ALTERATIONS IN CONSUMER BEHAVIOR ON FOOD PURCHASE DURING COVID-19 PANDEMIC

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ABSTRACT

The present research aims to assess the impact of the COVID-19 pandemic on the behavior of Portuguese consumers concerning the purchase of food. For this purpose, a quantitative study was performed, using a sample composed of 741 Portuguese consumers. The study was carried out between November 2020 and February 2021, a period during which the most severe measures of social isolation were imposed by the Portuguese government since the beginning of the pandemic in March 2020. The results show that during the pandemic, consumers changed their behavior patterns, specifically: in the frequency of shopping; the use of transport to carry out the purchases; the amount of the budget allocated for this purpose; and the channels used to purchase. Based on these results, managers and policy makers will be able to adjust or redefine their strategies to meet new consumer preferences, thus promoting individual well-being and business success. Our research is original as it is focused on the Portuguese context at a specific point in time motivated by the external factors that arose from the dissemination of the Covid-19 pandemic, consequently affecting consumers' behavior on food purchase. Furthermore, it adds value to the literature with new findings on consumer behavior change within a pandemic environment, and the application of practical assistance to market practitioners as well as advice to policy makers.

Keywords: Covid-19, Consumer Behavior, Food Purchase

INTRODUCTION

Currently, the COVID-19 pandemic has disrupted economies on a global scale (Nicola et al., 2020). In this context, a large part of the countries of the European Union (EU) locked their economies, in an attempt to avoid a large number of human fatalities. The sanitary measures had negative consequences on national and, also global economies, reducing the economic activity, with a special impact on employment levels (Oliveira et al., 2021; Pantano, Pizzi, Scarpi & Dennis, 2020).

The impact of the COVID-19 pandemic affects most organizations and businesses, including logistics, healthcare, retail, manufacturing, education, and tourism (Brandtner, Darbanian, Falatouri & Udokwu, 2021). The service sector, such as tourism, hospitality and retail, is being particularly affected (Dolnicar & Zare, 2020; Pantano et al., 2020). Economies, where these types of business areas are predominant, will have more difficulties than the rest, further aggravated by

the upsurge in the unemployment rate. It is possible to mention some EU countries where the impact is expected to be: Portugal (19.1%), Austria (15.4%), Spain (14.6%), and Italy (13.2%). In these countries tourism has a strong contribution to GDP, thus, being the most affected in terms of pandemic impact. In other countries like China, retail sales could drop 20 % with the pandemic. Nevertheless, it is expected that when the pandemic is surpassed, consumption will increase noticeably, particularly with the consumer's need to restore their usual levels of psychological stimulation in retail. However, this phase of increased consumption can occur during a short period (Deng, Wang & Chao, 2020; Fernandes, 2020).

That said, studying individual consumer behavior during pandemics and outbreaks, due to policies imposed by policy makers, is relevant and most important. During these pandemic periods, unpredictability, ambiguity, and novelty are greater, which affects the decision-making of consumers' political and individual decision-makers. These decisions are subject to prejudice and errors in these less clear and new situations.

Being so, the information sources played an essential role in consumer behavior during the COVID-19 pandemic (Brug, Aro & Richardus, 2009; Laato, Islam, Islam & Whelan, 2020; Weinstein, 1988; Wen, Huimin & Kavanaugh, 2005).

This research aims to understand the impact of the COVID-19 pandemic on the behavior of food consumption by the Portuguese population. The present research is original and innovative, in the sense that no relevant literature on the subject applied to the Portuguese population was found.

LITERATURE REVIEW

Consumer Behavior

The area of consumer behavior deals with the study of how people, individually or in groups, select products or services, to satisfy their needs (Quester, Pettigrew, Kopanidis, Hill & Hawkins, 2014).

Mowen & Minor (1998), assume that consumer behavior is simply based on a process of exchange between two parties, in which one party (the company) behaves to satisfy the other party (the consumer). Still, according to Mowen & Minor (1998), acquisition, one of the important aspects to be studied in consumer behavior (alongside exchange, consumption, and disposition), reveals the references, factors, and tastes that underlie the choice and selection of one product at the expense of other (s). In this logic, consumers will be able to choose a certain product because they want to transmit certain behaviors and ideas to third parties.

From the contributions of Kotler & Armstrong (2018), we can group the factors that influence the purchasing behavior of consumers into 4 types: cultural factors (including culture, subculture, and social classes), social factors (which integrate the reference groups, the family, the roles and the social positions), personal factors (including age, occupation, consolidation, economic aspects, lifestyle, and personality) and psychological factors (motivation, perception, learning, beliefs, and attitudes).

