

# When fear is a factor: consumer behavior changes during the pandemic

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## Keywords

Consumer behavior; COVID-19; Fear; Pandemic; and Risk

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## Abstract:

*This paper focuses on the current topic of consumer behavior changes influenced by the COVID-19 pandemic. The purpose of the research was to explore how the factor of fear affected consumers and analyze their response to shopping habits. Design/methodology of the research was based on a survey conducted on a sample of 252 consumers in Slovak republic. Findings in the study map the individual changes in consumer behavior that occurred during the pandemic with special focus on changes related to panic buying. Up to 82% of consumers reported an increase in amount of goods they bought in 2020, however, this form of panic buying significantly decreased in later years of the pandemic. Results show that male consumers were less likely to experience panic buying, however, they men expressed concerns about the negative impacts of the pandemic on the state's economy to a greater extent than women. The majority of consumers were concerned by health threats and related risks, but it was discovered that they feared more for others than themselves which resulted in an increased tendency to prefer unaccompanied shopping. Practical implications of this research provide guidelines for businesses that need to adjust their strategies according to the new reality in the post-pandemic era. Findings can also provide foundation for further risk management measures that companies need to consider should a similar situation arise again in the future to be better prepared and to design a flexible response.*

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## Introduction

Nowadays the world is gradually returning to its normal operations after several years of living in societies marked by the pandemic of COVID-19 virus. Since the outbreak of the pandemic many changes were introduced to everyday lives of all people that had the potential to significantly alter their habits and even to remain active after the pandemic have passed. One of the main issues that the pandemic impacted was shopping habits. Therefore, consumer behavior experienced many significant changes. Many studies have already been published on how the consumers reacted to having their shopping patterns altered (Li et al., 2020; Veselovská, 2021; Yang and Chen, 2022). However, very few researchers focused on exploring what aspects of the pandemic were the factors that influenced the consumers and the exact nature of such influence.

Therefore, this research paper aims to fill this research gap. Since the topic of pandemic and consumer behavior changes is quite vast, a partial issue was selected as the main focus of this paper. Dammeyer (2020) reported the panic buying during the early stages of the outbreak stating the fear as the main reason behind this phenomenon. However, there are very few research studies that focused on fear as a cause of other consumer behavior changes and moreover, no studies analyzed its influence during the following years of the pandemic. Therefore, the main aim of this paper was to explore the influence of fear on consumer behavior during the duration of the COVID-19 pandemic.

## Literature review

Nowadays the world is coming to terms with the consequences of the COVID-19 pandemic. Even though the restrictions related to pandemic have mostly been removed in majority of countries

worldwide, the lessons of the pandemic continue to affect entrepreneurs and regular people alike. Since the global outbreak of COVID-19 virus in 2020, the world has changed significantly. One of the most significant changes that was observed almost immediately after the outbreak were the consumer behavior changes in terms of frequency of shop visits and changes in goods amount bought. The sudden outbreak of COVID-19 virus also caused frequent incidents of large-scale material panic buying, resulting in imbalance in supply and demand of goods and threatening social stability (Chen et al., 2022). The effect of fear accompanied with the outbreak of COVID-19 resulted in the emerging panic buying behavior (Alfoqahaa, 2023). Behavior related to shopping that occurs as a reaction to unprecedented events is referred to as "panic buying". This term includes irrationality and lack of control. However, panic buying is not always attributed to people who are psychologically weak (Ntontis et al., 2022). It can be experienced by people who are under extreme duress at the time or are facing unprecedented threats to their very existence. The COVID-19 pandemic falls to both of those categories. Any unpredicted alternations in shopping behavior patterns can negatively affect the supply and consequently entrepreneurs' ability to provide products to all consumers with sufficient demand. Therefore, panic buying should be avoided to not cause supply chain disruptions and consequent shortages and can result in even more intensive fear in consumers. Fear is assumed to be the main reason for the emergence of panic buying behavior and it can be broken down to its individual dimensions such as fear of infection, fear of food scarcity, fear of job loss, and fear of crime (Alfoqahaa, 2023; Beitelspacher et al., 2012; Aydin et al., 2019).

