

# E-commerce market environment formed by the COVID-19 pandemic – a strategic analysis

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## Abstract

The article assessed the development potential of e-commerce, considering virtualisation as a result of the coronavirus pandemic. The achievement of the assumed goal was made possible by the use of strategic analysis methods. The following groups of factors were used in the identification of factors influencing the conditions for running a business: social, legal, ethical, economic, political and technological (according to the SLEPT concept). Subsequently, two methods of strategic analysis were applied independently of each other – Porter's Five Forces and TOWS/SWOT, considering the perspective of both the consumer and the entrepreneur. The final stage of the study was to compare the results obtained with the use of both methods. The results of Porter's Five Forces analysis showed that the e-commerce sector is a restrainedly unattractive area with more negative than positive external factors. However, the TOWS/SWOT analysis showed that the strengths and opportunities of the environment are so strong that, in order to develop the e-commerce sector even further, an aggressive strategy (maxi-maxi) should be implemented. The impact of the pandemic on e-commerce was enormously significant, as both lockdown and fear of contagion led consumers to choose the Internet as their preferred purchasing location. Thus, the effects of the COVID-19 pandemic not only expanded the current e-commerce market segments, but also created new ones. The research combined theoretical and practical aspects; therefore, the results of the study can serve as a benchmark for further scientific research, especially at the micro level, which would explain the behaviour of individual consumers when choosing the Internet as a place to shop, as well as how entrepreneurs adapt to the realities of the pandemic.

## Keywords

e-commerce, strategic analysis, market analysis, SARS-CoV-2 pandemic, COVID-19, TOWS/SWOT analysis, Porter's Five Forces

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## Introduction

Modern business is currently unfolding in the online space, and some enterprises have never operated outside of it. The environment has always played a substantial role in the life of an organisation (Gollay et al., 2016), but it is information and communication technology (ICT), as well as the social effects associated with it, that have made the virtual world the basis of present-day relationships, both business and commercial (Ejemeyovwi et al., 2021). Digitisation, as a pivotal facet of technological evolution, has the potential to be a significant catalyst for development (Pollák et al., 2021). Although in today's digital world there is an unbreakable bond between society and ICT, it is worth bearing in mind that there are still inequalities in the use of technological benefits (Becker, 2022), including after the outbreak of the COVID-19 pandemic (Lai and Widmar, 2021).

Due to technological advancements, online shopping is now accessible at any time and from any mobile device. From the point of view of economics, the utility of online shopping is increasing and constitutes one of the basic factors affecting consumer behaviour when it comes to purchasing products (Kim et al., 2009). Indeed, ICT has consistently gotten “faster, better, cheaper, and easier” (Atkinson and McKay, 2007, 9). These terms can also be attributed to the e-commerce market itself, which, in the face of the coronavirus pandemic, can also be viewed as a safer place for traditional purchases. The COVID-19 pandemic caused the even faster growth of the e-commerce industry due to, among other things, the complete lockdown of economies, which translated into a change in consumer habits (Gu et al., 2021; Kawasaki et al., 2022; Pollák et al., 2022). This manifests, inter alia, in the transfer of a noticeable proportion of the sale of even the most basic subsistence-providing products, such as food, to the Internet sphere (Gao et al., 2020; Guo et al., 2021).

The contactless mode of making purchases was also made visible in brick-and-mortar stores during the pandemic – not only due to the growth of the e-commerce industry, but also because banks relaxed their limits on cashless payments during lockdown (Brem et al., 2021).

The global scale of the impact of the coronavirus pandemic makes it a worthwhile topic for study, primarily in terms of opportunities and threats. The COVID-19 pandemic has rapidly and unexpectedly transformed the state of businesses in individual sectors, in particular businesses related to the medical industry and virtual aspects (such as e-commerce), the revenues of which were boosted significantly during the pandemic (Kubiczek and Derej, 2021). There are also studies, such as one by Xiong et al. (2020), which indicate how the individual characteristics of enterprises (which are representatives of specific sectors) affected the market reaction. However, there is still no holistic view of the conditions for running a business, i.e. the impact of the pandemic in strategic terms; therefore, it can be concluded that the state of knowledge is not wholly complete in this respect. This article aims to fill this research gap.

The goals of this paper are to present the COVID-19 pandemic as a multidimensional influencing factor and to assess the directions of its impact on the performance of e-commerce companies. In order to achieve the abovementioned objective, the following research questions were posed:

- RQ 1: How has the ubiquity of the Internet translated into consumer purchasing decisions?
- RQ 2: What business opportunities have been created by the development of ICT?
- RQ 3: How did the COVID-19 pandemic affect the determinants of economic activity, especially in the area of e-commerce?

# 1. Literature review

## 1.1. The rise of e-commerce

E-commerce is a term that was first used in the 1990s, but its origins date back as far as the mid-1960s (dos Santos et al., 2017), when the concept of the electronic data interchange (EDI) was created. EDI involves the transfer of business files between computers in a standardised format (Hansen and Hill, 1989). It is recognised that e-commerce is a far-reaching evolution of the EDI concept (Tian and Stewart, 2006). In the 1970s and 1980s, EDI was already being implemented in organisations; as the first generation of e-commerce, it allowed for the transfer of funds, information exchange and order placements (Sawabini, 2001). By 1993, there were 23,000 enterprises using EDI in the United States (Shen, 2020). The second generation of e-commerce, which evolved from the ARPANET (Advanced Research Projects Agency Network) concept from the 1960s, was characterised by empowering transactions that involved physical products and services. Initially it was meant to be purely a research tool, but eventually turned into a commercial service (Tian and Stewart, 2006).

It is believed that e-commerce, as a branch of e-business, has its origins at the turn of 1994 and 1995. In October 1994, the first commercials made by commercial companies (such as AT&T, Sprint and Volvo) appeared in the United States in Hotwired – the world's first online magazine. In turn, at the beginning of 1995, the first spaces for commercial banner ads were sold on the websites of the Netscape and Infoseek search engines, which were popular at the time (Laudon and Traver, 2017, 70). During more than 20 years of the existence of the global e-commerce market, three main periods of industry development can be distinguished, preceded by breakthrough moments. These periods include: the early development phase (1995–2000), the strengthening phase (2001–2006), and the phase of redefinition of the industry. The last period considers the success of mobile and social technologies and the

increasing strength and importance of the local market (phase of the technological revolution; 2007–present) (Laudon and Traver, 2017, 70). Nowadays, e-commerce is most often equated with e-trade, which includes transactions made via electronic networks (Czaplewski, 2016).

## 1.2. Factors affecting the e-commerce market

As soon as 1979, it was noted that electronic and wireless technologies were changing the way business is perceived (Mensch, 1979). The innovations implemented at the turn of the millennium, including information technology, changed the business models and strategies of companies (Nadeem et al., 2018). The growth in the popularity of computers and digital media, and above all the increase in Internet accessibility, have made tremendous changes in the geographies of business organisations and brought consequences for places and communities worldwide. Most importantly, business has become digitisation-oriented, which has ensured the global reach of enterprises.

