

## E-COMMERCE FROM THE CUSTOMER PANEL: THE PHENOMENON OF THE PANDEMIC INCREASE AND FUTURE CHALLENGE

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Received 25 March 2022; accepted 11 April 2022

**Abstract.** *Purpose* – the purpose of the article is to present the customers (the auction site’s users) perception of the opportunities provided by e-commerce, especially increasing its meaning during the pandemic conditions and to conclude the ways of e-commerce development in the future.

*Research methodology* – the methodology was based at desk research and the survey conducted in April 2021 among online users of Allegro on-line platform by the one of the basic quantity methods, the CAWI method (by the questionnaire survey) supported by statistic method.

*Findings* – the increasing role of e-commerce in people’s lives as well as the pandemic increasing e-commerce growth effect, it can therefore be crucial for the country’s market position and its developmental perspectives. Some customers habits, especially greater savings regimes, more careful approach to spending, but also on-line shopping, will stay with them even after the pandemic.

*Research limitations* – the research is limited to the leading, but one, on-line platform one of the TOP-10 on-line platforms however, because of the market coverage, it is representative for the examined branch. Other limitation is the pandemic period which may present the data characteristic only for this time.

*Practical implications* – nowadays, especially developed by the pandemic and lockdown all over the world, the e-trade has spread its development. The practical implication may be using the results of the research in practice by the on-line shops owners/managers.

*Originality/Value* – the value of the study is the realistic approach while attempting to provide a clear view of the overarching picture of the e-trade and directions of its development, especially after pandemic experience. The originality also is that the research conducted not only It has also shown that online commerce transactions are conducted not only at young people probe, but at the probe representative for whole society, including elderly people. The study fulfils the gap at e-commerce research due to the often proclaimed lack of attitude of older people towards e-commerce or pointing them as the age group’s digital exclusion.

**Keywords:** e-commerce, customer habits, global economy, COVID-19, internet usage.

**JEL Classification:** D12, D81, E21.

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## **Introduction**

Commerce is one of the oldest sectors of the economy and is very important in people's lives. Thanks to the growing economy, implementation of new technologies and Internet dominance, commerce is blooming again, but this time in the virtual environment. The primary reason for this are the advantages both for the seller and customer, provided by e-commerce.

Commerce performs various functions in the economy, such as transforming the production range into the commerce range, intermediation between production and sales, analysing the market needs, organising exchanges between the manufacturer and consumer, ensuring constant supply or striving for the high quality of the offered products.

On the other hand, the Internet is a network of networks, a global computer network consisting of a group of computers, their resources and peripheral devices connected with data transmission lines, thereby connecting computers around the world and enabling quick communication. It is based on a common addressing system and the TCP/IP common communications protocol. Despite its deficiencies such as limited trust towards data safety, virus or hacker risks, or limited range, it is an excellent commerce (business) channel due to its many benefits and advantages such as the ability to directly acquire new customers, no territorial limitations, lower operating and transaction costs compared to stationary methods, capacity, flexibility, speed as well as high availability which is not constrained by time. It is characterised by broad research opportunities and real-time data access.

In a knowledge-based economy, most challenges are derived from modern technologies and innovations. The growth of Internet and mobile technologies brought about new solutions that facilitate cooperation, communication and information exchange. Increasing numbers of entrepreneurs see an opportunity in gaining a competitive advantage by acting in the virtual market.

Electronic commerce over the Internet is a way of conducting business. A combination of regulatory reform and technological innovation enabled e-commerce to evolve as it has (OECD, 1999). Electronic business enabled new solutions in management as well as product and service distribution, being broadly applied, e.g. in e-banking, facilitated entering markets that were previously unavailable and enabled the expansion of e-commerce. Surely, e-commerce has come to take on two important roles; first as a more effective and efficient conduit and aggregator of information, and second, as a potential mechanism for the replacement of many economic activities once performed within a business enterprise by those that can be done by outside suppliers that compete with each other to execute these activities (Terzi, 2016).

The purpose of the article is to present the customers (the auction site's users) perception of the opportunities provided by e-commerce, especially increasing its meaning during the pandemic conditions and to conclude the ways of e-commerce development in the future.

