

THE POST-COVID ADAPTATION AND TRANSFORMATION MODEL OF RETAIL FOOD UNITS BASED ON CUSTOMER BEHAVIOUR: WHAT CONSTITUTES THE NEW NORMAL FOR MARKETING MANAGEMENT?

Horváthová, K., Čvirik, M.

Kristína Horváthová / University of Economics in Bratislava, Faculty of Business Management, Department of Management, Slovakia.

Marián Čvirik / University of Economics in Bratislava, Faculty of Commerce, Research Institute of Trade and Sustainable, Business Slovakia. Email: marian.cvirik@euba.sk.

Abstract

The post-COVID period brought not only a change in the way of life but also in business. The aim of the paper is the investigation of possible changes in preferences in the context of retail as well as the identification of key elements of changes in behaviour for the needs of managerial practice. The paper is supported by a primary survey based on 370 respondents. Respondents responded to seven key statements that emerged from the professional literature as possible elements of change that occurred after COVID-19. For data processing, we use a number of statistical methods with an emphasis on descriptive statistics, correspondence analysis, and explanatory factor analysis. The results point to new trends in consumer behaviour to which retail must respond. This is primarily a change in purchase frequency and a change in distribution channels. The results provide not only an expansion of the knowledge base but also direct applications for practice.

Implications for Central European audience: Knowing the customer's needs and way of thinking helps shape the current trend of the new standard. The results will help not only to supplement the knowledge base of the subject matter but also offer knowledge applicable in management with an emphasis on the field of retail in Slovakia. It is possible to state the currently ongoing change and the need to react in terms of distribution management.

Keywords: Covid-19; management; retail; new normal; consumer behaviour

JEL Classification: D91; M10; M31

Introduction

The COVID-19 pandemic can be classified as one of the most significant global events of modern history, which fundamentally changed the functioning of society in several aspects, and its impact can also be identified in customer behaviour, while it extremely affected the lives of consumers and thus retail itself (Sheth, 2020; Di Crosta et al., 2021; Cruz-Cárdenas et al., 2021). Already during the first wave of the pandemic, it was possible to observe

dramatic changes in customer behaviour, such as mass shopping for basic foods, a sudden reduction in the frequency of store visits, and an increased emphasis on safety, hygiene, and minimising physical contact (Čvirik, 2020; 2021). Retail operations (not only in Slovakia) found themselves in a situation that required adaptation – from the introduction of disinfection stations and social distancing rules to the expansion of capacities for online purchases and delivery services (Butt, 2022; Sopha et al., 2022). The pandemic thus indirectly caused the acceleration of the digitisation process of retail and other elements, changing the dynamics of the market as well as the transformation of customer behaviour, which necessarily had to be reflected in their expectations, values, and preferences, which probably persist and further create the image of the company. For example, customers have become accustomed to the convenience offered by the digital channels (Afaq et al., 2023; Kita et al., 2023; Krowicki and Maciejewski, 2023). Retailers trying to meet new needs must think not only about how to innovate their services but also how these innovations fit into the generation of value for the customer. So far, few studies (e. g. Grashuis et al., 2020; Predanócyová et al., 2023; Diaz-Gutierrez et al., 2024; Kita et al., 2024; Titiloye et al., 2024) have investigated the change in retail preferences, and it is also questionable whether this change can be observed. It is also necessary to identify the key determinants of changes that are the driving force behind the dynamics of the current retail trade for the needs of managerial practice. Our effort is to fill this knowledge gap. The aim of the article is the investigation of possible changes in preferences in the context of retail as well as the identification of key elements of changes in behaviour for the needs of managerial practice.

