A COMPARATIVE ANALYSIS OF E-COMMERCE DEVELOPMENT IN BOSNIA AND HERZEGOVINA AND REGIONAL COUNTRIES

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Abstract
The growth of e-commerce in the Western Balkans reveals significant regional disparities, underscoring the need to examine the factors influencing the digital economy.
This paper presents a comparative analysis of e-commerce development in Bosnia and Herzegovina, situating it in relation to other countries in the region, including Serbia, Croatia, and Montenegro. The aim of the study is to identify key drivers and barriers to growth, as well as to assess Bosnia and Herzegovina's competitive position through an analysis of digital infrastructure, mobile commerce penetration, the number of active online stores, and innovation capacity.
The methodological approach is based on the analysis of secondary data obtained from relevant sources and academic literature. The findings indicate a stable but slow growth of e-commerce in Bosnia and Herzegovina compared to Serbia and Croatia, primarily due to challenges such as a lower level of digital literacy and limited trust in electronic payments. On the other hand, significant potential lies in the high share of mobile commerce and the increasing number of e-shops.
The study concludes that a more dynamic development of e-commerce in Bosnia and Herzegovina requires a comprehensive strategic approach that includes improvements to the logistical and regulatory framework.
Keywords: e-commerce, Bosnia and Herzegovina, Western Balkans, digital transformation, mobile commerce, innovation.

1. INTRODUCTION

The rapid technological development and increasing availability of the Internet have transformed modern commerce, enabling the electronic exchange of goods and services without geographical limitations. Although traditional trade has existed for many years, it cannot adequately respond to the dynamic changes occurring in contemporary society. To remain competitive, an increasing number of companies are using the Internet to provide online services and expand their market share. According to Sadiku et al. (2016), the term electronic commerce (or e-commerce) refers to the process of conducting business transactions over the Internet. As a key element of the digital economy, e-commerce has become one of the main drivers of economic growth and market modernization. Its impact is not limited to developed countries; on the contrary, the Western Balkans region is also undergoing significant digital transformation, where e-commerce creates new opportunities for both businesses and consumers.

However, the dynamics of this development are not uniform across the region. The growth of e-commerce exhibits notable regional disparities, influenced by specific economic, technological, and social factors. A key prerequisite for e-commerce development is Internet penetration and the availability of broadband access to the population.

According to the World Bank (2023), in 2023 Serbia had an Internet penetration rate of 85.4%, providing a strong foundation for further development of the digital economy. Montenegro leads among the analyzed countries, with 89.8% of the population using the Internet. Bosnia and Herzegovina recorded 83.4%, while Croatia reported 83.2% of Internet users.

These indicators point to a wide degree of digital connectivity in the Western Balkans, providing a stable basis for the expansion of e-commerce and digital services. Nevertheless, infrastructural challenges remain, particularly regarding the availability of ultra-high-speed broadband networks in rural areas (World Bank, 2023).

For these reasons, this paper provides a detailed comparative analysis of the evolution of e-commerce in Bosnia and Herzegovina, positioning it in relation to the reference countries of the region Serbia, Croatia, and Montenegro. The main objective of the research is to systematically analyze key indicators in order to identify and explain the fundamental drivers and barriers shaping the e-commerce market in Bosnia and Herzegovina.

Therefore, this study goes beyond a standard descriptive analysis and puts forward the central thesis that the lag in e-commerce development in Bosnia and Herzegovina is not primarily a consequence of technological or infrastructural gaps, but rather a direct result of the strategic and regulatory framework. It argues that the lack of harmonized legislation (particularly in the field of data protection aligned with the GDPR) and the absence of a comprehensive national digital strategy create a synergistic negative effect that systematically undermines consumer trust and discourages investment in logistics. The scientific contribution of this paper lies in demonstrating that the institutional framework is the key variable explaining why the high Internet penetration rate in Bosnia and Herzegovina has not translated into a developed e-commerce market unlike neighboring countries that, despite similar starting positions, have made more significant progress thanks to targeted state policies.

In this paper, the term "regional countries" refers specifically to Serbia, Croatia, and Montenegro. These countries were selected due to their geographic proximity, comparable economic characteristics, and relevance for benchmarking the development of e-commerce in Bosnia and Herzegovina.

Accordingly, the central research question of this study is: To what extent does the institutional and regulatory framework explain the lag in e-commerce development in Bosnia and Herzegovina compared to Serbia, Croatia, and Montenegro, despite similar levels of internet penetration?

2. LITERATURE REVIEW

This section presents the theoretical framework and an overview of previous research relevant to the analysis of e-commerce development. First, key concepts and basic e-commerce models are defined, followed by an analysis of global and regional trends, with a special focus on the factors influencing e-commerce growth. Finally, the current state of e-commerce in Bosnia and Herzegovina and neighboring countries is discussed. The purpose of this section is to provide a basis for comparative analysis and to identify the main differences between the Bosnian market and more developed markets in the region.