As the novelty the study is the realistic approach while attempting to provide a clear view of the overarching picture of the e-trade and directions of its development, especially after pandemic experience. The originality also is that the research conducted not only It has also shown that online commerce transactions are conducted not only at young people probe, but at the probe representative for whole society, including elderly people. The study fulfils the gap at e-commerce research due to the often proclaimed lack of attitude of older people towards e-commerce or pointing them as the age group's digital exclusion.

Findings also show increasing significance and share of e-commerce in the market. This will undoubtedly have the influence at the GDP size as well as a favorable effect on domestic economy, as it shows a huge potential for growth.

## **1. E-commerce as the economic phenomenon**

The Internet market is growing in two directions. Aside from the increasing number of people that actively use the network, the time spent by consumers by using the medium is also increasing. This phenomenon is affected by the growing experience of consumers, which translates into the fulfilment of more advanced and complex needs (Kowal et al., 2016) in the Internet, and causes the shift of some activities previously performed using traditional methods to the Internet, e.g. online shopping, telephone calls via the Internet or keeping a personal calendar in the network instead of traditionally.

Pandemic influence the e-commerce immediately, for which it has been reported as a powerful trigger in times of crisis (Eggers, 2020). Prior to the pandemic, there was a strong correlation between e-commerce to GDP as measured by the WIPO Global Innovation Index (World Intellectual Property Organization [WIPO], 2020). The lower the level of e-commerce in a given country in 2019, the higher the growth rate of e-commerce during the Covid-19 pandemic what implied that countries with very low e-commerce volumes have been catching up (Hale et al., 2020; Bloomberg, 2020).

The sales organisation in e-commerce is supported by specialist computer software that ensures considerable comfort of working. However, the primary element of starting Internet sales is the introduction of the previously acquired product range and all the required information about it into a database.

E-commerce is a multi-dimensional phenomenon, as many research areas cover it. Consider it for the economics point of view it is necessary to point such aspects as e-commerce quality measurement (Sá et al., 2016; Subramanian et al., 2014), e-commerce customer behavior (Alshibly & Chiong, 2015; Madlberger & Matook, 2017; Radionova-Girsa et al., 2019; Bugshan & Attar, 2020) or being nowadays B2B model (Pabedinskaitė & Davidavičius, 2012; Agnihotri et al., 2016).

Mobile customers appreciate good communication that builds trust. It can take place via popular social networks (Facebook, Twitter) which are used to take care of the company's reputation (Chou et al., 2015) and communicate with potential customer (Meilatinova, 2021). The most important feature of online distribution is the safety of processes, regardless whether the sales are conducted in the form of a professional online shop or an online auction.

Retail sales of e-commerce shows that COVID-19 (OECD, 2020) has significant impact on e-commerce and its sales are expected to reach \$6.5 trillion by 2023 (Jones, 2020).

### **1.1. The Allegro – characteristic of researched portal**

The study was led at the base of Allegro – Polish e-commerce leader acting in Central Europe and one of the TOP-10 on-line worldwide platforms but steadily conducting take-overs, thereby ranking it among global e-commerce leaders with a 90% share in the Polish market, becoming an indispensable sales channel in online business.

Arjan Bakker is the mastermind of the auction site, which commenced its operation in 1999. The site, available at [www.allegro.pl](http://www.allegro.pl), allows for easy online shopping thanks to its search engine and the ability to sort goods by criteria relevant to the user.

There is an infinite number of sales offer on Allegro, therefore goods were classified in 10 department and those were additionally divided into categories. The website is continuously modified to follow the customer requirements and provide him or her with the most comfortable shopping conditions.

Due to the dynamic growth of e-commerce, especially during the pandemic, as well as the increasing popularity of the Polish Allegro auction site, the portal was chosen to be the subject of research.

## 1.2. The methodology

The desk research was the first part of research. Then the survey took place – it was conducted in April 2021 among online users of Allegro by the CAWI method (the questionnaire survey). The research was also developed by statistic method showing the correlation and partial correlations between the variables.

The research was conducted on the attempt of active Internet users representative on account of the sex, age and size of the region. They were respondents of full legal age. The probe size took 1000 persons out, by 89% survey return, what gave 890 respondents. The respondents were notified about the anonymity of the collected data.

