

Gender-Specific Differences in Food Consumption Behaviour During and After the COVID-19 Pandemic

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Please cite this paper as:

Stanca, L., Campian, V., Dabija, D.C. and Felea, M., 2024. Gender-Specific Differences in Food Consumption Behaviour During and After the COVID-19 Pandemic. In: R. Pamfilie, V. Dinu, C. Vasiliu, D. Pleşea, L. Tăchiciu eds. 2024. 10th BASIQ International Conference on New Trends in Sustainable Business and Consumption. Almeria, Spain, 6-8 June 2024. Bucharest: Editura ASE, pp. 522-529

DOI: 10.24818/BASIQ/2024/10/029

Abstract

The paper aimed to identify the extent to which women's behaviour differed from that of men during the COVID-19 pandemic and in the New Normal.

In this respect, empirical, questionnaire-based research was conducted among Romanian consumers. The data was analysed using the Mann-Whitney U test, which allowed identifying relevant differences between men and women in their behaviour towards food purchases during the COVID-19 pandemic and in the New Normal.

At the same time, it was possible to identify those relevant features depending on which men made their purchases in contrast to women, the factors that led to the anchoring of the preference for purchases in physical stores versus online. Some behaviours acquired during the pandemic have also been preserved in the New Normal, becoming the benchmark for food purchases.

The study provides valuable insight into the fundamental differences in purchasing behaviour of women and men during and after the pandemic. The study is not limited to the general characteristics of consumer behaviour and purchasing in brick-and-mortar and online, but reveals the differences in the perception of pandemic-induced adaptation to change and how to cope with stressful situations and daily tasks. In addition, the research highlighted the different positionings of men and women in terms of expectations towards the new normality, giving retailers directions to adapt their strategies to the new requirements, preferences, and expectations of customers of both genders.

Research results can lead retailers to develop differentiated gender strategies based on the different expectations that men and women have from traders, from how they communicate with customers and from distinct perceptions related to the complexity of product information or quality standards of services.

Keywords

COVID-19 pandemic, New Normal, men, women, Mann-Whitney U test, foodstuff, consumer behaviour.

DOI:10.24818/BASIQ/2024/10/029

Introduction

The COVID-19 pandemic substantially changed preferences, attitudes, behaviour, and buying patterns among consumers. Consumers reacted differently to health restrictions and new rules for food purchases depending on personal beliefs, affiliation, knowledge, age, home, education, or gender. While for some consumers, purchases of food and other basic supplies for daily living were easy and developed according to similar patterns as before the pandemic, for other consumers, simple contact with any foreign person induced restraint, fear, and the need to seek protection (Shamim, Ahmad and Alam, 2021). Of course, men highlighted different behaviours compared to women; their attitudes and preferences vary strongly.

Previous research has highlighted consumer behaviours towards food purchases and the preferred ways in which they were carried out during the COVID-19 pandemic and in the New Normal. Still, research highlighting comparative behavioural buying patterns of males versus females during the COVID-19 pandemic versus the New Normal is quite rare (Reisch et al., 2021). To overcome this gap, this research aims to highlight through the Mann-Whitney U test the behavioural differences of men versus women regarding food purchasing patterns during the COVID-19 pandemic in the New Normal. In this respect, the authors resorted to questionnaire-based quantitative research for respondents of an emerging market severely hit by the COVID-19 pandemic, which generated a substantial shift towards online food acquisitions, where such studies are rare.

The originality of the paper lies in the valuable insight into the fundamental differences in women's and men's purchasing behaviour during and after the pandemic. However, the study is not limited to general characteristics of online and physical consumption and purchasing behaviour, but also reveals differences in adaptation to pandemic-induced changes, as well as coping with stressful situations and daily tasks. In addition, the research highlights the different attitudes of men and women regarding expectations towards the New Normal. It provides retailers with directions to follow in order to adapt their strategies to the new demands, preferences, and needs of customers of both genders.

The paper is structured as follows: Section 1 presents the literature review on the topic, highlighting similar studies that have dealt with the shopping behaviour, preferences, and attitudes of males and females during the COVID-19 pandemic and in the New Normal, while Section 2 presents the research methodology. The paper continues in Section 3 with the presentation of results, while Section 4 discusses the findings. The paper ends with conclusions, consisting of theoretical contributions, managerial implications, limitations, and future research perspectives.

