



DIGITAL TRANSFORMATION IN THE RETAIL SECTOR: EFFECTS AND BUSINESS PERFORMANCE ANALYSIS

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Abstract: Considering its impact on business performance, consumer behavior, and economic development, digitalization is a key driver in the retail sector. This study analyzes the level and effects of digital transformation in the retail sector of the Republic of Serbia. By examining data from the Statistical Yearbook of the Republic of Serbia and the financial and business reports of the seven largest retail chains (Delhaize Serbia, Lidl, Univerexport, AMAN, DIS, Gomex, and Metro Cash & Carry), the study investigates the correlations between the number of stores, employees, the presence of online sales, mobile applications, and loyalty programs, as well as financial indicators (ROS and ROE), and explores the potential impact of digitalization on financial performance. The results indicate that digital transformation in Serbia lags behind that of developed economies. While most chains offer mobile applications and loyalty programs, online sales remain limited. Moreover, despite the growing share of consumers shopping online, the impact of digital tools on financial performance is still low.

Keywords: digitalization, retail, online retail, performance

JEL classification: M15, L81, O32

1. Introduction

Digital competitiveness is gradually becoming a key driver of economic growth in the 21st century. The increasing adoption of digital tools by industries, companies, and government institutions highlights the importance of building a stable and reliable digital infrastructure, which forms the foundation of successful digital transformation. Digital transformation involves the implementation of digital technologies to improve business processes and create value (Zhai et al., 2022). According to the World Digital Competitiveness Report 2024, the top-ranked countries are Switzerland, Denmark, Sweden, the Netherlands, and Norway. Among neighboring countries, Slovenia ranks highest (41st out of 67 countries) (Institute for Management Development, 2024). Unfortunately, the Republic of Serbia was not included among the ranked countries, indicating the need to enhance its digital competitiveness.

Despite significant global progress, there remains a considerable disparity between developed and developing economies in the pace and depth of digital transformation. While markets such as Western Europe, the United States, and East Asia have achieved high levels of digital maturity, many emerging markets—including those in Southeast Europe - still face challenges related to digital infrastructure, human capital, and regulatory frameworks (Kane et al., 2019). This gap underscores the importance of analyzing the digital transformation of retail in transitional economies, where the potential for efficiency gains and market innovation is substantial but underexplored.

In recent years, the retail sector has faced increasingly sophisticated consumer demands, turbulent market conditions, and various risks, creating the need for operational practices that ensure high competitiveness, agility, and resilience (Sagar, 2024). Digitalization is recognized by retailers as a key source of competitiveness, agility, and resilience. The digitalization in the retail sector involves the adoption of digital technologies to respond more quickly to market demands and improve customer experience. This process represents a true digital transformation, resulting in organizational and operational changes that increase competitiveness, efficiency, and personalization (Verhoef et al., 2021). Digital transformation in retail is supported not only by e-commerce but also by mobile applications, inventory management systems, artificial intelligence, the Internet of Things, and big data analytics across all stages of the retail process, from procurement to sales and customer relationship management (Pantano & Timmermans, 2014; Matt et al., 2015; Warner & Wäger, 2019).

Compared to other sectors, the effects of digitalization are particularly visible in retail, where an efficient distribution system is crucial for competitiveness. According to Deloitte (2024), digital leaders in retail achieve up to 20% higher operational efficiency and 30% higher customer retention compared to traditional

retailers. As the sector is in direct contact with consumers, digitalization can directly increase sales, enhance operational efficiency, and enable personalized offerings, thereby improving customer loyalty (Sagar, 2024). Furthermore, the retail sector significantly contributes to GDP and employment, so innovations aimed at increasing digitalization are expected to have a direct impact on economic development (Mostaghel et al., 2022).

However, while numerous studies have examined the relationship between digital transformation and business performance in developed economies, there is limited empirical evidence on how these processes unfold in the context of Southeast European retail markets, particularly in the Republic of Serbia. This paper focuses on analyzing the potential of digital transformation in the retail sector of the Republic of Serbia. The study uses descriptive and comparative analyses of data from official financial reports of retail chains and national statistical reports to assess the level and effects of digitalization on business performance.

