"The role of demographic characteristics and shopping habits in online shopping behavior"

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BUSINESS PERSPECTIVES

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THE ROLE OF DEMOGRAPHIC CHARACTERISTICS AND SHOPPING HABITS IN ONLINE SHOPPING BEHAVIOR

Abstract

E-commerce is a prospering industry, its global market size has doubled in recent years and, in addition to volume growth of more than 100%, its market share is constantly increasing. There has been a significant change in the information search phase of purchase decisions recently, which appears in a differentiated manner in generations. Social network sites have become the primary sources for the members of the young generation (Generation Y and Z) these days. The paper explores the habits of Hungarian online consumers and the factors influencing them. A quantitative data collection tool was selected as a method of the research, including an online questionnaire survey with 720 respondents. Based on the results, it can be concluded that most respondents have integrated monthly online shopping in their lives, and they browse offers online on a weekly basis. With respect to product categories, clothing products and electronic items were among the most frequently purchased, in terms of delivery, most people prefer delivery by courier service, while regarding payment methods, credit card payment is preferred. After conducting Principal Component Analysis, the research identified six factors that influence online purchase, including convenience, risk, time efficiency, social media, logistics, and availability. The hypothesis tests revealed significant differences along all variables related to demographics and shopping habits.

INTRODUCTION

E-commerce is a prospering industry, its global market size has doubled in recent years and, in addition to volume growth of more than 100%, its market share is also constantly increasing (Emarketer, 2020). COVID-19 contributed to the market expansion in 2020 significantly, as confirmed by Piros and Fehér (2020) according to which online retail in Hungary achieved a growth of over 30% in the first month of the outbreak of the pandemic, well exceeding forecasts (Hajdú & Nagy, 2021). According to the survey by GKID (2022), the number of domestic online orders approached 70 million items in 2021.

Nowadays, e-commerce has an increasing share in trade. A broad range of recent international studies focus on what effects social media, content sharing sites, and influencers have on consumers' online shopping behavior (Xiao et al., 2018; Vassalo et al., 2018; Kawaf & Istanbulluoglu, 2019). Michaelidou et al. (2011) concluded a decade ago that 93% of social media users are of the opinion that companies should include social media in their marketing activities to reach and convince consumers.

The relevance of the research is that there is a lack of research on the factors influencing the behavior and attitudes of Hungarian online consumers. Various institutions and organizations regularly publish

market trends, but the characteristics of consumers and the factors influencing their behavior are not known. Furthermore, the research gap is that the model of factors influencing online shopping developed by Rao et al. (2018) has not been adapted not only in Hungary, nor in the countries of the Central European region.

1. LITERATURE REVIEW

E-commerce has been defined in several ways over the past decades, both broadly and narrowly, including B2B and B2C. According to the narrow definition, e-commerce refers to the buying and selling of goods and services over the Internet, regardless of the payment and delivery method (Semerádová & Weinlich, 2022). The continuous expansion of e-commerce has been strongly influenced by digitalization, which has significantly affected consumer behavior and the purchasing decision process.

In general, the digital impact on consumers is increasingly important. The results of Deloitte (2020) survey conducted in the United States show that before placing an order, a significant number of consumers visit the web store or retailer's website and social media pages, look at customer reviews about the given product, and - typically members of Generation Z and women - are also interested in the opinion of influencers. Zhu et al. (2019), who state in their study that Generation Z is the largest customer group in the e-commerce market, also confirm the Deloitte (2020) survey.

Among the main characteristics of e-commerce, it can be mentioned that it is carried out through digitized processes and partially or fully automated processes, which can contribute to the entry of enterprises into export markets, improve innovation and growth capabilities, and lead to more efficient and competitive operations, even for SMEs (Dallocchio et al., 2024).

On the consumer side, the growth and popularity of e-commerce can be attributed to the continued availability of online stores, which provide shoppers with the opportunity to shop 0-24, any day of the week (Guven, 2020).

With the spread of smart devices and the availability of broadband internet, the so-called m-commerce (or mobile commerce), which is interpreted in international literature as online shopping by consumers via smart devices, has become the fastest growing channel for the sale of products and services (Chopdar et al., 2022; Sun & Xu, 2019; Hu et al., 2023). For consumers, it is a simple and convenient way to place orders, as our mobile phones are within reach, they can be used anywhere and anytime, thus they can be used during all stages of the purchase process (Chopdar et al., 2018).