Electronic commerce (e-commerce) refers to the process of buying and selling products and services via the Internet, using digital platforms, electronic payment systems, and delivery networks (Sadiku et al., 2016). According to business models, e-commerce can be classified as B2C (Business-to-Consumer), B2B (Business-to-Business), and C2C (Consumer-to-Consumer). Jaganjac et al. (2020) note that a simple form of B2B commerce was launched in the 1970s by the pharmaceutical company Baxter Healthcare, which used a modem connected to a telephone line that allowed hospitals to order medicines directly from the company. Cheba et al. (2021) emphasize that information technology infrastructure, including access to mobile networks and the Internet, has had a significant impact on e-commerce development, particularly in urban areas.

Jaganjac et al. (2020) also identify challenges such as high delivery costs and an underdeveloped market as obstacles to rapid e-commerce growth. Peštek and Hadžijamaković (2024) mention that inadequate legal regulations and the lack of financial institutions' support for e-commerce infrastructure are also barriers. According to Isaković et al. (2019), although Bosnia and Herzegovina has consumer protection laws against hacking and data abuse, the implementation of electronic signatures remains unresolved.

Peštek et al. (2011) demonstrated that trust was the main issue for online shoppers in Bosnia and Herzegovina a decade ago, due to concerns about payment security and data privacy. Selimović and Peštek (2014) also found that trust in the safety of money and products remains a problem for online buyers in Bosnia and Herzegovina. More recent research by Peštek and Hadžijamaković (2024) confirms that the lack of trust continues to be a challenge for e-consumers in the country, especially in terms of online payments. Approximately 21.4% of respondents reported using a separate bank account or card exclusively for online payments, 49.6% do not use online payment systems at all, and 69.7% prefer cash-on-delivery transactions. Isaković et al. (2019) also point out that citizens of Bosnia and Herzegovina are reluctant to shop online due to a sense of insecurity and fear of credit card misuse.

Sadiku et al. (2016) identify digital literacy as one of the barriers to e-commerce adoption in developing countries. Isaković et al. (2019) note that 36% of Bosnia and Herzegovina's population is digitally illiterate. Furthermore, the country ranks low (104th place) on the technology absorption index.

Isaković et al. (2019) emphasize that e-commerce development in Bosnia and Herzegovina largely depends on the regulatory framework and institutional support for digital business. The absence of a comprehensive national digital strategy slows the adoption of innovative business models and reduces the competitiveness of domestic e-retailers in the regional market. Unlike Bosnia and Herzegovina, Serbia and Croatia have implemented national digital economy strategies and e-commerce support programs, leading to greater consumer adoption of online shopping.

According to Mahmutović (2024), strengthening brand awareness is a key marketing tactic for e-commerce websites in Bosnia and Herzegovina. Companies should pay particular attention to improving website loading speed and user experience, especially through technical optimization aimed at improving LCP and CLS metrics. The abandonment rate is significantly higher than the global e-commerce average, indicating a need for content and navigation optimization.

A comprehensive review of the literature shows that Bosnia and Herzegovina has significant potential for e-commerce development, but this potential has not been fully realized. The main challenges include limited trust in digital transactions, infrastructure shortcomings, and the absence of a strategic approach to digital market development. By comparing Bosnia and Herzegovina with more successful regional examples, it becomes clear that targeted reforms including strengthening the regulatory framework, modernizing logistics, and promoting electronic payments could substantially enhance the competitiveness of domestic e-commerce and support Bosnia and Herzegovina's integration into the regional and European digital market.

3. METHODOLOGY

This study is based on a detailed comparative analysis of the evolution of e-commerce. The aim is to go beyond standard descriptive analysis and focus on a systemic explanation of the observed trends. The research positions Bosnia and Herzegovina in relation to reference countries in the region specifically Serbia, Croatia, and Montenegro in order to identify key similarities and differences in e-commerce development. The main goal of the study is to systematically analyze key indicators and identify the main drivers and barriers shaping the e-commerce market in Bosnia and Herzegovina. Special attention is devoted to the factors influencing e-commerce development, given the importance of Internet penetration as a key precondition for growth. The central hypothesis of this paper is that the lag in e-commerce development in Bosnia and Herzegovina is not primarily due to technological or infrastructural gaps, but rather to strategic and regulatory shortcomings.