1 Literature review

The COVID-19 pandemic accelerated a new shift in retail consumer behaviour towards a "new normal" of increased digital interactions, concerns for safety, and environmental sensitivity. In fact, the traditional retail has been given over to hybrid approaches that foster contactless, omnichannel, and localised shopping options (Roggeveen & Sethuraman, 2020; Brüggemann & Olbrich, 2023; Adulyasak et al., 2024; Stanca et al., 2025). This new era of retail focuses on using technology to provide security. Donthu and Gustafsson (2020) highlight the substantial impact of COVID-19 on business operations and research, marking a transformative period that accelerated digital transformation in many sectors. Cocco and De Juan-Vigaray (2022) provide a detailed typology of omnichannel retailer activities during COVID-19, highlighting the critical adaptations made to support contactless and localised shopping. Concept of a "new normality" in post-COVID times, emphasising how social and physical distancing have redefined online interactions and digital engagement across sectors (Sato et al., 2023; Bergamo, 2024). In this way, digital transformation for retailers has become the gateway to being competitive in a post-COVID world (Almeida et al., 2020; Bilková et al., 2024). Sim et al. (2021) further specify the role of technology in managing customer data for personalised shopping experiences. Peculiarities associated with the development of e-commerce demonstrate that the periphery needs such channels in the course of the pandemic (Nahiduzzaman et al., 2021; Halibas et al., 2023). Ozdemir et al. (2022) indicate that the COVID-19 circumstance is a good time for innovations of the operating system of the retail chain via the Internet in which e-commerce and platforms are the means of survival. At first, sustainability and localism have increased a lot within the market, with a greater and greater number of consumers attempting to focus on local business and sustainability (Bansal et al., 2021). Cahapay (2021) underscores the importance of inclusivity post-COVID, especially for vulnerable populations, by advocating for equal access to digital retail spaces,

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aligning with the new trend of digital equity. Health and safety are considered the most important factors that keep on altering consumer expectations (Čvirik et al., 2023), as evidenced by the rise in the use of contactless and self-service checkout. When retailers overtly show they care more about hygiene and safety, consumers generally seem to trust such retailers more and become more loyal (Elnahla & Neilson, 2021; Goić et al., 2021; Rossetti et al., 2022; Duong et al., 2024). The significance of shifts in consumer behaviour within the retail sector is also evident in the growing emphasis on health consciousness (Čvirik, 2020; 2021) and the demand for health-promoting products (Imrovič et al., 2022; Horská et al., 2023; Arcese et al., 2024). These developments must be reflected as an emerging trend in the formulation of post-COVID retail business models.

As a matter of fact, increased contactless payments are actually a reflection of a new trend in which consumers are demanding minimum contact while shopping in physical stores (Khayru, 2021; Gao et al., 2022). Le (2021) explores how fintech solutions have become a new standard, fostering increased consumer loyalty and trust as contactless payments rise in popularity post-COVID. Changing consumer behaviours influence changing patterns of urban retail as well as decision-making in marketing management (Mason et al., 2021; Anderson et al., 2022). Pantano et al. (2020) describe challenges and opportunities that retailers face during the pandemic; they were put under enormous pressure to adapt in innovative ways to the expectations of consumers in increasingly ambiguous times. The role of retail in urban life is an emerging issue in the post-COVID world, where local shopping and community-oriented retail spaces would inspire new for. Cocco and De Juan-Vigaray (2022) discuss strategies to enhance customer satisfaction in omnichannel environments, which align with the post-COVID trend towards seamless shopping experiences. It has, in the main, propelled consumer behavioural change in a post-COVID retail environment that is digital, local, and inclusive. In this "new normal," retailers are very likely to thrive if they can adapt by improving digital infrastructure to support sustainable practices and consumers' safety first. These trends are expected to continue and transform retail into a more flexible, resilient, and consumer-centric sector. Brusset (2022) emphasises the importance of building resilience in retail through adaptive marketing and operational strategies, a key to navigating post-COVID challenges.

On the basis of the above, two research questions (RQ) arise:

- **RQ1:** How can the perceived change in consumer shopping behaviour be characterised in the context of retail unit preference in the post-COVID era?
- **RQ2:** How can the key factors of change in consumer behaviour be characterised in the studied geographic location?

2 Methodology

The article is supported by primary research. 370 respondents took part in the survey. In terms of the investigated locality and due to significant migration, it was not possible to clearly specify the size of the population; therefore, we used a general formula for determining the error rate of the sample based on its size. It can be concluded that the error rate of the sample at 95% confidence will be within $\pm 5\%$, which is more than acceptable. The sample consisted of respondents from 16 to 73 years old, who represent an active purchasing power. In the

sample, 57.6% of women were represented, which reflects the specification of the given geographic location and the higher level of representation of women in the role of buyers (Tarka et al., 2022; Trembošová et al., 2021).