The purpose of the research allowed for the formulation of the following research question:

To what degree is e-commerce and its opportunities used by online users?

Detailed questions were provided as following:

- Are business transactions conducted online and how often are they conducted, if so?
- What is the reason for making online transactions?

Does the opportunity of safe online shopping affect the quantity of conducted online transactions and to what degree, if so?

At the base of such a consideration the following research hypothesis was then formulated:

*H: E-commerce and its opportunities are used by online users to a large extent.*

and auxiliary hypotheses:

*H1. E-commerce transactions are conducted relatively often.*

*H2. Online transactions are conducted due to the convenient physical and financial conditions and the opportunities deriving from using securities in e-commerce, thereby substantially increasing the number of commerce transactions.*

*H3. The COVID-19 pandemic affected the behaviour of customers and the growth of the e-commerce sector.*

The verification of the formulated research hypotheses as well as online activities lead to the selection of the survey as the research technique. The survey did not feature open, semi-open or filter questions and the respondents were only asked to answer closed-ended questions. They enable quick survey completion, which can be comfortable for the respondent, therefore minimising the risk of refusal to cooperate and improving the survey return rates.

The research is limited to the leading, but one, on-line platform one of the TOP-10 on-line platforms however, because of the market coverage, it is representative for the examined branch. Other limitation is the pandemic period which may present the data characteristic only for this time.

## 2. The research results

The survey featured the participation of 56% (498) males and 44% (392) females. The most numerous group among the respondents included people aged 31–35 (222 people) and the least numerous group included respondents aged 46–55 years (87 people). Other respondents included people aged 26–30 years (148 people), 18–25 (178 people), 36–45 years (149 people) and aged 56 and more (106 people).

The places of residence declared by the respondents include country (93 respondents: 21 men and 72 women), a town with less than 50 thousand inhabitants (178 respondents: 71 men and 107 women), town with less than 50 and more than 100 thousand inhabitants (425 respondents: 247 men and 178 women) as well as city above 100 thousand inhabitants (194 respondents: 95 men and 99 women), which is presented in the Figure 1.



Figure 1. The place of living declared by respondents by the place of living by number of inhabitants (source: own elaboration)

100 % respondents answered affirmatively to the question about the knowledge of the Polish auction site as well as to the question of whether they were using the site. The respondents declared the time of using the site, which is presented in Figure 2.

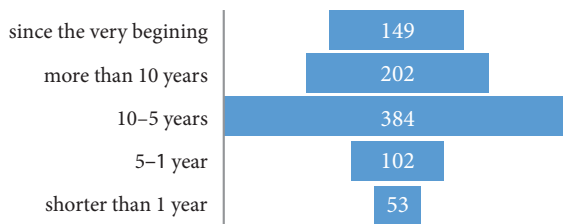


Figure 2. Declared time of using the portal (source: own elaboration)

The respondents were asked about the frequency of shopping via the website. Half of the respondents admitted to shopping via the site once a month. 223 respondents are shopping

several times a month. 178 people conduct transactions every six months and 44 – once a year. None of the respondents purchases products once a day or more and no respondent admitted to never making purchases via the analysed site. This data is presented in Figure 3.

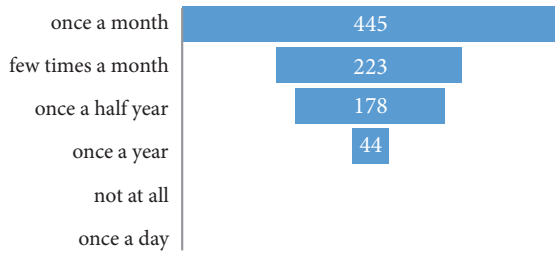


Figure 3. Declared frequency of using of the portal (source: own elaboration)

What is important 68% of respondents have declared that pandemics had the influence at the frequency of using of the portal – they have spread it. Figure 4 shows the distribution of responses.