The development of the e-commerce segment is highly dynamic, but it should be noted that the expansion and adoption processes of this sector in developed countries differs significantly from those in developing countries that imply the existence of a so-called digital divide (Sánchez-Torres, 2019). The term 'digital divide' is defined as the "differential capabilities of entire social (or regional) groups to access and utilise electronic forms of knowledge" (Straub, 2003). A low stage of development of a country is often linked to inadequate technical infrastructure, which results in technological exclusion. A lack of Internet access is considered to be one of the most important factors adversely affecting the development of not only the e-commerce sector but also the entire economy (del Aguila-Obra and Padilla-Meléndez, 2006; Tekin et al., 2019).

The adoption of e-commerce (and therefore the Internet) in individual enterprises or entire markets brings with it certain challenges. Researchers have classified the factors in-

fluencing e-commerce adoption (which also influence innovative decision-making) into three groups: technological, organisational and environmental (Tornatzky and Fleischer, 1990). These factors were consolidated and presented in Table 1.

**Table 1. Factors influencing e-commerce adoption**

<b>Environmental factors</b> (del Aguila-Obra and Padilla-Meléndez, 2006)	<b>Organisational factors</b> (del Aguila-Obra and Padilla-Meléndez, 2006)	<b>Technological factors</b> (Davis, 1989; Roger, 1983)
<ul style="list-style-type: none"> <li>• pressure from competitors, customers or suppliers;</li> <li>• the role of government (incentives);</li> <li>• partner alliances;</li> <li>• technological infrastructure;</li> <li>• technology consultants;</li> <li>• image of the Internet technology;</li> <li>• user expectations.</li> </ul>	<ul style="list-style-type: none"> <li>• a community of IT users;</li> <li>• organisational structure;</li> <li>• company processes;</li> <li>• company size;</li> <li>• technological capabilities of the organisation's members;</li> <li>• the technological and financial resources available;</li> <li>• the culture of the organisation;</li> <li>• the process of selecting and implementing the IT;</li> <li>• management backing and support for the project;</li> <li>• the project leader.</li> </ul>	<ul style="list-style-type: none"> <li>• complexity;</li> <li>• compatibility;</li> <li>• relative advantage;</li> <li>• ease of use;</li> <li>• usefulness.*</li> </ul>

\* Adapted from Aghaunor and Fotoh, 2006.

Source: own elaboration

### 1.3. Events influencing the e-commerce market and boosting demand

While analysing the e-commerce market, especially while using mathematical models, both random events and some regularly occurring phenomena should be taken into account (Zheng et al., 2009). While the former, due to the COVID-19 pandemic, were not significant in shaping e-commerce, the latter are of paramount importance for its development, e.g. the seasons and the associated weather patterns.

However, it has already been noted that the coronavirus pandemic and the resulting restrictions have had an impact on e-consumer behaviour. For example, the desire to keep one's distance and reduce the risk of infection has made online food shopping a national trend in China, and e-commerce has become the new food basket for customers (Guo et al., 2021). Research has shown that there is a positive correlation between the number of infections and the likelihood of buying food online (Gao et al., 2020).

Moreover, customers are now more likely to shop online than in stationary stores due to the pandemic restrictions, because e-commerce models, including food delivery, have been shown to be effective in countering the spread of COVID-19 (Guo et al., 2021).

It has been observed that traffic on e-commerce websites noticeably increases during the occurrence of cyclical holidays throughout the year and in the periods leading up to the holidays (Yang et al., 2016). This is due to the fact that during these periods, online stores often provide their customers with additional promotions which further fuel demand. Among the most popular time periods when intensified traffic in e-commerce occurs are not only religious holidays such as Christmas, Easter, Hannukah or Diwali, but also non-religious ones such as New Year, Mother's Day, Halloween or Valentine's Day.

Due to globalisation, holidays that once had national coverage at most now take place on an international scale. With regard

to e-commerce, holidays related to promotions in online stores are particularly important (Khullar, 2018). The most popular such holiday is Black Friday, which falls on the day after Thanksgiving. Although it is a strictly American holiday, it has gained popularity in Europe. It is worth mentioning countries such as Germany and Italy (incidentally one of the most coronavirus-afflicted countries in Europe) as examples of tremendous mobile shopping traffic during such holidays. It is estimated that approximately 40% of total online activity is m-commerce traffic (i.e. from mobile devices) on Black Friday, with total expenditure estimated at around \$1.2 billion (Adjust, 2018). In the previous decade, m-commerce (or mobile commerce, that is, trade with the use of wireless technologies and devices, including mobile devices; for further explanation, see Senn (2000)) has developed at an exponential rate in the commercial world (Rana et al., 2019). Mobile commercial sales were set to reach \$3.56 trillion by the end of 2021, which is 72.9% of total e-commerce sales (Statista, 2021).

The National Retail Federation notes that in 2019 there were 84.2 million people doing their shopping in stores on Black Friday, and 37.8 million people shopped in stores on Thanksgiving (Amadeo, 2021). In total, over the four-day Black Friday weekend in 2018, it is estimated that 165.8 million people went to stores and shopped online (which increased to 189.6 million in 2019) (Amadeo, 2021).

Although Black Friday is the most media-driven shopping holiday in the world, the largest customer spending is recorded on Chinese Singles Day (falling annually on 11/11, that is 11 November), which exceeds Black Friday four times over in this respect. On 11 November 2017, buyers spent \$25 billion (Haas, 2017). The second Asian shopping holiday that is gaining popularity is 12/12 (12 December). Interestingly, this combination of holidays allows companies to exceed the level of 50% of annual sales in the last quarter of the year alone (Lavin, 2019).

From the point of view of enterprises, an additional holiday on 12/12 just a month after 11/11 allows them to experiment with their promotional policy. It also allows them to adjust the product inventory after 11/11. What is more, 12/12 can be used to sell surplus inventory following lower than expected demand on 11/11. In other words, this type of holiday shopping creation strategy gives companies the opportunity to adapt to market conditions in a given year. This refers to both shopping trends and the demand for given products. In addition, if customers are satisfied with their purchases, the likelihood of re-purchases on 12/12 increases. This can be demonstrated, for example, by the growing number of shipments sent via e-commerce platforms every year: in 2018 as many as 322 million shipments were sent (a 33% increase compared to 2017) (Rajeck, 2019). Moreover, Ele.me, Alibaba's mobile food delivery service, reported that they processed 12% more orders on Double 12 than on Singles' Day in the same year (Rajeck, 2019).

Nevertheless, it should be noted that all pandemics, including the COVID-19 pandemic, occur suddenly and are almost entirely unpredictable. During the outbreak, researchers were unable to predict the extent to which it would change or in what ways. Only now, when the data for the previous periods (months and quarters) is available, is it possible to build future forecasts and assess the foregoing effects of the coronavirus.