We use several philosophical, heuristic, and mathematical-statistical methods in our paper. From the point of view of mathematical-statistical methods, we use elements of generic descriptive statistics, the aim of which is to point out the situation in the basic set (Coolidge, 2021; Ölveczká et al., 2024). We use correspondence analysis, the aim of which is to visually indicate possible relationships between variables in our case in a two-dimensional space (Greenacre, 2010). To investigate the connections between variables, we use a modern graphic display called a heatmap, which will provide a better overview of correlation coefficients (Michálková et al., 2023). We use exploratory factor analysis (EFA) to learn latent variables. This method has its assumptions, while it is recommended that the Kaiser-Meyer-Olkin test (KMO test) be above 0.6 and the Bartlett's test should be significant, i.e., the p-value should be below the alpha level (usually 0.05) (Moon et al., 2018). It is necessary to use a specific metric when calculating the matrix, since it is ordinal data, and in this context, it is appropriate to use the polychoric correlation matrix (Rogers, 2021). To prove the reliability of the identified factors, it is advisable to use, for example, Cronbach's alpha, which represents the reliability estimation coefficient and should reach values above 0.7 (ideally above 0.8) (Taber, 2018; Bujang et al., 2018). Also, structural equation modelling (SEM) methods point to the suitability of examining fit indices such as Standardised Root Mean Square Residual (SRMR recommended below 0.08) and Comparative Fit Index (CFI recommended above 0.9) (Shi et al., 2022). We use the R software and its packages and add-ons to calculate the results.

As part of the primary survey, we identified a research design based on current studies that present possible elements of change in consumer behaviour in the context of retail. We recorded the research design in Table 1.

Table 1 | Investigated statements and their base

| Code | Statement | Sources |
|------|--|---|
| ST_1 | I buy more food products than before the pandemic | Ben Hassen et al., 2021; Chenarides et al., 2021; Ellison et al., 2021; |
| ST_2 | I spend less money on food than before the pandemic | Ellison et al., 2021; Litton & Beavers, 2021; Ziliak, 2021 |
| ST_3 | I buy groceries less often before the pandemic | Pantano et al., 2020; Chenarides et al., 2021; Gupta & Mukherjee, 2022; Shen et al., 2022; Tyrväinen & Karjaluo, 2022 |
| ST_4 | I buy food more intensively than before the pandemic | Basu & Swaminathan, 2023; Delasay et al., 2022; Tyrväinen & Karjaluo, 2022; Gordon-Wilson, 2022 |
| ST_5 | I have limited the purchases of food products in shopping / business centers | Aday & Aday, 2020; Leone et al., 2020; Chenarides et al., 2021 |
| ST_6 | I shop more often in small stores | Ha et al., 2021; Li & Tang, 2022; Titiloye et al., 2024 |
| ST_7 | I buy food products online more often | Grashuis et al., 2020; Eger et al., 2021; Jensen et al., 2021 |
| ST_8 | I use home delivery of food products more often | Mehrolia et al., 2021; Kaplan et al., 2023; Said et al., 2023 |

Source: Authors' own elaboration

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The presented statements (Table 1) reflect the knowledge base of scientific knowledge, which we use to generate a model of changes in consumer behaviour that marketing managers must reflect on.