Data were collected from relevant secondary sources, including reports from national statistical agencies such as the Statistical Office of the Republic of Serbia (RZS), the Statistical Office of Montenegro (MONSTAT), the Croatian Bureau of Statistics (DZS), and the Agency for Statistics of Bosnia and Herzegovina (BHAS). Additional data were obtained from academic and professional publications, including reports from the World Bank (2023), the Macedonian eCommerce Association (2024), the Organisation for Economic Co-operation and Development OECD (2024), and the eCommerce Association of Bosnia and Herzegovina (2024). The core comparative analysis focuses on Bosnia and Herzegovina, Serbia, Croatia, and Montenegro, which constitute the primary analytical sample of the study. Data from other Western Balkan economies, such as North Macedonia, are used selectively and exclusively as a comparative regional benchmark. These data serve to illustrate broader regional trends and to complement the analysis in cases where fully comparable and up-to-date indicators are not consistently available for all primary countries. North Macedonia is therefore not treated as a core unit of analysis.

The analysis covers the period from 2014 to 2024, although for some countries particularly Bosnia and Herzegovina the data are available only for 2018-2024 due to limited reporting. The comparison was carried out across several key dimensions shaping the digital economy:

- The state of digital infrastructure and Internet penetration level,
- The degree of e-commerce adoption and consumer trust,
- The number and growth of active online stores,
- Logistic and payment infrastructure, and
- The regulatory framework and security environment.

A combination of descriptive statistics, comparative analysis, and visual data representation was used for data processing and interpretation. Descriptive statistics provided insight into mean values, medians, and annual growth rates, while comparative analysis enabled the identification of differences in e-commerce maturity among countries. The results were presented using graphs and tables, facilitating interpretation and allowing for a clear overview of Bosnia and Herzegovina's position in relation to its regional peers, while highlighting areas with the greatest potential for improvement.

The scientific contribution of this study lies in demonstrating that the institutional framework is the key variable explaining why high Internet penetration in Bosnia and Herzegovina has not translated into a developed e-commerce market. Although the analysis includes a broad spectrum of factors, certain limitations are recognized. The research relies predominantly on secondary data and literature review and does not include primary data collection (e.g., surveys or interviews). In addition, some data vary by period depending on availability.

This structure and approach allow for a comprehensive analysis of the state and trends of e-commerce, with a particular focus on identifying the specific characteristics of Bosnia and Herzegovina within te regional context.

4. ANALYSIS OF RESULTS

This chapter provides a detailed comparative analysis of the development of electronic commerce in Bosnia and Herzegovina and neighboring countries Serbia, Croatia, and Montenegro. The comparison is structured according to the key dimensions of the digital economy, enabling a comprehensive assessment of the competitive position of each observed country.

4.1. Digital Infrastructure and Internet Penetration

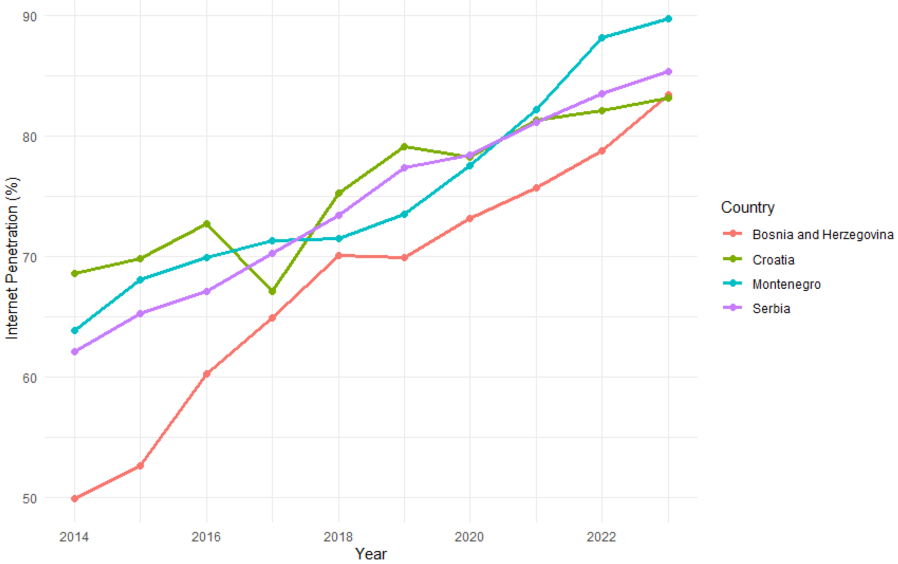
Analysis of World Bank data for the period 2014-2023 shows consistent growth in internet penetration in Bosnia and Herzegovina, Serbia, Montenegro, and Croatia. During the observed period, all four countries recorded a gradual increase in the share of the population using the internet, with Croatia and Serbia almost continuously holding higher positions compared to Bosnia and Herzegovina and Montenegro.

Initial values in 2014 indicate more pronounced digital differences among the countries of the Western Balkans. However, in later years, these differences gradually decreased, due to accelerated growth in internet access in countries with a lower initial penetration rate. A sharp increase is particularly visible in the period 2020–2021, which can be linked to the global COVID-19 pandemic. The pandemic significantly accelerated the digitalization process, increased the need for remote work and online education, and stimulated the wider acceptance of digital services among the population.