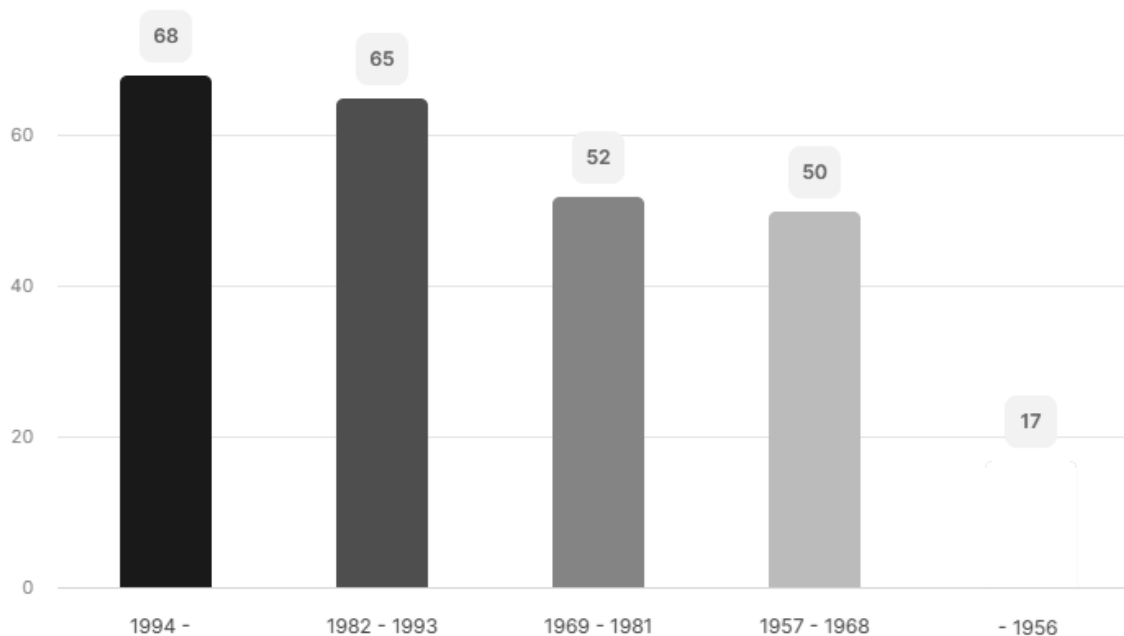
Ali et al. (2022) discovered that internal and external factors such as rumors, government strategies, fear and anxiety and health security significantly affect consumers' panic buying behaviors. These findings also related panic buying with internal and external consequences that affected all consumers such as price hike, shortage of supply of products, dissatisfaction of consumers and increase in utility (benefit) of the products but not on consumer's budget. Rahman et al. (2022) also examined supply chains that suffered from panic buying-related instabilities and multiple disruptions of supply, demand, and capacity during the pandemic. Any major alterations in demand can cause a chain reaction on the supply side which can result in shortages. When consumers take notice of lack of some products' stocks, they immediately react by buying more when available, even hoarding, thus deepening the supply problems. Under normal conditions suppliers need time to react and adjust. However, in extreme situations such as COVID-19 pandemic, even the best prepared suppliers are unable to react flexibly, therefore the crisis prolongs. This vicious circle prolongs the problem and even influences the fear of consumers.

Many authors contribute fear as a major factor to media coverage of pandemic related stories and risk examinations (Rajkumar, 2022; Chen et al., 2022; He and Hu, 2022). Therefore, mitigating the negative influence of media can contribute to decrease of fear, however it cannot completely eliminate it. Other than panic buying the fear that consumers experienced resulted in alternations of other habits such as frequency of visiting shops or preference to visit them unaccompanied (Haroon and Rizvi, 2020). The COVID-19 pandemic created unprecedented circumstances and the response of both sellers and consumers was extreme. Since many scientists believe that such extreme situations can be repeated in the future, it is necessary to analyze the changes that occurred during the pandemic to be better prepared to respond flexibly.

