

DIGITAL TRANSFORMATION OF RETAIL: THE IMPACT OF E-COMMERCE ON SMALL BUSINESSES

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Abstract: *The expansion of online commerce has significantly changed the structure of the modern retail market and the relationship between businesses and consumers. This paper analyzes the impact of e-commerce on traditional retail, with particular focus on the challenges faced by small retailers in the digital environment. First, the development and growth of e-commerce are examined, along with the organizational and social aspects of digital transformation, through a comparative overview of traditional retail and electronic commerce. Special attention is given to the effects of low-price platforms, using the example of Temu, including their business models, margin reduction, and impact on local sellers. The paper also explores adaptive strategies that small retailers can implement to maintain competitiveness, including improving service quality, integrating online and offline sales channels, and enhancing logistics processes. By defining the research problem and posing key questions whether e-commerce inevitably leads to the disappearance of small retailers or encourages the transformation of their business models, the paper aims to provide a comprehensive insight into the challenges and opportunities of the digital economy. The results of this research contribute to a better understanding of the adaptation mechanisms of small retailers and provide a foundation for future development strategies in a digital environment. Additionally, the paper*

emphasizes the importance of informed policies and support measures to preserve sustainable competition in the retail sector. The conclusions indicate that digital transformation creates both challenges and opportunities for small retailers in the modern market environment.

Key words: *Digital transformation of trade, E-commerce, Small retailers, Low-price platforms, Adaptive business strategies*

JEL classification: L81, O33

1. INTRODUCTION

The digital transformation of trade represents one of the key structural changes in the modern economy, which over the past fifteen years has significantly redefined the processes of selling, distributing, and consuming goods and services. The initial development of this process was driven by the expansion of information and communication technologies (ICT), the growth of internet usage, and the emergence of digital platforms, enabling consumers faster and easier access to products, while providing retailers with new channels for distribution and promotion.

The rapid development of e-commerce, particularly in the last decade, has accelerated the digitalization of the retail sector, reflected in the

increase in online purchases, the growth of digital users, and continuous technological progress.

These changes have influenced not only consumer habits but also the market position of small retailers, who are facing increased competitive pressure from large online platforms, reduced margins, and shifts in market share.

The subject of this research is the vulnerability and adaptation of small retailers in the digital environment.

The aim of the paper is to systematically analyze and compare e-commerce and the traditional sales approach, examine its impact on the retail sector, and describe adaptive strategies that small retailers apply to maintain competitiveness and adjust to new market conditions. Special focus is placed on identifying adaptation mechanisms in the context of a growing digital economy and changing consumer behavior.

Based on the defined research problem, the main hypothesis states that online shopping is gradually becoming the dominant form of acquiring goods and services, accompanied by a decline in the importance of traditional sales channels and an increase in the number of individuals using the internet for purchasing purposes.

Within the methodological framework, the paper applies descriptive statistics and comparative analysis, particularly through comparing web sales and traditional electronic data interchange (EDI-type sales), as well as evaluating changes in the number of internet users over time. These methods enable an empirical assessment of the impact of digital transformation on retail and provide a basis for analyzing small retailers' adaptation strategies.

2. RESEARCH METHODOLOGY

2.1. SUBJECT AND OBJECTIVE OF THE RESEARCH

The subject of this paper is the impact of digital transformation and the development of e-commerce on the traditional retail structure, with a particular focus on the position and adaptation of small retailers in a digital environment.

The objective of the research is to examine, through theoretical and comparative analysis, the extent to which the growth of e-commerce affects the market position of small retailers, and to identify adaptive strategies that enable their long-term competitiveness.

In line with the defined research problem, the main hypothesis is that online shopping is increasingly becoming the dominant form of acquiring goods and services, while the relative importance of traditional sales channels is declining.

2.2. METHODOLOGICAL APPROACH

The paper is based on both qualitative and quantitative approaches, with a dominant emphasis on theoretical analysis and secondary data processing. The research did not include primary data collection, but relies on the analysis of relevant scientific literature and available statistical sources.