Review of the scientific literature

The COVID-19 pandemic has led consumers to adapt to the new situation imposed by the health crisis, change their consumption behaviour, and reassess their needs and habits (Komonen and Seisto, 2022). The pandemic context altered and disrupted daily routines and led to new purchasing behaviours (Mason et al., 2020; Punitha, Jeronsia and Saranya, 2023), exacerbating at the same time other entrenched behaviours, such as preference for online deliveries, digital entertainment consumption, or even telemedicine (Kirk and Rifkin, 2020).

Affected differently by the changes caused by the pandemic, several studies have shown that the pandemic has had a stronger impact on women than on men (Stevens, 2020; Croda and Grossbard, 2021), social influences affecting women more as they generally have greater responsibility in the household and especially related to family nutrition, compared to men (Rana et al., 2021; Ben Hassen et al., 2022). Thus, because of the gender differences and roles that women and men have in the household or at work, the effects and influence of the COVID-19 pandemic on consumer behaviour and purchasing decisions (Qaiser et al., 2023) must be analysed.

In the research carried out by Gu et al. (2021) in relation to the changes in the consumption behaviour of individuals and the context of online purchases, the authors highlighted the important experience gained by those who opted for this way of shopping and the fact that online purchases led to new habits and motivations.

Studies (Hesham, Riadh and Sihem, 2021; Awal et al., 2023) have shown gender differences in online shopping. Thus, men were more open to this type of purchase and electronic payments (Budden et al., 2022). On the other hand, women have been intensely concerned about the safety of online shopping and privacy issues, leading to a certain degree of scepticism and diminished confidence in online shopping (Kanwal et al., 2022). Another argument that supports the willingness of men to shop online is related to their previous experience with this type of purchase, which made male consumers more loyal and open to online shopping (Boustani, Sayegh and Boustany, 2022). Also, before the pandemic, men made regular online purchases of food and non-food products and ordered food at home more often than female consumers (Diaz-Gutierrez, Mohammadi-Mavi and Ranjbari, 2023). By purchasing online, women have shown interest in other aspects as well, not just in the products themselves as men do. Women have expectations regarding the complexity of the information they can receive about the products, or the standards related to the quality of the services offered by the stores (Boustani, Sayegh and Boustany, 2022).

Studies have shown that consumers will continue to make online purchases even after the end of the pandemic (Damais, 2020). During the pandemic, individuals experimented with new ways of shopping and

considered how these changes could become the new norm in shopping, thus impacting the future (Koslow et al., 2021).

Research Methodology

Quantitative research was used through a questionnaire to highlight the extent to which women's behaviour differed from men during the COVID-19 pandemic and in the New Normal. It was applied in 2023 among consumers in an emerging market, Romania. This market was chosen because the COVID-19 pandemic created major disruptions in the supply of food stores, with Romanians highlighting a hoarding behaviour at the onset of the pandemic, creating important food stocks in impressive quantities, and thus creating large ruptures in food supply (Roşu et al., 2021). Of course, Romanians later preferred online food purchases, highlighting an increased capacity to adapt to the pandemic (Petrescu-Mag et al., 2020). After the pandemic, many consumers resumed their old habits of purchasing food from physical stores. Still, a significant part of them continued to buy them online (Demyen and Tănase, 2023).

The sampling was of convenience; the questionnaire was distributed randomly by the authors on various social networks and online platforms, as well as to friends and acquaintances. In total, 1068 responses were collected, of which 420 were women and 648 men. 85% of respondents came from urban areas and 15% from rural regions. 65% of the respondents were Millennials, and 35% were part of Generation Z. The questionnaire statements were formulated on a five-step Likert scale (total agreement-disagreement). Their participation was voluntary, apart from responses to the questionnaire's statements, indicating gender, age, income, social status, and education. The collected data were subjected to various statistical tests, verifying their reliability, validity, and internal consistency (Culic, 2004; Brown, 2006; Enachescu, 2009). The values obtained on the totality of the questionnaire items (0.986 Cronbach Alpha coefficient) allowed further testing to assess the significance of the differences between the independent groups considered: men versus women.

