E-COMMERCE AND SERVICE INNOVATION: TRENDS AND RESEARCH PATTERNS BASED ON A BIBLIOMETRIC REVIEW

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Abstract: The paper examines how e-commerce platforms and technological innovations have transformed traditional services and consumer behavior. New economic models based on digital technologies have emerged because of the accelerated pace of globalization and the advancement of information technology. These models have entirely changed how businesses operate and report to their clients. This paradigm presents digitalization, digitalization, and digital transformation as separate phases of change, each of which plays a complementary role in restructuring operational procedures and adjusting services to new technological realities. The Covid-19 pandemic has sped up the use of digital tools, forcing businesses to rethink their business strategies and create creative ways to engage with customers. Furthermore, the study includes a bibliometric analysis of literature from the period 2014–2024, performed with the help of Scopus, VOSviewer, and XLSTAT. The findings highlight important global networks for collaboration, reference publications, and subject clusters related to service innovation and e-commerce. According to the research, e-commerce has a major role in the development of the services industry and has a big influence on businesses' competitive strategies and customer interactions.

Keywords: *e-commerce*; *technological innovation*; *consumer behavior*; *digitalization*; *traditional services*;

Introduction

It is well known that technology facilitates the expansion of services globally, and digital changes have significant implications in terms of managing operations within companies operating in the service sector and beyond. The globalization process has been accelerated by the rapid development of information technology and the Internet that has facilitated the achievement of economic activities much faster, and the accessibility of the global network has connected billions of users. Thus, the current economy has become digital through technology, significantly influencing the services sector, which is the essential element of the development and operation of any company, regardless of the field of activity. The phenomenon of digitalization, the development of innovative technologies, followed by the expansion of e-commerce have had a strong impact on the socio-economic level of the entire society. From his perspective (Chaudhury & Kumar, 2015), technological evolution together with the information and knowledge generated determines the production capacity of a society and its standard of living, considered necessary elements for the economic growth of a country.

Globalization has connected nations, and digitalization has become an essential force that has transformed the dynamics of e-commerce. As all economies of the world adopt innovative technologies, the effects on international markets are numerous. Thus, the phenomenon is considered a revolution that has reshaped the landscape of international trade, creating a new era of connectivity and efficiency (Oliinyk, 2024). Extended access to digital processes, together with the integration of e-commerce, play an important role in harnessing the opportunities generated by them, especially for developing or least developed countries. At the same time, the technology of commercial services is accelerating the growth of trade in digital services as economies increasingly integrate globally.

Thus, the technological process has a direct impact on the expansion and diversification of the digital services trade (Zhang & Wang, 2022). This idea continues as digitalization has become the main driver of development, contributing to global economic growth. Additionally, globalization has enabled the integration of international markets. As the reduction of trade barriers and the development of new technologies have made international trade possible, they have stimulated international trade and consumption by harnessing the competitive advantages of each nation. E-commerce has transformed the way goods or services are purchased and sold, even in cross-border transactions. But e-commerce is not just about these transactions, it also involves exchanging information and making payments between the parties involved in the transaction. The development of the retail and logistics industries has been driven by the spectacular growth of e-commerce in recent years. The Internet allows traders to attract many customers, expand their business over a wider geographical area and make efficient use of their resources.

At the same time, customers benefit from quick access to services, regardless of where or when they are located, thus having the possibility to easily compare the offers available on the market. In addition, it has become a vital means for conducting transactions between companies and customers, covering all types of commercial interactions such as business-to-business (B2B), business-to-consumer (B2C), consumer-to-business (C2B), consumer-to-consumer (C2C). In recent years, the field of e-commerce has expanded, supported by emerging technologies such as artificial intelligence and blockchain, seen as ways to diversify globally. In addition, it includes various activities such as online sales, electronic trading platforms, online auctions, product distribution, digital services, online banking and mobile commerce (Paun et al., 2024).

Another important element is that innovation and modern technologies have become the main pillars of the development of the global economy, which have supported both the creation of new jobs and the improvement of existing working conditions. Thus, digital transformation is happening worldwide, but the pace of modernization differs from region to region, depending on the level of economic and social development. The countries of the European Union are among the main actors of digital transformation, which deems it absolutely necessary to develop modern, competitive, innovation-driven, digital and knowledge-oriented economies (Brodny & Tutak, 2024). In this context, modern technologies are widely used, but also involve challenges such as high implementation costs, cybersecurity risks, data quality and privacy issues, as well as legal constraints.