2. Literature Review

In the digital era, digital technologies have become particularly significant in enhancing business performance. Their capacity to foster differentiation and create competitive advantage has accelerated the digital transformation of companies (Masoud & Basahel, 2023). Digital transformation can be defined as a multidimensional process that integrates technological, organizational, and strategic change (Matt et al., 2015). It extends beyond the adoption of new technologies and involves the reconfiguration of business models, processes, and culture (Vial, 2019). In retail, this transformation translates into the development of digital business models, customer-centric strategies, and the integration of data-driven decision-making across all levels of the organization (Hess et al., 2016). Consequently, the effectiveness of digital transformation depends not only on technological investments but also on organizational readiness and leadership commitment (Kane et al., 2019). As a result, digital technologies have emerged as a central focus of empirical research in assessing the impact of business process digitalization on performance.

Martín-Peña et al. (2020) demonstrated that digitalization positively affects the sales performance of industrial enterprises and extends its influence to retail companies. Masoud and Basahel (2023), drawing on a sample of 164 firms in Saudi Arabia, found that digital transformation exerts a positive impact on performance in the service sector. High correlation coefficients between digital transformation and performance, as well as between innovation and performance, provided strong empirical support for their assumptions. Similarly, Cheng et al. (2022), analyzing Chinese firms during the period 2010–2019, showed that digitalization increases profitability, although only in manufacturing enterprises,

not in service-oriented firms. Scott et al. (2017), Braojos et al. (2019) and Vhatkar et al. (2024) further revealed that the impact of digital technology extends beyond immediate outcomes, often materializing over the long term.

Investments in digital technologies present a significant strategic opportunity for retail companies to differentiate themselves from competitors and enhance operational performance. Performance improvement driven by digitalization is primarily associated with two factors (Bhilat & Hamidi, 2025):

- Supply chain integration – a higher degree of digital transformation contributes to the integration of supply chain stages and partners, thereby improving operational efficiency and reducing costs (Zhai et al., 2022); and
- Consumer behavior management – the adoption of digital solutions enables deeper insights and more effective management of consumer behavior, ultimately resulting in higher levels of customer satisfaction and loyalty.

With respect to supply chain integration, digitalization has facilitated new modes of interaction among partners (Zaid et al., 2025). By improving information flows, digitalization ensures seamless communication, enhanced connectivity, increased transparency, and more efficient decision-making within business networks (Hautala-Kankaanpää, 2022). Zaid et al. (2025) confirmed that digitalized supply chains promote information sharing and responsiveness among partners, while Okyere et al. (2023) highlighted the positive effects of digitalization on coordination and collaboration across the supply chain.

Regarding consumer behavior, digitalization enhances efficiency, strengthens quality control, and improves customer support (Shah et al., 2023; Liu et al., 2022). It also facilitates faster adaptation to market dynamics and supports personalized consumer demands (Zaid et al., 2025). Within the retail sector, digitalization enables the systematic collection of data to define consumer profiles and purchasing behavior patterns (Sagar, 2024). Moreover, it has simplified the purchasing process by expanding product variety and enabling consumers to compare prices, thereby shifting consumer preferences toward online sales channels (Cheung & Lee, 2012). Additionally, online reviews of products, producers, and retailers shape consumer perceptions of product quality, service standards, and overall satisfaction (Sagar, 2024).

Nevertheless, a number of studies highlight the limitations of digital transformation. Kharlamov and Parry (2023) argued that digitalization exerts no significant impact on performance unless it is combined with traditional retailing. Hautala-Kankaanpää (2022) further emphasized that the effects of digitalization are conditional upon supply chain capabilities, stressing that digitalization without complementary competencies cannot deliver improved outcomes. Similarly, Martínez-Caro et al. (2020) demonstrated that, beyond technological implementation, digital transformation requires the development of agile

organizational structures, indicating that performance improvements depend not only on adopting digital technologies but also on their effective integration within firms. Zhai et al. (2022) also noted that managerial expectations regarding the benefits of digitalization often exceed the results actually achieved, given the high costs of implementation and the continuous need for learning and adaptation. Furthermore, while digitalization enables greater personalization of offerings, concerns regarding potential data misuse may erode consumer trust (Sagar, 2024). Broader socio-economic consequences are also evident in the literature. Americo and Veronico (2018) demonstrated that online retail in 35 European countries between 2007 and 2016 contributed to a decline in employment within traditional retail, without clear evidence that related sectors such as logistics, warehousing, or digital services absorbed the displaced workforce. Similar findings were reported in a study conducted in the Czech Republic during the COVID-19 pandemic, which revealed that retailers were less optimistic about the accelerated transition to digital purchasing, expressing concern about its negative implications for employment in retail (Dvorak et al., 2021).