In conducting this analysis, the non-parametric inferential test **Mann-Whitney U** was used, which allowed the study of the responses regarding attributes and factors among the different segments of respondents (men versus women). The analysis involved testing respondents' behaviour by applying the Kappa test, which showed significant statistical significance between women and men. The result of the Kappa test ($p < 0.001$) and the values obtained ($k = 0.102$; $Z = 139.138$) indicate that the respondents showed different behaviours, their resilience being different, and their behaviour of purchasing food during the COVID-19 pandemic is different from that of the New Normal. The moderate level of Kappa values suggests that the drastic situations to which respondents were exposed generated different reactions regarding food purchases, and the degree of resilience was highlighted.

At the same time, the Friedman test was applied to the totality of items that measure the buying attitude during the COVID-19 pandemic and in the New Normal. The results show strong statistical significance (Chi-Square=10768,571, $p = 0,000$), suggesting that respondents showed adaptive and resilient behaviour regarding food purchases during the two periods.

Results

The application of the Mann-Whitney U test revealed no significant differences in the mean order values between men and women, both in terms of the period during the pandemic and the one after the COVID-19 pandemic. However, there is a significant difference in the average number of orders made by men and women during the two periods. Women have a higher average number of orders compared to men (Table no. 1).

Table no. 1. Application of the Mann-Whitney U test

Number of orders ...		Mean	St.D.	St.E.	95% Con.Int.		Max	Mann-Whitney U	
					-15%	+15%		Z	p-value
During the pandemic	Male	42,61	226,053	11,030	20,93	64,29	3500	123298	0,010
	Fem	26,17	123,652	4,861	16,62	35,71	1000		
In the New Normal	Male	31,08	127,542	6,231	18,84	43,33	1000	117731	0,000
	Fem	16,28	89,103	3,500	9,41	23,16	1200		

Note: Male: 420 respondents; Fem (female): 648 respondents; St.D.: Standard Deviation; St.E.: Standard Error; 95% Con.Int.: 95% Confidence Interval for the Mean; Minimum Value: 0 for all indicators.

The analysis continued by testing the extent to which the respondents' gender influenced their purchasing behaviour during the COVID-19 pandemic (Table No. 1) and the New Normal (Table No. 2).

According to the results of the Wald-Wolfowitz test, significant differences are observed between the maximum values of purchases made by men and women, both during the pandemic ($Z=29,553$, $p\text{-value}=0,000$), as well as in the New Normal ($Z=29,425$, $p\text{-value}=0,000$). This suggests that significant variations exist between the maximum level of transactions carried out by the two genres, both during the pandemic and in the New Normal. Regarding the number of orders, the results of the Wald-Wolfowitz test show that there are significant differences between the two genders both during the pandemic ($Z = 30,244$, $p\text{-value}=0,000$) as well as later ($Z = 30,376$, $p\text{-value}=0,000$). Women had a more pronounced tendency to place more orders than men, regardless of pandemic circumstances, wherein the differences concern both the maximum values of purchases and their number.

At the same time, significant variations in the minimum and maximum income made by women and men are also noted ($Z=26,629$, $p\text{-value}=0,000$). This result can be interpreted as a reflection of existing differences in income distribution between the two genders. Thus, it can be concluded that there are significant differences in purchasing behaviour between men and women, especially regarding the number of orders and the value of transactions. Therefore, it can be considered that gender and context-specific factors influenced the way men and women approached shopping during the COVID-19 pandemic (Table no. 1) in the New Normal (Table no. 2).