3 Results

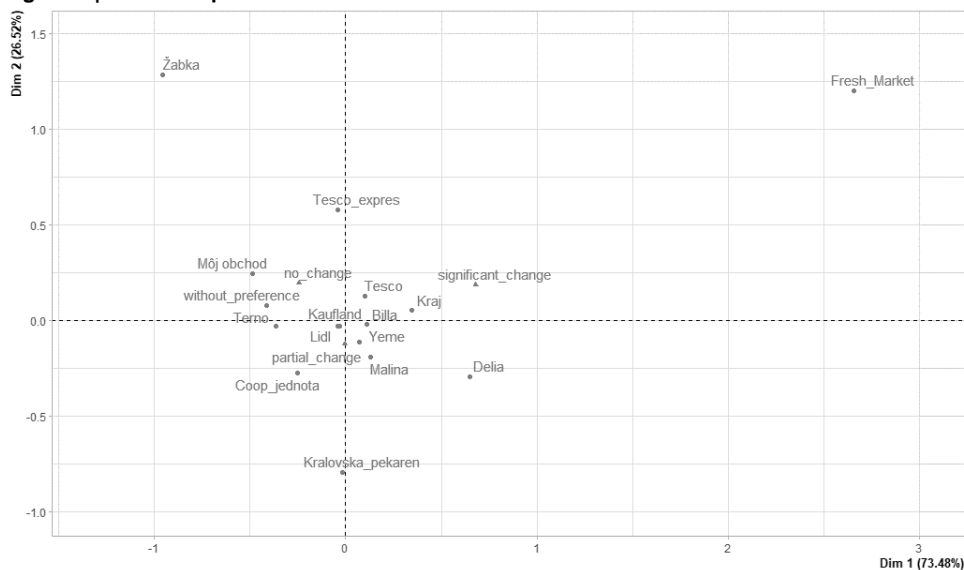
The following section focuses on the results of the primary research, which aims to address the main objective of the study. Due to the broad scope of this objective, the text has been structured according to the formulated research questions.

RQ1: How can the perceived change in consumer shopping behaviour be characterised in the context of retail unit preference in the post-COVID era?

First of all, we investigated the perceived change of consumers and their current purchase preference. It can be stated that 28% of respondents (104 respondents) do not perceive a change in their shopping habits after the COVID-19 pandemic. On the contrary, 11% of respondents perceive a significant change in their shopping habits after the COVID-19 pandemic and thus the creation of a new standard of behaviour. The largest group of respondents ($n = 227 = 61\%$) perceives a partial change in their shopping habits.

The retail chain Lidl dominates the preferences of the surveyed consumers, followed by Billa and Fresh Market. It is appropriate to investigate the connection between the perceived change in shopping habits and the preferences of the retail chain, which can be a determinant and a partial manifestation of loyalty. We carried out the investigation of connections on the basis of CA (correspondence analysis), which, with its graphic visualisation, provides a clear model of behaviour in terms of preference and perceived change (see Figure 1).

Figure 1 | Factor map based on CA



Source: Authors' own processing in R

First of all, it is necessary to note that the factor map is rather indicative in nature and points to possible connections and connections. We can see that the characteristics of those who did not notice a change in their behaviour are probably respondents without a clear preference. They can also be respondents who prefer Mój obchod and Terno or Tesco Express. It follows from the above that respondents preferring rather small-sized food units maintained their behaviour. Partial changes were observed in most supermarkets and hypermarkets. A significant change can probably be identified in connection with the preference for retailing the region. However, it should be emphasised that the results are rather ambiguous and point to a direction rather than a direct output. However, it can be concluded that the majority of respondents perceive a certain change in their purchasing and consumption behaviour, so it is appropriate to identify the key elements of the change.

RQ2: How can the key factors of change in consumer behaviour be characterised in the studied geographic location?

To answer the research question, we first of all identified the degree of agreement for statements orientated to aspects of possible change identified on the basis of professional literature. Respondents responded to individual statements on a five-point Likert scale, with 1 representing absolute disagreement and 5 representing absolute agreement. We recorded the results of descriptive statistics for individual statements in Table 2.

Table 2 | Generic results of behavioural change

| Statement | Valid | Missing | Median | Mean | Std. Deviation | Minimum | Maximum |
|-----------|-------|---------|--------|------|----------------|---------|---------|
| ST_1 | 370 | 0 | 3.000 | 3.49 | 1.36 | 1 | 5 |
| ST_2 | 370 | 0 | 4.000 | 3.60 | 1.30 | 1 | 5 |
| ST_3 | 370 | 0 | 3.000 | 3.32 | 1.26 | 1 | 5 |
| ST_4 | 370 | 0 | 3.000 | 3.43 | 1.25 | 1 | 5 |
| ST_5 | 370 | 0 | 3.000 | 3.32 | 1.25 | 1 | 5 |
| ST_6 | 370 | 0 | 3.000 | 3.31 | 1.25 | 1 | 5 |
| ST_7 | 370 | 0 | 4.000 | 3.61 | 1.32 | 1 | 5 |
| ST_8 | 370 | 0 | 4.000 | 3.58 | 1.37 | 1 | 5 |