The research on online consumer behaviour has become widespread in recent years (Gañac, 2018; Kumar & Kashyap, 2018; Sebald & Jacob, 2018; Padmavathy et al., 2019; Hermawan, 2021), which has led to the exploration of the factors that influence their behavior. The factors that influence online consumers can be categorized into two main groups: utilitarian and hedonistic (Arul Rajan, 2020).

In the utility group, factors such as convenience, assortment, availability of information or payment services have been identified (Martínez-López et al., 2014). One of the most important factors influencing consumers is convenience, by which different authors mean different characteristics. For example, convenience can be understood as avoiding crowds in stores or standing in line to pay (Kumar & Kashyap, 2018), but it can also be understood as saving time for shoppers (Duarte et al., 2018).

The hedonistic group includes factors that influence consumers' non-rational selves, such as visual appeal, escape, intrinsic enjoyment or, for example, hang out (Martínez-López et al., 2016). Several previous studies have shown that visual appeal influences the formation of positive attitudes towards online shopping (Peng et al., 2017), browsing time (Bonnardel, 2011), purchase intention (Shaouf et al, Online shopping provides consumers with the opportunity to have a mind-free, relaxing time or to forget about work (escape). They may also be characterized by shopping purely for the pleasure of shopping (intrinsic enjoyment) or because it provides them with a pleasant relaxation (hang out) (Martínez-López et al., 2016).

The research on the factors influencing online consumer purchases has also led to the development of models and scales. According to Kumar and Kashyap (2018), online consumers are basically influenced by 5 factors, the availability of information (5 statements), accessibility (4 statements), product availability (3 statements), searchability (3 statements), and convenience (2 statement). Respondents must answer the statements with a scale from 1 to 5. Hermawan's (2021) model identified 5 factors: entertainment, informativeness, web irritation, attitude to online shopping and satisfaction. Each factor has 5 statements, apart from entertainment, which has 4 items. Like Kumar and Kashyap's (2018) model, respondents must rate each statement on a scale from 1 to 5. Sebald and Jacob (2018) revealed 3 dimensions and a total of 12 factors in their study. The dimensions include web environment, personalized solutions, trust and uncertainty. 4-4 factors belong to the three dimensions, such as effort saving, time saving, product presentation, variety search (online shopping environment); product search, interest in product combinations, desire for change, willingness to innovate (customized solutions); uncertainty of product performance, consumer confidence, support for product choice, and willingness to pay (uncertainty).

Sebald and Jacob (2018) examine the factors influencing online consumers in a more complex way than the previously described researchers, at the same time, one believes that the model does not cover an important factor, and it is social media. People and companies, on the other hand, most often limit social media to content sharing or social networking sites and use them as practically synonymous in the common language. However, social media are tools that have key elements such as content sharing, opinion sharing, media, and relationships and bonds between users and companies (Nair, 2011). One of the important marketing tools of social media is that it enables interactive communication between users, and thus potential consumers, and provides opportunities for companies to reach consumers directly through it (Ryu & Park, 2020).

In recent years, research examining the role of social media (Phan et al., 2024; Nastišin et al., 2019) and influencers has been published in the field of e-commerce (Weismueller et al., 2020; Dolega et al., 2021; Charoensereechai et al., 2022). According to Vasallo et al (2018), marketing spending in food marketing is increasingly shifting towards social media, given their greater and more effective potential to influence consumers, especially the younger generation. In their research, the authors found that in the case of junk food, brands are trying to appeal to consumers' emotions rather than 'overload' them with information by using targeted and curated posts on Instagram to boost sales.

The role of influencers in social media marketing can be analyzed from several aspects. On the one hand, they can influence consumers by increasing their purchase intentions, and this influence is becoming more powerful as the number of followers increases (Weismueller et al., 2020). Influencer marketing through the YouTube platform affects the credibility of perceived information, which can influence consumers' decisions (Xiao et al., 2018). On the other hand, the influence of influencers on consumers is evidenced by the fact that almost half of consumers tend to take their comments and opinions into account before making a purchase (Moshin, 2019). This is a significant change given that members of the older generation used to take into account recommendations from relatives, friends and acquaintances before making a purchase, as well as advertising in traditional ATL marketing communication tools such as television commercials or advertising magazines and leaflets (Hofmeister-Tóth, 2014).

