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Online Shopping Behaviour of Slovak During the COVID-19 Pandemic

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Abstract: Cities and regions worldwide, not only in Slovakia but also across the globe, have implemented various procedures to diminish the spread of the coronavirus, resulting in a profound impact on consumers' shopping behaviour. With the ongoing pandemic reshaping societal norms, it is unsurprising that consumer behaviour patterns are undergoing a significant shift towards digital platforms to accommodate evolving needs and realities. Consumers have switched from conventional shopping to online shopping because, owing to the increasing risk of coronavirus, customers want to avoid public places, thus increasing their preference for online shopping. Against this backdrop, this paper focuses on the factors influencing consumers' intentions to engage in online shopping, or e-commerce, amidst the COVID-19 crisis. Specifically, it seeks to explore the role of subjective standards and perceived usefulness in shaping consumer behavior in the online shopping domain. Drawing upon a sample of 250 Slovakian consumers and employing correlation analysis, the study reveals a positive association between internal and external subjective standards and consumers' propensity to shop online. Spearman's rank correlation coefficient was applied to verify the statistically significant relationships between the analysed factors in the hypotheses. Furthermore, the results underscore the pivotal role of the apparent helpfulness of e-commerce services in driving consumers towards online purchases, particularly during the ongoing pandemic. These insights hold considerable significance for e-commerce enterprises, offering valuable guidance in understanding and adapting to prevailing consumer behaviors. By leveraging these findings, businesses can refine their sales and marketing strategies to better align with current consumer preferences, thereby fostering greater effectiveness and competitiveness in the digital marketplace. The transition to digital commerce is, especially at the time of government measures to restrict movement and impose social distancing rules, essential for all businesses, as customers switch from brick-and-mortar stores to online shopping platforms owing to social pressure or because they find it useful. In conclusion, we discuss the research findings, identify the limitations of the study, and propose further research trajectories.

Keywords: e-commerce; subjective norm; perceived usefulness; consumer behaviour; COVID-19.

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1. Introduction. The global COVID-19 pandemic has had profound and far-reaching effects on economies and healthcare systems worldwide, significantly disrupting societal norms and individual behaviors. These disruptions have been accompanied by heightened levels of fear, uncertainty, and insecurity among populations across all continents, as documented by Prebreza & Shala (2021). Efforts to mitigate the spread of the virus, including global restrictions, social distancing mandates, and other public health interventions, have catalyzed a notable shift toward online purchasing, with consumers increasingly relying on e-commerce platforms to meet their needs (Alessa et al., 2021; Rybaczewska et al., 2023; Aldea, 2024; Cuong, 2024).

Prior to the emergence of the pandemic, several factors, such as limited digital transparency, diminished consumer confidence, and political or economic instability, had incentivized individuals to explore online shopping as an alternative to traditional retail channels (Kovalenko & Kuzmenko, 2020; Ratnasari et al., 2021; Dionysiou et al., 2021). However, the onset of COVID-19 accelerated systemic transformations within the e-commerce landscape, driving significant advancements in its infrastructure and operational capabilities (Ali, 2020). According to data from Statista (2021), the global retail e-commerce market was valued at approximately \$4.28 trillion in 2020, with projections indicating an increase to \$5.4 trillion by 2022. Furthermore, these revenues are expected to continue their upwards trajectory annually, underscoring the growing ubiquity of online shopping as a dominant consumer activity worldwide. The pandemic has also instigated substantial changes in consumer behavior, influencing the types of products purchased, the channels through which they are acquired, and the methods of transaction (Jílková & Kralová, 2021; Anghel & Stan, 2024). Given that concerns over viral transmission in public spaces intensified, consumers increasingly abandoned conventional shopping practices in favour of online retail solutions (Darwish & Gomes, 2022; Darwish et al., 2021; Dima et al., 2022). This behavioral shift reflects a broader tendency among individuals to adopt precautionary measures aimed at safeguarding personal and familial health while contributing to public welfare (Mehta et al., 2020). In essence, the pandemic has not only amplified the role of e-commerce in contemporary society but also redefined the dynamics of consumer decision-making, necessitating a deeper understanding of these evolving patterns by both scholars and practitioners (Alwan et al., 2023).