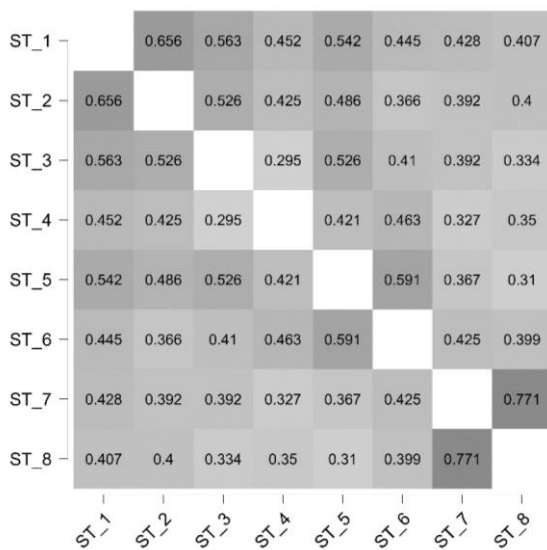
Source: Authors' own elaboration

As can be seen from Table 2, most of the statements are at the level of neutral or rather agreeing reactions of the respondents. From the point of view of the median value, a higher level can be noted for the statements "I spend less money on the purchase of food products than before the pandemic", "I buy food products more often online", and "I use home delivery of food products more often". In simplicity, it can be assumed that there is a higher rate of agreeable opinions, which indicates a change towards saving money, an increase in interest in shopping in the online environment, and the associated increased interest in home delivery, which may indicate an indication of a new paradigm in consumer behaviour. It is also necessary to state that due to the nature of the data, the average is only indicative, but only small differences can be observed. It is also worth noting that in all the investigated statements, the respondents used the full depth of the scale, that is, from 1 to 5 points. This fact indicates a certain diversity in the perceived self-reflection of consumer behaviour. We also examined the possibility of correlation between the statements, as there is

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an assumption that some activities are connected and/or related to each other. We displayed the correlation of individual statements with the help of graphical visualisation in R in the form of a heat map graph (Figure 2).

Figure 2 | Heatmap for the examined statements



Note: Due to the nature of the data, Spearman's correlation coefficient was used

Source: Authors' own processing in R

As can be seen from Graph 2, the reactions to the statements are positively correlated in all cases, but the intensity of the correlations varies. The strongest correlation can be identified as the connection between *ST_7* (I buy food products online more often) and *ST_8* (I use home delivery of food products more often), while this connection is logical.

Differences within responses, as well as considerable variation and correlation between individual statements, suggest the possibility of latent variables. In this context, it is appropriate to use exploratory factor analysis (EFA). First of all, however, it is necessary to verify the statistical assumptions of the use of this analysis. In our case, it can be concluded that the overall MSA evaluated on the basis of the KMO test reaches a value of 0.839, and the Bartlett's test is significant ($p\text{-value} < 0.001$), which indicates the suitability of using this type of analysis. Subsequently, we determined the number of factors based on Kaiser's rule (eigenvalues above one). The results indicate the existence of two factors. As part of the factoring method, we chose principal axis factoring. Base analysis on polychoric correlation matrix. As the initial solution did not bring satisfactory assignment of statements to factors, we used rotation. Given the assumption of connection (correlation) between latent factors, we chose oblique rotation (promax). We recorded the generic EFA results in Table 3.

Table 3 | Factor Loadings

| Statement | Factor 1 | Factor 2 |
|--------------------|----------|----------|
| ST_5 | 0.843 | |
| ST_1 | 0.825 | |
| ST_2 | 0.734 | |
| ST_3 | 0.714 | |
| ST_6 | 0.581 | |
| ST_4 | 0.522 | |
| ST_8 | | 1.045 |
| ST_7 | | 0.686 |
| Eigenvalues | 4.464 | 1.003 |

Note: Only factor loadings greater than 0.4 are displayed
Source: Authors' own processing in R