Horner & Swarbrooke (2016), identified the following factors, as the ones that weigh in the moment of the decision: consumer´s lifestyle, price of the product or service, product or service quality, points of sale, and after-sales assistance.

Other studies address the influence of specific factors on consumption behaviors, for example, for Larentis (2009), elements such as culture, subculture, reference groups, lifestyles, and fashion tend to affect the consumer's state of desire. Also, psychological aspects, such as stress (Anton & Miller, 2005), emotion (Sauerbronn, Ayrosa & Barros, 2009), and price (Banyte, Rutelione, Gadeikiene & Belkeviciute, 2016; Büyükdağ, Soysal & Kitapci, 2020; Wang et al., 2014) directly affect consumer behavior. Following these perceptions, it appears that organization

leaders and marketing professionals should pursue to know the needs and desires of consumers, to adjust their offer to the profile and evolution of consumers. Consequently, streamlining and distributing products or services according to their interests and desires, thus optimizing the characteristics of existing products and services and launching new ideas and proposals to the market (Silva, Castro, Nunes & Pinheiro, 2018). By knowing in advance the consumer's preferences, companies will be able to anticipate and attract the consumer, improving their ability to find the path of success.

Food Consumer Behavior in a Pandemic Environment

Consumer behavior is a complex process (Basen, 2014). Food consumption is influenced by several factors, such as socio-demographic, regional, and economic characteristics, as well as consumer preferences and attitudes (Cranfield, 2020; Fieldhouse, 2013; Seymour, 1987).

Regarding the influence of income on food purchase decisions, the investigation of Fieldhouse (2013) reveals that the demand and selection of food are influenced by family income. Throop (1992), also points out that purchasing decisions are influenced not only by the current family income but also by the expectations of future income.

Several governments around the world have been imposing quarantine conditions to limit the spread of the COVID-19 virus, forcing people to stay at home, and restricting reasons for leaving home to meet essential basic needs, such as buying food and urgent medication or going to work (considering that telework is not possible). The imposition of lockdown led to changes in food consumption habits, whose evolution varies inversely with factors such as personal attitudes, individual and family experiences, among other characteristics. The investigation from Borsellino, Kaliji & Schimmenti (2020), which deals with the behavior of food consumption during the pandemic environment in several countries around the world, exposes that specific contexts and the respective financial, economic and logistical nature, are relevant factors in food purchasing behaviors in the pandemic environment. On the other hand, global phenomena such as the rediscovery of homemade food (leading to an increased demand for basic ingredients) and the preference for small local groceries and online shopping are also considered to be relevant factors that affected food buying behaviors. The preference for online shopping, in detriment of physical stores, is also corroborated by Ellison, McFadden, Rickard & Wilson (2021); Grashuis, Skevas & Segovia (2020); Ali, Khalid, Javed & Islam (2021); Shamim, Ahmad & Alam (2021). Furthermore, the studies by Jribi, Ben Ismail, Doggui & Debbabi (2020); Degli Esposti, Mortara & Roberti (2021); Wang, An, Gao, Kiprop & Geng (2020); e de Shamim, et al., (2021) complemented the frequency of food purchases and the time they occurred.

In terms of the type of food to purchase, the study by Borsellino, et al., (2020) concludes that, despite price volatility and the concern about future family income, a significant proportion of consumers started to buy healthier and more sustainable foods. Another key aspect to take into account is food waste, which had a noticeable decrease in volume. This new trend must be explored strategically by producers and traders of food products, to get closer to consumer preferences as well as from the sustainability point of view. Several authors consider that the pandemic has been causing important changes in contemporary society, at various levels, among which, public health, quality of life, food, economic and financial security (Alves, Lok, Luo & Hao, 2020; Santos, Oliveira, Ratten, Tavares & Tavares).

Theodoridou, Tsakiridou, Kalogeras & Mattas (2019) argue that behaviors vary depending on the environment (pandemic or not) in which consumers are inserted. These authors consider that, in the absence of a pandemic, the selection of food is based on factors such as quality, taste, freshness, price, nutritional value, and production method; in times of a pandemic, the relative influence of each of those factors in the decision-making process can vary. In this sense, other

studies also appear to reveal that, in a pandemic environment, consumers started to choose healthier foods, valuing more beneficial diets for health, fiber, and vegetable stripes, which will lead to changes in habits and behaviors reflecting the change in lifestyles in the medium and long term (Cohen, 2020; Jribi et al., 2020; Long & Khoi, 2020; Naja & Hamadeh, 2020; Sarkis, Cohen, Dewick & Schröder, 2020).