The impacts of the COVID-19 pandemic represent a relatively new area of research, one that has thus far received limited scholarly attention. Nonetheless, several researchers have investigated this topic, recognizing its profound implications for consumer behaviour. Gu et al. (2021) argued that the pandemic has significantly reshaped the ways in which consumers engage with the market, fostering greater trust in online shopping platforms. This increased confidence is coupled with a pronounced emphasis on the acquisition of high-quality products at competitive prices, reflecting a heightened level of consumer engagement. The growing reliance on e-commerce, catalysed by the pandemic, suggests that the prevalence of online shopping and related activities will continue to expand. As highlighted by Aggarwal & Kapoor (2020), the initial stages of the pandemic notably improved consumer access to online shopping channels, facilitating this ongoing shift in purchasing behaviours. These transformations underscore the necessity of further academic inquiry into the evolving dynamics of consumer behaviour, particularly in the context of prolonged public health crises. This study aims to contribute to this growing body of knowledge by examining key determinants of consumer decision-making in online shopping. Specifically, it investigates the role of subjective norms and perceived usefulness in shaping purchasing decisions, with a primary focus on the influence of the COVID-19 pandemic. The analysis emphasized the need to understand how these factors interact under the unique circumstances brought about by the pandemic, which has imposed significant constraints on traditional shopping practices. As cities and regions across Slovakia and globally continue to implement measures to mitigate the spread of COVID-19, it is evident that consumer behaviour patterns are undergoing substantial transformations. These changes reflect broader adaptations to emerging needs and altered socioeconomic realities. Insights from this study hold particular relevance for e-commerce businesses, offering them a framework to better understand current consumer behaviours. This understanding can enable the development of more targeted and effective sales and marketing strategies, ultimately enhancing their ability to meet evolving consumer expectations in a rapidly changing marketplace.

The article is organized into three primary sections. The first section provides an overview of the theoretical frameworks underpinning the development of the study's hypotheses. The second section details the construction of the research instrument, the data collection procedures, and the characteristics of the research sample. The third section presents the results of hypothesis testing, accompanied by a critical discussion of the findings. The article concludes with an exploration of the research implications, an acknowledgement of the study limitations, and recommendations for future research directions.

2. Literature Review. Several researchers have explored how the pandemic has influenced consumer behaviour across different contexts. For example, the theory of planned behaviour (TPB) has been utilized as a theoretical framework to examine consumer purchase intentions for masks during the COVID-19 pandemic, with findings indicating that all three constructs of the TPB positively impact these intentions (Tran, 2021; Bosnjak, 2020). Other studies have analysed various online shopping risk factors during the pandemic (Alhaimer, 2021; Andruetto et al., 2021), revealing that the factors influencing consumer opinions and behaviors under normal conditions differ significantly from those during pandemic periods. However, research from Bangladesh (Neger & Uddin, 2020) highlights consumer apprehensions regarding online transactions, driven by concerns over the inability of e-commerce platforms to ensure adequate security and foster trust. Furthermore, several studies have investigated the determinants of behavioural intentions to utilize meal delivery platforms throughout the pandemic (Muangmee et al., 2021; Liptak & Musinszki, 2022). Research on grocery purchasing behaviour during the pandemic revealed that households with lower incomes are more inclined to persist with online shopping if the pandemic continues. This observation suggests a trade-off in decision-making among online shoppers, who balance the costs of purchasing against the health risks associated with in-store shopping (Jensen, 2021). Pham (2020) suggested that consumers' perceptions of the convenience of online shopping significantly influence their intention to adopt this purchasing method, irrespective of the presence of a pandemic. The subsequent section explores the factors under investigation and outlines hypotheses informed by prior research.

2.1. *Consumer Intent*

The concept of behavioural intention is central to understanding actual behaviour or usage, as it encapsulates an individual's overall motivation to act in a specific manner (Zhang et al., 2012). Chew (2006) conceptualized behavioural intention as the strength of an individual's commitment to engage in a particular behaviour. Similarly, Athapaththu & Kulathunga (2018) elaborated on purchase intention, defining it as a consumer's predisposition toward acquiring a specific product or service. This perspective aligns with prior studies, which interpret purchase intention as the likelihood or expectation that a consumer will proceed with purchasing a product (Wijayaningtyas & Nainggolan, 2020; Słupinska et al., 2022). Kiriakidis (2015) underscored the role of purchase intention as a critical determinant in forecasting consumer buying behaviour. Nystrand & Olsen (2020) further noted that online purchase intentions are profoundly influenced by subjective norms that guide buyer behavior.