On the basis of the literature review, the following research hypotheses were stated:

**Hypothesis 1:** The accessibility of the Internet has altered the consumer purchasing processes.

**Hypothesis 2:** The enlargement of ICT has translated into new selling opportunities and thus the rapid growth of the e-commerce sector.

**Hypothesis 3:** The outbreak of the COVID-19 pandemic boosted the number of online transactions and the shift to the digital sphere.

## 2. Methodology

### 2.1. Methods utilised

The methods of strategic analysis applied were dictated by the goals of the research. The multidimensional impact of the pandemic made it necessary to identify ways of influencing the determinants of running a business. The classification of factors into individual groups was carried out in accordance with the SLEPT concept. Subsequently, two methods of strategic analysis were applied independently of each other – Porter's Five Forces and TOWS/SWOT, with the distinction of the perspectives of both the consumer and the entrepreneur. The *consumer's* perspective assumes the influence of factors that are important to the buyer, that is, a person who makes purchases via the Internet (i.e. using e-commerce channels), while the *entrepreneur's* perspective considers the determinants which are important from the point of view of the online store operator. The methods used are widely described in articles such as those by Dobbs (2014) and Porter (2008) considering Porter's Five Forces methodology; Namugenyi et al. (2019) and Kowalik (2020), referring to the TOWS/SWOT analysis; and Chaffey et al. (2019), discussing the SLEPT approach.

The data sources used in the study were secondary data, including reports on the macroeconomic situation of the e-commerce sector and coronavirus impact studies, thanks to which the scope of the study was defined as follows:

- objective scope: the e-commerce sector;
- subjective scope: the impact of the COVID-19 pandemic;
- temporal scope: the duration of the COVID-19 pandemic.

Thanks to the application of Porter's Five Forces, the impact of the pandemic on the macroeconomic situation of enterprises, especially the e-commerce market, was determined. On the other hand, the TOWS/SWOT analysis made it possible to determine the type of strategy that enterprises should apply to achieve the

best results given the reality of the pandemic. The final stage of the study was to compare the results obtained with the use of both methods.

Strategic analysis methods are used to determine market conditions from both the micro- and macro-level perspectives. Thanks to this, entrepreneurs can determine the attractiveness of entering a given market, as well as better adjusting the applied measures to the socio-economic situation. Subsections 2.2 and 2.3 present research using Porter's Five Forces model and TOWS/SWOT analysis, respectively, to determine the prevailing market conditions. These methods are used for effective measurements not only within the organisation, but also to evaluate the development strategy of a given market sector (Al-Mayahi and Mansoor, 2012; Gottfried et al., 2018; Jibai et al., 2018; Wellner and Lakotta, 2020). The market under study is the e-commerce sector and the blossoming thereof, which was accelerated by the coronavirus pandemic.

### 2.2. Porter's Five Forces analysis in the e-commerce context

Porter's Five Forces analysis is a concept that was conceived in 1979 and aimed at concentrating on profit maximisation as a corporate policy objective rather than as a public policy goal, and reducing "surplus" profit as a public policy goal (Porter, 1979). It focuses on five axes concerning the internal and external environment of a business or industry:

- Severity of competitive struggle;
- Suppliers' bargaining power;
- Customers' bargaining power;
- The threat of entry of new market participants;
- The threat of the appearance of substitutes.

In numerous ways, Porter's approach to industry analysis enlarged the supply-demand study of specific markets. Firstly, it relaxed the requirements of high numbers and homogeneity – that is, a substantial percentage of representative rivals. Secondly, along the horizontal dimension, it changed focus from

two-stage horizontal chains with a supplier and a buyer to three-stage chains with suppliers, competitors, and purchasers. Thirdly, it accounted for future entrants and substitutes, as well as direct competitors, along the vertical dimension (Karagiannopoulos et al., 2005).

As previously mentioned, this analytical methodology is effective in examining not only a specific organisation or enterprise, but also in assessing the development strategy of the entire industry (Al-Mayahi and Mansoor, 2012; Gottfried et al., 2018; Jibai et al., 2018; Wellner and Lakotta, 2020; Yadav and Sharma, 2014). The use of this approach is also visible in the e-commerce industry (Vargas-Hernández, 2015), in particular in its adoption in SMEs (Jeffcoate et al., 2002). Porter's Five Forces also finds use in building competitive advantage in e-commerce long-term decision-making processes (Oudan, 2010), as well as enhancing B2B/B2C strategies in cross-border commerce (She et al., 2020). A more detailed view on the utilisation of Porter's Five Forces analysis in the current context of the e-commerce industry is presented in the Results section, specifically in subsection 3.1.

### 2.3. TOWS/SWOT analysis in the e-commerce market

Researchers have repeatedly performed TOWS/SWOT analysis and competitive advantage in the e-commerce sector. This methodology focuses on illustrating favourable and unfavourable facets from both the internal (strengths and weaknesses) and external environment (opportunities and threats) that influence a particular organisation or sector (Demont and Rutsaert, 2017). It has been noted that it is worth carrying out a multi-vector analysis of the electronic commerce branch, given the awareness of the transformation of the global digital economy into a "global village" and the fact that trade (including international trade) is often the backbone of the national economy (Liu, 2020). Yadav and Sharma (2014) decided to analyse the e-commerce market due to the fact that they observed that e-commerce

in India, as an example of a developing market, is creating a new type of economy and transforming the way of doing business and creating a new enterprise from scratch. The most important results of this analysis are, among others, the following strengths of the sector: cost efficiency, the ability to compare products on-the-go, time savings, information, segmentation and purchasing speed. Additionally, the global market was interpreted both as a positive factor in terms of both the micro (strength) and macro (opportunity environments) levels. One of the results of this analysis is that it draws attention to security issues and encountering potential fraud on the Internet, as was confirmed in a research paper by Yazdanifard et al. (2011). The topic of problems related to security and privacy on the Internet has also been noted by Fisher et al. (2000) as a significant factor negatively affecting the micro- and macro-environment of e-commerce enterprises. They also pay attention to problems related to network infrastructure and identify them as an external threat to the sector. Moreover, Anic et al. (2019) identified key determinants and effects that matters related to security and privacy in e-commerce have on the industry in the context of newly introduced regulations related to the protection of personal data, among others. Zhao et al. (2021), in turn, conducted a comprehensive TOWS/SWOT analysis at the level of the development of e-commerce rural tourism systems based on the context of Big Data. Extending the analysis to include modern Big Data approaches may give a broader picture of the development strategy of the sector, as Big Data enables in-depth customer insight (Mach-Król and Hadasik, 2021).

The approaches to strategic analysis used in the literature focus on the proper definition of groups of factors that influence the conditions for running a business. In the literature, the SLEPT approach is used, which assumes the separation of factors into the following groups (Chaffey et al., 2019, 121–122):

- Social,
- Legal and ethical,

- Economic,
- Political,
- Technological.