### Research methodology

The COVID-19 pandemic introduces various changes in consumer behavior as early as the beginning of year 2020 and continued to do so significantly during the following 2 years. In order to analyze in detail its influences a survey was conducted during the period of October 2022 and January 2023 on a sample of consumers. In total 252 consumers from Slovak republic participated on the survey. The structure of the sample file is provided in Figure 1. Over one quarter of consumers (26.98%) who participated in the survey were 29 years old or younger. Consumers between 30 and 41 years old contributed 25.79% of the sample file. Up to 20.63% of consumers were between 42 and 54 years old. Similar contribution to sample file (19.84%) had the consumers who were between 55 and 66 years old. Older consumers represented 6.74% of the sample file. The representativeness of sample file was verified according to criterion of age of consumers using the Pearson Chi-squared test.

Figure 1 Structure of sample file based on age



Source: Own elaboration.

Sample file consisted of 33.3% male consumers who are the person who did most of the shopping for their household or they lived alone. However, the majority of consumers who participated on the survey were female (66.7%) since they were in charge of doing the main shopping for their families. Furthermore, the consumers were asked to provide other characteristics such as their household income, employment status and level of education. Table 1 shows the structure of sample file based on education and gender of consumers. The majority of consumers in sample file were women who completed higher education (41.27%). More than half of the men in sample file completed secondary education (55.96%).

Table 1 Structure of sample file – gender and education

Consumers	elementary	high school	university	Total
female	1.19%	24.21%	41.27%	66.67%
male	2.78%	18.65%	11.90%	33.33%
Total	3.97%	42.86%	53.17%	100.00%

Source: Own elaboration.

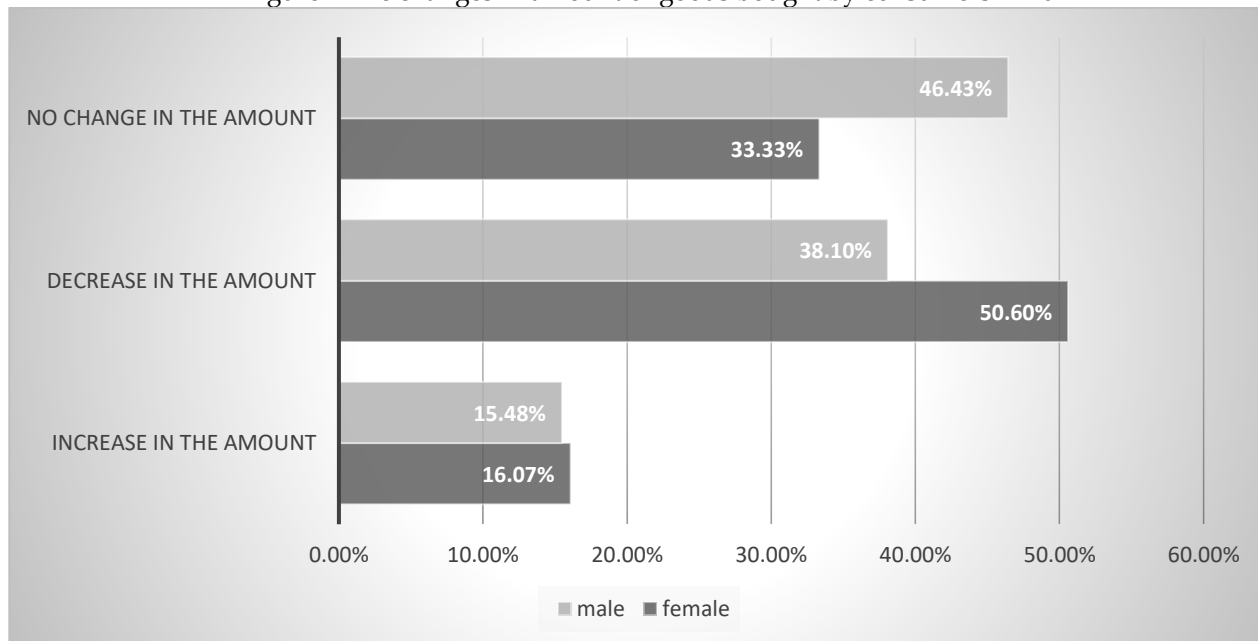
This sample file was used to examine the opinions of consumers on pandemic and to describe the changes in their shopping habits due to the pandemic of COVID-19. The collected data created a complex image of how the pandemic altered the business environment through the lens of consumers.