Within the European Union, modern technologies are strongly promoted, as they have the capacity to strengthen and expand economic competitiveness. Innovation is associated with technological, economic and social progress, and the economic policy of the European Union has supported the development of innovative companies, starting from the idea that a free and competitive market favors the effective implementation of new solutions, including in the field of digitalization (Brodny & Tutak, 2021). Thus, the global context illustrates that digitalization has become a strategic direction at European level, and the evolution of technology has accelerated the transition to a digital economy and the rapid development of e-commerce, which has redefined global trade and economic rules. With the rapid advance of technology, e-commerce has become a standard of operation for business and a key factor in strengthening the digital economy globally.

Therefore, as e-commerce has become an essential element for businesses and consumers, and the phenomenon of digitalization continues to revitalize the economic environment, it is necessary to study the impact of these transformations on traditional services and consumer behavior. Building on these premises, this article proposes to analyze how e-commerce platforms and technological innovations have redefined the services sector and consumer preferences. Thus, the research interest of the study is focused on studying how e-commerce platforms have transformed traditional services and consumer behavior. In this respect, the research methodology includes the development of a literature review and a bibliometric analysis to examine how innovation reinvented the services sector in

the e-commerce era. Thus, it is envisaged to identify the most relevant studies on the impact of innovation on traditional services. Using the tools of VOSviewer and XLSTAT, the research network will be visualized, highlighting the thematic relations between innovation, e-commerce and the concepts associated with the services sector. Also, the literature review and bibliometric analysis will facilitate the identification of gaps in current research, but also the identification of trends, challenges and opportunities generated by innovation in the studied sector. The purpose of this article is to examine how technological advances and the use of e-commerce have reinvented the business models of companies operating in the services sector, along with the analysis of how consumer preferences have been redefined with the integration of the digitalization phenomenon within the global economy.

Literature review

This section will explore how e-commerce platforms influence the transformation of traditional services and consumer behavior in a digital context. Thus, concepts of digitization, digitalization, and digital transformation are addressed, and the mechanisms by which technology reconfigures the services sector are also highlighted. Through a literature review, the first part presents an overview of the research progress in this area of interest and highlights the innovative trends in this sector.

Digitization, digitalization and digital transformation in e-commerce and services

Over the past decade, companies have become interested in increasing operational efficiency, reducing costs so they can easily adapt to the current economic environment. Digital transformation has penetrated all areas, being characterized by digitization and digitalization. On the one hand, digitization from the perspective of Gradillas & Thomas (2025) is a technical process by which physical objects, analog information or real-world phenomena are transformed into digital form. The process involves converting, representing, and improving data to create the digital artifact. The digital artifact is understood as an artificial object that includes technology, information and relationships (Lee et al., 2015). In short, digitization involves the conversion of tangible information into digital format. On the other hand, digitalization is the use of digital technologies to improve existing processes or a complex phenomenon involving both social and economic dimensions, by using digital artifacts in activities that lead to structural changes such as the emergence of business models, the transformation of industries or the emergence of economic and social realities (Gradillas & Thomas, 2025). In the era of e-commerce, companies become digital, so technological progress contributes to the sustainable development of any organization (Butt, 2020).

E-commerce is constantly adapting to technological innovations and changes in consumer behavior. Its evolution began with the development of Electronic Data Intercharge in the 1960s, which allowed digital data transmission between

companies, eliminating the need for the transmission of documents in physical format. Then, another major change occurred in the same period, with the advent of the World Wide Web, which marked the beginning of the marketing of the Internet. The launch of Amazon in 1994 and eBay in 1995 revolutionized online commerce, establishing business-to-customer (B2C) and customer-to-customer (C2C) (Santos-Jaen et al., 2023) models. Then, with the passage of time, technological progress led to full access to the Internet, giving customers the opportunity to purchase goods and services online, and the development of smart phones led to the emergence of mobile commerce. All these stages reflected a complex process of digitalization, which goes beyond the mere conversion of information into digital format and involves structural changes in business models, industries and economic interactions (Faccia et al., 2023).

Digital transformations have not only revolutionized the way companies interact with customers, but reconfigured the functioning mechanisms of markets, competitive strategies and economic models. In both the services sector and e-commerce, the digitalization phenomenon is redefining how value is created, influencing business models and generating new experiences for consumers. Moreover, these transformations are not limited to the operational level, but their effects are felt by the organizational culture and the areas that deal with strategic planning (Kolomiyets et al., 2024). Digitalization in services is supported by Industry 4.0, which promotes automation, smart systems integration and data analysis to enhance operational efficiency. In this context, the digitalization of operations, together with the orientation towards electronic channels, is no longer just an option, but a necessity for companies that want to remain competitive (Ingaldi & Klimecka-Tatar, 2024). The Covid-19 pandemic has accelerated this transition, forcing organizations to quickly adapt to their operational activities and digitize their services.