The reviewed literature highlights that while digital transformation can significantly enhance operational and financial performance, its outcomes are highly context-dependent and mediated by factors such as digital maturity, organizational capabilities, and cultural readiness. However, most empirical studies have focused on developed economies, leaving a gap in understanding how these mechanisms operate in emerging markets such as Serbia. This research aims to fill that gap by empirically examining the relationship between digitalization and business performance in the Serbian retail sector.

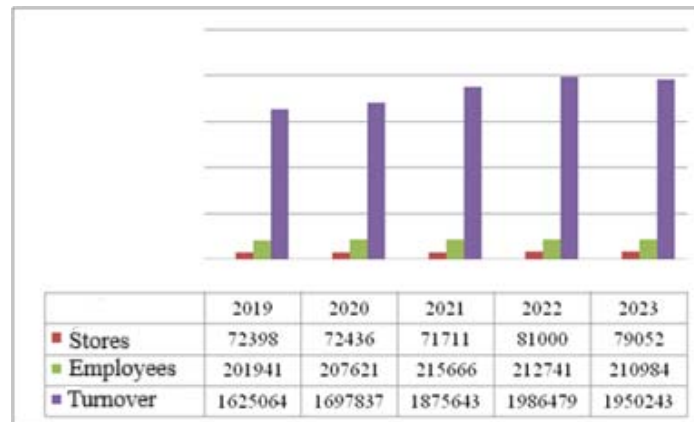
Against this backdrop, two key research questions arise: What level of digitalization retail chains in the Republic of Serbia have achieved, and are these effects reflected in their business performance? The answers to these questions are expected to provide justification for further investments in digital technologies and to encourage smaller retailers to embark on the process of digital transformation.

3. Digitalization of the Retail Sector in the Republic of Serbia

The retail sector in Serbia has undergone dynamic changes over the past decade, driven by modernization, the entry of foreign chains, changes in consumer behavior, and increasing digitalization. For the Republic of Serbia, this sector represents a significant source of GDP, as well as employment. Retail and wholesale enterprises account for around 35% of the total number of enterprises in the country (Anđelković, 2023), making them an important source of jobs. On average, trade enterprises in Serbia employ nearly 18% of the total workforce (Anđelković et al., 2017). According to the *Statistical Yearbook of the Statistical Office of the Republic of Serbia* (2024), between 2019 and 2023, no major fluctuations were recorded in the retail sector regarding the number of employees,

stores, and turnover (in millions of RSD). Figure 1 provides an overview of these data.

Figure 1. Statistical data on retail enterprises in the Republic of Serbia



Source: Adapted from Statistical Office of the Republic of Serbia (2024). *Statistical Yearbook of the Republic of Serbia*. Belgrade: Statistical Office of the Republic of Serbia

During the observed period, based on the available data on the number of online shoppers, it can be concluded that consumer perceptions of online business in the Republic of Serbia have been changing. Table 1 shows a decline in the percentage of consumers who had never used online shopping, alongside an increase in the percentage of those who had used it within the last three months or several times during the year. The most notable changes in these groups occurred between 2020 and 2022. It is assumed that the growing interest in online shopping among consumers was largely a consequence of the COVID19 pandemic.

Table 1. Online shopping users in the Republic of Serbia (%)

Year	Never used it	Within the last 3 months	More than 3 months ago (less than 1 year)	More than 1 year ago
2019	43	34.2	9.7	13.1
2020	39	36.1	11.8	9.1
2021	39	42.3	10.6	8.2
2022	27.1	47.8	15.7	9.5
2023	26.6	51	13.2	9.2

Source: Statistical Office of the Republic of Serbia (2024). *Statistical Yearbook of the Republic of Serbia*. Belgrade: Statistical Office of the Republic of Serbia.