## Results

The results of the survey clearly show changes in consumers' opinions and habits during the years of COVID-19 pandemic. The initial change that was observed during the first days of the outbreak was an increase in the amount of bought products of everyday consumption. Up to 82% of consumers reported such an increase in 2020. However, this form of panic-buying significantly decreased soon. The majority of consumers even decreased the amount of goods they bought in 2021 and 2022. Figure 2 shows the

corresponding data structured by gender. The results clearly prove that no massive panic-buying occurred during the later stages of the COVID-19 pandemic. Furthermore, male consumers were less likely to change the amount of goods the bought for themselves and/or their families. These findings indicate the influence of fear as a factor of consumer behavior.

Figure 2 The changes in amount of goods bought by consumers in 2021



Source: Own elaboration.

These findings indicate the influence of fear as a factor of consumer behavior. However, there was one other major factor that needs to be considered that can put these findings in context. During the response of government to the COVID-19 outbreak in Slovak republic was considered quite severe. It included several major lockdowns and other restrictions such as the ban of travelling out of local region. All of these actions influenced consumers' possibilities to visit shops as they had been used to. Table 2 contains data that correlates the frequency of visiting shops and changes in amount of goods bought during the pandemic.

Table 2 Changes in frequency of visiting shops and changes in in amount of goods bought by consumers

Proportion of consumers	more frequent visits to shops	less frequent visits to shops	no change in frequency of visits	Total
increase in the amount	3.97%	9.92%	1.98%	15.87%
decrease in the amount	1.59%	40.48%	4.37%	46.43%
no change in the amount	0.79%	30.16%	6.75%	37.70%
Total	6.35%	80.56%	13.10%	100.00%

Source: Own elaboration.

Since we had already established that consumers significantly changed their habits tendencies during the pandemic, it would be valuable to explore how much of a factor was fear. Consumers were asked to provide data specifically designed for this purpose in the form of their agreement or disagreement with

several statements (Table 3). According to the data nearly half of consumers increased the importance of stockpiling. Only 34.12% of consumers believed that they made their purchase decisions independently of information about the pandemic situation. Up to a quarter of consumers were not aware that they took this information into account in their decisions. Fear can also affect our interest in socializing. It was discovered that nearly a third of consumers preferred to a greater extent unaccompanied shopping during the pandemic. Furthermore, this research explored to what extent consumers perceived their fear of possible negative phenomena caused by the pandemic. First, the level of consumers' fear of harming their own health was examined. Nearly 40% of them expressed a strong response to this statement, with an additional 16.67% also expressed an agreement. Interestingly, we found that consumers were more concerned about the health of other people, as 67.06% of them agreed and only 14.29% disagreed with the related statement. Another important fact that caused concern among consumers was the risk of job loss. This fear turned out to be less significant than it was for health, as only 21.43% of consumers stated that they were worried about being fired from their jobs during the time of COVID-19. The pandemic and the restrictions associated with it also had economic consequences, which had a significant negative impact on the state's economy. Almost half of consumers (46.82%) expressed concerns about the economy and its future development. It is also interesting to observe that approximately 20% of consumers could not express their opinion on the selected statements. In the future, it would be worthwhile to investigate why this was the case, whether these were subconscious changes or whether consumers have not yet considered the fundamental changes in their lives caused by the COVID-19 pandemic.

