

# e-Commerce in the Post-Pandemic Period

Subjects: Economics

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The emergence of the COVID-19 pandemic has resulted in notable transformations of the commerce landscape, particularly in the realm of electronic commerce. This sector has experienced a precipitous advancement, characterized by substantial modifications of online business under-takings, encompassing both products and services.

Keywords: electronic commerce ; clusters ; similarities and disparities ; customer relationship management (CRM) and secure transactions ; risk of poverty

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## 1. Introduction

The COVID-19 pandemic has had a significant impact on consumer markets and their preferences, leading to substantial changes. This has resulted in the heightened priority of trade in goods and services conducted through electronic platforms. The current economic recovery hinges upon the ongoing process of digitization, wherein e-commerce serves as a vital driver of economic activity. The increasing utilization of electronic commerce for both domestic and international sales necessitates a corresponding diversification of products to cater to a more diverse consumer demand structure <sup>[1][2]</sup>. The rise of the COVID-19 pandemic has led to an escalation in competition within the e-commerce sector. The process of enticing consumers presents a complex and nuanced challenge, necessitating the development of tailored strategies that align with the distinct cultural traditions and consumption behaviors exhibited within specific countries <sup>[3][4]</sup>.

## 2. Electronic Commerce

The rapid transformations of e-commerce that occurred over time determined the gradual appearance of many structural changes in its composition. But, starting in 2019, the COVID-19 pandemic accelerated this evolution exponentially, changing the way of life, as most activities had to be carried out online. In this context, the importance of using digitalization on a large scale has increased, with electronic commerce expanding and developing rapidly in all countries of the world, including in European countries.

Electronic commerce (e-commerce), it can be stated, represents the act of sale and purchase, in close interconnection with their related activities (negotiation, transmission of information, etc.), carried out through an electronic platform on the internet <sup>[5][6][7][8][9][10][11][12][13]</sup>.

E-commerce, like any field of activity, has advantages for both companies and consumers but also presents some disadvantages compared to the traditional commerce. For the consumer, the main advantages would be the non-stop accessibility of the market, because a product can be returned if it does not meet expectations (even over a longer period of time), as well as high transparency. In addition, some of the sites show the opinions of other buyers about the product, facilitating additional information about the respective product. Saving time remains the main advantage of e-commerce, considering the fact that for the procurement of products or service it is no longer necessary to walk to registered commercial units. But e-commerce also has some disadvantages for the consumer: one cannot try certain products or touch them before buying them, certain goods cannot be chosen and individually picked (e.g., fruits, vegetables, etc.). However, considering all these disadvantages, mainly due to saving time, it remains a popular form of products purchasing, especially after the COVID-19 pandemic <sup>[13]</sup>.

As far as firms are concerned, e-commerce facilitates international exchanges and these may increase their sales, even if some barriers to these exchanges may appear <sup>[14][15]</sup>. The main advantage consists of increasing the number of customers and implicitly sales, because the companies are now able to sell even outside their country. Globally, the majority of the largest companies by turnover are those that conduct predominantly online commerce <sup>[16]</sup>. It should be mentioned here that within the EU, there is a single market, which facilitates the free movement of goods, services, capital and people. As a result of these provisions, there are no customs duties for the delivery of products within the European

Union, this being an advantage for the companies in the member states but also for consumers who have the ability to purchase cheaper products, without paying customs duties from other EU states <sup>[17]</sup>. Also, e-commerce can reduce transaction costs and make communication between customers and firms more efficient while increasing the speed of transactions <sup>[13]</sup>. A further limitation arises from the influence of unfavorable online reviews on consumer decision-making, resulting in swift changes in consumer preferences for products or companies <sup>[18]</sup>.

The main disadvantages for the companies identified by the authors of the article are the barriers that can appear in electronic commerce, among which it can be mentioned: problems related to internet access, qualified personnel, problems related to distribution—they do not have their own fleet and no companies to whom they can collaborate. At the same time, since some of the goods cannot be tried/tested physically by the consumer before purchase, there will be a higher return rate, which will increase the company's costs (particularly those related to transport, packaging, etc.), which constitutes another significant disadvantage.