However, despite changes in consumer perceptions and the growing number of individuals opting to use digital channels, Serbia still lags significantly behind

developed markets globally. While more than 30% of fast-moving consumer goods (FMCG) spending occurs online in the USA and China, this share in Serbia is only 4.3%. This highlights both the substantial growth potential and challenges related to logistics, consumer trust, and technological infrastructure.

3.1. Methodology and Variables

For this research, data were collected from the official financial statements and business reports of retail chains in the Republic of Serbia. Considering that digital transformation requires substantial financial investment, the authors selected seven major retail chains in Serbia (Delhaize Serbia, Lidl, Univerexport, AMAN, DIS, Gomex, and Metro Cash & Carry) for further analysis, as these chains have the financial capacity to implement digitalization processes due to their financial strength and market share (with the top 10 chains holding 45–55% of the market). The following indicators were analyzed:

- Number of stores,
- Number of employees,
- Presence and development of online sales, mobile applications, and loyalty programs,
- Financial performance measured through Return on Sales (ROS) and Return on Equity (ROE).

By comparing trends in these indicators, the level of digitalization in individual chains and its potential impact on business performance were assessed. Based on information from available business reports regarding digital transformation, the authors obtained data on the availability of online shopping, mobile applications, and loyalty programs. Table 2 presents the availability of these digital services among individual retailers.

Table 2. Availability of digital channels by the retailer

Retailer	App_loyalty	Online sales
Delhaize Serbia	„Moj Maxi“ (2022)	„Maxi online“ (2008)
Lidl	„Lidl Plus“ (2022)	-
Univerexport	„Bonus“ card (2024)	„eLakolije“ (2012)
AMAN	-	-
DIS	„Naša aplikacija“ (2020)	Online sales (2017)
Gomex	„Kasica brojalica“ (2015)	-
Metro Cash & Carry	„Klub prijatelji & Metro“ (2015)	Online sales (2020)

Source: Authors, based on the business reports of retail chains

Among the seven analyzed chains, only AMAN lacks a developed loyalty program or mobile application, while half of the chains included in the study do not offer online sales. Mobile applications are available in almost all chains, but their functionality varies: in some cases, they are limited to loyalty programs, while in others they also support online shopping and personalized offers. Delhaize Serbia, Lidl, and Univerexport introduced their application and loyalty programs relatively recently (after 2020), whereas DIS, Gome x, and Metro implemented them earlier.

Table 3. Number of employees and stores of the analyzed retail chains in the Republic of Serbia during the period 2020–2024

	Year	Delhaize Serbia	Lidl	Univerexport	AMAN	DIS	Gome x	Metro Cash & Carry
Employees	2020	n/a	n/a	n/a	3050	n/a	2277	n/a
	2021	11637	3115	2873	2934	1325	2374	1188
	2022	11426	3648	2912	2935	1343	2451	1198
	2023	12579	3415	3065	2858	1480	2589	1221
	2024	12469	3268	3207	2756	1568	2805	1145
Stores	2020	n/a	n/a	n/a	258	n/a	193	9
	2021	n/a	57	n/a	269	207	207	9
	2022	n/a	65	167	273	214	242	9
	2023	532	70	202	277	219	263	9
	2024	559	n/a	202	n/a	n/a	294	9

Source: Authors, based on the business reports of retail chains

Except for Metro Cash & Carry, which has a stable number of stores throughout the observed period, the other retail chains increased their number of stores. The number of employees has remained generally stable, with a slight increase observed in most chains (Stojković et al., 2018), suggesting that recent digitalization initiatives have not led to a significant reduction in the workforce.

In 2024, the highest ROS values were recorded by Delhaize Serbia (6.6%) and Lidl (4.3%), which may reflect cost optimization and a more effective use of digital tools in the supply chain, given that both chains introduced consumer-oriented digital applications during the observed period. Delhaize recorded an average ROS of 0.0445 before 2022 and 0.0674 after 2022 (a difference of +0.0229). Additionally, ROE increased from 0.1244 before 2022 to 0.2176 after 2022 (a difference of +0.0932). Although the increase in ROS and ROE coincides with the introduction of the application, this represents an association rather than proof of causality, as Delhaize also expanded its retail network during the same period. In contrast, Lidl experienced a decrease in ROS and ROE immediately after

introducing the application, which may reflect the influence of other factors (e.g., pricing strategy, investments in growth, store opening cycles); thus, the application alone is not sufficient. Gomex and Metro recorded negative or minimal ROS values in 2024, indicating potential profitability challenges despite digital investments. Regarding ROE, AMAN achieved the highest value in 2024 (28.7%), while DIS and Metro reported low or negative ROE. These results suggest that the mere presence of digital channels is not sufficient to achieve high profitability; their effective integration into the business model is essential.