Table 3 Influence of fear

Statement	Strongly disagree	Disagree	Undecided	Agree	Strongly agree	Total
During the pandemic, I bought goods for stock.	18.65%	12.70%	22.22%	21.43%	25.00%	100.00%
Information about the pandemic situation influenced me when making shopping decisions (when choosing the type of product, quantity, store, time of purchase etc.).	18.25%	15.87%	24.60%	19.05%	22.22%	100.00%
To a greater extent, I prefer unaccompanied shopping.	19.05%	15.08%	19.84%	14.68%	31.35%	100.00%
During the pandemic, I felt worried about my health during the pandemic.	10.71%	13.10%	20.24%	16.67%	39.29%	100.00%
During the pandemic, I felt concerned about the health of others.	8.73%	5.56%	18.65%	22.62%	44.44%	100.00%
During the pandemic, I felt worried about losing my job.	40.08%	17.46%	21.03%	9.13%	12.30%	100.00%
During the pandemic, I felt worried about our country's economy.	18.65%	10.71%	23.81%	19.44%	27.38%	100.00%

Source: Own elaboration.

Provided data on consumers' fears were further explored by correlating them with socio-economic characteristics of consumers. It was discovered that men expressed concerns about the negative impact of the pandemic on the state's economy to a greater extent than women. Moreover, this fear was felt to a greater extent by consumers with higher education. This consumer segment was also more interested in the information about the pandemic situation. In particular, older people disagreed with the statement that explored a lower interest in socializing. It can be concluded that older consumers had a greater need for contact with other people during the pandemic. This is an extremely dangerous finding, as this consumer segment is most exposed to negative health risks during a pandemic. An interesting finding is also that it was rather young consumers who stockpiled goods to a greater extent.



## Discussions and conclusions

The findings of this research prove that fear was a major factor influencing consumer behavior during the pandemic. Consumers were aware of risks related to the virus outbreak and consequently altered their behavior. Li et al. (2022) also reached the same conclusions when conducting similar research in China. Examples from other countries also support this finding (Ntontis et al., 2022; Alfoqahaa, 2022). This study shows that fear can instigate different responses in different people. Male consumers seemed more resilient to panic buying, however, they were equally affected by the threat to health. Duda-Chodak et al. (2020) and Foroudi et al. (2021) also proved that consumers significantly changed the frequency of visiting shops. The rate of consumption has significantly increased when compared before and after the COVID-19 outbreak (Veselovská et al., 2021; Anderson et al., 2020). This can also be contributed to fear. Psychological factors of consumer behavior had been largely downplayed before the outbreak of the COVID-19 pandemic, since very few research studies had focused on this set of factors. However, the pandemic changed since many related risks have been affecting consumers' reactions, especially their fear (Cetina et al., 2012; Di Crosta et al., 2021).

Since fear during the pandemic has been proven a major factor, solutions need to be implemented in order to mitigate its effects. From the point of central government, it is necessary to manage information that is publically available so that no false information or information specifically designed to create negative emotional response would be shared. This measure would significantly contribute to consumers' fear levels which would also mitigate panic buying and other negative alterations of consumer behavior. It was also proven that feeling of safety in shops has become an important factor that consumers are influenced by (Veselovská et al., 2022). Moreover, it proved to be beneficial to carefully promote safety as a decisive factor for consumers. Businesses should implement measures according to the needs of their customers (Zhang and Zhou, 2023; Habib and Hamadneh, 2021; Thomas and Feng, 2021). That has always been a necessity for achieving sustainability (Hudáková, 2013). The new equation for success seems to include factors such as perceived risk and consumer trust.