These groupings of factors turn out to be helpful in distinguishing individual determinants affecting a given market sector. The use of the SLEPT approach is visible, *inter alia*, in research on the free trade area (Ortiz and Tajes, 2009) or the entire global environment (Ortiz, 2010). The utilisation of this methodology in research on the e-commerce industry can be a novel development of this approach in terms of strategic business planning as well as academic groundwork.

### 3. Research results

#### 3.1. The concept of Porter's Five Forces in relation to the e-commerce market in the pandemic environment

The first aspect to be analysed, according to Porter's model, is competition in the industry of online sales companies. Companies from the e-commerce industry can be classified into the following subgroups (by size and area of activity):

- local (regional),
- nationwide (examples: Allegro, x-kom in Poland),
- international/global (examples: Amazon, Alibaba).

It is estimated that turnover on the B2C (business-to-client) e-commerce market amounts to EUR 621 billion (approximately US\$ 690 billion) in Europe alone (Ecommerce Europe, 2019), and over EUR 2 trillion (approximately US\$ 2.25 trillion) worldwide (Ecommerce Foundation, 2019). The three largest industry players in terms of annual turnover are the American company Amazon and the Chinese companies Alibaba and JD.com, which together have an approximately 60% share of the industry (The Motley Fool, 2018). Alibaba's revenues amount to over US\$ 760 billion a year, while Amazon and JD.com exceed US\$ 200

billion. On the international e-commerce market there are also slightly smaller entities operating globally, such as eBay, Shopify or Rakuten. However, their annual turnover does not exceed US\$ 100 billion.

This means that there is a fairly clear oligopoly among companies operating globally in the e-commerce industry (Nathan, 2020), which translates into cooperation between major players and increased competition among smaller e-commerce companies. In addition, the fact that the e-commerce industry does not consist solely of online stores, auction portals or internationally popular marketplaces should also be considered. Advertisement portals such as Gumtree or OLX are also a direct complement to the above (Lewicki, 2012, pp. 17–18); however, they do not have income or turnover on the same level as the abovementioned "giants". Stationary stores are direct competition for e-commerce enterprises; e-commerce must compete intensively with traditional sales, taking advantage of its strengths.

Another aspect to consider while discussing the e-commerce market in the context of Porter's Five Forces analysis is the bargaining power of suppliers. The "suppliers" of services to the e-commerce industry are all the intermediary entities in a transaction. It should be noted here that e-commerce enterprises operate in all business models: B2B, B2C, C2B and C2C (Bredzel-Skowera and Turek, 2015; Jones and Leonard, 2007). There is no doubt that, in this case, the "suppliers" are all links in the supply chain (in the case of B2B and B2C sales) that ensure product/service preparation for sale and thus allow exposure in an online store or other e-commerce platform (Mullane et al., 2001). This refers to material suppliers, production line employees, white-collar workers (e.g. patenting solutions or analysts) and forwarding companies providing deliveries to other companies for further distribution (Dutta et al., 2019). It is also necessary to include the abovementioned links in the case of warehouses or distribution centres that are



not the direct producers of given products. It should be emphasised that the relationships between the individual links in the supply chain are based on a high sense of uncertainty (Golicic et al., 2002). That is why, in this case, the key is information sharing, as this attitude is beneficial to each link in the supply chain (Pei & Yan, 2019). The implementation of solutions based on Big Data and the Internet of Things (IoT) turns out to be helpful in terms of the effective flow of information between suppliers (Yu et al., 2017). Bearing in mind sales of C2C (or, less often, C2B), it is not necessary to include them because a ready-made product is usually put up for sale or people become prosumers themselves (Duffy and Dale, 2002). On the other hand, having a stationary trading company usually implies the implementation of the aforementioned links in the supply chain, which results in a simplified process of distributing products in the network. Transport, postal and courier companies (including sorting stations and other terminals constituting an integral part of delivery) that deliver the product to the customer are also links that ensure the correct execution of the transaction. In the e-commerce industry, “technical suppliers” also include all technical entities: a hosting service provider, domain administrator and SSL certificate manager. These entities ensure the correct presentation of the product on the network, as well as allowing companies to make transactions (and thus conclude a contract) electronically. For these stakeholders, it is very important that all supply links (often independent of the e-commerce company) work properly, as a small defect may lead to the incorrect implementation of the electronic purchase service. Therefore, their joint bargaining power works somewhat unfavourably for the entire industry, despite the ease of entering the e-commerce market with enterprises already engaged in stationary sales.

Customers who make transactions electronically are the key element in the functioning of e-commerce enterprises. Consumer

satisfaction and trust in e-commerce depends not only on the experiences of a particular online store, but also the entire e-commerce industry (Gefen, 2000; Laudon and Traver, 2017, 393–394). It should be noted that the quality in the e-commerce industry has a direct and positive impact on the satisfaction of customers who use the services of the sector (Ribbink et al., 2004). Once a customer loses confidence in one of the representatives of the e-commerce industry, it is highly likely that their consumer preferences will change – the customer will return from online shopping to stationary trade. It should be noted that a decrease in satisfaction with one online store, although it is likely, does not always determine a decrease in confidence in the entire sector (Khalid et al., 2018).

Taking the abovementioned options into account, a customer considers the pros and cons of shopping in both a stationary and online manner, which in principle affects the given e-commerce company neither advantageously nor adversely. However, one should also bear in mind the fact that customers also play an important role in the C2C (customer-to-customer) and C2B (customer-to-business) business models; in these cases, they are not only the final link of the transaction, but they also play a significant role at the very beginning of the transaction (Duffy and Dale, 2002). In addition, customers have the ability to immediately check product prices and transaction conditions (such as payment methods, delivery methods, warranty etc.) from various online sales locations. These observations point to the fact that consumers ultimately play an important and often key role in the enlargement of the e-commerce sector. Therefore, it can be concluded that their bargaining power is moderately favourable as a result.

It can be easily presumed that the ease of setting up a business negatively affects the competitiveness of the market, but the oligopolistic structure of the e-commerce industry from an international perspective does not threaten the largest players. However, it

should be borne in mind that the growing e-commerce market and developing IT solutions of the digital economy will strengthen competition within the sector – for small on-line sellers in particular. Sellers that operate locally, in addition to internal competition, also have to compete with locally operating stationary stores (so-called brick-and-mortar activities), as well as companies with both traditional and online sales (Rajamma et al., 2007). Entrepreneurs wanting to fight for a position within the sector have to incur large financial outlays on marketing and advertising, although the costs of electronic marketing remain lower than in the case of traditional marketing. This fierce battle for market position, combined with the simplicity and low costs of setting up a business in the e-commerce industry, have a negative impact on the development of the sector.