In the research, with respect to the significant role of social media, the model associated with the name of Rao et al. (2018) was used, where the factors influencing online shopping include demographics, convenience, time efficiency, website design and features, security and the influence of social media factors were identified (Figure 1).

Nowadays, e-commerce is no more simply a commercial channel, but an integral part of consumer life, offering global access, convenience, speed and a wide choice of products. It has a significant impact on the economy, on the way businesses operate and on consumer habits. A complex of factors that determine the customer experience, the operational efficiency of platforms and the success of retailers influence e-commerce.
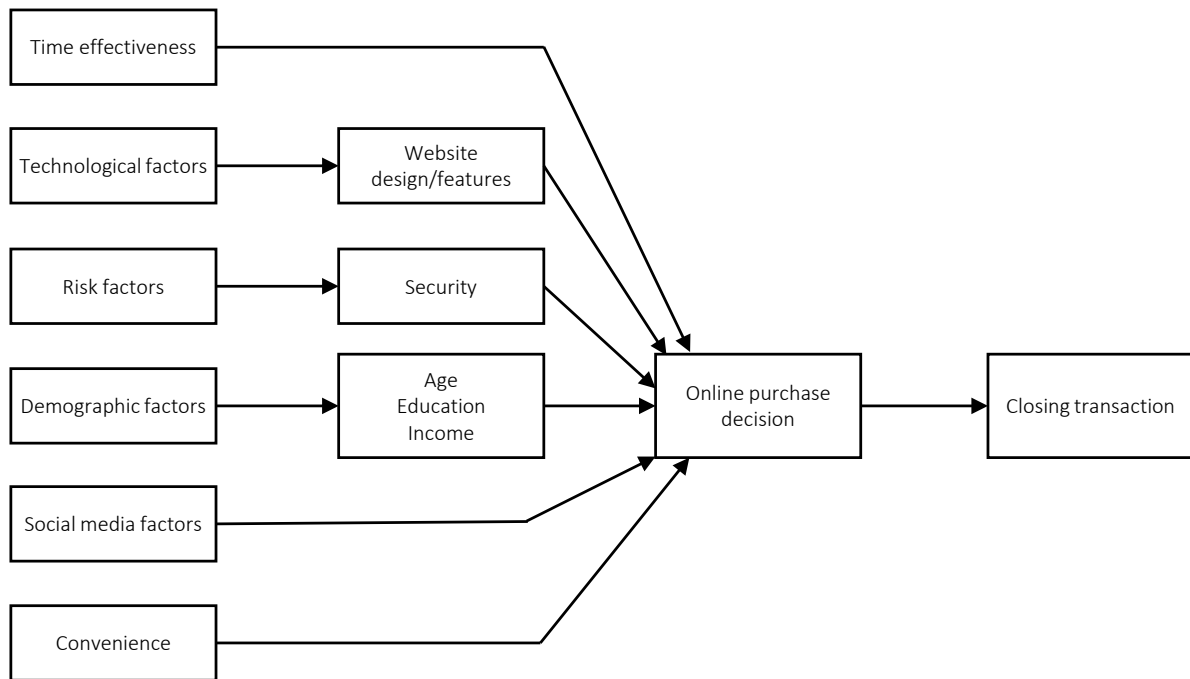
Figure 1. Model of factors influencing online shopping

The research goal is to reveal what factors influence the shopping habits of online consumers. Among other things, the study intends to examine the consumer behavior of online buyers. The study would also like to map the influencing role of social media, which is becoming more and more important in practically each field of our lives, in online shopping behavior. The research includes examining the differences, as well, that can be revealed between online buyers based on different demographics and their online shopping habits.