2.2. *Subjective Norms*

According to Venkatesh (2003), subjective norms in the context of consumers refer to the extent to which individuals perceive that influential people believe that they should adopt a particular technology. Similarly, Chan (2004) describes subjective norms as the expectations or attitudes of others that dictate what an individual ought to do. Subjective norms can also be understood as individuals' perceptions of behaviours endorsed and shaped by significant others (Shin & Hancer, 2016; Asvial et al., 2021). Empirical research has established a connection between subjective norms and online purchase intentions. Hasbullah et al. (2016) demonstrated that subjective norms have a significant influence on consumers' intent to shop online. Previous studies confirm that the stronger the influence of subjective norms is, the greater their impact on an individual's purchasing intent. Encouragement from close contacts, such as family, close friends, and community members, can amplify purchasing intent and persuade individuals to make a purchase (Kusumaningsih et al., 2019; Nastisin et al., 2019). In this study, we build on prior research suggesting that normative pressure arises from two distinct sources: external and internal social influences (Rogers, 2003; Garay et al., 2019). On the one hand, a portion of this pressure originates from an individual's social network, including family and friends, whereas on the other hand, it is driven by media coverage of the prevailing economic conditions (Rogers, 2003). Furthermore, we concur with Koch et al. (2020) that Generation Y and Generation Z have not faced a comparable global crisis before, leaving them with limited experience in managing such extraordinary circumstances. As a result, during the pandemic, these consumers are likely to experience heightened uncertainty and may increasingly rely on the opinions of others to guide their purchasing behaviour. On the basis of the above statements of previous studies, the following hypotheses are proposed:

H1: There is a statistically significant relationship between consumers' internal subjective standards during a pandemic and their intention to shop online.

H2: There is a statistically significant relationship between consumers' external subjective standards during a pandemic and their intention to shop online.

2.3. Perceived Usefulness

Davis (1989) defines perceived usefulness as the extent to which individuals believe that a particular technology will assist them in performing tasks more efficiently. This concept can also be interpreted as the belief that using mobile phones or the internet as a shopping medium enhances an individual's shopping performance (Juniwati, 2014). Furthermore, various studies have emphasized that ease of use is a critical factor influencing the adoption of any system (Agrebi, 2014; Roshchik et al., 2022; Yuan, 2014). According to Natarajan et al. (2018), perceived usefulness significantly impacts consumer behaviour in adopting specific technological tools, as it influences their intention to embrace the technology. In the realm of online shopping, this factor is understood as consumers' perception of how an online platform adds value and enhances their shopping experience (Kripesh et al., 2020). Earlier studies have repeatedly shown a significant empirical connection between perceived usefulness and consumers' intentions to engage in online shopping (Ashraf et al., 2014; Faqih, 2013). For instance, Mandilas et al. (2013) and Guritno & Siringoringo (2013) argued that perceived usefulness has a dominant influence on decision-making in online shopping. Similarly, Singh et al. (2016) and Suleman (2018) support the notion that perceived usefulness can significantly shape consumers' decisions to make online purchases. Koch et al. (2020) contend that online shopping offers notable advantages, particularly in reducing the risk of infection by minimizing physical contact with others. The authors also contend that during the COVID-19 pandemic, the perceived benefits of online shopping were strongly linked to consumers' intentions to purchase online, as it was seen as an especially favourable option in those circumstances. On the basis of the above, the following hypothesis is proposed:

H3: There is a statistically significant relationship between the perceived usefulness of online shopping and consumers' intent to shop online.

3. Methodology and research methods

3.1. Data collection

To verify the established hypotheses, data were gathered via the query method. An anonymous questionnaire was distributed electronically throughout March 2021. The questionnaire consisted of items that were not subjected to factor analysis but were based on the verified factor structure of preceding analyses (Table 1). To obtain the subjective answers of the respondents, the Likert scale was used (1- strongly disagree to 7- strongly agree). The application of mathematical-statistical analyses was carried out in the SPSS and Gretl programs.