In addition, the ease at which new players may enter the market (although it is dominated by oligopolistic units) is notable. This does not have perceptibly positive effects either, but it cannot be clearly stated that this is a negative aspect. In the case of selling niche or unique products, the conditions for entering the e-commerce market may prove to be an advantage, especially if one takes into account the bargaining power of substitution products. In the e-commerce industry, there are many options and variations of the same product that are usually more available than when it comes to traditional trade. Because

many suppliers compete in the same space, prices play a role of particular importance in gaining a larger market share. Considering the abovementioned aspects, it can be concluded that the appearance of substitutes is not favourable for market development.

With intense competition in the industry, there are no entry barriers that pose a threat to new entities and there is no differentiation of products that would pose a huge threat from substitute products. The huge opportunity for further integration for suppliers and the vast bargaining power of customers makes the current e-commerce industry unattractive, despite its undeniable advantages resulting directly from the definition of the sector. However, there are two exceptions:

1. When a company has an idea to create a unique (breakthrough, niche) product with a significant competitive advantage, e-commerce can be used as an important channel to reach customers;
2. An “offline player” (i.e. a customer who usually buys products in stationary stores) uses e-commerce as an extended channel and as part of the distribution strategy.

A tabular approach to the analysis of Porter’s Five Forces in the e-commerce business sector is provided in Table 2. This table summarises the strategic analysis of the e-commerce environment above with the presentation of arbitrary assessments of individual factors according to Porter’s Five Forces approach.

**Table 2.** Tabulated analysis of Porter’s Five Forces in the e-commerce sector with a 5-grade scale.

Strength \ Scale (1–unfavourable, 5–favourable)	1	2	3	4	5
Severity of competitive struggle		X			
Suppliers’ bargaining power		X			
Customers’ bargaining power				X	
The threat of entry of new market participants			X		
The threat of the appearance of substitutes		X			

Source: own elaboration

### 3.2. TOWS/SWOT analysis of the e-commerce market during the COVID-19 pandemic

Strategic analysis is characterised by combining viewpoints on organisations with the simultaneous examination of environmental conditions (Boardman et al., 2004; Emelyanov et al., 2020). The advantage of the TOWS/SWOT analysis is its comprehensive nature, which allows one to take into account all of the factors affecting a given situation for an enterprise and the sector.

The goal of strategic analysis is not to provide specific answers, but to help identify problems.

Due to the specificity of the e-commerce sector, the isolation of factors should be based on both the micro- and macroeconomic scale, with particular emphasis on the SLEPT concept. Their division, in accordance with the assumptions of the SWOT analysis, is presented in Table 3 (from a customer's perspective) and Table 4 (from an entrepreneur's perspective).

**Table 3. SWOT analysis of the e-commerce market – a consumer's perspective.**

		Factors	
		positive	negative
<b>Factors</b>	internal	<ul style="list-style-type: none"> <li>• Ease and speed of payment for goods/ services</li> <li>• Simplified shopping procedure in a foreign currency</li> <li>• Quick comparison of prices/offers from various online stores</li> <li>• Ease of obtaining other users' opinions about the store and the product</li> <li>• Time saving – convenience and speed of buying the product</li> <li>• Simplified access to purchasing niche/ specialised products</li> <li>• Possibility of personalising services and products (e.g. configurators)</li> <li>• A short process of developing a material certificate for the seller (through e.g. visual identification, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• The need to pay for the delivery of products and services</li> <li>• No possibility of "tangible testing" of the product</li> <li>• Potential online fraud threat</li> <li>• A limited number of stores offering personalised services or products</li> <li>• Delivery of products extends the waiting time for order finalisation</li> <li>• Limited price negotiation</li> <li>• After-sales service limited almost exclusively to remote contact</li> <li>• Extended process of gaining consumer confidence towards the seller in the e-commerce industry</li> </ul>
	external	<ul style="list-style-type: none"> <li>• Access to the e-commerce market from anywhere in the world at any time</li> <li>• The increasing influence of influencers on consumer decisions regarding online shopping and learning about new online shopping destinations</li> <li>• Non-existent or negligible geographical barriers</li> <li>• Preferential legal conditions regarding returns</li> </ul>	<ul style="list-style-type: none"> <li>• The product may be lost due to the fault of the supplier</li> <li>• Returning a product often requires the buyer to pay for shipping costs</li> <li>• No personal contact with the seller</li> <li>• Possible language barriers for cross-border transactions</li> </ul>

Source: own elaboration

**Table 4. SWOT analysis of the e-commerce market – an entrepreneur’s perspective.**

		Factors	
		positive	negative
Factors	internal	<ul style="list-style-type: none"> <li>• Marketing simplicity – availability of online tools for brand and product promotion</li> <li>• The ability to personalise ads to the preferences of the end user</li> <li>• Low costs of online marketing tools</li> <li>• Low entry costs (compared to a stationary store)</li> <li>• The simplicity of arrangement and display of products in the online store</li> <li>• Facilitates communication and interaction with the customer through online tools</li> <li>• No technical skills required when running a simple online store</li> <li>• A multitude of tools that automate processes supporting e-commerce</li> </ul>	<ul style="list-style-type: none"> <li>• High customer expectations for the store (compared to e-commerce giants such as Amazon)</li> <li>• Potential privacy concerns of users – a reluctance to share personal data</li> <li>• Psychological prejudices regarding online shopping</li> <li>• The need to implement security tools – often expensive</li> <li>• The desire to launch an advanced online store requires technical skills or the employment of a specialist</li> </ul>
	external	<ul style="list-style-type: none"> <li>• Potential global reach – no need to limit oneself to the local environment</li> <li>• Increasing number of Internet users</li> <li>• Economic growth of the e-commerce sector</li> <li>• Reduced server maintenance costs resulting from technological development</li> <li>• Simpler analysis of consumer trends using online analytical tools</li> <li>• Easier administration of an online store using evolving technology</li> <li>• Flexible target market segmentation (including niche selection)</li> <li>• The possibility of facilitating the sale of products internationally using marketplaces (such as Amazon, eBay or AliExpress)</li> </ul>	<ul style="list-style-type: none"> <li>• Enormous competition with both multiplying stationary and online stores (particularly in the case of the vertical sub-segment)</li> <li>• Tightening government regulations regarding online sales (including tax and personal data protection)</li> <li>• The need to comply with the legal regulations of the country where online sales are planned (including the adjustment of product certification and tax issues)</li> <li>• Difficulty of gaining access to emerging markets where access to the Internet is limited</li> </ul>

**Source:** own elaboration

The growing public interest in online shopping has brought about the dynamic development of the e-commerce market. This translates into the creation of a new space for entrepreneurs and, although the market seems to be saturated, new niches are constantly being found. Online stores and other e-commerce tools positively stand out from the competition posed by traditional commerce due to low entry costs, relatively low costs incurred for marketing, as well as the simple personalisation of advertising tailored to the preferences of the end user. There is no

doubt that for the e-commerce customer, the strengths of the sector may also be important. These include low market entry costs, the simplicity and speed of entering into transactions (including in foreign currency), which saves time but also enables the swift comparison of product offers from various stores or reviews (relating to both products and stores).