Methods applied include the method of analysis, used to explain the concepts of digital transformation, e-commerce, omnichannel approach, and the D2C model, while the method of synthesis enabled the integration of these concepts into a unified conclusion about the impact of digital transformation on the position of small retailers. The descriptive method provides insight into market trends, explains the concept of e-commerce, and outlines business models encountered in retail.

The comparative method was used to compare traditional retail, online sales, and the position of small retailers in relation to cross-border digital sales platforms.

2.3. EMPIRICAL RESEARCH

The paper utilizes data from Eurostat (data on the share of internet users engaging in online shopping), reports from Cross-Border Commerce Europe (data on the growth of cross-border e-commerce and Gross Merchandise Value indicators), as well as research conducted by the Zurich University of Applied Sciences (ZHAW) and FHNW – University of Applied Sciences and Arts Northwestern Switzerland on the impact of Asian platforms on local sellers.

The data were processed using descriptive statistics (trend analysis, percentage comparisons, and time series), enabling empirical verification of the stated hypothesis.

A deductive approach was applied by moving from general theoretical assumptions of digital transformation toward the analysis of the specific case of small retailers, while an inductive method was used to derive conclusions based on analyzed statistical data and case studies.

The data used refer to the period from 2014 to 2025, allowing for the analysis of long-term trends in digital transformation.

3. DIGITAL TRANSFORMATION AS A STRUCTURAL CHANGE IN TRADE

The digital transformation of trade represents a key structural change in the modern retail sector, redefining the ways in which retailers communicate with consumers and distribute their products. With the emergence of e-commerce and

digital platforms, traditional sales models based on physical stores and offline marketing have faced new challenges and the need for adaptation.

While traditional retailers have had to integrate digital channels into their operations to maintain competitiveness, e-commerce brands have been developed from the outset in a digital environment, using sophisticated tools for offer personalization and direct interaction with customers. The development of the internet, smartphones, social networks, and data analytics has enabled retailers to collect real-time consumer information, further accelerating changes in market structure.

This transformation affects not only business models and marketing strategies but also the organization of the retail sector, opening new opportunities for innovation and more efficient value chain management. In the context of small retailers, digital transformation creates both pressures and opportunities, requiring the development of adaptive strategies to maintain competitiveness.

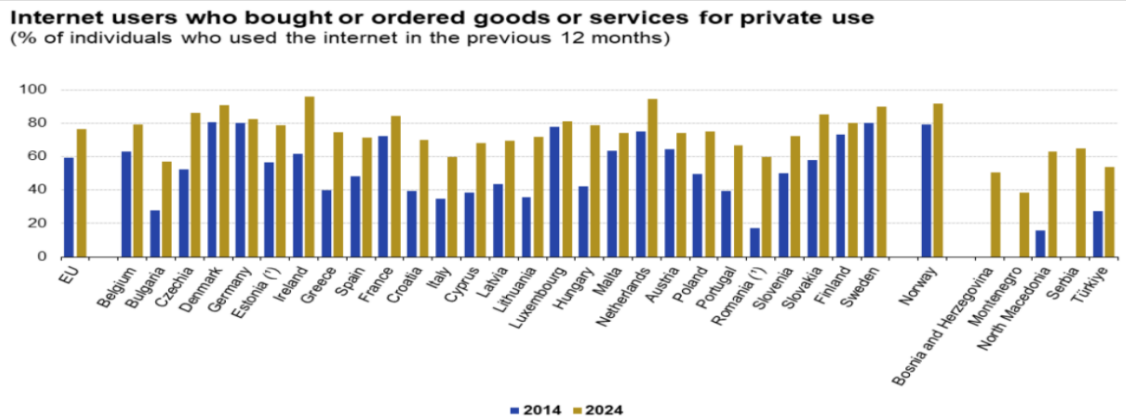
For this reason, it is essential to analyze how e-commerce is changing traditional retail, its impact on consumer behavior, and the ways in which small retailers respond to these structural changes (Ahmad, 2025).