Current internet penetration data confirms this broad digital connectivity in the Western Balkan countries, providing a stable foundation for the expansion of e-commerce and digital services. According to World Bank data from 2023, Montenegro leads with 89.8% of the population using the internet, while Serbia records 85.4%, Bosnia and Herzegovina 83.4%, and Croatia 83.2% of internet users. These indicators are crucial because they directly support the central thesis of this paper: the lagging e-commerce in Bosnia and Herzegovina is not primarily a result of a technological or infrastructural gap, given the high internet penetration rate. Nevertheless, it should be noted that infrastructural challenges are still present, especially regarding the availability of ultra-fast broadband networks in rural areas.

Despite the positive trend of internet penetration growth in all countries, differences in the level of development of digital infrastructure and socio-economic conditions still affect the speed of internet adoption and, consequently, the development of e-commerce.

Figure 1: Internet penetration in the Western Balkan countries (2014-2023).



Source: Author, according to the World Bank (2023).

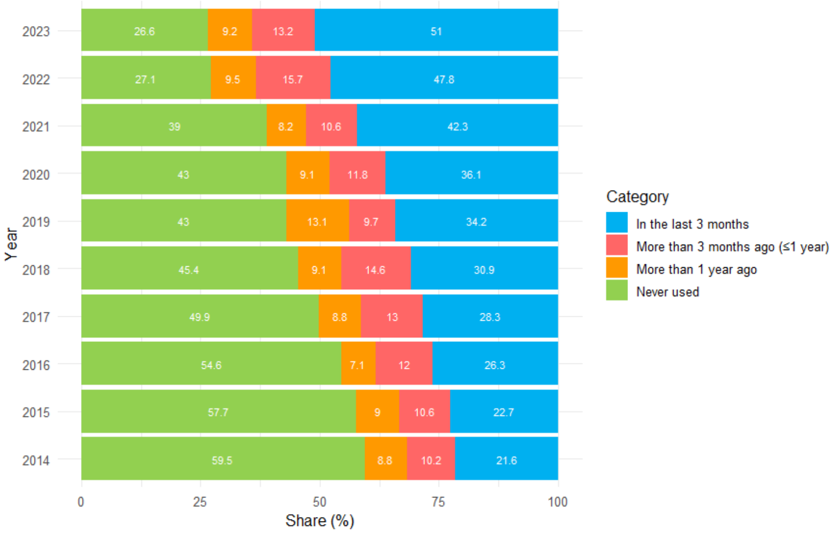
These results confirm that the growth of internet penetration in the region is not only a result of technological innovations but also a combination of regulatory measures, infrastructure investments, and socio-economic factors, with accelerated digitalization during the pandemic representing a crucial turning point in growth dynamics. Nevertheless, for Bosnia and Herzegovina, the emphasis remains that, although there is a solid digital foundation, the key obstacles to the full development of e-commerce lie in an inadequate strategic and regulatory framework, rather than in internet availability itself.

4.2. E-commerce adoption rate and consumer trust

Analysis of data from the Statistical Office of the Republic of Serbia (RZS) shows a continuous growth in the share of Serbia's population that shopped online over the past ten years. The participation of those who made an online purchase in the last three months increased from 21.6% in 2014 to 51.0% in 2023, indicating more than a twofold increase and a growing frequency of digital transactions. The share of users who purchased online more than three months ago but within the last year varied between 9.7% and 15.7%, without a clear linear trend, which may indicate occasional changes in purchasing habits or seasonal factors. Similarly, the share of those who made their last purchase more than a year ago shows slight oscillations but generally remains below 14%.

The most significant decrease was recorded in the group that never used the internet for shopping – from 59.5% in 2014 to 26.6% in 2023. This trend indicates a significant reduction in the digital divide and growing consumer trust in online commerce. Overall, the period 2014-2023 is characterized by stable growth in e-commerce, which can be linked to the development of digital infrastructure, the improvement of logistical solutions, and increased security of online payments. (Statistical Office of the Republic of Serbia [RZS], 2018-2023).

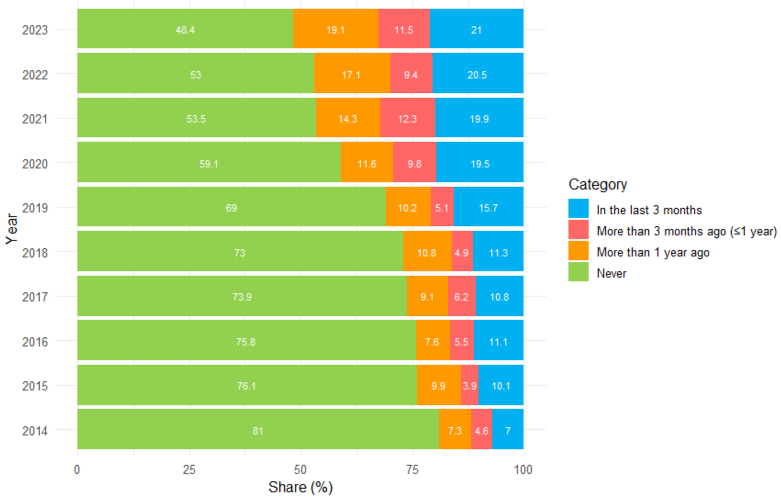
Figure 2: Timeframe of the last online purchase – Serbia (2014-2023).