As the results in Table 3 indicate, the first factor contains statements *ST_1* to *ST_6*, and the second factor contains statements *ST_7* and *ST_8*. The first factor explains 40.1% and the second 21.5% of the variability, so our model explains a total of 61.6% of the variability, which is acceptable. In the context of the semantic analysis of the statements, it can be concluded that the first factor represents a "change in the intensity of purchases", and the second factor represents a "change in the distribution paradigm". These two factors represent a challenge for managers in the context of changing consumer behaviour in the post-COVID era. Of course, it is also necessary to evaluate the quality of the presented model. The factor of change in the intensity of purchases reached a value of 0.840 from the point of view of the reliability estimate measured with the help of Cronbach's alpha, and the factor of change of the distribution paradigm reached a value of 0.860. Based on the above, the reliability of the identified factors can be established. From the point of view of the quality of the overall model, it can be concluded that the model achieves acceptable fit indices (SRMR = 0.045; CFI = 0.935).

4 Discussion

The results indicate a subjectively perceived change in behaviour among the majority of respondents. It can also be expected that the change was also reflected in retail preferences, while the size of the store may be a latent factor. The preference for small stores may be a manifestation of their adaptation of the business model to conditions after COVID-19 (Kita & Čvirik, 2024). Partial changes are also perceived by consumers of large-scale establishments, which may relate to the size and frequency of purchases (Chenarides et al., 2021).

Two key elements are the change in the intensity of purchases and the change in the distribution paradigm. Managers must incorporate the change in the frequency of purchases into their operational and strategic planning. Retail managers must adapt their strategies to respond to post-pandemic changes in customer behaviour, particularly in terms of purchase frequency. This includes optimising supply and planning to account for less frequent but larger purchases that customers often prefer (Mamula Nikolić et al., 2022).

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At the same time, an opportunity can be identified for a hybrid retail model that combines physical stores and e-commerce platforms, with an emphasis on the integration of omnichannel services (Cocco & De-Juan-Vigaray, 2022). An important aspect is also the strengthening and optimisation of distribution with an emphasis on logistics activities. Managers should also thoroughly analyse customer behaviour and personalise offers based on their preferences, which may include loyalty programs or dynamic pricing strategies for both online and offline channels (Jin et al., 2024). It is here that the space for the digitisation trend can be identified with an emphasis on ensuring a high level of customer experience in the digital environment. Awareness of these elements within the business model will contribute to maintaining customer loyalty and improving the competitive position in the post-pandemic retail environment.

The paper also contains certain limits. A certain limit is the characteristic of the sample, which does not directly reflect the nature of the population, which may cause some distortion. It can also be limiting that the respondents evaluated their change of status subjectively (self-evaluation). Another limitation may be the focus on a specific geographical area. In this context, it would be appropriate for future studies to expand to additional regions, which would enable broader coverage of Slovakia and potentially allow for comparisons and identification of regional differences. However, the results offer a basis for management decision-making.

Conclusion

The aim of this article is to examine the possible changes in consumer preferences in the context of the retail environment and to identify the key factors that influence changes in their behaviour, with an emphasis on their practical use in the field of management. The research findings indicate that consumers predominantly perceive a significant change in their behaviour, which has a direct impact on their preferences when choosing retailers. This consumer self-reflection reveals not only a change in their individual shopping habits but also deeper shifts in their value preferences that influence retail strategies.

The results suggest that the post-COVID era has brought two major key elements in the studied area that require adaptation by marketing management. The first is a change in the intensity of purchases, which reflects the need to re-evaluate and optimise logistics processes, including improving the supply system. These adjustments are necessary for retail to meet the changing needs and expectations of customers. The second aspect is the change in the frequency of purchases, which creates new challenges in creating value for customers. This frequency directly affects the way and time when and how customers come into contact with retail brands.

In addition, the research results indicate a significant need for transformation in the field of distribution models. The growing popularity of online purchases and the dynamics of the development of services such as courier and delivery services, or the possibility of ordering and then picking up goods, indicate a change in consumer preferences. These trends not only reflect the need to adapt existing business models but also indicate the emergence of new elements that contribute to the creation of value for customers. In this context, it is necessary for retail stores to expand their offers and streamline processes, thereby meeting the demands of the modern customer who increasingly expects convenience, flexibility, and speed in meeting their needs.

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