Table no. 2. Application of the Mann-Whitney U test during the COVID-19 pandemic

During the COVID-19 pandemic...		Mean	St.D.	St.E.	95% Con.I.		Mann-Whitney U	
					-15%	+15%	Z	p-value
... I quickly adapted to changes.	Male	3,85	1,030	0,050	3,75	3,94	112669	0,000
	Fem.	3,49	1,137	0,045	3,41	3,58		
... I relied on my previous experiences when making purchases.	Male	4,25	1,071	0,052	3,39	3,60	128218,5	0,048
	Fem.	3,38	1,134	0,045	3,29	3,46		
... I was able to face all the challenges.	Male	4,25	1,018	0,050	3,86	4,06	126,914	0,049
	Fem.	3,85	1,014	0,040	3,77	3,93		
... past successes gave me the confidence to move on.	Male	3,99	0,946	0,046	3,79	3,97	126,425	0,040
	Fem.	3,75	0,989	0,039	3,68	3,83		
... I managed to cope well with stress.	Male	4,07	0,989	0,048	3,98	4,17	114,835	0,000
	Fem.	3,75	1,124	0,044	3,67	3,84		
... I've always looked on the bright side.	Male	3,89	1,071	0,052	3,79	4,00	115,081	0,000
	Fem.	3,26	1,196	0,047	3,47	3,65		
... I recovered quickly if I was sick.	Male	3,93	0,987	0,048	3,84	4,03	119,316	0,000
	Fem.	3,40	1,071	0,042	3,61	3,78		
... I could act rationally and think freely, even under pressure.	Male	3,99	0,986	0,048	3,89	4,08	119563	0,000
	Fem.	3,37	1,048	0,041	3,68	3,85		
... I looked at the positive side of things.	Male	3,98	0,994	0,048	3,88	4,07	117,901	0,000
	Fem.	3,17	1,104	0,043	3,62	3,79		
... I tried to find the right solution for every situation.	Male	4,15	0,898	0,044	4,06	4,24	127,622	0,006
	Fem.	3,85	0,928	0,036	3,97	4,12		
... I was able to achieve my goals no matter what obstacles.	Male	3,86	1,015	0,050	3,76	3,96	131,011	0,028
	Fem.	3,08	0,996	0,039	3,73	3,88		
... I was not discouraged by the failures.	Male	3,91	0,976	0,048	3,82	4,01	122,741	0,005
	Fem.	3,37	1,044	0,041	3,65	3,81		
... I managed to cope with unpleasant situations.	Male	4,03	0,899	0,044	3,94	4,11	127,797	0,007
	Fem.	3,49	0,970	0,038	3,83	3,98		
... I bought the food needed for everyday life online.	Male	2,75	1,334	0,065	2,32	2,58	122,312	0,003
	Fem.	2,22	1,324	0,052	2,11	2,32		
... I have often turned to the help of others to purchase food.	Male	3,15	1,266	0,062	2,03	2,27	127,853	0,007
	Fem.	2,02	1,241	0,049	1,93	2,12		

Note: Male: 420 respondents; Fem (female): 648 respondents; St.D.: Standard Deviation; St.E.: Standard Error; 95% Con.Int: 95% Confidence Interval for the Mean; Minimum Value for all items: 1; Maxim Value for all items: 5.

Regarding women's behaviour during the COVID-19 pandemic (Table no. 2), it is found that by applying the Mann-Whitney U test, there are significant differences in their behaviour compared to that of men in the following situations. Thus, men have adapted more quickly to the changes induced by the COVID-19 pandemic, overcoming the adverse effects of the pandemic more easily. In buying food, they relied on previous experiences, managing to make food purchases that met the household needs. During the

pandemic, they largely preserved their previous habits. Men have managed better to manage the challenges posed by health restrictions and unrestrained movement, probably also due to the confidence stemming from the successes they had previously had. It was easier for them to move forward and better overcome the adverse consequences of the pandemic, managing stress well. They more readily looked on the bright side, managing to overcome the pandemic better.

The men quickly recovered from the vicissitudes and challenges induced by the pandemic, highlighting free and rational thinking under pressure. More often, they made food purchases necessary for daily living, many transactions ran online, and they ordered repeatedly from the same retailers. They were not discouraged during the pandemic and could move forward and support other family members. Thus, they achieved their goals very well during the pandemic.

The application of the same test to the post-pandemic situation in the New Normal (Table no. 3) revealed that there are also significant differences between women and men. Thus, in the New Normal, men maintain the tendency to make online purchases to a greater extent than women, preferring to reorder from those retailers that best met their previous expectations before and during the pandemic. In this way, men are more likely to be loyal to the food store networks than women, which highlights a less steadfast behaviour. Men tend to buy again from retailers they know and already have positive experiences, preferring to return to physical store purchases to a greater extent than women.

Table no. 3. The application of the Mann-Whitney U test in the New Normal

<i>In the New Normal...</i>		Mean	St.D.	St.E.	95% Con.I.		Mann-Whitney U	
					-15%	+15%	Z	P-value
... I buy more food from online stores.	Male	2.34	1.230	0.060	2.22	2.46	124,154	0.012
	Fem.	2.15	1.169	0.046	2.05	2.24		
... I buy online from retailers I know during the pandemic.	Male	2.82	1.251	0.061	2.70	2.94	124,116	0.013
	Fem.	2.63	1.294	0.051	2.53	2.73		
.... I buy most of my food online.	Male	2.21	1.226	0.060	2.09	2.33	126,544	0.042
	Fem.	2.05	1.160	0.046	1.96	2.14		
... I returned to my buying habits prior to the pandemic.	Male	3.30	1.254	0.061	3.18	3.43	125,235	0.024
	Fem.	3.48	1.289	0.051	3.38	3.58		
... I went back to grocery shopping in physical stores.	Male	3.73	1.237	0.060	3.61	3.84	122,956	0.005
	Fem.	3.93	1.189	0.047	3.84	4.02		