Source: RZS, ICT research.

The analysis of the timeframe of the last online purchase in Montenegro for the period 2014-2023 shows a clear growth trend in the participation of users who made a purchase in the last three months. This indicator increased from only 7.0% in 2014 to 21.0% in 2023, indicating a significant increase in the frequency of online shopping. During the same period, the share of citizens who never shopped online decreased from 81.0% to 48.4%, testifying to the expansion of digital consumer habits. The category of buyers who made their last online purchase more than three months ago, but up to one year ago, recorded a slight growth from 4.6% in 2014 to 11.5% in 2023. Similarly, the share of those who shopped more than a year ago increased from 7.3% to 19.1%. These results indicate a gradual, but persistent, transformation of consumer behavior in Montenegro, along with a reduction of the digital divide and increased trust in electronic commerce.

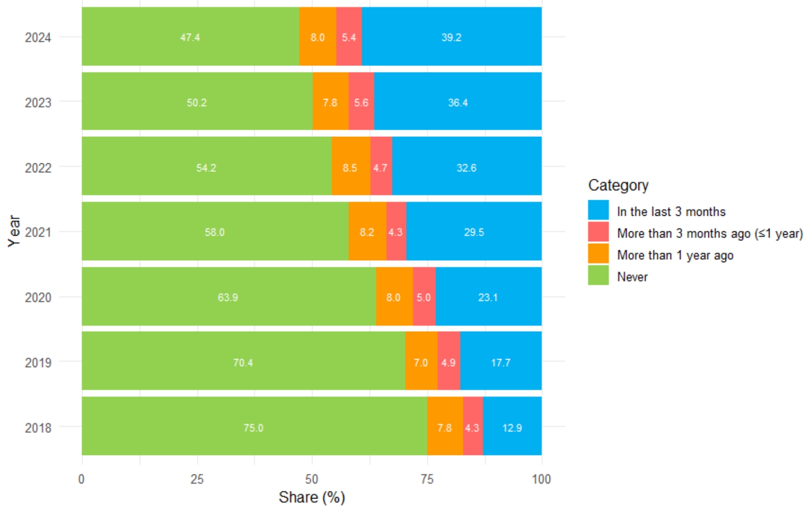
Figure 3: Timeframe of the last online purchase – Montenegro (2014-2023).



Source: ICT research (Montenegro).

The analysis of the timeframe of the last online purchase in Bosnia and Herzegovina is based on data from the Agency for Statistics of BiH (BHAS) from ICT research for the period 2018-2024. The data shows the share of the population that shopped online in four time categories: in the last 3 months, more than 3 months ago but less than a year ago, more than a year ago, and never. The results show a gradual growth in the share of the population shopping via the internet, especially in the "in the last 3 months" category, while the share of those who never shopped online significantly decreases throughout the observed period. However, data in this form are not available for the period 2014 - 2017. Although BHAS publishes ICT bulletins for earlier years, they generally contain only the total percentages of the population that shopped online, without distribution according to the timeframe of the last purchase. This lack limits the possibility of a complete longitudinal analysis and prevents detailed tracking of changes in the customer structure before 2018. Therefore, in this research, the time structure of online shopping in Bosnia and Herzegovina can only be tracked starting from 2018, while for earlier years, only aggregated data on the total prevalence of e-commerce can be used.

Figure 4: Timeframe of the last online purchase - Bosnia and Herzegovina (2018-2024).

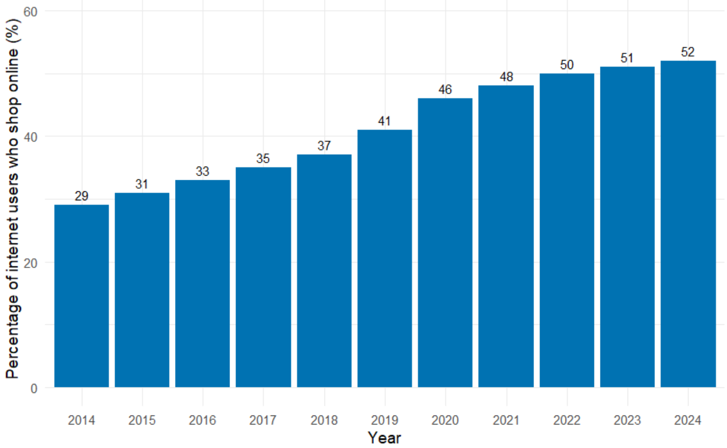


Source: ICT thematic bulletins (BiH).

