some of the limitations observed during data analysis and processing are: a relatively small research sample that included 56 companies in the National Register of Pollution Sources, the use of only secondary data available on the website of the Business Registers Agency and data available on sampled companies' websites, as well as the fact that the research does not use advanced statistical methodology but a non-parametric test, namely Mann-Whitney U test.

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