Regarding the income factor, Kikuchi, Kitao & Mikoshiba (2020) show the strong influence of income on purchasing decisions, stressing that in a time of pandemic, the weight of the income factor in purchasing decisions is more important amongst workers with lower incomes, as well as women (when compared to men).

It can be concluded that the COVID-19 pandemic appears to offer an unparalleled opportunity for reengineering the agrifood market, driving the transition to more sustainable supply and production patterns. Thus, stronger and more equitable partnerships between farmers, manufacturers, traders, and citizens may be in the process of being formed (Borsellino et al., 2020).

HYPOTHESES

Based on the available literature and considering the objective of the present research to assess changes in the consumer behavior on food purchase in the Portuguese population, before and during the COVID 19 pandemic, the following research hypotheses were assumed:

H0: There are no differences in the average response obtained in the questionnaires before and during the pandemic.

And as alternative hypotheses:

H1: During the pandemic, the Portuguese bought food less frequently than before the pandemic.

H2: During the pandemic, the Portuguese preferred to use their transport to go to stores to purchase food, rather than use public transport, when compared to what they used before the pandemic.

H3: During the pandemic, the Portuguese preferred to buy food in stores during working hours more than at the end of the day.

H4: During the pandemic, the Portuguese take less time to access food stores than before the pandemic.

H5: During the pandemic, the Portuguese spent less time shopping at food stores.

H6: During the pandemic, the average expenditure on each trip to food purchases is higher than before the pandemic.

H7: During the pandemic, the Portuguese feel less secure while shopping at food stores.

METHODOLOGY

The sample of this study has 741 valid responses, collected through an online questionnaire available to the Portuguese population between November 2020 and February 2021. The questionnaire applied to Portuguese food consumers was based on a questionnaire applied by Wang, et al., (2020). The questionnaire has the following structure: seven questions about changes in consumer behavior regarding the purchase of food at physical stores, namely the frequency of purchase of food, the types of store preferred, the time of food purchase, the average time (in minutes) to reach the food stores, the means of transport used, the length of stay (in minutes) at the food stores, the average expenditure (in euros) on food at each purchase and the sense of security at the food stores; a question about the care that Portuguese consumers took when shopping in food stores; ten questions regarding availability, diversity, and access to food in stores, ten questions regarding online consumption and ten questions regarding the socio demographic characteristics of the respondents.

RESULTS AND DISCUSSION - CHANGES IN CONSUMER BEHAVIOR WHEN BUYING FOOD AT PHYSICAL STORES

As the questionnaire applied has the same questions about the behavior of consumers when buying food at physical stores, the objective is to compare whether there were changes in consumer behavior during the pandemic compared to the behavior they had before the pandemic. To achieve this objective, the Paired Sample T-Test method was applied, for a 95% confidence level, in the SPSS software. This method, also called the dependent sample Test T, is a statistical procedure used to compare the differences between databases with the same observations. It assesses whether the average difference between two sets of observations is zero, with each question assessed being measured twice, resulting in pairs of observations. Like many statistical procedures, the Paired Sample T-Test has two competing hypotheses, the null hypothesis (H0) and the alternative hypothesis (H1). The null hypothesis assumes that the true average difference between Paired Samples is zero. Under this model, all observable differences are explained by random variations. On the other hand, the alternative hypothesis assumes that the real difference in terms of averages between Paired Samples is not equal to zero, that is, there are observable differences between the pairs of observations (Greene, 2000).

Thus, as in the questionnaire, the same questions were asked about the behavior of consumers when buying food, before and during the pandemic, the Paired Sample T-Test was used to test the significant differences between the responses of Portuguese consumers surveyed before and during the pandemic.

As previously mentioned, to compare the differences between the questions before and during the pandemic, and to test the hypotheses presented above, the Paired Sample T-Test method was applied.

Regarding Pair 1, frequency of food purchases in physical stores, the respondents' responses were measured as follows: 1- more than 4 times a week; 2 - 2 to 3 times a week; 3 - once a week; 4 - 2 to 3 times a month; 5 - once a month; 6 - never, I do it online; 7 - I don't remember. Before the pandemic, the average value was 2.6, that is, on average the Portuguese respondents bought 2 to 3 times a week and during the pandemic, the average value of the frequency of food purchases increased to 3.45 (increased the average frequency for once a week). Thus, Hypothesis 1 is confirmed, corroborating that during the pandemic, the Portuguese buy food less frequently than before the pandemic.