The evolutionary trends observed in the domain of e-commerce in recent years can be attributed to the impact of the global COVID-19 pandemic. The transmission and manifestation of COVID-19 caused a significant amount of fatalities and had a major adverse effect on the global economy. This impact was particularly pronounced in stock markets, leading to adverse consequences <sup>[18][19][20][21][22]</sup>.

Gradually, the entire world economy has been affected, starting with China, and in the state of global crisis e-commerce took on an important role, which continues to gradually expand, gaining larger dimensions. The effects were different depending on the nature of the goods (food or non-food) and the method of trade (traditional trade or online trade) <sup>[23][24]</sup>. Drastic measures, even lockdowns, which prohibited people from leaving their homes without a well-founded reason, had the effect of transforming the supply process from a direct one into an online based orders, through which most of the goods reached consumers. As a result, even though the general trade declined worldwide, the e-commerce has greatly increased <sup>[9][16][25]</sup>.

E-commerce is becoming the "lifeline" for many companies that had to close their physical stores. The impact of the pandemic on the online commerce manifested itself differently depending on different economic sectors. Travel ticket sales were down (as expected due to COVID-19 restrictions), but homewear sales were up. The introduction of this system had positive effects on courier companies and click-and-collect delivery services <sup>[26]</sup> in specific urban areas, leading to a significant increase in the number of parcels delivered, sometimes doubling the previous amount <sup>[27]</sup>. Customers have become much more attentive to courier services and have begun to evaluate them in terms of their quality and punctuality <sup>[28]</sup>. A negative correlation between age and online shopping was noted, with young people having a greater predisposition to online shopping than older people <sup>[29]</sup>. In this context, the consumer experience and trust in online transactions has increased and they have started to face a rapid evolution <sup>[30][31][32]</sup>.

The favorable encounters consumers had with online shopping platforms amidst the pandemic prompted them to persist in this behavior even subsequent to the relaxation of restrictions <sup>[33]</sup>. E-commerce is recognized as a sector that has exhibited sustained high levels of activity even in the post-COVID-19 pandemic period, characterized by an ongoing process of substantial growth. In contrast to other industries, wherein online enterprises experienced considerable surges during the pandemic, their subsequent progression following the pandemic did not exhibit comparable momentum. One illustrative instance involves the emergence of online communication platforms such as ZOOM and Google Meet during the pandemic. These platforms, while initially developed as a response to the prevailing circumstances, have shown a recent inclination toward a resurgence in personal, in-person interaction, as compared to electronic commerce <sup>[34]</sup>.

As humanity faced the COVID-19 pandemic, many specialists paid special attention to electronic commerce, studying the phenomenon more intensively, the course of the processes and its effects. Some of the effects were gradually measured and used in other research studies in order to construct an overall picture, or to analyze in more detail aspects regarding the development of e-commerce. In this regard, one of the significant indicators used in such research can be mentioned: e-commerce, customer relationship management (CRM) and secure transactions. The data for this indicator are collected annually by the National Statistical Institutes (INSSE) based on a questionnaire developed by Eurostat <sup>[35]</sup>. The model of this questionnaire changes annually in order to correctly measure the use of new technologies and at the same time not to burden the respondents, meaning certain questions are asked every 2 or even 3 years and therefore the time series may have interruptions. The questionnaire is addressed to enterprises with 10 or more employees that have online sales (e-commerce), excluding the financial sector. For 2022, a sample of 151,000 companies was selected from the 1.47 million companies with at least 10 employees. The results are expressed in the form of weights, representing the number of enterprises that present a certain feature, weighted by the total number of enterprises. The importance of transaction security for e-commerce is obvious, because the main issue of e-commerce refers to maintaining the integrity of

transactions, confidentiality and correctness of data, considering that these security measures are intended to limit the negative effects both in the online environment and outside of it [36][37].

The implementation of security measures for variables within the cluster is additionally justified by the importance attributed to this domain by the European Union, as demonstrated by the incorporation of “Safety” as a distinct category in the Digital Competence Framework 2.0, which constitutes a revision of the DSI methodology.

The population's hesitance to engage in online transactions stems from a perceived lack of confidence in the security of personal data and monetary transfers, as acknowledged in the previous literature [38][39][40][41]. However, it is important to note that these studies do not encompass EU countries, and they do not definitively demonstrate the strong correlation between them through the utilization of the hierarchical cluster methodology.