2. METHODOLOGY

To fulfil the goal, quantitative data collection was carried out, including a questionnaire survey. The questionnaire contained three groups of questions, the first on the respondents' online shopping habits, the second on factors influencing their behavior, and the third on demographic data. With respect to influencing factors, the model of Rao et al. (2018) was used where the respondents had to evaluate 24 statements on a scale from 1 to 5 (1 = not at all, 3 = unconcerned, 5 = completely) based on the extent how it affects their online purchasing behavior. The questionnaire was shared in various closed groups of the social network site (Facebook) with the most Hungarian users.

Data of the questionnaire survey were processed with IBM SPSS Statistics 27 program. For the data reduction procedure, Rao et al. (2018) performed a principal component analysis, therefore in the research was used it as well. Before the study, Kaiser-Meyer-Olkin (KMO) and Bartlett tests were performed to analyze whether the variables are suitable for conducting the data reduction procedure, whether a correlation might be shown between them. In the case of the KMO value, 0.5 was considered the threshold value based on previous research (Tahar et al. 2010; Kiss et al. 2020). After the principal component analysis, hypothesis tests were performed along various variables related to demographics and shopping habits. As a first step, the distribution of the factor values created based on the principal component analysis was examined with normality tests, for which the Kolmogorov-Smirnov test was applied. Based on the results of the tests, was determined that the variables do not follow a normal distribution, therefore the Mann-Whitney and Kruskal-Wallis tests were applied.

A total of 720 people filled in the questionnaire, of which nearly 75% were women and 25% were men. In terms of age, the respondents can be classified into four generations. 7.8% of the respondents are baby boomers, 20.1% are X, 27.3% are Y, while

44.8% belong to generation Z. In terms of place of residence, 6.9% of the sample lives in the capital, 50.7% in cities with county status, 25.8% in cities, and 16.6% in villages. In terms of education, 2.2% have primary degree (8 elementary schools, vocational training), 52.0% have secondary degree, and 45.8% have higher degree. Regarding their income situation, the average net earnings published by the Hungarian Central Statistical Office for 2021 were taken as a basis. In comparison, 28.7% considered their income situation to be below average, 34.3% to be average, 22.9% to be above average, while 14.1% have no active income (Table 1).

Table 1. Demographic characteristics of the sample

Variable	Main	Percent
Gender		
Women	518	74.6
Men	176	25.4
Generation		
Baby boomers	54	7.8
X	139	20.1
Y	189	27.3
Z	310	44.8
Place of residence		
Capital city	48	6.9
City with county status	352	50.7
City	179	25.8
Village	115	16.6
Education		
Primary degree	15	2.2
Secondary degree	361	52.0
Higher degree	318	45.8
Income situation		
Below average	199	28.7
Average	238	34.3
Above average	159	22.9
No active income	98	14.1

3. RESULTS

Based on the survey, 99% of people in the sample have already placed an order online. The vast majority (70%) of the respondents have become accustomed to buying online monthly. It can also be concluded from the answers that the majority (54%) are even more 'active' when browsing the online offer, as they view the offers of online stores on a weekly basis.

When it comes to online purchases, it is a crucial question which delivery methods consumers pre-fer, as well as which payment method they choose the most often. In terms of delivery, the majority of online customers in the sample prefer delivery by courier service, but at the same time, we believe that delivery to a parcel machine/parcel point is also gaining in popularity, which is confirmed by the results and the dynamically growing number of service providers. In terms of payment method, most of the respondents (44.6%) choose to pay by bank card, however, if one considers cash on delivery and bank card alternatives together, one gets almost half of the respondents (48.6%), thus cash on delivery option is still the most popular in Hungary.

Respondents could choose more options to the question 'What products do you usually buy online?' The most answers were received for clothing products (23.1%), electronic items (18.7%), entertainment products (15.8%), prepared food (13.6%), drugstore products (12.5%). This ranking overlaps with the GKID (2022) survey, according to which the top 5 sectors for online retail in Hungary included technical items, clothing, fashion and sports, toys and culture, FMCG, and computer technology in 2021 (figure 2).

The examination of factors influencing online shopping habits was started with the KMO and Bartlett test, afterwards performed the Principal Component Analysis, where the filling level was determined to be 0.5 based on Gupta and Falk (2017). In most cases, the KMO value exceeded the minimum threshold value of 0.5 according to Kiss et al. (2020), but 6 statements were not included in the final Principal Component Analysis due to their low content level.