There are also negative internal factors that e-commerce companies must face, the most serious of which are the need to pay for the delivery of the product, the lack of the possibili-

ty of organoleptic verification of the product, as well as potential etiological factors in the field of client psychology (prejudices, fears). In order to develop, the e-commerce sector should utilise its undeniable advantages; however, it should also adapt to the needs of the market, being as open as possible in order to create customer-friendly and customer-oriented enterprises. The most visible threats to the e-commerce industry are primarily the growing parallel stationary trade market, the changing political situation in the world and the need to adapt to legal requirements, as well as potential language barriers in the case of cross-border transactions. For customers, an important element may also be the lack of personal contact with the seller, but this can be negated or even turned into an opportunity as soon as e-commerce companies implement solutions that meet the needs of clients.

The opportunities provided in the sector include the increasing number of Internet users, global coverage (blurred geographical boundaries), and access to the e-commerce market from almost anywhere in the world at any time. These positive external factors in combination with significant threats should be used by the e-commerce industry, inter alia, by being able to reach regions with lower levels of Internet awareness and with more limited Internet access, in order to further expand the sector.

On the basis of the factors identified, the power and direction of impact thereof were determined from the perspective of both the customer and the enterprise (the subsequent stages of the analysis are presented in the Appendix – Tables A1-A8). The final results of the TOWS/SWOT analysis are presented in Table 5.

**Table 5.** Development strategies for the e-commerce sector (final results)  
– TOWS matrix.

		Analysis of the environment	
		Opportunities	Threats
Enterprise / sector	Strengths	<b>Aggressive strategy (<i>maxi-maxi</i>)</b> Result: 309	Conservative strategy ( <i>maxi-mini</i> ) Result: 137
	Weaknesses	Competitive strategy ( <i>mini-maxi</i> ) Result: 192	Defensive strategy ( <i>mini-mini</i> ) Result: 104

\* The results in individual categories are the sum of partial results from the perspective of the consumer and entrepreneur.

Source: own elaboration

The TOWS/SWOT analysis shows that companies from the e-commerce industry should fight for the target customer using an aggressive strategy for the development of the industry. This means that enterprises creating the sector, wanting to maximise profits and become real competition for new substitutes, should derive the greatest benefits from the opportunities arising from the external environment and focus on evolving their strengths.

## 4. Discussion

The Internet, including e-commerce services, has long been present in the modern world (Tian and Stewart, 2006) and it is widely accepted that the Internet is widespread. The use of digital services has long supported purchasing processes, and since the spread of e-commerce around the world, many new trade opportunities have been created; the digital skills of society are sufficient for both the stationary and online forms of shopping to be

considered alternative and equal purchasing channels. However, there are some limitations in making purchases online, such as the phenomenon of territorial digital exclusion (Śmiałowski, 2020) or the digital divide (interconnected with the term of Internet proficiency) (van Deursen and van Dijk, 2011). These issues are important factors inhibiting the development of e-commerce and slowing down digitisation processes (Hoffman et al., 2000; Abbad et al., 2011). Despite the wide availability of the Internet and its clear impact on changing consumer decisions, the challenges of digital exclusion and technology acceptance should be kept in mind.

From the very beginning of the construct, digitisation has created new business opportunities, and its constant development translates into the emergence of new technologies supporting business. Here, the notions of m-commerce and social commerce (trade using social media; for further explanation, see Lai (2010)) should be indicated, as well as the aforementioned 3D e-commerce (Billewar et al., 2021) or Big Data approaches in gaining in-depth customer insight (Mach-Król and Hadasik, 2021). Thanks to technological advancements, entrepreneurs are more willingly and effectively attracting new clientele in electronic commerce, and e-customers have new opportunities to shop online.

The major epidemics of the 21<sup>st</sup> century – i.e. the SARS virus in 2003, the Ebola virus (which causes haemorrhagic fever) in 2013–2016, and the Zika virus – implied a rapid and systematic digital shift in the business sector. Technological development made it possible to ensure safety for consumers through the transition to a remote mode of life, including the purchase of goods and services. It is the fear of contamination that is mentioned as one of the key determinants of using online transactions (Addo et al., 2020). After all, there was no (or hardly any) other possibility when governments introduced lockdowns (Guthrie et al., 2021), despite differences in policy responses across different countries regarding

the level of restrictions (Desson et al., 2020). In addition, the prolonged lockdown resulted in an effective change in consumer habits, making remote shopping the first choice (Kubiczek et al., 2021).

The growing role of technology, especially the Internet, translated into a noticeable trend of establishing service enterprises (Huang et al., 2020). Thus, their stable situation was noticeable, including during the pandemic; but it is worth emphasising the existence of an oligopoly among the largest players on the e-commerce market, which was also confirmed by the analysis of Porter's Five Forces. The impact of the COVID-19 pandemic was so multidimensional that the application of the SLEPT concept made it possible to systematise the factors shaping the expansion of the e-commerce sector. Although online business is highly competitive with minimal barriers to entry, the existing and new market segments such as 3D e-commerce have developed with the use of modern solutions in the form of augmented/virtual reality, Big Data or robotic and contactless shopping deliveries. Therefore, the results of the TOWS/SWOT analysis should not come as a surprise, as the pandemic and related restrictions have accelerated the digital transformation. The dynamic course of the pandemic also forced the rapid creation of new e-customers' niches as well as boosting the size of the clientele. Hence, focusing on moving the business to the Internet as well as starting or continuing an online enterprise from a strategic point of view should be the best solution (an aggressive maxi-maxi strategy). Moreover, the TOWS/SWOT analysis shows that maintaining the status quo of activity is the worst possible choice in the conditions created by the COVID-19 pandemic.

## Conclusions

Being active on the Internet and focusing on the opportunities created by the COVID-19 pandemic for the e-commerce market is also

legitimate given the duration of the pandemic itself. Remote functioning was not only a temporary solution, but is constantly being re-implemented as the next waves of the pandemic ensue. The restrictions (such as common lockdown/social isolation and therefore the limitations of shopping malls) imposed by governments to stop the spread of the coronavirus have moved consumption to the virtual world, even for people who rarely make purchases on the Internet.

However, in the face of the pandemic, such people often started using electronic tools of their own free will for their own safety. This resulted in a synergistic effect on the transfer of demand from brick-and-mortar stores to the Internet. In response, businesses had to adjust their operations in a “new” reality full of challenges and uncertainty. Enterprises were forced to create and implement sufficient tools in order to facilitate online shopping and delivery while ensuring a high level of sterility.

The e-commerce sector itself is highly competitive but also ultimately attractive (despite moderate unattractiveness, which is the result of Porter’s Five Forces analysis), especially in the face of the pandemic, which has created niches for new users who have not yet used the Internet as a shopping destination. However, the TOWS/SWOT analysis showed that the strengths and opportunities of the environment shaped by pandemic conditions are so strong that, in order to amplify the e-commerce sector, an aggressive strategy (maxi-maxi) should be implemented, i.e. the expansion should be focused on these most positive factors.