In the last decade, significant changes have occurred in how individuals purchase goods and services, with internet commerce becoming increasingly important in consumer behavior. Alongside the development of digital technologies and platforms, online shopping has continued to grow across Europe.

The data presented indicate a clear upward trend in the share of internet users who purchased or ordered goods and services for private use in the period from 2014 to 2024. In almost all observed countries, a significant increase in the share of online buyers has been recorded, particularly in countries with more developed digital infrastructure, but also noticeable in countries that had relatively low levels of online shopping in 2014.

This trend confirms that online shopping has become an increasingly present and accepted form of consumption, gradually transforming from an alternative into a dominant purchasing channel for a large number of consumers. Technological innovations, increased consumer trust in online transactions, and external factors such as the pandemic have played a significant role in accelerating this process and further driving the digital transformation of the market

Figure 1. Trend in the number of Internet users



Source: EUROSTAT (2025).

Based on the presented data, a clear and continuous increase in the share of internet users engaging in online shopping can be observed, confirming the existence of an upward trend over time.

This supports the main hypothesis of the paper, as the data indicate the growing affirmation of online shopping as a standard method of acquiring goods and services.

4. TRADITIONAL RETAIL STRUCTURE AND THE ROLE OF SMALL RETAILERS

Traditional retail primarily refers to the physical sale of products and services in brick-and-mortar stores, shops, supermarkets, and shopping centers, including independent small shops, specialized stores, and mixed retail outlets serving local communities (Iglesias-Pradas, Acquila-Natale & Del-Río-Carazo, 2022). These physical stores have historically formed the foundation of local

economies, contributing to employment and enabling personalized services tailored to the specific needs of consumers (OECD, 2025).

Within the traditional structure, classic stores with predominantly food assortments stand out, typically with a sales area of up to 100 m² and direct customer service (Legal Information System, 2024). These establishments are legally and economically independent retail units with low capital requirements and relatively easy market entry, although their survival rate in the early years of operation is low (Lovreta, Končar & Petković, 2019).

Despite strong competition from large retail chains and the growth of e-commerce, small traditional formats still represent a significant part of the retail network. According to NielsenIQ data, in 2023 these outlets accounted for 63.98% of the total number of retail establishments in the Republic of Serbia, although a slight decline in their share and a process of market concentration are noticeable (Nuševa et al., 2024). Their competitive advantage is primarily based on location and proximity to consumers, reducing transaction costs and saving customers time (Milić, 2020). Consumers are often willing to pay slightly higher prices if they can purchase products more quickly and conveniently near their place of residence, avoiding transportation costs, waiting, and additional time (Nuševa et al., 2024).

In addition to location advantages, these neighborhood stores build closer and more personalized relationships with customers, strengthening consumer loyalty and long-term relationships (Tomašević, Gašević & Vranješ, 2020). Flexibility in adjusting assortments and the ability to source products according to customer demand further differentiate them from large retail systems (Filipović, Kostić-Stanković & Joksimović, 2010). Their importance became particularly evident during the COVID-19 crisis, when small formats were able to ensure a certain level of continuity in food supply under disrupted distribution conditions and changes in consumer behavior (Vučenović et al., 2021; Končar et al., 2021). Data from the Republic of Serbia are used as an illustrative example of a market with a similar retail structure and consumer habits characteristic of the region.

With the growth of online shopping, traditional stores are facing a decline in foot traffic due to changes in consumer habits and the strengthening of e-commerce (Cedro, 2025). In response, the omnichannel approach is gaining increasing importance, involving the integration of physical and digital sales channels (Iglesias-Pradas et al., 2022). Integrating online orders, in-store pickup,

and digital communication channels enables traditional retailers to enhance customer experience and maintain market relevance (MDPI, 2024). Therefore, the long-term sustainability of traditional retail depends on the ability to combine location-based and social advantages with the digital transformation of business models (OECD, 2025; MDPI, 2024).

Electronic commerce (e-commerce) refers to conducting commercial activities through electronic media and the internet, including the exchange of goods and services in a digital environment. It involves the use of the internet and information technologies by companies, including electronic data interchange (EDI).

