

THE DEVELOPMENT OF E-COMMERCE DURING COVID-19 PANDEMIC

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Purpose: The paper presents the issues related to the development of e-commerce during COVID-19 pandemic.

Design/methodology/approach: The study used world-bank reports from statista portal and own research.

Findings: The aim of the article is to present the development of e-commerce during COVID-19 pandemic. The functioning types of e-business and basic business models used in e-commerce are also presented. Payment methods used in internet sales are shown. An analysis of the online payment methods preferred by consumers during the COVID-19 pandemic was also performed.

Originality/value: The publication presents the results of research conducted on the basis statista international portal.

Keywords: e-commerce, COVID-19 pandemic, e-business.

Category of the paper: research paper.

1. Introduction

The state scientific publishing house dictionary of the Polish language calls e-commerce in one sentence as "trade via the Internet". According to the Organization for Economic Cooperation and Development is a transaction of selling or buying goods or services using computer networks through methods specifically designed to receive and placing orders. These methods provide goods or services, however payment as well delivery, can take place outside the online realm. The participants of the transaction are businesses, households, individuals, governments as well public or private organizations. Orders placed via the Internet, extranet or electronic data systems are considered e-commerce transactions.

The main purpose of the article is to analyze e-commerce in Poland regarding the time of COVID-19 pandemic. The article poses the question: How did the e-commerce sector develop in Poland during the COVID-19 pandemic, what the consumer behavior looked like and what factors influenced it? The problem was analyzed by reviewing the literature, reports and information provided by enterprises.

2. History of e-commerce

The progressive digitization of trade ensures rapid communication between trading partners or between the customer and the organization etc. Organizations today want to have a competitive advantage over their competencies, constantly considering expanding their business to reach different customers in different locations. This is not possible with a normal distribution channel, point of sale, etc. To do this, they use the internet, which can be accessed from anywhere in the world, and modern supply chain management helps them deliver products to customers wherever they want at an affordable price.

The electronic commerce market (so-called e-commerce) is currently the most dynamically developing branch of commerce. The term e-business has been here again first used in 1995 by IBM (International Business Machines Corporation). According to one of the simplest definitions proposed by S. Pangsy-Kania, e-business is a type of business that is run with the use of ICT solutions, including primarily web applications, as well as automatic delivery or exchange of information and business data (Pangsy-Kania, 2012). According to authors such as A. Hartman, J. Sifonis and J. Kadora, electronic business refers to all projects implemented via the Internet, mainly tactical and strategic, which transform business relationships, such as business-to-consumer (business - clients), business-to-business (business - business) or intra-business (business connections). These authors added that e-business is a new source of efficiency, speed, innovation of enterprises and the functioning of new ways to create value in the organization (Hartman, Sifonis, Kador, 2001). The OECD definition indicates that this trade is a business run through the network in the WTO definition that it covers various means of production or marketing, and in the WCO definition that it supports data traffic between computer systems of different enterprises. Among the events immediately preceding the emergence of e-commerce were:

- 1991 lifting in 1991 of commercial restrictions imposed by NSFNET (National Science Foundation NET) regarding for the use of the Internet by individual users and then the creation, with the participation of IBM, Merit Network Inc. and MCI Communication Corp., infrastructure, thanks which made it possible to make commercial internet connections;

- creation in 1993 one of the first web browsers - Mosaic, thanks to which virtually anyone could navigate around network and use its resources;
- finalizing the 1995 contract for the sale of ANS to America Online, thanks to which all Internet infrastructure remains so far only at the disposal of the public sector, passed to the private sector and it was he who began to play the most important role in the further development of the Internet;
- commencing commercial operations on the Internet in 1995 companies such as Amazon (the world's largest online store that offers books, music and movies), Dell (producer computer equipment) or eBay (portal with online auctions), which caused mass development of e-commerce and gradual dissemination of its individual forms and models among more companies (Tian, Stewart, 2006).