According to data from the State Statistical Office of the Republic of Croatia (DZS, 2014-2024), the participation of the population that purchased goods or services via the internet shows a growth trend over the last decade. However, in available sources, the data are not separated according to the timeframe of the last purchase (e.g., in the last three months, more than three months ago, etc.), but are presented only as the total percentage of people who made an online purchase in the previous 12 months. This form of presentation hinders direct comparison with data for other countries where more detailed time distributions of purchases are available. The share of citizens who purchased goods and services via the internet increased from 29% in 2014 to 52% in 2024. This trend indicates an increasing degree of digital inclusion of the population, as well as an increase in confidence in online trade mechanisms.

Growth was moderate in the initial years (2014-2018), with an average annual increase of about two percentage points. However, the period 2019–2021 records a more intense increase from 41% (2019) to 48% (2021), which can partly be attributed to the impact of the COVID-19 pandemic, which spurred wider use of digital shopping channels. In the period 2022–2024, the share of users stabilizes at a high level: 50% (2022), 51% (2023), and 52% (2024), suggesting that e-commerce has become a standardized part of consumer behavior. These findings position Croatia as a digitally mature market in the regional context, with stable growth indicators and a pronounced presence of electronic commerce as a key segment of the contemporary economic environment.

Figure 5: E-commerce adoption rate in Croatia (2014–2024).



Source: DZS 2014-2024.

4.3 Analysis and modeling of the growth trend in the number of e-shops (2014–2023)

Based on available statistics for the period 2019-2023 and estimated initial values for 2014, a model was created for the growth of the number of e-shops in Bosnia and Herzegovina, Serbia, Croatia, and Montenegro.

Data for 2023 were taken from relevant sources: the National Bank of Serbia (Serbia), AfterShip and StoreLeads (Croatia and Montenegro), and AfterShip (Bosnia and Herzegovina). Initial values for 2014 were estimated by combining available historical data on the share of e-commerce in total retail trade, internet penetration, and digital market growth rates in the region, compared with more developed markets. Estimates were derived by retroactive calculation based on known data for 2019-2023.

Modeling was performed using the Compound Annual Growth Rate (CAGR), to ensure consistent extrapolation of data between the starting and ending years. The formula for CAGR is:

$$CARG = \left(EV^{(1/n)}\right)/BV - 1$$

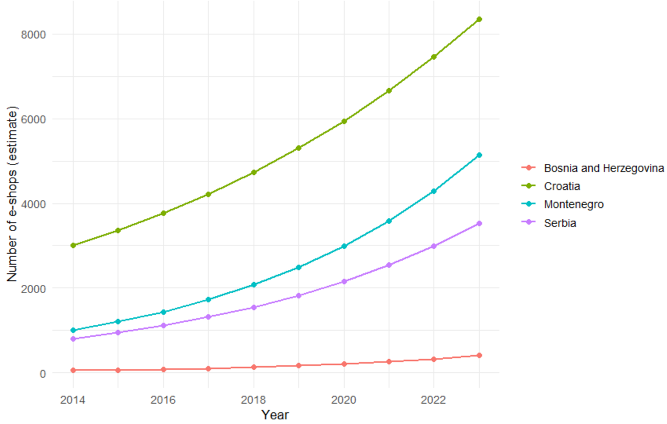
Where:

- EV (Ending Value) – Value at the end of the observed period.
- BV (Beginning Value) – Value at the beginning of the observed period.
- n - Number of years in the observed period.

This approach was chosen because CAGR ensures a smooth exponential growth curve, which better reflects the actual expansion of e-commerce than linear interpolation, and allows for model flexibility if more precise input data becomes available.

The results show that in Bosnia and Herzegovina, the number of e-shops increased from approximately 50 in 2014 to about 407 in 2023, representing an eightfold growth. Serbia progressed from approximately 800 to about 3,524 e-shops, while Croatia recorded the largest absolute growth, from about 3,000 to more than 8,361 online stores. Montenegro achieved the fastest relative growth, from about 1,000 e-shops in 2014 to approximately 5,143 in 2023.

Figure 6: Modeled growth in the number of e-shops (2014-2023).



Source: author's processing according to the National Bank of Serbia, 2024; AfterShip, 2024; StoreLeads, 2024; eCommerce Association BiH, 2024.

The graphical representation of the model clearly shows a divergence in growth dynamics among the observed countries. Croatia and Serbia lead in the absolute number of e-shops, while Montenegro achieves by far the highest density of web shops per inhabitant. Bosnia and Herzegovina records stable growth, but at a slower pace, which may indicate structural obstacles in the development of e-commerce, including logistical limitations, regulatory challenges, and insufficient consumer trust in online shopping.