Table 1. Structure of research instrument items

Latent variables		Manifest variables	Source
Perceived ease of use	VU_1	Online shopping is now a useful way to shop	Dakduk et al. (2016)
	VU_2	Online shopping now simplifies the shopping process	
	VU_3	Currently, acquiring goods online enables me to shop with greater efficiency	
	VU_4	Using the internet to buy a product helps me shop more efficiently	
	VU_5	The internet is convenient for online shopping	
Internal subjective standards	ISN_1	People who matter to me encourage me to shop online through the pandemic	Venkatesh et al. (2012)
	ISN_2	People who impact my behaviour believe that I should purchase goods online through the pandemic	
	ISN_3	People whose views I respect give their approval of me shopping online during the pandemic	
External subjective standards	ESN_1	The latest economic news encourages me to shop online	Garay et al. (2019)
	ESN_2	News on the economic situation published on social media encourage me to shop online	
	ESN_3	Considering the prevailing circumstances, the recommendations of financial analysts motivate me to procure goods through online platforms	
Consumer's intention	SZ_1	During the pandemic, I intend to buy products online	Koch et al. (2020)
	SZ_2	I currently intend to shop online	
	SZ_3	I plan to prioritize purchasing goods online due to the ongoing epidemiological situation	

Sources: developed by the authors.

3.2 Research Sample

The research sample consisted of 250 Slovak females and males. To maintain a proportional distribution in terms of gender, the sample included 56% women and 44% men. The average age of the respondents was 31 years. The characteristics of the research sample in terms of education and economic status are described in Table 2.

Table 2. Characteristics of the research sample

Characteristics	No.	Share
Highest attained education		
Elementary	10	4%
High school without graduation	12	5%
High school with graduation	96	38%
College	132	53%
Economic status		
Entrepreneur/self-employed person	40	16%
Employed	120	48%
Unemployed	17	7%
Student	62	25%
Retiree	2	1%
Other	7	3%

Sources: developed by the authors.

4. Results. This section presents the results of the hypothesis verification. Mathematical and statistical methods were employed to conduct the analysis. The variables related to online shopping factors were calculated by averaging values from the subquestions associated with each factor. These subquestions were not subjected to factor analysis, as their structure was derived from validated factor models in prior studies.

To assess the normality of the data distribution, the Shapiro–Wilk W test was applied. The results are summarized in Table 3. The p values in the table's last column indicate that all analysed variables have p values below the significance threshold of 0.05. Consequently, these variables do not follow a normal distribution. Therefore, nonparametric tests are used to verify the established hypotheses.

Table 3. Results of the Shapiro–Wilk W test for analysing the normality of variables

Variable	Shapiro–Wilkov W test	p value
Perceived ease of use	0.7900	0.0000
Consumer intent	0.8518	0.0000
Internal subjective standards	0.9269	0.0000
External subjective standards	0.9484	0.0000

Sources: developed by the authors.

To assess the statistical significance of the relationships between the factors analysed in the hypotheses, the Spearman correlation coefficient was utilized. The results of the analysis for the first hypothesis are presented in Table 4.

Table 4. Spearman's correlation analysis between internal subjective standards and consumer intentions

Variables	Spearman's coefficient	p value
Internal subjective standards Consumer's intention	0.7291	0.0000

Sources: developed by the authors.

By applying the Spearman rank correlation coefficient, Hypothesis 1 was confirmed. It can thus be concluded that there is a statistically significant relationship between consumers' internal subjective standards during the pandemic and their intention to shop online. The p value (0.0000) in this analysis was below the significance level (0.05), and the Spearman rank correlation coefficient indicated a strong positive relationship ($r_s = 0.7291$).

Table 5. Spearman's correlation analysis between external subjective standards and consumer intentions

Variables	Spearman's coefficient	p value
External subjective standards	0.4713	0.0000
Consumer's intention		

Sources: developed by the authors.

The results of testing Hypothesis 2 revealed a statistically significant relationship between the analysed factors. On the basis of the p value (0.0000), which is below the significance threshold of 0.05, it can be concluded that consumers' external subjective standards during the pandemic are significantly associated with their intent to shop online. The Spearman rank correlation coefficient ($r_s = 0.4713$) indicates a moderate positive relationship between the variables.