The first true online deal came three years after the National Science Foundation lifted its ban on commercial use of the web. In 1994, 21-summer economics graduate Dan Kohn sold the CD to Phil Brandenburger. Brandenburger had to place the order through a device having the XMosaic viewer. Using the new technology, Dan's start-up was the first store to transact online using an encrypted credit card. At first, potential consumers were concerned about sharing their personal data via a global network and exposing them to foreclosure by criminals. These worries decreased when the Secure Socket Layer (SSL) protocol was invented in 1994, which was used to securely encrypt the transmitted information. By the end of 1995, 120,000 domains had already been registered, and in the next three years that number had risen to 2 million.

With information and communication technology, doing business internationally has totally changed. The progressive digitization of trade ensures rapid communication between trading partners or between the customer and the organization etc. Organizations today want to have a competitive advantage over their competencies, constantly considering expanding their business to reach different customers in different locations. This is not possible with a normal distribution channel, point of sale, etc. To do this, they use the internet, which can be accessed from anywhere in the world, and modern supply chain management helps them deliver products to customers wherever they want at an affordable price.

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3. Examples of international electronic commerce

It involves entering into commercial transactions and selling products through various means and devices electronic, such as the Internet, telephone or fax, for example currently the most popular. International e-commerce consists of three basic ones entities: consumers, enterprises and administration. Due to the nature of the relationship between these entities, several types of e-business have developed. The basic relationships between e-commerce entities include (Combe, 2006):

- C2C (customer-to-customer) - refers to transactions between consumers that are carried out, for example, as part of the operation of auction sites,
- C2B (customer-to-business) - includes transactions between consumers and enterprises, with consumers as their initiators, and the goal is, for example, price comparison,

- C2G (customer-to-government) - these are transactions between citizens and public administration that concern, for example, taxes,
- B2B (business to business) - this is "classic" e-business and includes implementation of business processes between two enterprises,
- B2C (business-to-consumer or business-to-client) - this is "classic" e-commerce and includes transactions between businesses and consumers,
- B2G (business-to-government) - covers transactions between enterprises and public administration, such as public procurement or tenders,
- G2C (government-to-citizen) - concerns the flow of administrative information from offices to citizens,
- G2B (government-to-business) - covers the flow of economic information (customs documents, statistical data) from offices to companies,
- G2G (government-to-government) - cooperation between organs public administration, which coordinates internal processes.

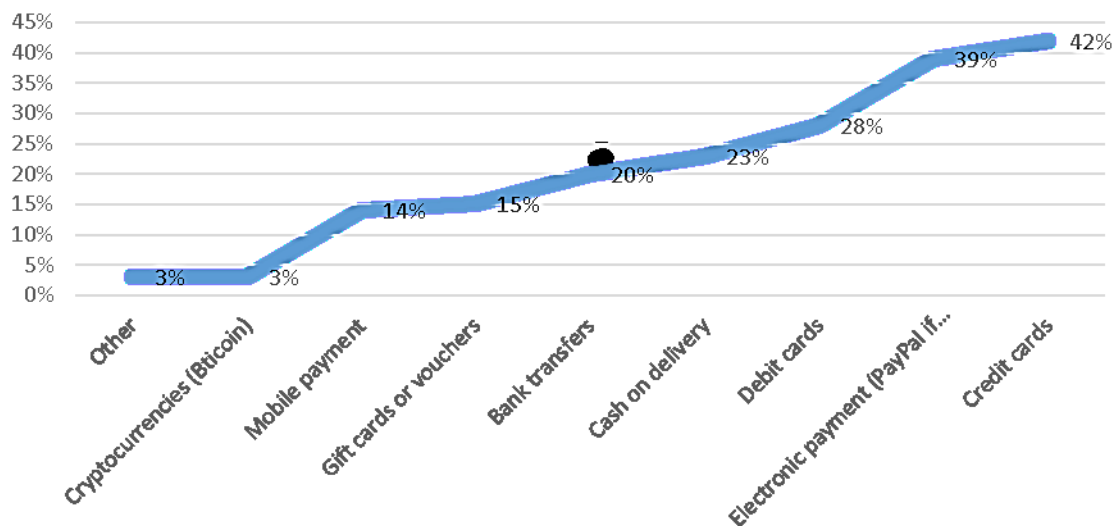


Figure 1. Preferred payment methods of online shoppers of March 2021 in Poland.