4.5 Regulatory framework and security

The regulatory frameworks in the Western Balkans region exhibit varying degrees of alignment with European Union (EU) law and institutional maturity. This heterogeneity in the approach and implementation of legislation directly affects the dynamics of electronic commerce development within each country. A comparative analysis of the regulatory frameworks in Bosnia and Herzegovina (BiH), Serbia, and Croatia unequivocally indicates that institutional support is a key variable explaining the differences in the level of e-commerce development. BiH is in a transitional phase concerning the regulatory framework for e-commerce. Although positive, but isolated, advances are visible, such as the alignment of laws with GDPR and the introduction of e-signatures, the absence of a comprehensive national digital strategy systematically undermines consumer confidence and investments in logistics. Reliance on support through EU projects and other international partners further indicates a deficit in domestic strategic capacities. In contrast, Serbia has established a stable legal framework supported by developed payment systems (NBS IPS), while Croatia, as an EU member, uses robust support mechanisms such as the National Recovery and Resilience Plan (NPOO) to directly encourage digitalization. These proactive state policies have resulted in more mature markets.

The comparative analysis unequivocally indicates that Serbia and Croatia have implemented national digital economy strategies and e-commerce support programs. This has resulted in a greater degree of consumer acceptance of online shopping and an increase in the number of e-shops. These examples emphasize that the institutional framework is a key variable explaining why high internet penetration in Bosnia and Herzegovina (83.4% in 2023) fails to translate into a developed e-commerce market. Neighboring countries, starting from similar initial positions, have achieved more significant advances thanks to targeted state policies. The lack of a comprehensive national digital development strategy in BiH slows down the adoption of innovative business models and reduces the competitiveness of domestic e-merchants in the regional market. Strengthening the regulatory framework, modernizing logistics, and promoting electronic payments represent key reform measures for improving the competitiveness of e-commerce in BiH and its integration into the regional and European digital market.

Table 1: Comparative overview of strategic and regulatory frameworks for e-commerce

Indicator	Bosnia and Herzegovina	Serbia	Croatia (EU)	Montenegro
National Digital Economy Strategy	No unified national strategy; digital initiatives mainly project-based (EU, EBRD, GIZ).	Targeted programs implemented (e.g., Programme for the Development of E-commerce 2019–2020; E-Government Development Strategy 2023–2027).	Digital Croatia Strategy 2032 (aligned with the EU Digital Decade).	Horizontal public administration digital transformation strategies; ongoing harmonization with EU framework.
Alignment with Data Protection Regulations (GDPR Model)	New Personal Data Protection Law adopted in 2025; full implementation expected in October 2025.	Personal Data Protection Law (2019) – "GDPR-like" provisions.	GDPR directly applicable; DSA and PSD2 also in force.	Partial alignment; national harmonization with EU GDPR framework planned.
Implementation of e-Signature and e-ID	IDDEEA PKI and e-ID-DEEA platform introduced; adoption in progress.	Fully operational e-ID/e-Signature and trust services; widely used in practice.	eIDAS regime; QTSPs (e.g., FINA, AKD); qualified e-signature legally equivalent to handwritten.	Law on Electronic Identification and Electronic Signature in force; national PKI established.
Government Support Programs for E-commerce and SME Digitalization	Limited national initiatives; reliant on EU/EBRD/GIZ instruments (EU4DigitalSME, Go Digital).	Multiple public programs and policies (E-commerce 2019–2020; E-Government).	Strong NPOO (National Recovery and Resilience Plan) voucher schemes and continuous SME digitalization calls (HAMAG-BICRO).	Partial: horizontal competitiveness and innovation programs; limited e-commerce-specific incentives.

Source: Author's compilation based on: Government of Serbia (2020, 2023); Government of Croatia (2022); Republic of Montenegro, Ministry of Public Administration (2022); Agency for Identification Documents, Registers and Data Exchange of BiH (IDDEEA, 2025); European Commission (2020, 2021, 2022);OECD (2024);World Bank (2023

5. DISCUSSION

Comparative analysis of regulatory frameworks unequivocally confirms the central thesis of this paper: the lag in e-commerce in Bosnia and Herzegovina is not primarily a consequence of a technological or infrastructural gap, but a direct result of the strategic and regulatory framework. Although Bosnia and Herzegovina records a high internet penetration rate of 83.4% in 2023, which is comparable to Serbia (85.4%) and Croatia (83.2%) and represents a stable basis for the development of digital services, this potential does not translate into a developed e-commerce market due to the weakness of the institutional framework.