E-commerce is most commonly conducted through sellers' websites that enable direct purchase of goods or services, while payments are carried out via electronic systems such as virtual shopping carts, credit or debit cards, or electronic fund transfer (EFT). In essence, e-commerce represents the use of electronic communications and digital information processes between organizations and individuals to create value and conduct transactions.

With the growth of ICT and the internet, the global business environment is increasingly shifting toward e-commerce, especially in the business-to-business segment. The internet allows consumers to actively participate in the global economy by comparing prices, analyzing market variations, and identifying substitute products and services, thereby gaining a competitive advantage. Market openness enables buyers to quickly compare offers across different websites and change purchasing decisions if they are not satisfied with the product, price, or service. From the sellers' perspective, e-commerce reduces the need for physical stores.

E-commerce has become a key force in modern trade, transforming consumer behavior, business models, and global markets. Digital channels allow companies to reach customers worldwide, while mobile and social commerce increase user engagement through smartphones and social networks.

Forms of e-commerce:

- Mobile commerce (M-commerce): An increasing number of people shop via smartphones and tablets, requiring businesses to adapt their websites and applications to mobile devices. Digital wallets and mobile applications further simplify the process, making it faster and more convenient.
- Social commerce: Enables ordering products directly through social networks. Brands use platforms such as Instagram and Facebook to showcase products and enable in-app purchases,

while users can share experiences and participate in live events, increasing engagement.

- Voice commerce (V-commerce): Voice-activated devices such as Amazon Echo enable purchasing, searching for product information, and adding items to lists via voice commands. AI-powered virtual assistants provide recommendations and facilitate shopping, especially for multitasking users.

These changes highlight the importance of making the purchasing process simple and enjoyable for users. Companies that follow these trends are more successful in attracting customers and maintaining a competitive advantage. Monitoring technological changes has become a key factor for success in the digital world (Sharma, 2025).

5. OMNICHANNEL APPROACH – INTEGRATION OF SALES CHANNELS

Omnichannel marketing is the practice of simultaneously providing customers with information, products, services, and support through two or more coordinated distribution channels, developing at a rapid pace. The omnichannel approach refers to the integration of online stores, physical stores, and other sales channels to provide customers with greater flexibility and freedom of choice during the purchasing process.

Most consumers shop across multiple channels, and these customers are typically more profitable than others.

Distribution channels include web centers, call centers, and direct sales networks. The goal of this approach is to increase customer satisfaction and, consequently, customer loyalty.

This strategy goes beyond the standard multichannel approach by coordinating channels to provide a seamless customer experience (Shankar & Kushwaha, 2021).

Empirical data from Switzerland (Die Schweizerische Post & HWZ, 2024) show that most omnichannel retailers offer key services supporting this strategy. The most common is “click and collect,” offered by 71% of retailers, with large online retailers implementing it more frequently than smaller ones.

Other services include in-store returns of online purchases, product availability checks online, and in-store payment options for online orders.

These findings demonstrate that omnichannel strategies provide convenience and flexibility for customers while increasing loyalty and optimizing operational costs for retailers.

5.1. DIRECT-TO-CONSUMER (D2C) MODEL WITHIN THE OMNICHANNEL PARADIGM

Modern marketing is increasingly characterized by the era of digital intermediaries, driven by widespread internet use and technologies such as big data and artificial intelligence. Digital intermediaries differ from traditional ones by using digital tools and platforms, particularly social media, to connect companies and consumers.

One of the most important models in this context is the D2C model, in which brands sell directly to end customers without intermediaries such as wholesalers and retailers. This model focuses on the consumer, enables direct communication, and relies on digital channels and social networks. It is characterized by specialized products, innovation, cost efficiency, and integration of multiple sales channels (Mu & Yi, 2024).