The research seeks to address this deficiency and contribute to the existing knowledge. The evolution of e-commerce is closely related to the level of economic development of each country, which can be transposed through the risk of poverty. The at-risk-of-poverty rate indicator is calculated as a weight and tells us the percentage of the total population living in households where the disposable income is below 60% of the median disposable income per adult-equivalent at the national level in the current year and also within 2 years from the previous 3 years. It is determined based on various data collected by the European Union Statistics on Income and Living Conditions (EU-SILC) over a period of at least 4 years according to the methodology [42].

This correlation has not previously been investigated; thus, researchers' study endeavors to address this gap in the existing literature. One of the key repercussions of poverty for online commerce is the inherent impediment posed by limited financial resources, resulting in restrained purchasing power. In some studies, poverty is considered a “disease” that needs to be treated in order to benefit from future economic development [43]. In addition to presenting an impediment, inadequate financial resources pose a challenge when seeking to access the internet, as it necessitates possession of a computer and the means to procure a paid internet subscription. In various long-term scholarly investigations, empirical evidence suggests that children hailing from disadvantaged backgrounds tend to exhibit diminished academic achievement when compared to their counterparts from affluent households [44]. This observed disparity in educational performance subsequently engenders reduced financial prospects, thereby establishing a self-perpetuating cycle wherein poverty is sustained. Several studies suggest that e-commerce has the potential to alleviate poverty, particularly in areas with limited access to technology, such as rural environments [45]. The aforementioned correlation can also be substantiated by research findings suggesting that in Africa, which is characterized by prevalent poverty, the advent of mobile phones alongside diminished communication costs has fostered enhanced efficacy within the labor market and overall welfare [46].

The examination of aspects concerning the population is indispensable when discussing the evolution of e-commerce, as it serves as the principal driving force in this sphere of enterprise. The level of education of the population is pertinent in regard to the perception of this online phenomenon, as well as the adaptability of internet users. Education plays a pivotal role in fostering digital commerce by instructing subsequent cohorts to discover, analyze, and employ relevant information, ultimately cultivating their capacity to comprehend economic–social and existential occurrences. Moreover, education imparts essential skills in harnessing computer technology for practical endeavors, encompassing online transactions and commercial endeavors.

Education is widely regarded as a significant determinant of consumer behavior, particularly in the realm of e-commerce, as reflected by a multitude of scholarly works. This influence is derived from factors such as digital proficiency, technology familiarity, and foreign language proficiency [47]. Simultaneously, consumer education holds considerable significance in the prioritization of needs, enabling individuals to establish a resilience toward forceful promotional tactics online while discerning genuine necessities from artificially generated desires [48]. The provision of consumer education to individuals starting from the primary cycle holds significant importance [49].

The selection of the educational attainment level as a representative indicator for e-commerce is justified by the given context. This statement presents data regarding the proportion of the overall population that has accomplished a specific educational milestone, classified according to the International Standard Classification of Education (ISCED) coding system for educational attainment. In the assessment of educational attainment, the primary criterion considered is the successful completion of the most advanced level of education with official recognition in the form of a qualification or diploma. However, in cases where lower levels of education do not provide such credentials, the acquisition of admission to a higher level is deemed sufficient evidence of graduation. Furthermore, it is noteworthy that both vocational and general education hold significance in the academic discourse [50].

Other research studies focused on analyzing the “Internet access level for households” as an indicator in order to correctly measure the use of new IT technologies and monitor the development of e-commerce. Internet access is essential for the ability to surf the internet for multiple purposes, either for online shopping or accessing various sources of educational information or advice related [51].

Several studies indicate that consumer ownership of electronic devices and the quality of internet services play significant roles in determining the success of e-commerce. Thus, the degree of economic development appears to have a lesser impact on online sales [52][53][54].

The findings indicate that the COVID-19 pandemic has had a lasting and beneficial impact on digital trade activity. This impact arises from a significant diversification of the consumer and product categories within the digital environment. Moreover, this diversification is occurring amidst an overarching commitment to sustainability across all economies worldwide. The evolution of e-commerce is also based on the strategies developed and applied at the local, regional or national level in relation to the level of development of each country [13][55][56][57].

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