Unlike Serbia and Croatia, which have implemented national digital economy strategies and robust e-commerce support programs, Bosnia and Herzegovina still lacks a unified overarching strategy, relying instead on project-based initiatives, often with the support of the EU and other international partners. While Serbia records significant growth in online purchases in the last three months (from 21.6% to 51.0% from 2014 to 2023) and a drop in those who have never shopped online (from 59.5% to 26.6%), and Montenegro shows a similar growth trend (from 7.0% to 21.0%), BiH has recorded gradual growth since 2018.

This lack of a comprehensive national digital development strategy systematically undermines consumer trust and discourages investments in logistics. For example, while Serbia (2019) and Croatia (direct application of GDPR) previously aligned their data protection regulations with the GDPR model, the new Law on Personal Data Protection in BiH only comes into force in 2025, with full implementation beginning in October 2025.

Additionally, the implementation of e-signature in BiH has not yet been resolved, although adoption is underway, while Serbia and Croatia already have widespread use of e-signature and e-ID. These regulatory deficiencies directly contribute to a feeling of insecurity among BiH citizens, which manifests in payment habits, where 69.7% of respondents prefer cash-on-delivery payments due to fear of credit card misuse and a lack of trust in online payment systems. These findings are consistent with earlier research by Peštek et al. (2011) and Selimović and Peštek (2014), who also identified trust as the main problem for online buyers in BiH.

Conversely, in Serbia, the increase in card payments, supported by developed payment systems such as NBS IPS, has significantly reduced delays and improved order processing procedures. This clearly shows that the institutional framework is the key variable explaining why high internet penetration in BiH fails to translate into a developed e-commerce market, unlike neighboring countries which, despite similar starting positions, have made more significant strides thanks to targeted state policies. Furthermore, Mahmutović (2024) points to problems with website optimization and a high abandonment rate in BiH, which may also be indirectly related to the lack of strategic support that would encourage businesses towards technical improvements and enhancement of the user experience

Efficient logistics and payment infrastructure are key prerequisites for e-commerce growth, as they directly affect delivery speed, shipping costs, and transaction security. In Bosnia and Herzegovina, "last mile" services are unevenly developed, with longer delivery times in rural areas, which reduces the competitiveness of e-traders. Significant reliance on cash-on-delivery (COD) for most transactions slows down processing and increases costs, and the reason for this, as previously stated, is the lack of trust in online payment systems and the regulatory framework.

These issues contrast with Serbia, which has significantly improved the "last mile" segment by developing regional distribution centers and implementing "same-day delivery" in urban zones, alongside an increase in card payments and improved order processing procedures. Croatia, as an EU member, possesses a highly developed "last mile" network with options for pickup in parcel lockers and "click & collect" systems, and membership in SEPA enables faster payment processing.

These examples from Serbia and Croatia show how targeted policies and investments in infrastructure, supported by a stable regulatory framework and harmonized payment systems, can transform the logistics and payment ecosystem of e-commerce. In Bosnia and Herzegovina, however, the lack of clear strategic directions and institutional support contributes to the slower development of these key segments, making the market less competitive and less attractive for investment.

6. CONCLUSION

The rapid development of technology and the widespread availability of the Internet have fundamentally transformed global commerce, opening new opportunities for economic growth. This paper conducted a comparative analysis of the evolution of e-commerce in Bosnia and Herzegovina relative to Serbia, Croatia, and Montenegro, with the aim of identifying the key drivers and barriers shaping this market.

The central thesis of the study has been confirmed: the underdevelopment of e-commerce in Bosnia and Herzegovina is not primarily the result of technological or infrastructural limitations, given that the country has a high Internet penetration rate comparable to its more developed neighbors. The main reason for slower progress lies in an inadequate strategic and regulatory framework. The analysis revealed that the lack of harmonized legislation—particularly in areas such as data protection aligned with the GDPR model and the absence of a comprehensive national digital strategy systematically undermine consumer trust and discourage investment.

In contrast, the examples of Serbia and Croatia demonstrate that targeted government policies and the implementation of national digital economy strategies have resulted in more mature markets, greater acceptance of online shopping, and faster growth in the number of e-stores. Although Bosnia and Herzegovina shows steady growth in the field of e-commerce, the pace remains significantly slower, indicating structural barriers that high Internet penetration alone cannot overcome.

The contribution of this study lies in demonstrating that the institutional framework is the key variable explaining why Bosnia and Herzegovina has not yet fully utilized its digital potential.

The recommendations for future actions are clear. It is necessary to adopt a comprehensive national strategy for digital development, strengthen the regulatory framework in line with EU standards, modernize logistics and payment infrastructures, and actively promote electronic payments to build consumer trust. Such reforms are crucial to enhancing the competitiveness of domestic e-commerce and facilitating Bosnia and Herzegovina's successful integration into regional and European digital markets. For future research, it is recommended to conduct primary studies, such as surveys and interviews with consumers and e-store owners, to gain deeper insight into specific challenges and opportunities within the market. This would complement the findings of this study, which primarily relied on secondary data sources.

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