Source: own based on <https://www.statista.com/statistics/508988/preferred-payment-methods-of-online-shoppers-worldwide/>, 2021.

In Poland, during the pandemic, consumers are more likely to choose non-cash forms of payment, and less and less use of cash as a means of payment is declared. For the most part, a credit card is used (see Figure 1). Searching for new sales opportunities is one thing, but e-commerce companies also need to be up to date with technical innovations. Payments are certainly such an area. The fact that clients want to execute transactions simply and hassle-free is known to all. However, there are new trends on the market that need to be adapted to.

The factors influencing the development of e-commerce in Poland have been studied over the years, the appearance of the SARS-CoV-2 virus is another stimulus that has influenced the economic activity on the Internet. COVID-19 contributes to growth of e-commerce. The global

coronavirus pandemic is affecting consumer behavior worldwide. In the week ending April 26, online traffic in the supermarket segment increased by 135 percent compared to the reference period in January and February 2020. In general, e-commerce sales have increased in recent years, a trend that was expected to continue through 2024. It is likely that this sector will see further increases due to COVID-19, as many people choose to stay at home and amend their daily routines to avoid catching the airborne virus. As people spend longer stretches at home, consumers are purchasing more nonperishable food-items, cleaning supplies, and home entertainment products (see Figure 2). This is often done through online marketplaces, such as Walmart or Amazon. In contrast, there has been a decrease in spending in clothing and furniture stores, as most of these locations have been temporarily shut down to help contain the spread of coronavirus.

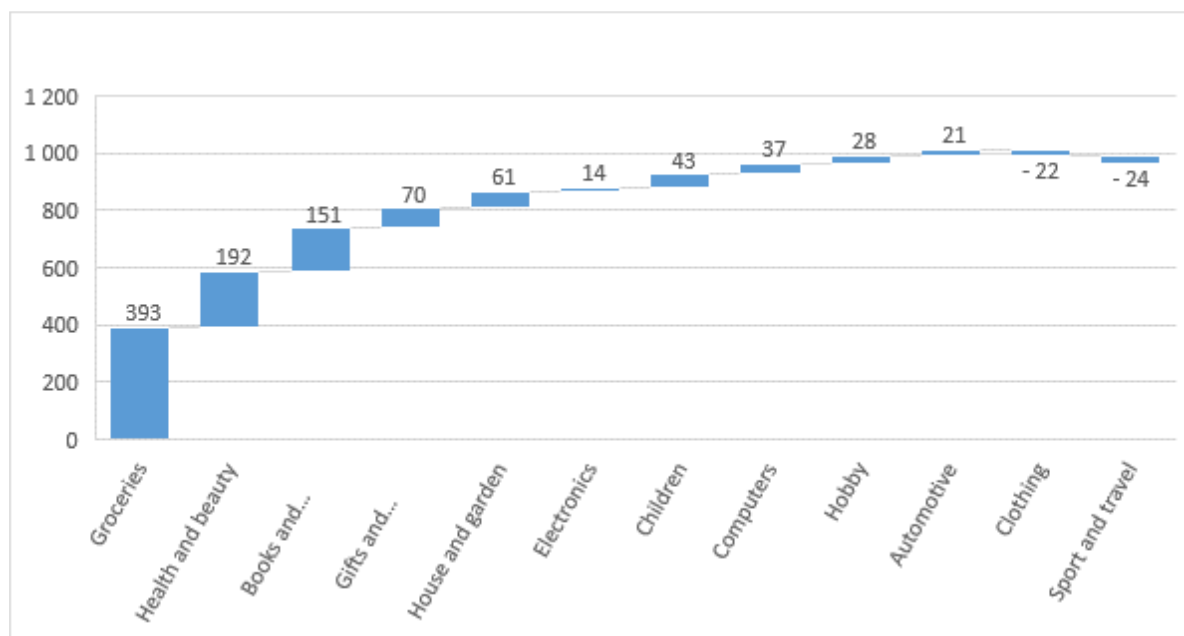


Figure 2. Growth in transactions number and sales value of orders in online stores due to the coronavirus (COVID-19) outbreak in Poland from February to March 2020, by category.