As a result of the Principal Component Analysis, 6 factors shown in Table 2 were developed. The first factor was named convenience, which includes statements that refer to the simplicity and ease of shopping online. The second factor was named risk, considering that it included factors that reflect the fear of providing bank card data. The importance of the risk factor lies in the fact that more than 50% of people in the study still do not prefer paying by bank card and prefer cash on delivery payment alternatives or bank transfers, which are considered safer. The third factor is time efficiency, which is divided into three statements. The claims
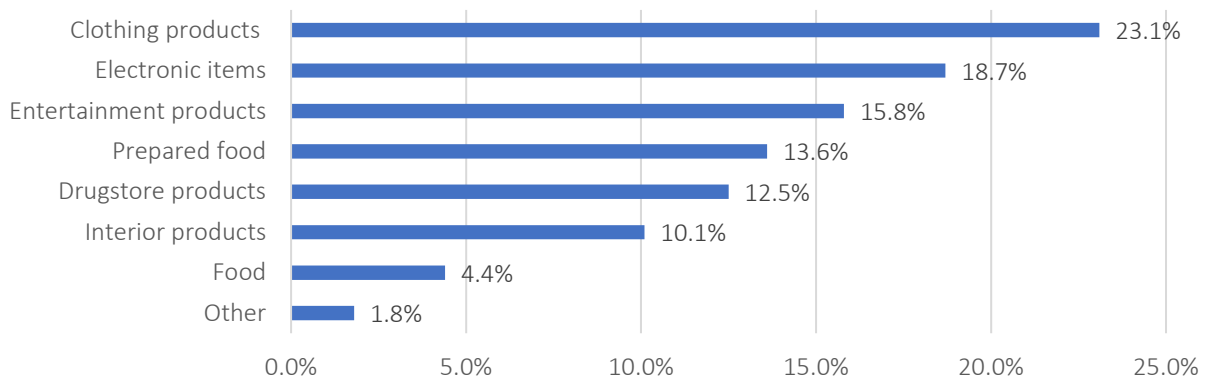
Figure 2. Product type ranking in the sample

suggest that people can save time when shopping online, whether it is choosing a product or rating a product. The fourth factor is social media. Statements organized into this factor indicate that social media helps to gather information about the desired product before the purchase, and one can search for opinions. Logistics, or the fifth factor, refers to transport. The last factor was availability, since this includes the claim

that we use the Internet to order products that are not available near us.

After the Principal Component Analysis, different hypothesis tests were performed on the established factors to examine whether there are significant differences between the respondents along the variables related to demographics and online shopping habits. Given that the sample

Table 2. Principal Component Analysis of the short version of the consumer online shopping behavior scale created by Rao et al. (2018)

Statement	Component					
	Convenience	Risk	Time efficiency	Social media	Logistics	Availability
I shop online as I can take as much time as I can to decide.	.730					
I shop online as I can then save myself from chaos of traffic.	.722					
I shop online as I can save myself from market crowd.	.712					
I shop online as there is no embarrassment if I do not buy.	.635					
I shop online as I can get detailed product information online.	.613					
I shop online as I can shop from home.	.531					
Online purchasing makes my shopping easy.	.507					
I fear misuse of credit card data in online shopping.		.917				
I fear overcharging if I shop online as the retailer has my credit-card information.		.900				
I feel that my credit-card details may be compromised and misused if I shop online.		.898				
Online shopping takes less time to purchase.			.862			
Online shopping does not waste time.			.804			
I feel that it takes less time in evaluating and selecting a product while shopping online.			.782			
Social media helps me getting customer reviews before buying online.				.925		
Social media helps me to collect information about the products to buy online.				.907		
I get on time delivery by shopping online.					.783	
Availability of internet makes online shopping easier.					.634	
I use online shopping for buying products that are otherwise not easily available in the nearby market or are unique (new).						.899

Methods: Principal Component Analysis, rotation method: Varimax with Kaiser normalization. Rotation converged in 5 iterations. KMO: 0.808; Bartlett (approx. Chi-squared): 4443,206; communalities: 0.520-0.874. Variance Explained: 69,438. Cronbach's alpha: 0.766

does not follow a normal distribution, non-parametric statistical tests were used.