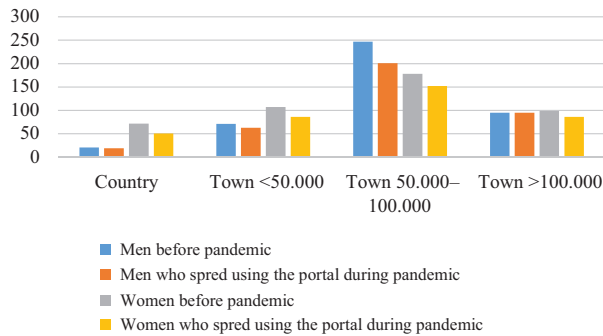


Figure 4. The influence of pandemic at the frequency of using the portal by respondents in percentage (source: own elaboration)

In spite of the outbreak of COVID-19 pandemic, 80% respondents did not see the reason or the need for the resignation from doing groceries in stationary shops. The situation is totally different in case of the non-food shopping: only 32% respondents were effecting this type shopping in stationary shops during the COVID-19 pandemic. The straight majority of consumers who assessed the changed channels of the completion of the shopping declared that even after standing the COVID-19 pandemic still they will be using new channels of sale in the Internet: the 89% of them granted, that they would be making purchases via a website, but the 79% on them that they would be making the purchase with the mobile application.

Respondents were also asked about being hacked and frauded when using the analysed portal. A vast majority of the respondents indicated that they were not cheated when conducting transactions via the site, while 7 people were cheated.

The analysis concerned a subjective evaluation of the site's transaction security. Majority of the respondents answered that the site's security is very good. 37 indicated that the security is good, while 14 stated that the security is weak. None of the respondents stated that the site's security is very weak or that he or she has no opinion on the topic.

The respondents stated that the main incentives for using the site included lower prices than in regular shops (52%) and time savings (43%). The availability of rare products and products unavailable in regular shops is taken into consideration to a lesser extent. The factors that least incentivised the respondents to use the site included the comfortable product classification (13%) and product description (7%).

The responses related to using the site depending on the time of day are as follows: in early morning – 8%, in the morning – 14%, in the afternoon – 28%, in the evening – 37%, late in the evening – 13%, what is presented in Figure 5.

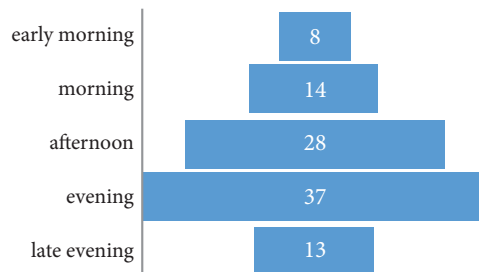


Figure 5. The percentage of respondents using the portal in pointed time of a day in percentage (source: own elaboration)

Asked about the kind of goods buying by the portal respondents mainly pointed new goods (94%), rarely used once (6%). Most respondents buys products for their own use (60%), while 30% buys presents on the site. The smallest group of respondents (10%) makes purchases for friends or family. None of the respondents uses the site to buy goods with the intention of re-selling them at profit.

The survey also accorded subjective opinion about the change of influence and meaning of the e-commerce during a pandemic. Figure 6 presents the distribution of answers according to such formulated problem.

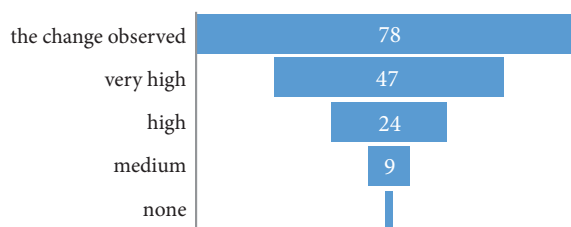


Figure 6. The change of influence and meaning of the e-commerce during a pandemic in percentage (source: own elaboration)

The e-commerce customers pointed that they noticed that the change at its influence at their habits as the customers occurred (78%). The respondents pointed that this influence is very high (47%), high (24%), medium (9%) and none 2%. Higher influence of e-commerce at consumers habits was noticed by men (81%) than the women (46%). Women pointed the rise of percentage share of medicines (38%), IT (27%) and electronics (12%) in their shopping. Men especially pointed the rise of percentage share of food (89%), medicines (58%)

and articles for children (37%) in their shopping. That allows to state that pandemic moves every day shopping to e-commerce.