A general overview of e-commerce and service innovation

Technological progress is continuous, the Internet is in vogue, and investments in service sector technology have become the main trend in the development of companies. In the current era, all operations are based on the use of information technology, which includes the Internet, artificial intelligence, Big Data and other means to carry out processes of creation, delivery and consumption through online platforms. Globalization, technological progress and the development of the electronic communications market are the elements that have had the greatest impact on all economic activities. In the global context, these elements led to the rapid emergence and development of e-commerce (Murthy et al., 2021). Innovation in online platforms has revolutionized the way goods and services are purchased or sold. E-commerce is a new tool for digital transactions that provides extensive access to a wealth of information and knowledge needed to facilitate e-commerce globally, through Internet networks (Abdullah et al., 2024).

Globalization has made e-commerce a crucial component of all business strategies to gain a competitive advantage. The integration of technology into the economic processes of organizations has led to increases in productivity, attract-

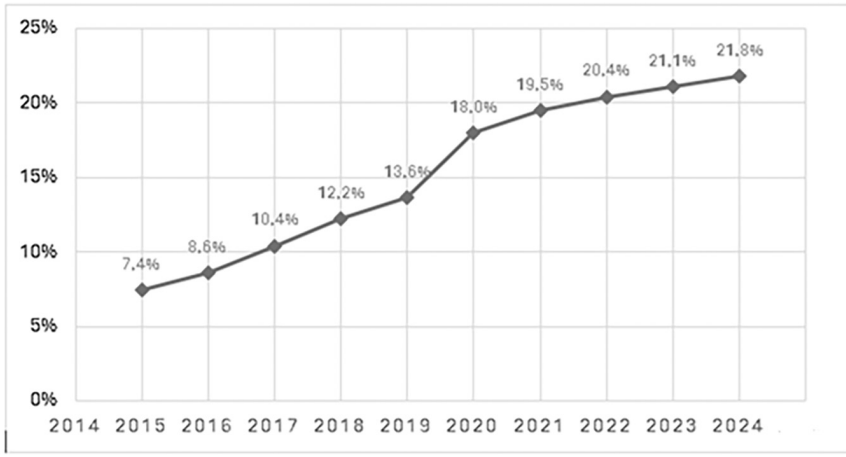
ing more customers and reducing costs. With the spread of the global Internet network, consumers have become concerned about online purchases, making e-commerce the engine of marketing of goods or services around the world. The easy and fast way of conducting online transactions has led to the accelerated development of e-commerce. Due to its advantages, it quickly spread to all branches of the economy, removing barriers that hampered the operational processes of traditional companies. In recent years, more consumers are choosing online shopping, thanks to convenience, time savings and a wide range of products, and services available respectively. This phenomenon is supported by high-speed Internet access, the development of mobile devices and electronic payments. From the perspective of Alamdari et al. (2020), e-commerce involves a wide range of activities such as marketing, service delivery, development, delivery, sale and purchase of services through online platforms. Nowadays, e-commerce has become an indispensable element of business, due to its advantages such as global accessibility, wide variety of products, the possibility of comparing offers between suppliers, safe payment methods, and the convenience of shopping from anywhere.

E-commerce has gained great popularity with the spread of Covid-19, when all physical interactions were then conducted online. Even though that period was characterized by panic, uncertainty and quarantine, it was the technology that allowed the daily activities to be carried out. Due to the restrictions, people have turned to online shopping, which causes them to try new ways of purchasing. The spread of the virus and the isolation of the world's population spurred e-commerce as a business platform between consumers, retailers and between companies, and to survive, they had to reevaluate their traditional business models or risk bankruptcy. The technologies were brought to the fore, the companies made predictions and built modern strategies for the future to be able to carry out their work in the new uncertain environment (Myovella et al., 2020). In March and June 2020, there was a record activity in online shopping, the share of e-commerce in global commerce exceeded 15.6%, reaching the value of 4.2 trillion dollars, and the total time spent on mobile e-commerce applications increased by 40% compared to 2019.

In the period 2013–2023, the value of the B2C market multiplied by five times, that of the B2B market by 3.5 times, the share of digital sales in total retail sales increased by three times, the number of registered online stores doubled, and the time spent in mobile e-commerce applications increased by 40% compared to the previous year (Czerwinska et al., 2023). In 2021, the global e-commerce market reached a level of 13 trillion dollars, and forecasts suggest that it will reach 55.6 trillion dollars by 2027. In 2022, China was the world leader in e-commerce, and estimates show that it will remain in this position until at least 2027. The value of the Chinese market was estimated at USD 1,156.3 billion. As for the Central and Eastern Europe region, it is among the most dynamic in the world, being led by Poland, where the e-commerce market has grown at a rate of about 20–25% annually in the last decade (Statista, 2023). In Romania, the value of the e-commerce market was estimated at 6.2 billion euros, compared to 2020, when it recorded a value of about 5.6 billion euros, with an increase of 10% (Radu, 2022).