Table 3 shows the results of the Mann-Whitney and Kruskal-Wallis tests applied along the demographic variables. Based on the results, it can be concluded that there are significant differences for each factor along different demographic variables. Based on the answers, social media and logistics influence women to a larger extent than men (p = 0.000). In the case of generational differences, those who are more afraid of giving bank card information are members of the older generation, as well as the youngest generation included in the study (p = 0.026). Previous studies (Moqbel et al., 2017; Bordonaba-Juste et al., 2020) also concluded that members of the younger generation are more concerned about their data security. In our opinion, members of Generation Z may be more informed about various data protection concerns that may arise in connection with social media or online purchases. The role of time efficiency is the most significant in the purchasing behaviour of the Generation X, while the factors of logistics and availability were rated significantly higher by members of the boomer generation. With respect to place of residence, it can be concluded that online shopping behavior of those living in villages is more influenced by convenience, that of residents of the capital by social media, and that of those living in the county seat by logistics factors. In the case of education, 'simplicity' and 'convenience' of online shopping has a greater impact on those with a basic education than on those with a higher education. The perceived or real risk arising in connection with online shopping has less impact the higher the

level of education, the logistics factor is, at the same time, a significantly more important factor for those with higher education. Finally, in terms of their financial situation, it is conclusive that, like their educational level, the better the financial situation of the people in my sample, the less they are afraid of the possible risks of online shopping, and the accessibility and delivery of products is more important to them (Table 3).

The authors would like to highlight some of the important ones from the results of the hypothesis tests carried out along the variables related to shopping habits. Based on the Kruskal-Wallis test, it can be determined that the more often people shop online, the more important convenience, time efficiency, and logistics are to them, and the less the risk factor affects them. The study reached similar results in case of the frequency of browsing various webshops. It will supplement this with the fact that the more often people browse the webshops, the more social media influences their behavior. They consider that social media helps them to gather information about the selected products, and they consider various customer opinions useful. Regarding the shopping expenses, it can conclude that the more online customers in the sample spend, the more their behavior is influenced by convenience, time efficiency, and logistics, and on the other hand, they rated the statements related to the risk and availability factors lower. Finally, regarding the different payment methods, the study concluded that consumers who prefer cash on delivery are more afraid of risk and statements related to time efficiency and logistics are more important to them (Table 4).

Table 3. Hypothesis testing along demographic variables

Factor	Gender	Generation	Place of residence	Education	Income situation
Convenience	0.622	0.144	0.144	0.188	0.464
Risk	0.921	0.026*	0.026*	0.003*	0.002*
Time efficiency	0.581	0.001*	0.001*	0.369	0.110
Social media	0.000*	0.842	0.084	0.750	0.865
Logistics	0.003*	0.014*	0.014*	0.011*	0.083
Availability	0.869	0.018*	0.018*	0.074	0.154

Note: *p < 0.05.

Table 4. A hypothesis test along shopping habits variables

Factor	Frequency	Browse	Spend	Payment method
Convenience	0.000*	0.000*	0.000*	0.932
Risk	0.000*	0.004*	0.000*	0.000*
Time efficiency	0.046*	0.613	0.025*	0.028*
Social media	0.919	0.001*	0.794	0.949
Logistics	0.001*	0.001*	0.000*	0.017*
Availability	0.005*	0.846	0.005*	0.323

Note: *$p < 0.05$.

4. DISCUSSION

Based on the results, it can conclude that, similarly to previous international research (Jaller-Pahwa, 2020; Moon et al., 2020; Nguyen et al., 2021), online shopping has become a daily activity of the people in the sample. In terms of shopping habits, most of them shop online monthly and browse the range of online stores even more often. In the case of delivery methods, most people prefer delivery by courier service, while cash on delivery is the most popular of the payment options. More than 50% of the sample still does not prefer paying by bank card. Based on the ranking of product types, the respondents buy clothing products (23.1%), electronic goods (18.7%) and entertainment products (15.8%) the most often online, which overlaps with the previous survey by GKID (2022).