## Limitations and direction for further research

The research findings are significant since they have potential to provide valuable information to companies who need to learn to again understand their post-pandemic customers. However, the main limitation of this study could be related to its narrow focus. The data was collected only in Slovak republic and therefore, there may exist small differences in opinions of consumers in comparison to other countries. Therefore, the natural extension of this research would be to compare the obtained results to other surveys or to conduct international surveys with similar focus.

## References

- Alfoqahaa, S. (2022) "Fear and panic buying behavior associated with the outbreak of covid-19 pandemic in Palestine," *Explore Business, Technology Opportunities and Challenges After the Covid-19 Pandemic*, pp. 1129–1144. Available at: [https://doi.org/10.1007/978-3-031-08954-1\\_95](https://doi.org/10.1007/978-3-031-08954-1_95).
- Ali, M.R. et al. (2022) "Determinants of panic buying during COVID-19: Causes and consequences," *International Journal of Quality and Service Sciences* [Preprint]. Available at: <https://doi.org/10.1108/ijqss-12-2021-0187>.
- Anderson, R.M. et al. (2020) "How will country-based mitigation measures influence the course of the covid-19 epidemic?" *The Lancet*, 395(10228), pp. 931–934. Available at: [https://doi.org/10.1016/s0140-6736\(20\)30567-5](https://doi.org/10.1016/s0140-6736(20)30567-5).
- Aydin, D. et al. (2019) "The relationship of consumers' compulsive buying behavior with biological rhythm, impulsivity, and fear of missing out," *Biological Rhythm Research*, 52(10), pp. 1514–1522. Available at: <https://doi.org/10.1080/09291016.2019.1654203>.
- Beitelspacher, L.S. et al. (2012) "Exploring consumer privacy concerns and RFID technology: The Impact of Fear Appeals on consumer behaviors," *Journal of Marketing Theory and Practice*, 20(2), pp. 147–160. Available at: <https://doi.org/10.2753/mtp1069-6679200202>.
- Cetina, I., Munthiu, M.-C. and Rădulescu, V. (2012) "Psychological and social factors that influence online consumer behavior," *Procedia - Social and Behavioral Sciences*, 62, pp. 184–188. Available at: <https://doi.org/10.1016/j.sbspro.2012.09.029>.
- Chen, T. et al. (2022) "Identifying emergence process of group panic buying behavior under the COVID-19 pandemic," *Journal of Retailing and Consumer Services*, 67, p. 102970. Available at: <https://doi.org/10.1016/j.jretconser.2022.102970>.