Source: own based on <https://www.statista.com/statistics/508988/preferred-payment-methods-of-online-shoppers-worldwide/>, 2020.

At the turn of 2020 and 2021, a CAWI study presenting the e-commerce situation in Poland was carried out. 100 Internet users aged 15 and over participated in the study. One of the behaviors studied was to check what influences the decision not to use online shopping. It was conducted on a representative sample of 80 people. The results shows the percentage of the population who made online purchases in the last 12 months in particular years. The same as with online stores the numbers are consistently growing both in Poland and in the European Union (see Figure 3). The dynamics of Polish e-commerce is clearly visible here, where in 2019 and 2020 the number of buyers increased by 13% compared to the previous years compared to the European Union, where the increase was only 5% and 3%, respectively. In 2020, the difference between them was only 4 percentage points, where previously it was even 16 points.

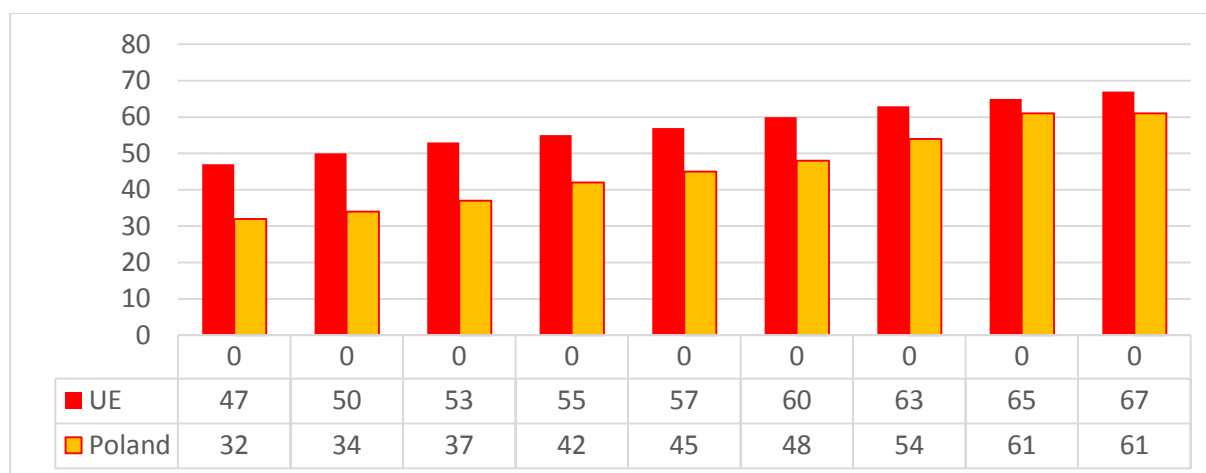


Figure 3. Percentage of the society purchasing online in the last 12 months.

Source: own elaboration based on Eurostat data.

In 2021, the share of households with internet access in Poland increased by two percent since 2020. Therefore, the share of households with internet access in Poland reached a peak in 2021 with 92 percent (see Figure 4). Notably, the share of households with internet access continuously increased over the last years.