Table 4. ROS and ROE of the analyzed retail chains in the Republic of Serbia during the period 2020–2024

	Year	Delhaize Serbia	Lidl	Univerexpress	AMAN	DIS	Gomex	Metro Cash & Carry
ROS	2020	0.0574	0.0200	0.0159	0.0269	0.0047	0.0132	n/a
	2021	0.0315	0.0577	0.0172	0.0290	0.0080	0.0139	-0.0063
	2022	0.0589	0.0219	0.0278	0.0358	0.0179	0.0209	0.0094
	2023	0.0772	0.0174	0.0222	0.0282	0.0172	0.0236	0.0006
	2024	0.0661	0.0437	0.0165	0.0357	0.0075	-0.0297	-0.0001
ROE	2020	0.1614	0.0395	0.0782	0.1539	0.0166	0.1982	n/a
	2021	0.0875	0.1255	0.0879	0.1574	0.0284	0.1783	-0.0396
	2022	0.1730	0.0584	0.1388	0.1769	0.0704	0.2295	0.0721
	2023	0.2473	0.0489	0.1229	0.1328	0.0730	0.2226	0.0054
	2024	0.2326	0.1157	0.0932	0.2878	0.0339	-0.4270	-0.0007

Source: Authors, based on the financial reports of retail chains

3.2. Analysis and Discussion of Results

Since the variables “Online sales” and “App/loyalty programs” are binary, point-biserial correlation was applied as a more appropriate measure of association with the continuous variables (ROS, ROE, employees, and stores). The correlation between the number of employees and the number of stores indicates a logical link between retail network growth and human resources. However, the lack of a significant relationship with ROS and ROE suggests that expansion alone does not ensure improved profitability. The results (Table 5) show that ROS and ROE are strongly positively correlated ($r = 0.602$), which is expected, as sales profitability directly influences capital profitability. The digital variables (online, app loyalty) did not exhibit significant correlations with performance. Interestingly, the online variable even shows a negative correlation with ROE ($r = -0.364$). This does not imply that applications worsen results; rather, retail chains faced other challenges that may have masked the effect.

Table 5. Point-biserial correlation analysis

		Online	App_loyalty	Employees	Stores	ROS	ROE
Online	Pearson Correlation	1	,183	,227	-,088	,055	-,364*
	Sig. (2-tailed)		,292	,228	,677	,756	,034
	N	35	35	30	25	34	34
App_loyalty	Pearson Correlation	,183	1	,191	-,024	-,060	-,142
	Sig. (2-tailed)	,292		,312	,908	,736	,422
	N	35	35	30	25	34	34
Employees	Pearson Correlation	,227	,191	1	,779**	,712**	,279
	Sig. (2-tailed)	,228	,312		,000	,000	,136
	N	30	30	30	24	30	30
Stores	Pearson Correlation	-,088	-,024	,779**	1	,539**	,634**
	Sig. (2-tailed)	,677	,908	,000		,007	,001
	N	25	25	24	25	24	24
ROS	Pearson Correlation	,055	-,060	,712**	,539**	1	,602**
	Sig. (2-tailed)	,756	,736	,000	,007		,000
	N	34	34	30	24	34	34
ROE	Pearson Correlation	-,364*	-,142	,279	,634**	,602**	1
	Sig. (2-tailed)	,034	,422	,136	,001	,000	
	N	34	34	30	24	34	34

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' calculations

The absence of strong correlations between digital tools and financial performance indicators (ROS and ROE) may suggest that the Serbian retail sector is still in the early stages of digital maturity. According to Warner and Wäger (2019), the benefits of digital transformation typically emerge only after companies reach a certain level of integration between technology, processes, and organizational culture. In the context of Serbia, this alignment appears incomplete: while digital tools are being implemented, they are not yet fully embedded in strategic and operational routines. This finding aligns with Vial (2019), who argues that digital transformation generates sustainable performance improvements only when accompanied by managerial innovation and process redesign.