As the restrictions imposed with the pandemic intensified, companies turned to e-commerce sales channels that proved to be the only survival solution for them. A study published in early 2025 by the International Trade Administration (2025) shows that, globally, since 2019, the percentage of online purchases has increased by 8.2% by the end of 2024. Figure 1 shows the share of e-commerce in total global retail sales over the period 2015-2024.

Figure 1. E-commerce share of total global retail sales in 2015-2024



Source: Personal processing using the International Trade Administration

Over the period 2015-2019, e-commerce has been growing gradually, from 7.4% to 13.6%, highlighting the use of technologies progressively and the adoption of online shopping. The highest growth was recorded in 2020, when the share of e-commerce grew rapidly from 13.6% in 2019 to 18% in 2020. This progressive development is due to the Covid-19 pandemic, which has accelerated the process of digitization in terms of both consumer behavior and business models of companies. After the rapid growth in the period 2020-2021, the development of e-commerce continued, but at a steady pace, the percentage increased from 20.4% in 2022 to 21.8% in 2024. In recent years, with the rapid development of technologies, and in the sphere of e-commerce, significant progress has been identified, making online operations indispensable to current society, having a strong impact on traditional business models.

In his paper on how e-commerce is integrated into the innovation processes of company management, Li (2024) identifies that the main advantage of e-commerce is that it can be realized from any corner of the world. Also, transactions are carried out through a computer or mobile phone with Internet access, without involving a considerable investment of human or material resources, the operational costs of the company are significantly reduced, and the economic efficiency is improved. Given the impact that innovation has on all economic branches, the importance of e-commerce is mentioned because it is considered one of the key factors that support the success of any product or service of a company, accelerating sales and

providing customers with a fast, safe and convenient purchasing process (Rahardja, 2022). Thus, the integration of technologies and information into operations executed by companies operating in the service sector allows them to compete much more effectively, the implementation process involving many stakeholders, such as investors, customers, even governments, which play an important role in adopting new technological solutions (Hendrawan et al., 2019). With this evolution, economic players significantly improve communication and information sharing capabilities, as well as access to other resources essential for efficient operation.

Research methodology

This section of the article focuses on a detailed bibliometric analysis, focused on literature in the field of e-commerce and services. The objective is to identify the main research trends, influential authors and high-impact academic sources. The study is structured based on a rigorous selection of scientific articles indexed in the Scopus database, for the period 2014-2024 and conducted using the VosViewer and XLSTAT tools. To carry out the bibliometric analysis within this study, relevant articles from the international database Scopus were collected and evaluated, and the selection process was carried out in March 2025, the scientific papers covering a period of 10 years, precisely to capture the evolution of the digitization phenomenon and its impact on services. The inclusion criteria covered articles written in English, published mainly in academic journals, which address topics related to the impact of innovation on services and consumers, e-commerce and mobile commerce. The purpose of this analysis is to identify the conceptual relations between innovation, digital platforms and service transformation, as well as to outline a perspective on the current state of research in the field.

The main objective of this research is to study how ecommerce platforms have transformed traditional services and consumer behavior. In this respect, bibliometric analysis was carried out to identify the most relevant papers in the field and possible gaps in the literature. Bibliometric analysis is a research modality that has gained great popularity in studies in the sphere of economics due to the development, availability and accessibility of analysis tools such as VOSviewer, Gephi, Leximancer, but also Scopus and Web of Science databases. Also, the success of bibliometric is not a fleeting trend, but reflects its usefulness in managing large volumes of scientific data and generating a high impact of research (Donthu et al., 2021). This method also allows quantitative identification of trends in a specific field of study, through a variety of indicators, depending on the factors of interest identified for research.

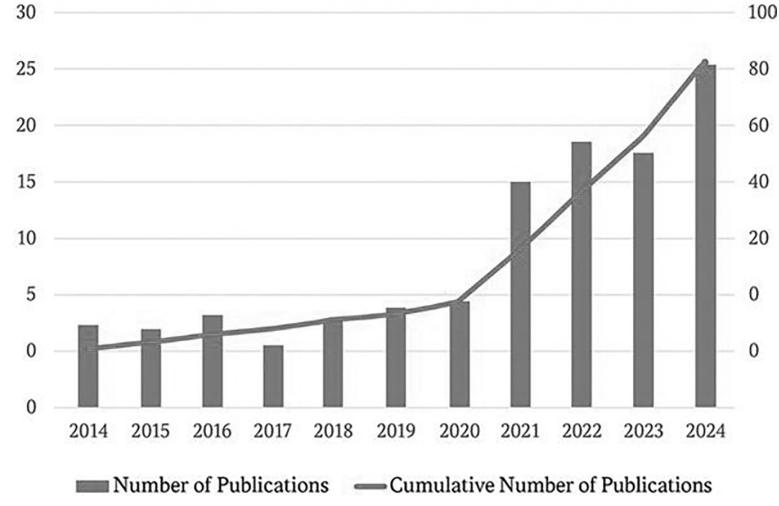
The selection process of the academic papers focused on articles dealing with topics related to e-commerce, innovation, services and consumer condor. For each line of research, specific keywords were used to reflect the topics of interest pursued. To identify the way, influenced the traditional services of the company, influenced the electronic module, used expressions such as: „e-commerce" AND „in traditional services"; „service innovation" AND „digitalization"; „tech-