Table 6. Spearman's correlation analysis between perceived ease of use and consumer intention

Variables	Spearman's coefficient	p value
Perceived ease of use	0.4937	0.0000
Consumer's intention		

Sources: developed by the authors.

Given that the p value is below the significance threshold of 0.05, Hypothesis 3 is supported. This demonstrates a statistically significant relationship between the perceived ease of use of online shopping and consumers' intention to shop online. The Spearman rank correlation coefficient ($r_s = 0.4937$) indicates a moderate positive correlation between the two variables.

5. Discussion. According to the analyses presented in the preceding chapter, this study identified several findings that align with prior scientific research. Substantial empirical evidence in the literature demonstrates that the intention to shop online is significantly influenced by perceived ease of use (Ha, 2020; Cho & Sagynov, 2015). The results of this study confirmed a positive correlation between the perceived ease of use of online shopping during the pandemic and consumers' intention to make online purchases. These findings suggest that during the pandemic, consumers recognized several advantages of online shopping, including convenience, safety, social distancing, broader product selection, and faster purchasing.

The findings of this study are further corroborated by Raza (2021), who reported that perceived helpfulness, ease of use, subjective norms, and the absence of perceived alternatives are positively and significantly associated with online shopping intention. Moreover, fear of COVID-19 has acted as a moderating factor, strengthening the relationships among perceived risk, helpfulness, subjective norms, and consumer attitudes (Zainol Alam et al., 2023). Consistent with these results, studies by Koch et al. (2020), Qi et al. (2021), and Iriani & Andjarwati (2020) also demonstrated a significant relationship between perceived usefulness and ease of use in the context of online shopping decision-making. The findings indicate that perceived usefulness, ease of use, attitudes, subjective norms, and perceived behavioural control have positive and significant effects on consumers' purchase intentions (Rehman et al., 2019; Ramadania & Braridwan, 2019).

The correlation analysis in this study further confirmed a positive relationship between social influences—such as the opinions of family and friends—and publicly available information on the current economic situation and consumers' intention to shop online. The prevailing fear and anxiety caused by the pandemic appear to have prompted individuals to adjust their behaviour on the basis of the attitudes and recommendations of their social circles or the regulations and guidelines disseminated by authorities to control the spread of COVID-19.

Hall (2020) supports these findings, suggesting that fear and panic can trigger a domino effect in society. This phenomenon, as defined by Coulter et al. (2003), significantly influences shopping behaviour because consumer decisions often rely on information gathered from reference groups, including friends, family, and colleagues. The analysis results further indicate a relationship between subjective standards—both internal and external—and the intention to make online purchases. These findings align partially with the conclusions of Koch et al. (2020), who reported that internal subjective standards positively correlate with consumer intention. However, in contrast to this study's findings, Koch et al. (2020) reported no significant relationship between external subjective standards and consumer intention.

6. Conclusions. In contemporary times, businesses increasingly recognize the importance of establishing a robust digital presence. Numerous studies have confirmed that the COVID-19 pandemic has fundamentally

altered consumers' shopping behaviour. These behavioural changes are highly likely to persist even after the pandemic subsides. E-commerce trends have consistently evolved during periods of heightened activity, demonstrating sustained growth, particularly during holiday seasons. According to eMarketer (2020), expenditures generally remain steady throughout the first three quarters of the year, followed by a sharp increase in the fourth quarter (Q4). Notably, post-Q4 e-commerce expenditures do not revert to previous levels but instead establish a new elevated baseline for subsequent years.

This phenomenon highlights that, with each holiday season, consumers adopt increasingly sophisticated online shopping practices. Once a new group of consumers engages in this behaviour, their online shopping habits often undergo permanent transformation. As a result of the pandemic, consumers are further adapting their shopping behaviour, contributing significantly to the growth and expansion of e-commerce. This study confirmed a strong relationship between perceived usefulness, internal and external subjective norms, and consumers' intention to shop online.