This approach allows customers to choose how they want to shop, either online or in physical stores. It bypasses intermediaries but can also be combined with other sales channels or an omnichannel strategy (McKee et al., 2023). By adopting the D2C model, brands gain advantages such as internalizing retail margins, greater control over customer experience, and access to real-time consumer data (Wirtz, 2021). However, despite accelerated growth during the COVID-19 pandemic, the D2C model faces challenges such as economic instability, supply chain disruptions, rising production costs, and labor shortages (Ryan, 2022).

6. IMPACT OF DIGITAL PLATFORMS AND CROSS-BORDER TRANSACTIONS ON SMALL BUSINESSES IN THE EUROPEAN ECOSYSTEM

Temu is a rapidly growing international e-commerce platform that has significantly impacted the global retail market since its launch in 2022 through low prices and a wide product assortment. Its business model combines consumer-to-manufacturer production, reverse auctions, consignment inventory, and factory-to-consumer distribution, reducing costs and achieving economies of scale.

Personalized recommendations and data-driven marketing further enhance efficiency and user growth, making Temu one of the most downloaded apps in the United States in 2023. However, rapid expansion has also revealed structural weaknesses and operational risks.

Studies show that Asian platforms such as Temu, Shein, and AliExpress significantly affect local online retailers in the DACH region. While 61% of stores report no direct impact, 39% experience

negative effects such as reduced profit margins, increased competition, and declining sales.

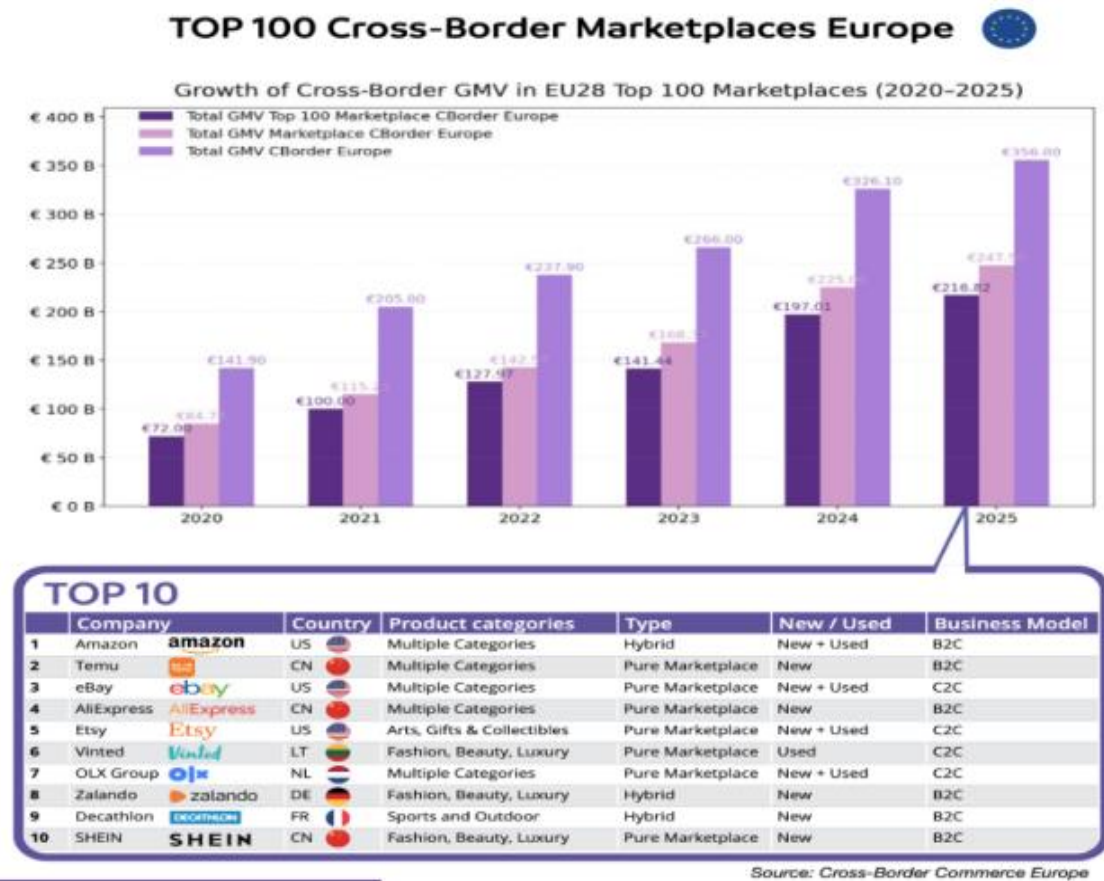
Smaller retailers often adapt by modifying assortments or differentiating through quality, marketing, and customer support. Some see opportunities in faster delivery and better product quality, developing differentiation strategies in digital commerce. The data indicate that low-cost platforms significantly shape consumer behavior, the competitive environment, and the strategies of small retailers, directly influencing digital transformation processes in retail.