nology adoption" AND „traditional services". „View to identify the main trends qui electronic challenges:" e-commerce trends„" challenges;" e-commerce development „AND" opportunities; „e-commerce" AND „digital transformation"; for e-commerce evolution „last": „ „e-commerce growth" AND „technological innovation"; „e-commerce platforms" AND „service transformation". The last direction of research, which are aimed at identifying the mode & „;" e-commerce platforms „AND" user experience„;" customer „AND" mobile commerce.

Trends and findings in bibliometric analysis

The articles were evaluated based on thematic relevance, and 100 studies consistent with the research objectives were retained. Subsequently, the list of works was exported to a CSV file and processed using VOSviewer and XLSTAT tools, the first program developed for the construction and visualization of bibliometric maps, and the second program, for statistical analysis, in the case of this research, cluster analysis, based on a standardized matrix. The reason for choosing these tools was because they can create, for example, maps of authors or magazines, based on co-citation data, keyword maps, based on co-occurrence data and cluster analysis. In addition, VOSviewer offers a viewer that allows detailed examination of bibliometric maps, displaying them in several ways, each highlighting a different aspect of them. In addition, the program is available for free to the bibliometrics research community (Van Eck & Waltman, 2010). The evolution of the scientific articles on e-commerce innovation analyzed in the period 2014-2024 is presented in Figure 2 and reflects the way in which technological evolution and digitalization have influenced the research directions in the field of services to adapt rapidly to the digital environment.

Figure 2. The evolution of the scientific articles on E-Commerce innovation (2014–2024)



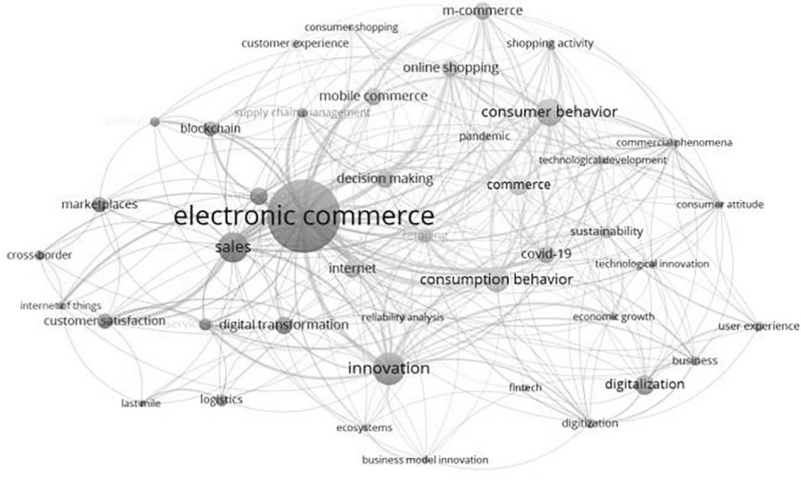
Source: Authors' work using Scopus

From 2014 to 2019, the number of published articles was quite low, with a range of 1-5 per year in the early years of the period under review. This interval can be considered an early period, in which the academic interest in this direction was still in training. Since 2020, the number of publications has increased rapidly, reaching its peak in 2024, this development highlights the acceleration of digitalization processes and the increase in the popularity of e-commerce, seen as the main delivery channel to consumers. In addition, the Covid-19 pandemic of 2020 has boosted research in this area, especially if companies have had to adapt quickly to the digital environment. From the point of view of the cumulative evolution of publications, there is a development of research interest in this field, with the passage of time and the digitization of the sector. After 2020, the increase in academic research in this sphere is due to the need to adapt traditional services to the new demands of the digital environment.

Bibliometric networks and maps

To understand how e-commerce and service innovation topics are addressed in the literature, a bibliometric analysis of keywords was conducted using the VOSviewer program. The analysis was conducted using 100 selected articles from the Scopus database and focused on the frequency of co-occurrence of keywords in scientific articles. The full or full counting method was applied, setting a minimum threshold of three appearances for inclusion in the map. Out of a total of 759 identified terms, 54 met this criterion and were considered. Figure 3 is the keyword picture in e-commerce and service innovation research.