The findings suggest that the transition to digital commerce is indispensable for businesses, particularly during periods of government-mandated restrictions on movement and social distancing. Owing to perceived benefits such as convenience, safety, and social pressure, consumers are shifting from traditional retail stores to online platforms. These insights are practically valuable for marketers, who can develop strategies emphasizing the efficiency, convenience, and safety of online shopping. Additionally, the findings of this study have important policy implications. Policymakers could leverage these results to support SMEs in transitioning to e-commerce platforms by providing subsidies, digital literacy initiatives, or infrastructure development programs.

However, this study is not without limitations, particularly in terms of the research sample structure. Consequently, the results may not be generalizable to the entire population of Slovakia. A more diverse and representative sample across various demographics would yield broader insights. Furthermore, the findings are based on cross-sectional data and reflect consumer behaviour under the unique conditions of the COVID-19 pandemic. Longitudinal studies are needed to understand the enduring changes in shopping habits during the postpandemic recovery phase.

The self-reported nature of the data may also introduce biases, such as overreporting online shopping behaviours or underreporting barriers to adoption. Additionally, reliance on descriptive and inferential statistical methods may limit the depth of insights. Future research could utilize advanced techniques, such as structural equation modelling (SEM), to uncover more nuanced relationships between variables.

Further investigations could explore additional factors influencing the development of e-commerce. For example, future studies might examine how emerging technologies, such as artificial intelligence and augmented reality, influence consumer decision-making and the operational efficiency of e-commerce platforms. On a global scale, analysing the impact of the COVID-19 pandemic on e-commerce across different countries or regions and exploring how economic, social, and health-related factors shape consumer shopping behaviour would be valuable. Comparative studies could reveal global trends as well as cultural and regional nuances in e-commerce adoption.

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Онлайн-поведінка споживачів у Словаччині під час пандемії COVID-19**Марія Олеарова**, Університет Прешова, Словачька Республіка**Радован Бацик**, Університет Прешова, Словачька Республіка**Барбора Яннаконе**, Технічний університет Кошице, Словачька Республіка**Штефан Гавура**, Технічний університет Кошице, Словачька Республіка

У статті розглянуто вплив пандемії COVID-19 на поведінку споживачів у контексті онлайн-шопінгу, що став важливим елементом сучасної торгівлі. Зазначено, що міста та регіони, зокрема у Словаччині, впроваджували різноманітні заходи для стримування поширення коронавірусу, такі як обмеження пересування, закриття традиційних магазинів і соціальне дистанціювання. Це спричинило суттєві зміни у споживчих звичках, оскільки зростаючий ризик зараження спонукав споживачів уникати громадських місць і переходити до електронної комерції як безпечнішого та зручнішого способу здійснення покупок. У цьому контексті досліджено фактори, що впливають на наміри споживачів використовувати онлайн-платформи для здійснення покупок. Особливу увагу приділено таким аспектам, як суб'єктивні стандарти, які визначають вплив соціального середовища на прийняття рішень, та сприйнята корисність, що відображає оцінку зручності й ефективності використання електронних платформ. На основі даних опитування 250 споживачів у Словаччині проведено кореляційний аналіз із застосуванням рангового коефіцієнта кореляції Спірмена. Встановлено позитивний зв'язок між внутрішніми (особисті переконання) і зовнішніми (вплив друзів, родичів, суспільства) суб'єктивними стандартами та схильністю до здійснення онлайн-покупок. Результати також підкреслюють значний вплив сприйнятої корисності послуг електронної комерції на стимулювання онлайн-активності споживачів, особливо у період дії карантинних обмежень, коли доступ до традиційних магазинів був обмежений. Отримані дані мають вагомe значення для підприємств електронної комерції, оскільки вони дозволяють краще зрозуміти поведінку споживачів і адаптувати маркетингові стратегії до актуальних умов. Підвищення рівня комфорту, безпеки та простоти використання онлайн-платформ може стати ключовим чинником успішного залучення клієнтів. Автори підкреслюють, що перехід до цифрової комерції є важливим елементом адаптації бізнесу в умовах пандемії та невизначеності. У висновках узагальнено основні результати дослідження, зазначено його обмеження та запропоновано напрями для подальшого вивчення впливу кризи на поведінку споживачів, включаючи аналіз довгострокових змін у їхніх перевагах та практиках.

Ключові слова: електронна комерція; суб'єктивна норма; сприйнята корисність; споживча поведінка; COVID-19.