According to Cross-Border Commerce Europe, the European cross-border e-commerce market is

experiencing strong growth, reaching €358.7 billion in 2024/2025, with online platforms accounting for 70% of total revenue. This highlights the crucial role of digital platforms in driving the development of the digital economy.

The data further show continuous growth in gross merchandise volume among the top 100 cross-border e-commerce platforms in the EU from 2020 to 2025, indicating high market concentration among leading global players such as Amazon, Temu, eBay, and AliExpress

Figure 2. Top 100 Cross-Border E-Commerce platforms



Source: Cross-Border Commerce Europe, 2025.

The chart displays three different shades of purple, each representing a different level of the cross-border online sales market in Europe.

The lightest shade of purple shows the total value of all e-commerce platforms, both large and small, representing the entire market, with a value of €141.9 billion in 2020, increasing to €356 billion in 2025.

The medium shade of purple reflects the strong growth of online platforms that connect buyers and sellers, such as Amazon, Temu, and eBay. This is the so-called “marketplace” segment.

The darkest shade of purple represents the top 100 cross-border platforms.

The essence of the chart is that cross-border online shopping in Europe is continuously growing year by year, demonstrating the strong expansion of

digital trade. The largest share of this market is made up of marketplace platforms, which have become the dominant model of online sales between countries. Within this segment, the top 100 largest platforms generate a substantial portion of total turnover, indicating a high level of market concentration in the hands of a few leading players.

Amazon remains the largest cross-border marketplace in Europe, maintaining its leading position in terms of sales volume. Temu follows closely behind, confirming its exceptionally rapid growth and the increasing presence of Chinese platforms in the European market. In addition, eBay, AliExpress, and Etsy operate across multiple product categories and offer a mix of new and second-hand goods, covering

a wide range of consumers. C2C platforms such as Vinted and OLX specialize in second-hand products and operate within specific market niches.

Furthermore, Shein and Temu clearly demonstrate how Chinese online platforms have become strong competitors to traditional and European retailers. Overall, the cross-border e-commerce market in Europe is characterized by strong and continuous growth, but also by significant concentration, as a few major platforms hold dominant market shares and play a key role in shaping overall market trends.

7. ADAPTIVE STRATEGIES OF SMALL RETAILERS

Traditional retail in developing countries typically consists of small, family-owned shops or kiosks, often characterized by simple management, cash payments, and personal relationships with customers. These stores offer flexible pricing, the possibility of deferred payment for known customers, and strong social ties with the local community.

For small businesses, digital marketing represents an effective and cost-efficient way to compete with larger companies. Affordable online advertising tools enable even firms with limited budgets to increase brand visibility and establish direct communication with their target audience. Through digital channels, consumers gain unprecedented access to information, allowing them to make well-informed decisions (Isharyani et al., 2024).

Unlike traditional retailers that rely on physical stores and conventional marketing channels, e-commerce brands use digital platforms to achieve highly targeted and personalized marketing. By using tools such as SEO, social media marketing, email campaigns, and algorithm-driven

recommendations, e-commerce enables direct interaction with customers, real-time data collection, and precise audience targeting. These advantages also include influencer marketing and online reviews, which strengthen consumer trust and social proof, while traditional retailers often lack such capabilities (Ahmad, 2025).