Figure 3. Keyword co-occurrence map in the literature on e-commerce and service innovation



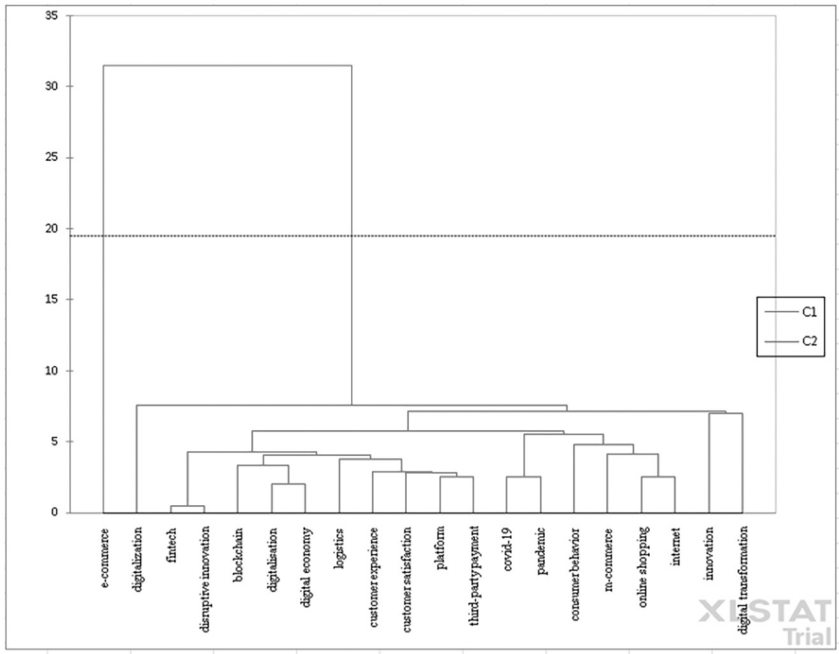
Source: Authors' work in VOSviewer using Scopus

The bibliometric map obtained shows each node as a keyword that was identified in the literature. The size of the circle associated with each term illustrates how often it appears in the analyzed articles, and the link lines between the nodes reflect the link between them. The more prominent the line, the higher the frequency of occurrence. Based on these links, the program grouped the terms into eleven thematic clusters, differentiated by color, each highlighting a distinct research direction. With the help of the VOSviewer tool, 54 keywords were selected, the most used terms being e-commerce, with a number of 38 appearances, a total intensity of links of 135; innovation, having a number of 13 appearances, a total intensity of links of 60; sales- 12 appearances, a total intensity of links of 64 and consumer behavior, with a total intensity of 11 Appearances and a total bond intensity of 61.

These keywords occupy central positions in the network and relate to numerous other terms, which highlights the fact that the themes they represent are the subject of concerns in the current literature. Also, these concepts are highlighted by several research directions: *digitalization, mobile commerce, technological innovation, digital transformation, technical development*, etc. The distribution and links between the terms highlighted in the conceptual map illustrate how innovation and e-commerce contribute to the transformation of traditional services and the modification of consumer behavior.

To understand how the key terms were associated, Figure 4 illustrating a dendrogram made using the XLSTAT program based on a standardized matrix, reflecting the presence and co-occurrence of 20 keywords from the selected articles, obtained through cluster analysis, using Agglomerative hierarchical cluster. Cluster analysis is a statistical clustering method that aims to identify classes or clusters made up of elements as similar as possible to each other and as different as possible from the other groups. This technique provides the ability to structure sets of objects or variables according to similarities or dissimilarities, aiming to reduce the complexity of data by highlighting latent patterns or relationships. In its agglomerative hierarchical form, cluster analysis starts from treating each element as an individual cluster, which is then gradually aggregated with other similar elements, to obtaining a hierarchical structure graphically represented by a dendrogram (Ionescu, 2015).

Figure 4. Cluster analysis of the most frequently used terms in research on e-commerce and service innovation