### *Limitations of the study*

The use of strategic analysis methods, apart from determining the conditions of activity, creates limitations in terms of interpretation. Porter’s Five Forces analysis, as well as TOWS/SWOT, is not burdened with the subjectivism of the researcher, even with extreme prudence and a willingness to be objective. The multidimensional character of the SARS-CoV-2 pandemic creates problems in the classification of influencing facets. Although the SLEPT concept was used, the effects of the pandemic had an ultrawide socio-economic impact and intertwined with each other in many aspects; thus, recognition in a given category could also be biased by subjectivity.

dimensional character of the SARS-CoV-2 pandemic creates problems in the classification of influencing facets. Although the SLEPT concept was used, the effects of the pandemic had an ultrawide socio-economic impact and intertwined with each other in many aspects; thus, recognition in a given category could also be biased by subjectivity.

### *Practical implications*

However, the aforementioned limitations do not affect the practical implications of using the results, especially in the cognitive aspect. Some businesses have decided not to move online; however, still operating in stationary form, they mostly have a chance to function only thanks to, for example, support from government subsidies and aid programmes. The duration and complexity of the pandemic has led to the fear that customers may not come back because their habits have changed permanently and they thus prefer remote forms of services offered by the competition, including in commerce. The findings of the study may be used as a benchmark for future scientific research.

### *Directions for further research*

Further research could focus particularly at the micro level, to understand the behaviour of individual customers when selecting the Internet as a shopping destination, as well as how enterprises adjust to pandemic reality. The COVID-19 pandemic and the emerging new variants of the coronavirus have led to widespread uncertainty and anxiety and therefore provide natural grounds for future research. Firstly, the durability of changes in consumer behaviour in terms of virtualisation can be assessed. Moreover, it is possible to assess the effects of the decision to continue the current form of business and not to focus solely on operating in the digital environment. For example, a comprehensive case study of commercial and service companies that have collapsed during the pandemic can be conducted to verify whether it was actu-

ally the result of not transferring their sales to the Internet, or whether the condition was caused by other “non-pandemic” factors.

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## Appendix A

Tables A1-A8 present the following elements of the TOWS analysis:

- Tables A1–A4 present the following parts of the TOWS analysis from a consumer perspective<sup>1</sup>:
  - Table A1 contains the strengths and weaknesses of the e-commerce sector along with valuations and ranks of individual factors;
  - Table A2 illustrates the analysis of the e-commerce industry environment, i.e. opportunities and threats along with valuations of the impact of individual factors;
  - Table A3 presents the matrix of relations between the external and internal environment of the e-commerce sector;
  - Table A4 is a presentation of the results of partial analysis of the matrix of relations between the external and internal environment and the internal e-commerce sector (including the choice of development strategy);
- Tables A5–A8 present the following parts of the TOWS analysis from an entrepreneur's perspective<sup>2</sup>:
  - Table A5 contains the strengths and weaknesses of the e-commerce sector along with valuations and ranks of individual factors;
  - Table A6 illustrates the analysis of the e-commerce industry environment, i.e. opportunities and threats together with valuations of the impact of individual factors;
  - Table A7 presents the matrix of relations between the external and internal environment of the e-commerce sector;  
Table A8 presents the results of partial analysis of the matrix of relations between the external and internal environment and the internal e-commerce sector (including the selection of development strategies).

<sup>1</sup> For a broader explanation of the consumer's perspective, see subsection 2.1.

<sup>2</sup> For a broader explanation of the entrepreneur's perspective, see subsection 2.1.

**Table A1. Strengths and weaknesses of the e-commerce sector together with valuations and ranks of individual factors – the consumer perspective.**

No.	Strengths and weaknesses of the e-commerce sector – the consumer perspective	Valuation of the factor as a				Rank of the factor			Total score
		weakness		strength		1	2	3	
		-2	-1	+1	+2				
1.	Ease and speed of payment for goods/services				X			X	6
2.	Simplified shopping procedure in a foreign currency				X		X		4
3.	Quick comparison of prices/offers from various online stores			X				X	3
4.	Ease of obtaining other users' opinions about the store and the product			X			X		2
5.	Time saving – convenience and speed of buying the product				X			X	6
6.	Simplified access to purchasing niche/specialised products			X		X			1
7.	Possibility of personalising services and products (e.g. configurators)			X			X		2
8.	A short process of developing a material certificate for the seller (through e.g. visual identification, etc.)			X		X			1
9.	The need to pay for the delivery of products and services	X					X		-4
10.	No possibility of "tangible testing" of the product	X						X	-6
11.	Potential online fraud threat		X				X		-2
12.	A limited number of stores offering personalised services or personalised products		X			X			-1
13.	Delivery of products extends the waiting time for order finalisation	X					X		-4
14.	Limited price negotiation		X			X			-1
15.	After-sales service is limited almost exclusively to remote contact		X			X			-1
16.	Extended process of gaining consumer confidence towards the seller in the e-commerce industry		X			X			-1

\* -2 points – the factor is considered to be a very weak point of the sector; -1 point – the factor is considered to be a weakness; +1 point – the factor is considered to be a strength; +2 points – the factor is considered to be a significant strength. 3 – the highest rank, a very important strength/weakness; 2 – medium rank, an important strength/weakness; 1 – low strength/weakness.

Source: own elaboration

**Table A2. Opportunities and threats of the e-commerce sector (environment analysis) together with valuations of the impact of individual environment factors – the consumer perspective.**

No.	Opportunities and threats of the e-commerce sector (environment analysis) – the consumer perspective	Valuation of the impact of environmental factors				
		-2	-1	0	1	2
1.	Access to the e-commerce market from anywhere in the world at any time					X
2.	The increasing influence of <i>influencers</i> on consumer decisions regarding online shopping and learning about new online shopping destinations				X	
3.	No or negligible geographical barriers					X
4.	Preferential legal conditions regarding returns				X	
5.	The product may be lost due to the fault of the supplier	X				
6.	Returning a product often requires the buyer to pay for shipping costs		X			
7.	No personal contact with the seller			X		
8.	Possible language barriers for cross-border transactions		X			
9.	The product may be lost due to the fault of the supplier	X				

\* -2 points – a factor considered to be a very strong threat to the company; -1 point – a factor considered to be a threat, but with less impact; 0 points – a factor that cannot be clearly classified as a threat or opportunity, but which is worth considering; +1 point – a factor considered an opportunity; +2 points – a factor considered to be an opportunity with a high impact.

**Source:** own elaboration



**Table A3.** Matrix of relations between the external and internal environment of the e-commerce sector – the consumer perspective.