Based on the results presented in Table 6, it can be concluded that there are significant differences in ROS and ROE among the analyzed retail chains,

indicating that sales and capital profitability depend on each retailer's strategy. Additionally, no statistically significant differences in ROS and ROE were observed across the analyzed years within the sample. Of concern, however, is the finding that online sales, as well as the use of applications and loyalty programs, do not have a significant impact on these two performance indicators. Moreover, these variables account for only a relatively small proportion of the variance.

Table 6. Univariate ANOVA – ROS & ROE

Variables	ROS				ROE			
	Df	F	Sig.	Partial Eta Sq.	df	F	Sig.	Partial Eta Sq.
Retail	6	5.21	0.002	0.62	6	3.94	0.008	0.54
Year	4	2.11	0.094	0.31	4	1.76	0.166	0.26
Online	1	2.47	0.128	0.12	1	2.02	0.172	0.09
App loyalty	1	6.77	0.016	0.25	1	1.12	0.301	0.05
Error	20				20			
Total	32				32			

Source: Authors' calculations

Compared with EU retail markets, the level of digital adoption in Serbia remains considerably lower. For example, the share of e-commerce in gross domestic product in some Western European countries ranges from 9.3% in the United Kingdom to 3% in Germany (International Trade Administration), while in Serbia it is 0.77% (Serbia Business). Similarly, the share of online retail in total FMCG spending exceeds 25% in the UK and Germany, compared to less than 5% in Serbia (Datareportal, 2025). These differences highlight the structural and behavioural barriers that limit digital transformation—such as lower consumer trust in online payments, underdeveloped logistics networks, and limited investment capacity among domestic retailers. However, the increasing consumer shift toward digital channels observed in Table 1 suggests strong potential for growth once these barriers are addressed.

The results indicate that the digitalization process in Serbia's retail sector is progressing, albeit at a slower pace than in developed economies. Although most of the analyzed chains offer mobile applications, loyalty programs, and online sales, their impact on performance is not yet evident. This finding aligns with Hiremath et al. (2023), who emphasize that the mere presence of technology does not automatically lead to adoption, and that digitalization generates benefits only when supported by appropriate competencies and processes (Zaid et al., 2025; Hautala-Kankaanpää, 2022). A similar conclusion was reached earlier by Mladenović et al. (2024), who found that while consumers in the Republic of Serbia are willing to use applications, the content and functional features of these applications are often poorly implemented. Furthermore, with the increase in the number of online

shopping users, retail chains must adapt their strategies to meet the needs of digitally aware consumers (Hiremath et al., 2023).

Overall, the findings indicate that digitalization in the Serbian retail sector has primarily been technological rather than transformational. For digital transformation to translate into higher performance, firms must develop digital competencies, invest in employee training, and foster data-driven decision-making. Policymakers can support this transition by incentivizing innovation, improving broadband infrastructure, and promoting consumer protection in e-commerce. Such measures could accelerate digitalisation process and enhance competitiveness.

4. Conclusion

The retail industry is undergoing a significant transformation driven by digital technologies. Among the main challenges faced by retailers are the growth of e-commerce, changes in consumer behavior, and increasingly complex supply chains. These changes have placed additional pressure on profit margins, requiring decisive action to reverse negative trends.

The findings of this study reinforce the theoretical argument that digital transformation should be perceived as a multidimensional process encompassing technological, organizational, and cultural dimensions (Matt et al., 2015; Vial, 2019). In the Serbian retail context, the adoption of digital tools has not yet evolved into a full-scale transformation capable of driving measurable performance improvements. This supports previous research suggesting that the benefits of digitalization materialize only when supported by strategic alignment, digital leadership, and continuous learning (Warner & Wäger, 2019). There is no doubt that retail chains in the Republic of Serbia have recognized the importance of digitalization; however, the research confirms not only that this process is slow, but also that previous improvements in this area have not led to increased performance.