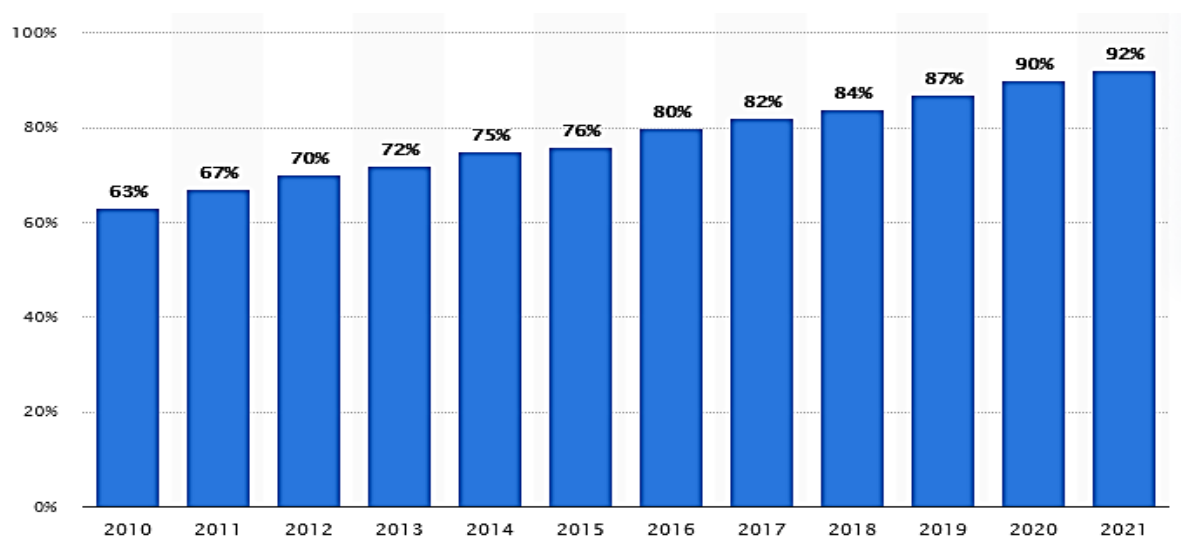


Figure 4. Share of households with internet access in Poland from 2010 to 2021.

Source: <https://www.statista.com>.

The development of information technologies (specially e-commerce) is the foundation for the growth not only of the ICT sector, but also of the entire economy and society. The competitiveness of Polish industries is largely based on the availability and quality of ICT sector solutions. In an era of global change, it is one of the key sectors for future growth (<https://www.gov.pl>, 24.05.2021).

The share of online sales in total sales also increased as shown in figure 3. Particular attention should be paid to the month of March and April 2020. It was then that the first wave of COVID-19 reached Poland and the first lockdowns were introduced. In these two months, online sales almost doubled. April with sales of 11.9% so far is the highest value in recent years (see Figure 5).

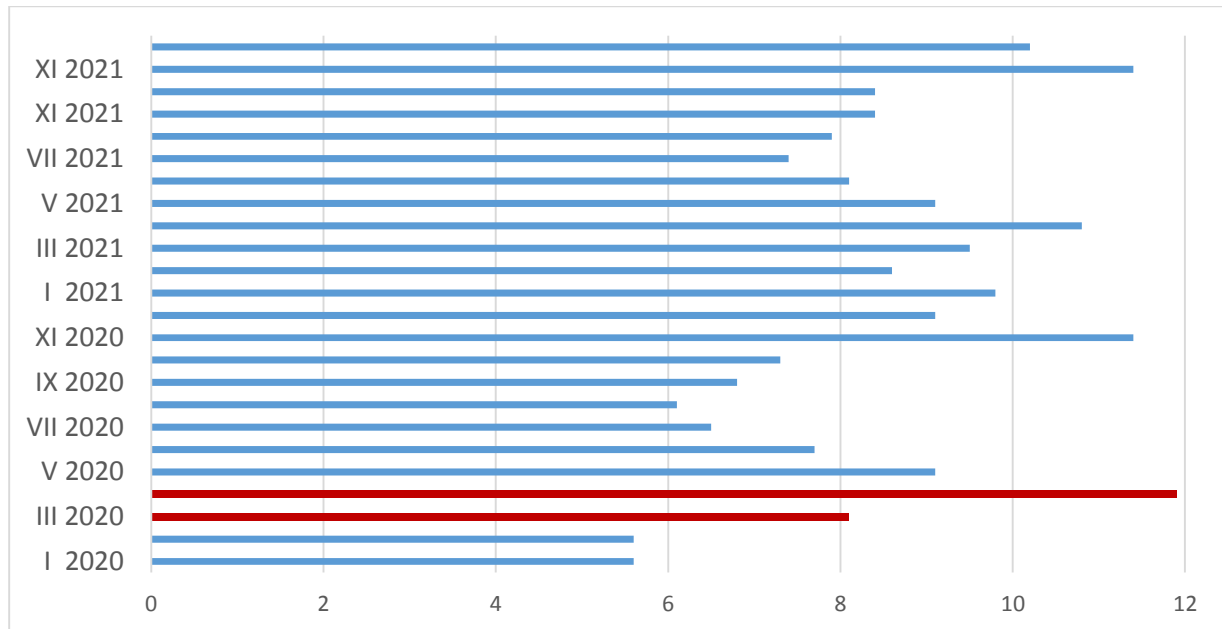


Figure 5. Share of total internet sales in total retail sales in Poland in the period 2020-2021 (%).