Consumer perspective		Analysis of the environment								
		Opportunities				Threats				
		1.	2.	3.	4.	5.	6.	7.	8.	
Weight		2	1	2	1	-2	-1	0	-1	
E-commerce sector	Strengths	1.	6	12	12	6	-12	-6	0	
		2.	4	8	8	4		-4		-4
		3.	3	6	6					-3
		4.	2	4	2	4				-2
		5.	6	12	6	12		-12	-6	-6
		6.	1	2	1	2				-1
		7.	2			2			0	-2
		8.	1	2	2	1	-2		0	
	Weaknesses	9.	-4		-8	-4	8	4		
		10.	-6	-12	-6	-12		6	0	6
		11.	-2	-4	-2	-4	-2	4	2	0
		12.	-1	-2		-2				
		13.	-4		-8		8	4		
		14.	-1	-2	-1	-2		1	0	1
		15.	-1	-2		-2	-1	2	1	1
		16.	-1	-2	-1		-1	2	1	0

\* The number in each cell is the product of multiplying the weights between factors from the exterior (opportunities and threats) and interior environment (strengths and weaknesses).

Source: own elaboration

**Table A4.** Development strategies for the e-commerce sector (partial result) – the consumer perspective.

		Analysis of the environment	
		Opportunities	Threats
Enterprise / sector	Strengths	<b>Aggressive strategy (<i>maxi-maxi</i>)</b> Result: 114	Conservative strategy ( <i>maxi-mini</i> ) Result: 60
	Weaknesses	Competitive strategy ( <i>mini-maxi</i> ) Result: 80	Defensive strategy ( <i>mini-mini</i> ) Result: 54 *

\* Individual partial results in given cells are the sum of external factor weight and internal factor weight – the result of adding up the numbers for each quadrant.

Source: own elaboration

**Table A5. Strengths and weaknesses of the e-commerce sector together with valuations and ranks of individual factors – the entrepreneur’s perspective**

No.	Strengths and weaknesses of the e-commerce sector – the entrepreneur’s perspective	Valuation of the factor as a				Rank of factor			Total score
		weakness		strength		1	2	3	
		-2	-1	+1	+2				
1.	Marketing simplicity – availability of online tools for brand and product promotion			X			X	<b>3</b>	
2.	The ability to personalise ads to the preferences of the end user				X		X	<b>4</b>	
3.	Low costs of online marketing tools			X			X	<b>3</b>	
4.	Low entry costs (compared to a stationary store)				X		X	<b>6</b>	
5.	The simplicity of arrangement and display of products in the online store			X			X	<b>2</b>	
6.	Facilitates communication and interaction with the customer through online tools			X			X	<b>2</b>	
7.	No technical skills required when running a simple online store			X		X		<b>1</b>	
8.	A multitude of tools that automate processes supporting ecommerce business				X		X	<b>4</b>	
9.	High customer expectations for the store (compared to ecommerce giants such as Amazon)		X				X	<b>-2</b>	
10.	Potential privacy concerns of users – a reluctance to share personal data	X					X	<b>-6</b>	
11.	Psychological prejudices regarding online shopping		X				X	<b>-2</b>	
12.	The need to implement security tools – often expensive	X					X	<b>-4</b>	
13.	The desire to launch an advanced online store requires technical skills or the employment of a specialist		X			X		<b>-1</b>	

\* -2 points – a factor considered to be a significant weakness of the sector; -1 point – a factor considered to be a weakness; +1 point – a factor considered to be a strength; +2 points – a factor considered to be a significant strength. 3 – the highest rank, indicating a very important strength/weakness; 2 – medium rank, indicating an important strength/weakness; 1 – low strength/weakness rank.

Source: own elaboration

**Table A6. Opportunities and threats in the e-commerce sector (environment analysis) together with valuations of the impact of individual environment factors – the entrepreneur’s perspective.**

No.	Opportunities and threats of the e-commerce sector (environment analysis) – the entrepreneur’s perspective	Valuation of the impact of environmental factors				
		-2	-1	0	1	2
1.	Potential global reach – no need to limit oneself to the local environment					X
2.	Increasing number of Internet users					X
3.	Economic growth of the e-commerce sector					X
4.	Reduced server maintenance costs resulting from technological development					X
5.	Simpler analysis of consumer trends using online analytical tools				X	
6.	Easier administration of an online store using evolving technology				X	
7.	Flexible target market segmentation (including niche selection)				X	
8.	The possibility of facilitating the sale of products internationally using marketplaces (such as Amazon, eBay or AliExpress)				X	
9.	Enormous competition with both multiplying stationary and online stores (particularly in the case of the vertical sub-segment)	X				
10.	Tightening government regulations regarding online sales (including tax and personal data protection)		X			
11.	The need to comply with the legal regulations of the country where online sales are planned (including the adjustment of product certification and tax issues)		X			
12.	Difficult access to emerging markets, where access to the Internet is limited		X			

\* -2 points – a factor considered to be a very strong threat to the company; -1 point – a factor considered to be a threat, but with less impact; 0 points – a factor that cannot be clearly classified as a threat or opportunity, but which is worth considering; +1 point – a factor considered to be an opportunity; +2 points – a factor considered to be an opportunity with a high impact.

Source: own elaboration

**Table A7.** Matrix of relations between the external and internal environment of the e-commerce sector – the entrepreneur’s perspective.

Entrepreneur’s perspective		Analysis of the environment													
		Opportunities						Threats							
		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.		
<i>Weight</i>		2	2	2	2	1	1	1	1	-2	-1	-1	-1		
E-commerce sector	Strengths	1.	3	6	6	6		3	3	3	3	-6		-3	-3
		2.	4	8	8	8		4	4	4		-8	-4	-4	-4
		3.	3		6	6	6								-3
		4.	6	12		12	12				6		-6	-6	-6
		5.	2						2	2					
		6.	2	4	4			2	2			-4			-2
	Weaknesses	7.	1			2		1	1		1	-2			
		8.	4	8	8	8	8	4	4	4	4	-8	-4	-4	
		9.	-2	-4	-4		-4		-2		-2	4		2	2
		10.	-6		-12			-6	-6	-6	-6		6	6	6
		11.	-2	-4	-4					-2	-2	4	2	2	2
		12.	-4	-8	-8	-8	-8	-4	-4				4	4	4
		13.	-1	-2		-2	-2	-1	-1			2			

\* The number in each cell is the result of multiplying the weights of factors from the exterior (opportunities and threats) and interior environments (strengths and weaknesses).

Source: own elaboration

**Table A8.** Development strategies for the e-commerce sector (partial result) – the entrepreneur’s perspective.

		Analysis of the environment	
		Opportunities	Threats
Enterprise / sector	Strengths	<b>Aggressive strategy (<i>maxi-maxi</i>)</b> Result: 195	Conservative strategy ( <i>maxi-mini</i> ) Result: 77
	Weaknesses	Competitive strategy ( <i>mini-maxi</i> ) Result: 112	Defensive strategy ( <i>mini-mini</i> ) Result: 50 *

\* Individual partial results in given cells are the product of external factor weight and internal factor weight – the result of adding up the numbers for each quadrant.

Source: own elaboration