- DiCrosta, A. et al. (2021) "Psychological factors and consumer behavior during the COVID-19 pandemic," *PLOS ONE*, 16(8). Available at: <https://doi.org/10.1371/journal.pone.0256095>.
- Dammeyer, J. (2020) "An explorative study of the individual differences associated with consumer stockpiling during the early stages of the 2020 coronavirus outbreak in Europe," *Personality and Individual Differences*, 167, p. 110263. Available at: <https://doi.org/10.1016/j.paid.2020.110263>.
- Duda-Chodak, A. et al. (2020) "Covid-19 pandemic and food: Present knowledge, risks, consumers fears and safety," *Trends in Food Science & Technology*, 105, pp. 145–160. Available at: <https://doi.org/10.1016/j.tifs.2020.08.020>.
- Foroudi, P., H. Tabaghdehi, S.A. and Marvi, R. (2021) "The gloom of the COVID-19 shock in the hospitality industry: A study of consumer risk perception and adaptive belief in the Dark Cloud of a pandemic," *International Journal of Hospitality Management*, 92, p. 102717. Available at: <https://doi.org/10.1016/j.ijhm.2020.102717>.
- Habib, S. and Hamadneh, N.N. (2021) "Impact of perceived risk on consumers technology acceptance in online grocery adoption amid covid-19 pandemic," *Sustainability*, 13(18), p. 10221. Available at: <https://doi.org/10.3390/su131810221>.
- Haroon, O. and Rizvi, S.A. (2020) "Covid-19: Media coverage and financial markets behavior—a sectoral inquiry," *Journal of Behavioral and Experimental Finance*, 27, p. 100343. Available at: <https://doi.org/10.1016/j.jbef.2020.100343>.
- He, G. and Hu, Z. (2022) "A model of panic buying and workforce under covid-19," *International Journal of Environmental Research and Public Health*, 19(24), p. 16891. Available at: <https://doi.org/10.3390/ijerph192416891>.
- Hudáková, L. (2013). "Sustainable development of business and the integration of sustainable corporate social responsibility into selected managerial functions," *Výkonnost podniku*, 3(1), pp. 68-75.
- Li, J., Hallsworth, A.G. and Coca-Stefaniak, J.A. (2020) "Changing grocery shopping behaviours among Chinese consumers at the outset of the covid-19 outbreak," *Tijdschrift voor Economische en Sociale Geografie*, 111(3), pp. 574–583. Available at: <https://doi.org/10.1111/tesg.12420>.
- Li, J.-B. et al. (2021) "Chinese public's panic buying at the beginning of covid-19 outbreak: The contribution of perceived risk, social media use, and connection with close others," *Current Psychology*, 41(11), pp. 8157–8166. Available at: <https://doi.org/10.1007/s12144-021-02072-0>.
- Ntontis, E. et al. (2022) "Is it really 'panic buying'? public perceptions and experiences of extra buying at the onset of the COVID-19 pandemic," *PLOS ONE*, 17(2). Available at: <https://doi.org/10.1371/journal.pone.0264618>.
- Rahman, T. et al. (2022) "Managing panic buying-related instabilities in supply chains: A covid-19 pandemic perspective," *IFAC-Papers Online*, 55(10), pp. 305–310. Available at: <https://doi.org/10.1016/j.ifacol.2022.09.405>.
- Rajkumar, R.P. (2022) "Do we need media guidelines when reporting on panic buying? an analysis of the content of news reports during the COVID-19 pandemic," *Frontiers in Communication*, 7. Available at: <https://doi.org/10.3389/fcomm.2022.867511>.
- Thomas, M.S. and Feng, Y. (2021) "Consumer risk perception and trusted sources of food safety information during the COVID-19 pandemic," *Food Control*, 130, p. 108279. Available at: <https://doi.org/10.1016/j.foodcont.2021.108279>.
- Veselovská, L. (2021) "Dual quality of products in Europe: A serious problem or a marketing opportunity?" *Total Quality Management & Business Excellence*, 33(9-10), pp. 1146–1163. Available at: <https://doi.org/10.1080/14783363.2021.1940929>.
- Veselovská, L., Závadský, J. and Bartková, L. (2021) "Consumer behavior changes during times of the COVID-19 pandemic: An empirical study on Slovak consumers," *E+M Ekonomie a Management*, 24(2), pp. 136–152. Available at: <https://doi.org/10.15240/tul/001/2021-2-009>.
- Veselovská, L., Hudáková, L. and Bartková, L. (2022) "Feeling of safety: A new important factor influencing consumers?" *Cogent Business & Management*, 9(1). Available at: <https://doi.org/10.1080/23311975.2022.2143007>.
- Yang, C. and Chen, X. (2022) "Factors affecting consumers' purchasing of suboptimal foods during the COVID-19 pandemic," *Agriculture*, 12(1), p. 99. Available at: <https://doi.org/10.3390/agriculture12010099>.
- Zhang, Y. and Zhou, R. (2021) "Promoting social distancing and preventing panic buying during the epidemic of COVID-19: The contributions of people's psychological and behavioural factors," *Journal of Public Health*, 31(2), pp. 187–201. Available at: <https://doi.org/10.1007/s10389-021-01497-y>.