Note: Male: 420 respondents; Fem (female): 648 respondents; St.D.: Standard Deviation; St.E.: Standard Error; 95% Con.Int: 95% Confidence Interval for the Mean; Minimum Value for all items: 1; Maxim Value for all items: 5.

These significant differences indicate different adaptations in post-pandemic purchasing behaviour. This context can reflect subtle variations in purchasing preferences and needs, revealing how gender influences choices in new circumstances. The data analysis identified specific trends and significant discrepancies between the two genders. The results of the Mann-Whitney U test provided valuable insight into how men and women adopt different purchasing behaviours in the New Normal. According to assessment scores, women scored lower than men in certain consumer situations.

Discussions

Various studies (Hasan, 2016; Hesham, Riadh and Sihem, 2021) have shown over time that gender is an influencing factor in consumer behaviour analysis. Thus, these differences between consumers become a starting point for analysing men's and women's different experiences, feelings, and attitudes during the COVID-19 pandemic and the new normality that followed.

The research showed that women placed more food orders than men during the pandemic and post-pandemic period and that there were differences in the frequency of the orders and their value. This is consistent with Titiloye and Jin (2023), who pointed out that women made purchases more often than male consumers, although women spent less on shopping than men. The study also reveals differences in the degree of adaptation to the changes caused by the pandemic. Thus, men have adapted more easily to changes and have been better able to manage stressful situations and successfully perform daily tasks. Similar results are reported by Hesham, Riadh and Sihem (2021), who recall a higher degree of anxiety and fear in women and who used several precautions to avoid becoming ill with the pandemic virus, making it harder for them to adapt to the new reality.

Another aspect that highlights the differences between male and female consumers is their attitude towards online shopping. Both men and women have increased their online shopping, but the study shows a preference for online shopping among men. One argument is the previous experience that men already had, but also the different requirements related to online shopping that women valued, such as data privacy, service quality or the availability of product information, according to Boustani, Sayegh and Boustany (2022). Noting the steady growth of online shopping, retailers can exploit this opportunity by developing and implementing new strategies for online commerce.

Conclusions

From a theoretical perspective, the results of this research are relevant for understanding the online shopping behaviour and the preferences of women and men for food during crisis situations in the New Normal. The e-commerce trends identified in Romania could align with similar trends in other European countries and beyond.

Consumers showed increased confidence in the face of the pandemic-related challenges and adapted their behaviour to a greater or lesser extent. Examining consumer behaviours, their evolution over time, and how consumers make decisions helps companies develop viable business strategies, and rethink personalized marketing offers and targeting campaigns. Companies can use such information to optimize their pricing, product offerings, and communication strategies. Of course, information about consumer attitudes towards online shopping and recommendations for online platforms can help food and non-food retailers increase customer engagement. Understanding and leveraging positive online shopping experiences can increase customer satisfaction and loyalty. Information about consumer trends in buying different foods and their preferences for certain products can help retailers identify cross-selling opportunities and optimize product grouping strategies when supply disruptions and stock management problems may occur. Last but not least, understanding the factors that have contributed to consumer resilience in the face of the pandemic-induced challenges allows crisis management and redefining business continuity plans. Incorporating strategies that enhance consumer confidence and resilience can better prepare companies for future disruptions.

Of course, the research also has certain limits. One is that it restricts itself to the analysis of the behaviour of buying food and does not consider other types of products and services (clothing, hygiene and personal care items, or electronic devices).

Future research could consider including variables in the analysis that would allow for a more in-depth analysis of the purchasing behaviour of male and female consumers, such as age, income, or level of education. Future studies could also consider the importance of the cultural context in which the analysis takes place, and the roles men and women occupy in society. Such an approach would fill an important knowledge gap in research.

Acknowledgment

This paper was also financed from a project supported by CNCS-UEFISCDI grant number PNIII-RU-TE-2021-0795

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