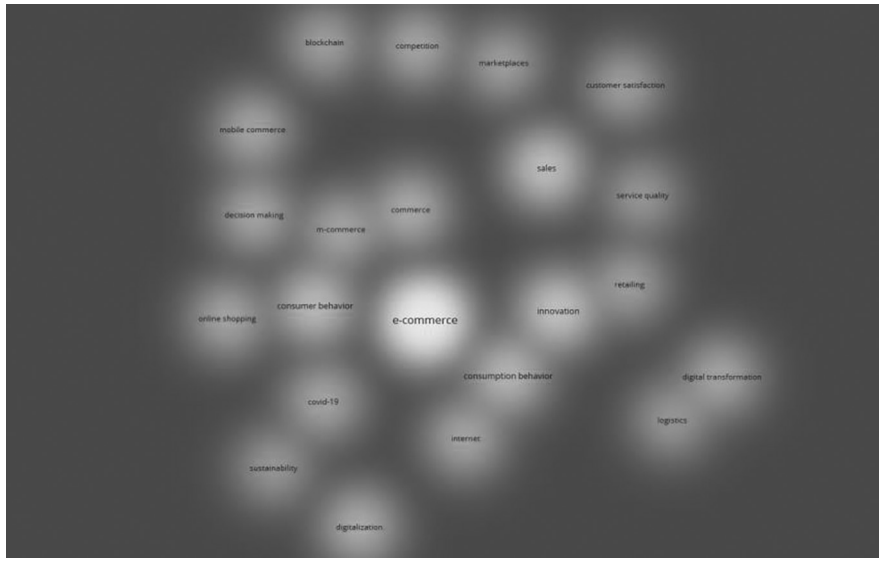


Source: Authors' work using Scopus and XLSTAT

The dendrogram reveals two main clusters, C1 and C2, which illustrate the relationships among the concepts and indicate how frequently they co-occur in the analyzed studies, thereby outlining the principal research directions in this field. The first cluster includes the term *e-commerce;* a key concept used in literature that occupies a central role in digital transformation studies. The separate positioning does not point to thematic isolation, but illustrates a broad character used in various topics, but also indicates the fundamental role it plays in service sector innovation. The perpendicular line connecting it with the thematic axis of the terms digitalization and digital transformation suggests that this concept correlates with the mentioned terms. The second cluster brings together the other 19 keywords analyzed, in this group being found terms such as *fintech, blockchain, customer experience, customer satisfaction, consumer behavior, internet, innovation*. The proximity between these notions highlights a close link between studies that address topics such as the impact of innovation on technologies, consumer experience, digital delivery or payment processes, and interactions across customers and companies.

To illustrate the central concepts frequently used in the specialized literature, a keyword density map was generated, as shown in Figure 5. This representation highlights, through color variations, the areas of highest interest within literature, indicating a concentration around the key concepts associated with e-commerce and service innovation.

Figure 5. Density map of key concepts in the literature on E-commerce and service innovation

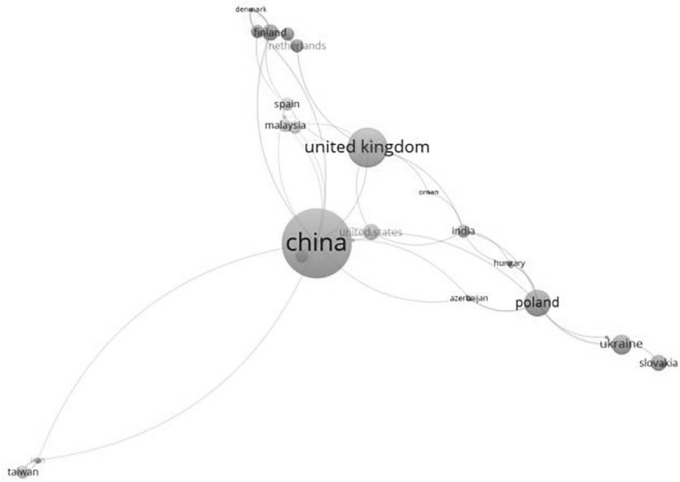


Source: Authors' work in VOSviewer using Scopus

The map was created based on a selection of 22 terms, automatically grouped into four thematic clusters, linked by 126 connections with a total link strength of 231. Concepts located in the bright yellow areas, such as *e-commerce, innovation, sales*, or *consumption behavior,* appear very frequently and are strongly interconnected within the network, becoming focal points around which most of the articles were developed. In contrast, terms like blockchain, logistics, or Covid-19 are positioned in less intense areas, indicating that, within the selected sample of articles, they were addressed in more specific contexts.

To examine the intensity of international collaboration in studies related to e-commerce and service innovation, a map was created, shown in Figure 6, which highlights the network of international collaborations in research on e-commerce and service innovation.

Figure 6. International collaboration map in research on E-commerce and service innovation

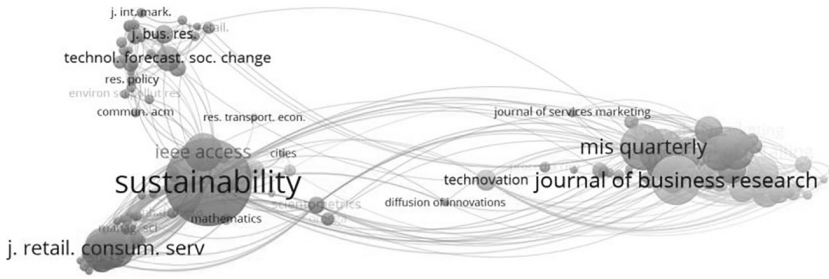


Source: Authors' work in VOSViewer using Scopus

The map shows 32 countries involved in the co-authorship network identified in the analyzed literature, organized into seven clusters and connected through 62 links. China stands out as the central hub of scientific activity in this field, recording the highest number of collaborations, followed by the United Kingdom and Poland. Countries such as the United States, India, and Finland are also notable for the frequency and diversity of their partnerships. Several international cooperation patterns can be observed as well: for example, India collaborates with Oman and Hungary, while Finland forms a network with the Netherlands and Denmark. In Eastern Europe, Poland plays a central role, establishing connections with Ukraine and Slovakia.