Source: Own study based on GUS data.

In December 2021, the value of the share of online sales in the whole retail sales dropped from 11.4% to 10.2%, however, the value of sales increased retail, which means that its value in current prices is really higher than in November. The value of internet sales increased by 3.2% in terms monthly. So the number of transactions in traditional stores increased, but still this e-commerce was still a frequently chosen option.

45% of respondents declare that they prefer to see the product in person before deciding to buy it; 24% of respondents are used to the traditional way of shopping and do not need to change their habits; 23% of respondents complain that delivery costs are too high and are concerned that problems will arise if the product does not meet expectations and cannot be returned; 22% of respondents are worried about the security of internet payments and do not trust this type of transaction; 18% of respondents are concerned about problems with delivery (see Figure 6).

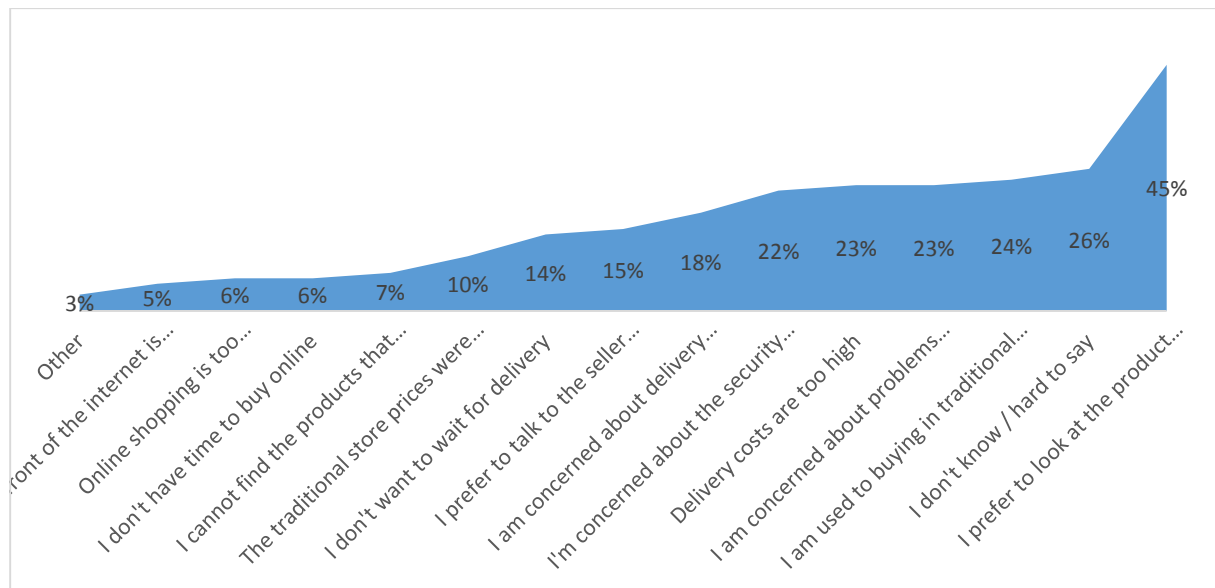


Figure 6. Factors influencing the decision not to use online shopping [%].

Source: own research.