In developed countries, retailers increasingly use technologies such as inventory management software, mobile applications, POS systems, and mobile payments, which can enhance customer experience and influence purchasing behavior. However, in traditional stores in developing countries, technology adoption is hindered by limited financial resources, lack of appropriate technology, and insufficiently trained staff.

For successful implementation, technology must be adapted to the local context, as solutions effective in developed countries cannot always be directly applied. The Technology-to-Performance Chain (TPC) model combines the assessment of how well technology fits user tasks with actual usage to evaluate organizational effectiveness (Isharyani et al., 2024).

Previous research has shown that TPC can successfully track technology adoption in e-commerce, mobile banking, and contactless services, but it has not yet been applied to traditional retailers in developing countries.

Such approaches can form part of adaptive strategies for small retailers, as they ensure that technology aligns with their real needs and resources, increasing the likelihood of successful adoption and long-term competitiveness.

CONCLUSION

The digital transformation of trade represents one of the most significant structural changes in the modern economy, affecting not only the way transactions are conducted but also the overall organization of the retail sector, competitive dynamics, and consumer behavior. The analysis conducted in this paper confirms that the growth of e-commerce is continuous and systemic rather than temporary or cyclical.

Data on the increasing share of internet users engaging in online shopping from 2014 to 2024, based on EUROSTAT, clearly indicate that digital sales channels are becoming the dominant method of acquiring goods and services. This confirms the main hypothesis that online shopping is gradually overtaking traditional forms of trade.

At the same time, the analysis of cross-border e-commerce in Europe reveals significant market concentration and the dominance of large digital platforms. The growth in total gross merchandise

value among the top 100 cross-border platforms, from €141.9 billion in 2020 to a projected €356 billion in 2025, demonstrates the rapid digital integration of the European market. Within this segment, global platforms such as Amazon, Temu, eBay, and AliExpress hold dominant market shares, shaping competitive conditions and business standards.

The example of Temu is particularly significant, as its business model based on direct-to-consumer production, economies of scale, algorithm-driven recommendations, and aggressive pricing strategies further intensifies competitive pressure on small and local retailers.

Research conducted in German-speaking countries confirms that a significant portion of small online retailers experience negative effects from the growth of Asian digital platforms, including reduced profit margins, declining sales, and increased price competition. These findings suggest that digital transformation does not affect all market participants equally, but rather deepens the gap between large, technologically advanced systems and small retailers with limited resources.

However, the results also show that digital transformation does not automatically imply the disappearance of traditional retail. Small retailers still possess certain competitive advantages, including proximity to consumers, personalized service, flexibility in product assortment, and strong ties to local communities. Data from the Republic of Serbia confirm that traditional retail continues to play an important role in local economies.

The key to the survival of small retailers lies in their ability to adapt. The omnichannel approach, integrating online and offline sales channels, emerges as a sustainable strategy that combines digital accessibility with physical presence. Services such as online ordering with in-store pickup, in-store returns of online purchases, and online product availability checks improve customer experience and strengthen consumer loyalty.

Additionally, the direct-to-consumer model enables brands to communicate directly with end customers, retain retail margins, and utilize real-time data, although it also carries risks, particularly in the context of supply chain disruptions and rising operational costs.

In developing countries, the adapted adoption of technology is of particular importance. The Technology-to-Performance model provides a framework for aligning technology with the real needs and tasks of small retailers. Instead of uncritically adopting solutions from developed

economies, it is necessary to tailor digital tools to local conditions, financial capabilities, and levels of technological literacy.

In conclusion, the digital transformation of trade is a complex and multidimensional process that simultaneously creates both pressures and opportunities for development. Although e-commerce and global digital platforms increase competitive pressure and accelerate market concentration, small retailers can maintain their relevance through differentiation, digital integration, and innovative business models. The long-term sustainability of the retail sector depends not only on the ability of small businesses to combine traditional advantages with modern digital tools, but also on the broader economic and regulatory environment in which they operate.

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