There was also checked the correlation and the partial correlation between the number of users, number of transactions and the period of using the portal to prove of to reject the hypothesis stated. The values of the variables taken into the statistical part of the research are presented at the Table 7.

Table 7. The values of the variables taken into statistical examination (source: own elaboration)

No.	Number of users	Number of transactions	Period of using the portal (in years)
1	53	952	1
2	72	795	2
3	102	2 488	3
4	169	4 210	4
5	294	7 365	5
6	312	11 214	6
7	348	19 488	7
8	273	17 831	8
9	249	15 219	9
10	202	16 164	10
11	183	18 248	12
12	149	15 870	15

The research shew the r-Person correlation between two first variables at the 0.665 level, which, according to Guilford classification, is defined as high ( $0.5 < |r| \leq 0.7$ ) with simultaneous significance at the 0.018 ( $<0.05$ ) level, which is defined as very relevant. At the same time the partial correlation to the third variable was shew at the 0.772 level, which, according to Guilford classification, is defined as very high ( $0.7 < |r| \leq 0.9$ ) with simultaneous significance at the 0.005 ( $<0.05$ ) level, defined as very relevant. The value are presented at the Figure 7.

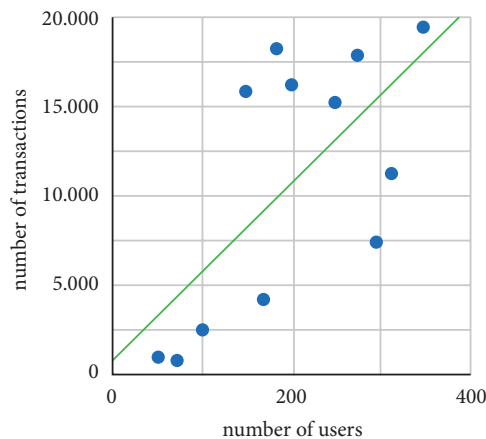


Figure 7. The correlation between the variables (source: own elaboration)



Taking into consideration the high level of correlation between the number of users and number of transactions with its simultaneous very high significance and the very high level between them and the period of using the portal (shown in years) with its simultaneous very high significance there can be stated that the hypothesis was confirmed.

### **3. Discussion**

Many previous studies have found that nowadays economic growth requires a system for forecasting (Arndt, 1999; Davidavičienė et al., 2016; Jasińska-Biliczak, 2019) and shopping is not just a matter of obtaining tangible products but also about experience (Dennis et al., 2019).

In the discussion, it may be observed, a harmonized transaction framework is needed for a sustainable e-commerce framework. 21<sup>st</sup> century is treated as industrial revolution transformed era. Expansion of e-trade is playing a key role for the purpose of developing international trade across the world (Kolbe, 2000). The literature points that despite the recent misfortunes of many dotcoms, e-commerce will have major and lasting effects on economic activity and only business models based on sound economic propositions will survive (Vulkan, 2000).

Nowadays, especially developed by the pandemic and lockdown all over the world, the e-trade has spread its development. The lack of possibility of buying in the brick and mortar shops moves their shopping into Internet, being the customers of e-commerce. There should be discussed the added value of e-commerce, which, among others, occurs in online shopping.

E-business is a part of e-commerce and depends on transaction security and trustworthy transborder legal framework (Weber, 2007). It is also executed by linking among different terminals through the transnational electronic transaction (Alam, 2019). The research follows the thesis, that understanding consumer buying patterns emerging in crises plays an important role in the success of online grocery shop (World Health Organization, 2020). There are research discussing the payment transaction system, sales, and reservations made by the business by using e-commerce technology (Soegoto et al., 2018), which point the need of these areas development (Lim et al., 2018; Jílková & Králová, 2021).

Analysing data collected in research it is possible to point that there is observed (Bagozzi & Yi, 2012) growth in on-line shopping, which has strongly developed by the COVID-19 pandemic (SAS Institute, 2021), when the percentage of the effect of coronavirus spread varied from one company to another (Abdelrhim & Elsayed, 2020). There was observed important of consumers habits changes, also caused by pandemic. The research completes the research of the e-commerce development under the COVID-19 conditions.