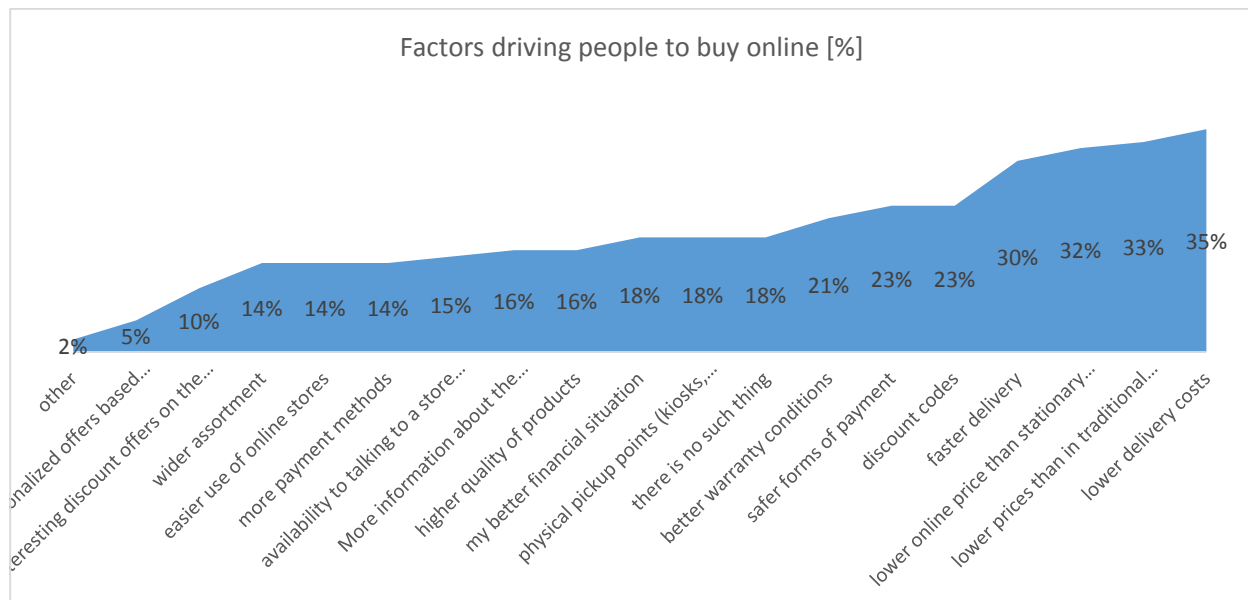


Figure 7. Factors driving people to buy online [%].

Source: own research.

Figure 7 shows that as many as 35% of respondents expressed the willingness to buy online with lower delivery costs; 33% of respondents declared that they would decide to buy products or services online if their prices were lower than in traditional stores, and 32% of respondents if the price was lower than the price in a stationary store of the same brand; 30% of respondents indicate faster delivery as a factor that would convince them to buy online; 23% of respondents would decide to buy online, with safer forms of payment, the same percentage would like to have more discount codes on offer. Other factors influencing the change of decision include Better warranty conditions; physical collection points; access to more information about the product on the websites of stores; offered higher quality products; possibility of talking about

the product with store employees, e.g. via the hotline or chat; a wider range of products on offer, as well as more personalized special offers based on previous purchases.

What made e-commerce so popular during the pandemic? Of course, that is lockdown. It had to be limited leaving home, there were limits in the shops of people who could at the same time stay in it, there were terrible queues and there was a shortage of goods in the shops. Much of these problems were solved by the advantages of e-commerce. It is enough for such purchases a computer and access to the Internet and in such a store there is already more choice, lower prices, and most importantly in a pandemic, purchases can be made from home without being huge queues.

4. Conclusion

The e-commerce pandemic has highlighted many of its downsides previously they did not exist or were not that noticeable. These were things like missing access to the internet and equipment in less developed countries, disruption of chains deliveries, changes in inventory management, increased competition or problems with services internet. It would be necessary to analyze what is their cause and what is possible to prepare for similar situations in order to avoid them in the future. For example improve transport or buy more servers for your website. The development of e-commerce is important because it makes it easier for people to access shopping globally. This leads to an increase in the number of customers and sellers as well development in other fields of trade which provides new jobs for people like couriers, web designers, internet providers and much more. It should be noted that the frequency of purchases and a large part of the society is still increasing forced to make purchases over the Internet, learning about the advantages of e-commerce even after returning to the pre-2019 state, it will continue to do so in this form.

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