In the specialized literature analyzed on service innovation and the development of e-commerce platforms, certain journals appear frequently in the bibliographies of the works on which the bibliometric study was based. This indicates the existence of key reference journals that have contributed to shaping research in this field. Figure 7 presents the co-citation map of bibliographic sources, created from a set of 157 journals identified in the bibliographies of the analyzed articles.

Figure 7. Co-citation map of bibliographic sources in the literature on E-commerce and service innovation



Source: Authors' work in VOSViewer using Scopus

These sources recorded 2,895 co-citation links, which VOSviewer grouped into six distinct thematic clusters, each reflecting a dominant research direction. The journal *Sustainability (Switzerland)* stands at the center of the network, being frequently co-cited. It is an international, open-access publication covering topics related to economic, social, and environmental sustainability. Furthermore, it is indexed in major databases such as Scopus and Web of Science, and in 2023 it achieved a Citescore of 6.8, ranking Q1 in Geography, Planning and Development (MDPI, 2023). Another important source in the bibliometric map is the *Journal of Business Research*, which publishes studies on consumer behavior, entrepreneurship, digitalization, and marketing. With a Citescore of 20.3 reported in 2023, the journal frequently features articles on e-commerce and the impact of innovation on the business environment (ScienceDirect, 2023).

Conclusions

The research aimed to explore how e-commerce platforms influenced the service sector and consumer behavior under the impact of technological innovation. The first part of the article started with the analysis of the concepts of digitization, digitalization and digital transformation in the context of e-commerce and services, to understand the processes by which the companies in the analyzed sector reconfigure their activity and adapt to the new technological requirements. The terms are distinct in meaning: digitization refers to converting information into a digital format; digitalization concerns the use of digital technologies to improve or redesign existing processes; and digital transformation denotes deeper structural changes in how companies operate, as well as shifts in user behavior. The work continues with an extensive review of the literature, in which e-commerce and innovation in services were analyzed in a general context. The literature review has led to the conclusion that e-commerce is not only an alternative to traditional commerce, but a phenomenon that reinvents service delivery, emphasizing mobility, accessibility and personalized interaction.

The article continued with the bibliometric analysis, based on a sample of one hundred scientific articles, covering a period of ten years, namely 2014-2024, indexed in the Scopus database. The process of bibliometric analysis was complex, because it involved selecting the articles, filtering them according to thematic relevance, but also studying the tools that made it possible to carry out quantitative analysis. The tools used were VOSviewer and XLSTAT, which enabled the generation of visual maps for co-occurrence analysis of terms, co-authorships, co-quotes sources and cluster analysis. At the same time, the visual maps reflected international collaborations between scientific centers in China, the United States or the United Kingdom, as well as the presence of European states such as Poland, Slovakia or Spain. This was aimed at identifying the most relevant studies in the field and the gaps existing in the literature. Thus, the bibliometric analysis highlighted the dynamics of the research topics in the last ten years, but also the identification of the most important scientific contributions. Keywords such as e-commerce, innovation, consumer behavior or digitalization have recorded a high frequency of occurrence, illustrating the interest of researchers in technology and service topics.

At the same time, the cluster analysis highlighted the existence of well-defined research directions that consider both the size of innovation and the consumer experience. In addition, the study of the evolution of published articles indicates an increase in interest in this field, starting with 2020, being closely related to the acceleration of digitalization, caused by the Covid-19 pandemic. The maps obtained in VOSviewer and the dendrogram in XLSTAT stressed that the transformation of the services sector through e-commerce platforms has an interdisciplinary character, making contributions in engineering, marketing or sociology. Bibliometric analysis has enabled an overview of how innovation revolutionizes traditional services but has also reflected the main trends in literature. The topics related to digitalization, innovation or consumer behavior are the main pillars of transformation in the services sector.

While the research identified limitations of the approach, the bibliometric analysis yielded numerous results. First, the study was based solely on articles indexed in the Scopus database. Even though this is considered one of the most important academic sources, there are databases like Web of Science that provide greater access to articles in the sphere of interest. Secondly, only open access studies and those written in English have been considered, which may lead to the omission of valuable works from other linguistic areas. At the same time, it would be possible to conduct a comparative analysis between organizations in Central and Eastern Europe and those in Western Europe, to highlight differences in the way and pace of digital technologies adoption, exploring directions of technology.

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