As an observational research method (Arndt, 1989), content analysis systematically evaluates the symbolic content of all forms of recorded communications (Laros & Steenkamp, 2015). The research agrees that a field of research such as e-commerce has practical implication to business and there occurs its greater importance. The results of the descriptive analysis of the returns of the e-commerce companies showed that the companies achieve positive daily returns by calculating the average daily returns (Khan et al., 2020).

The changes observed in the study are also widely discussed (Niedermeier et al., 2021) what underlines that the pandemic and changes in consumer behaviors which it brought are seen at the market and became real economic phenomenon (Sheth, 2020; Svajdova, 2021).

Present research also contributes to the literature on e-commerce the analysis of current changes in customers behavior in on-line environment. It also complements the literature with the actual trends (Shin, 2021; Chakraborty et al., 2022) in developing and growth observed in e-commerce. It fulfils the gap shown in the literature, where was examined that among the business focuses on a short-term goal and needed results immediately, further empirical analysis and research-proven cases need to be accomplished (Fedushko & Ustyianovych, 2022). Also corresponds to additional studies aiming to discover more e-commerce channels are also required as future research topics (Yun et al., 2020).

## **Conclusions**

The data analysis confirmed the main hypothesis and the auxiliary hypotheses. It was possible to confirm the opinion that e-commerce and its opportunities are used by online users to a large extent. Each of the respondents made a purchase via the analysed site at least once, thereby confirming the site's high popularity. It also confirms the increasing popularity of e-commerce and points to its increasing role in situations such as the pandemic.

The survey demonstrates an increasing use of this form of commerce by online users during the COVID-19 pandemic (59% of women and 19% of men). Respondents also declared that some of their habits, especially greater savings regimes, more careful approach to spending, but also on-line shopping, will stay with them even after the pandemic.

The respondents also pointed the pandemic influence at their on-line habits: very high (47%), high (24%), medium (9%) and none 2%. Higher influence of e-commerce at consumers habits was noticed by men (81%) than the women (46%).

The survey has also shown that online commerce transactions are conducted not only by young people, but also by older people. It is an interesting phenomenon due to the often proclaimed lack of attitude of older people towards e-commerce or the age group's digital exclusion.

It has also shown the reasons for the willingness to buy products online, which mainly include product prices which are often more affordable than prices in traditional shops or willingness to save time.

The research also confirmed the hypothesis concerning the transaction security. When deciding on whether to make a purchase, customers are often worried of being lied to and cheated by the sellers. The study demonstrated that the site's security is very good. 37% of respondents indicated that the security is good, while 14% stated that the security is weak. No one stated that the site's security is very weak or that has no opinion on the topic.

However, the research has some limitations such as leading it during the pandemic, what allowed to show only the values representative for this period, but is not without the influence for the future e-commerce development directions. It is also limited to the leading, but one on-line platform, which, because of the market coverage as one of the TOP-10 on-line platforms, is representative for the examined branch, as the probe size took 1000 persons out, by 89% survey return, what gave 890 respondents.

Thanks to the opportunities provided by e-commerce, consumers and sellers can feel a certain level of comfort. Commerce transactions conducted in the Internet provide mutual benefits, however the condition for mutual satisfaction that deepens the seller-customer relations is the transactional security.

Based on the conducted survey, it is possible to state that the risk of online frauds is relatively low, which thereby translates into the satisfaction of Internet and website users who take part in e-commerce.

E-commerce is a dynamically growing branch of business, the numbers of its supporters are increasing constantly, which is affected by external factors such as the pandemic and lockdown. This situation will undoubtedly result in the establishment of new auction site and the growth of commerce platforms.

The increasing significance and share e-commerce in the market was observed. This will undoubtedly have the influence at the GDP size as well as a favorable effect on domestic economy, as it shows a huge potential for growth. The increasing use of the e-commerce opportunities demonstrates the importance of the Internet and the increasing number of its applications and that the national services can be competitive to international ones.

Taking into account the role of e-commerce in people's lives it can therefore be crucial for the country's market position and its developmental perspectives.

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