Principal component analysis revealed six factors that influence online shopping behaviour: convenience, risk, time efficiency, social media, logistics, and availability. Based on the results of the hypothesis tests, we can conclude that there are significant differences between demographic groups and people with different shopping habits in case of individual factors. It may be surprising that, with respect to generational differences, not only the older generation (baby boomer), but also members of the Generation Z are more afraid of giving bank card data than, for example, the Generations X and Y. In our opinion, members of Generation Z may be more informed about various data protection concerns that may arise in connection with social media or online purchases. Regarding shopping habits, concluded that the more often people shop online, the more important factors that represent the simplicity and ease of shopping online (convenience or time efficiency) are more important to them, and the less the risk factor affects them. Similar results were reached in case of the

frequency of browsing the various webshops. In our opinion, the role and impact of social media can be seen most clearly here, since the respondents consider that social media helps them to collect information about the selected products, and they consider various customer opinions useful.

A significant part of research dealing with the behavior of online shoppers focuses on trust and security (Aslam et al., 2020; Wong et al., 2019; Bhat-Darzi, 2020). In Svatosova's (2020) study, it was also confirmed from the company side (209 Czech companies) that the critical factors of e-commerce are security, the reliability of online stores, and payment systems. According to Aslam et al. (2020), data protection largely determines customer trust, which can give a ground for consumer loyalty, the importance of which lies in the fact that consumers are basically becoming more unpredictable and less loyal (Lobaugh et al., 2019; Cachero-Martinez & Vazquez-Casielles, 2021).

Based on the results and previous research, in case of companies involved in e-commerce, building consumer trust and mitigating the risk perceived by consumers are the key to their operation. Accordingly, and in line with consumer expectations, it is advisable to maintain various payment and delivery options. It may be advisable for companies to produce educational content focusing on data protection issues, even as part of a social responsibility campaign, which could, on the one hand, increase the knowledge of online customers and, on the other hand, improve their sense of security.

The role of social media marketing and influencers is indisputable these days, and this is especially true in e-commerce. According to Wibowo et al. (2021), social media marketing

has a significant impact on the quality of the customer relationship, while Mason et al. (2021) concluded that after the COVID-19 epidemic, consumers increasingly use social media to identify products, as a means of collecting information about products, evaluating products and purchasing products. In the case of online stores, in our opinion, it is essential to use so- cial media and to appear with creative content. Social media marketing, in addition to the fact that targeted ads increase consumer purchase intention (Nasir et al. 2021; Sriram et al., 2021), enables and can play an important role in inter- action with customers and interactive contact (Bozkurt et al. (2021), which can generate con- sumer engagement (Shawky et al., 2020).

CONCLUSION

Online shopping has become an integral part of daily life. Online shopping means that people buy dif- ferent products and services using the Internet, using an online platform and a choice of delivery meth- ods. The behaviour of online shoppers is influenced by several factors. The research objective was to identify these factors and to explore differences between consumers by demographics and other aspects.

The research was a questionnaire survey, and data were collected through social media. To evaluate the results, different statistical analyses were used and tests such as principal component analysis, Mann- Whitney test and Kruskal-Wallis test.

The results confirmed that online consumption has become an integral part of people's lives, with cloth- ing products, electronics and entertainment products being the most purchased items. After principal component analysis, six factors were identified as influencing online shopping: convenience, risk, time efficiency, social media, logistics and availability. The research found that these factors have differential effects on people by demographics (gender, generation, place of residence, education and income situa- tion) and shopping habits (frequency, browse, spend, payment method).

It would be useful to break down future research into different product types, given that different habits and behavioral factors may play a role in the FMCG, clothing or even technical goods markets. The re- search narrowed down to product types may enable to identify different online shopper groups through cluster analysis, which could help the marketing strategy and activities of online stores.

AUTHOR CONTRIBUTIONS

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Formal analysis: Valentina Balogh-Kardos.
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Investigation: Valentina Balogh-Kardos, Renátó Balogh, Tímea Gál.
Methodology: Valentina Balogh-Kardos, Renátó Balogh.
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Visualization: Valentina Balogh-Kardos, Renátó Balogh.
Writing – original draft: Valentina Balogh-Kardos.
Writing – review & editing: Valentina Balogh-Kardos, Renátó Balogh, Tímea Gál.

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