Results from correlation and univariate ANOVA analyses suggest that digital channels alone do not guarantee high profitability. Rather, their effective integration into the business model, together with appropriate competencies, processes, and management strategies, is key. Furthermore, changes in consumer behavior, such as the growing number of online shoppers, require retail chains to adapt their strategies to meet the demands of digitally savvy customers.

From a managerial perspective, the results suggest that retailers should move beyond technology deployment toward the strategic integration of digital solutions across all stages of their value chain. This involves rethinking supply chain management, investing in data analytics, and developing customer-centric strategies that leverage personalization and omnichannel engagement. Training programs for employees, especially in the areas of digital literacy and data interpretation, can further support this transition. Companies that view digital

transformation as an ongoing organizational journey rather than a one-time investment are more likely to realize sustainable performance improvements.

On a broader scale, digital transformation in the retail sector contributes to national economic competitiveness, employment dynamics, and consumer welfare. The acceleration of e-commerce and the digitalization of retail processes can stimulate innovation in logistics, fintech, and information and communication technology services, creating spillover effects across the economy. However, policymakers must ensure that this transformation is inclusive by supporting SMEs in adopting digital tools, investing in digital infrastructure, and strengthening cybersecurity and consumer protection standards.

The conducted research has several limitations:

- The analysis of the performance and digital tools of the seven largest retail chains does not provide a complete picture of the sector, particularly regarding small and medium-sized enterprises.
- Reliance on secondary data sources, which are not always up-to-date or complete.
- The lack of historical data, particularly significant for those retail chains that began their digitalization process before 2019, as evidenced in their business reports.
- The absence of qualitative insights into the attitudes of managers and consumers.
- A short observation period from 2020 to 2024, which was also particularly turbulent (pandemic, inflation, changes in consumption), meaning that digital tools could not demonstrate their full effect.

Future research should extend beyond financial indicators to include non-financial dimensions such as customer satisfaction, innovation capacity, and employee digital readiness. Conducting longitudinal studies would allow for tracking the long-term effects of digital investments, while mixed-method approaches combining quantitative data with interviews or case studies could reveal the mechanisms behind digital adoption and resistance. Moreover, cross-country comparisons within Southeast Europe could provide valuable insights into regional patterns of digital maturity and competitiveness. For future research, it is recommended to include a broader sample of companies, conduct longitudinal monitoring of the impact of digitalization on performance, and combine quantitative and qualitative methods (surveys and case studies). Ultimately, digital transformation is not an end in itself but a catalyst for reimagining how retail businesses create, deliver, and sustain value in an increasingly digital economy. For Serbia's retail sector, the coming years will be decisive in determining whether digitalization becomes a true driver of competitiveness or remains a missed opportunity for growth.

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DIGITALNA TRANSFORMACIJA U SEKTORU MALOPRODAJE: EFEKTI I ANALIZA POSLOVNIH PERFORMANSI

Apstrakt: Uzimajući u obzir njen uticaj na poslovne performanse, ponašanje potrošača i ekonomski razvoj, digitalizacija predstavlja i ključni pokretač u sektoru maloprodaje. Ova studija analizira nivo i efekte digitalne transformacije u sektoru maloprodaje Republike Srbije. Istraživanjem podataka iz Statističkog godišnjaka Republike Srbije, kao i finansijskih izveštaja i izveštaja o poslovanju sedam najvećih maloprodajnih lanaca (*Delhaize Serbia, Lidl, Univerexport, AMAN, DIS, Gomex i Metro Cash & Carry*), studija ispituje korelacije između broja prodavnica, zaposlenih, prisustva onlajn prodaje, mobilnih aplikacija i programa lojalnosti, kao i finansijskih pokazatelja (ROS i ROE), i potencijalni uticaj digitalizacije na finansijske performanse. Rezultati pokazuju da digitalna transformacija u Srbiji zaostaje za onom u razvijenim zemljama. Iako većina lanaca nudi mobilne aplikacije i programe lojalnosti, onlajn prodaja je i dalje ograničena. Pored toga, uprkos rastućem udelu potrošača koji kupuju putem interneta, uticaj digitalnih alata na finansijske performanse još uvek je nizak.

Ključne reči: digitalizacija, maloprodaja, onlajn trgovina, performanse

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