Pair 2 of answers is related to the means of transport that the Portuguese consumers surveyed use to travel to the food store, the possible answers being: 1 - on foot; 2 - bicycle; 3 - car or motorcycle; 4 - bus; 5 - metro or train; 6 - taxi or app (Ex: Uber, Bolt, etc.). The average value of the Portuguese responses decreased by 0.06 pp (2.77 before and 2.71 during the pandemic), maintaining the preference in average terms for traveling by car and motorcycle to food stores. However, the decrease in the average value of this pair of responses means that the Portuguese during the pandemic increasingly prefer shared transport such as the bus, the metro, the train, taxi, and the like to go to stores to buy the goods, foods. On the one hand, this lower preference for shared transport is due to the reduction of passenger capacity in public transport, but also the fear of greater contagion due to the lack of hygiene in this type of transport. Thus, Hypothesis 2 is confirmed, corroborating that during the pandemic, the Portuguese prefer more own transport than shared transport compared to what they used before the pandemic.

Pair 3 of answers is related to the hours Portuguese consumers usually go to stores to buy food, the possible answers were: 1 - morning (before 11 am), 2 - noon (11 am-1 pm); 3 - afternoon (13 h-17 h); 4 - late afternoon (17 h-20 h) and 5 - night (after 20 h). In terms of average values, there is a decrease from 3.23 before the pandemic to 2.92 during the pandemic. Before the pandemic, the Portuguese on average bought food in the late afternoon (17 h-20 h), that is, after

working hours, and during the pandemic, they prefer to do it, in average terms, early. The telecommuting regime, the earlier closing of stores that sell food, and the search for times with less influx of buyers, made anticipating the purchase of food for more early hours. Hypothesis 3 is confirmed, corroborating that during the pandemic, the Portuguese preferred to buy food more during working hours than at the end of the day.

Pair 4 of responses refers to the average time (in minutes) it takes to reach food stores. Before the pandemic, on average the Portuguese took 11.68 minutes, and during the pandemic 11.02 minutes. The lower average time spent traveling to the store to buy food is related to lower car traffic resulting from mandatory teleworking and the confinement period imposed in Portugal during the pandemic. Hypothesis 4 is confirmed, corroborating that, during the pandemic, the Portuguese took less time to reach the food stores than before the pandemic.

Pair 5 of responses is related to the average time (in minutes) that Portuguese consumers spend inside food stores. Before the pandemic, on average, the Portuguese took 38.32 minutes to buy food at physical stores, having been reduced to 29.97 minutes during the pandemic, that is, the Portuguese tend, on average, to make food purchases more quickly. During the pandemic, the Portuguese spend less time shopping at food stores, confirming Hypothesis 5.

Pair 6 of responses refers to the average expenditure of Portuguese consumers on each shopping trip at food stores. There is an increase in average expenditure during the pandemic to 57.33 euros (before the pandemic - 56.18 euros). The Portuguese spend less, on average, on each trip to food purchases, confirming Hypothesis 6, which mentions that during the pandemic, the average expenditure on each trip to purchases is higher than the average expenditure before the pandemic. It should be noted that, together with Pair 1 of responses, the Portuguese, during the pandemic, go less frequently to the stores to buy food, thus having a reduction in the average monthly amount of expenses related to food purchases.

Pair 7 of responses measure the feeling of security of Portuguese consumers when they are in food stores, being 1 - not at all safe and 7 - totally safe. There is a marked decrease in the average response values from 6.56 before the pandemic to 4.45 during the pandemic, that is, before the pandemic, on average, the Portuguese felt very safe and during the pandemic, the average level of sensation safety has decreased to the middle of the scale used (neither too much nor too little insurance). Hypothesis 7 is confirmed, corroborating that during the pandemic, the Portuguese feel less secure while shopping in food stores.

The application of the Paired Sample T-Test, which allows us to determine if the average difference between two pairs of answers to equal questions is zero, for a 95% confidence level. In this type of paired sample testing, each observation is measured twice, resulting in pairs of observations.

According to the results of the application of the Paired Sample T-Test, all pairs of responses are statistically significant (Sig., 2-tailed=$p<0.05$) except for Pair 6, relative to the average expenditure of Portuguese consumers in each trip to food shopping. It means that there is a statistically significant difference between the two responses before and during the pandemic. Thus, hypothesis 0 is not confirmed that there are no differences in the average response obtained in the questionnaires before and during the pandemic.

We also conclude that during the pandemic, Portuguese consumers prefer to travel to stores on their transport (Pair 2), who buy food during working hours (Pair 3), take less time to reach food stores (Pair 4), spend less time shopping inside food stores (Pair 5) and feel less secure when shopping at food stores (Pair 7).

Being so, it is possible to affirm that during the COVID-19 pandemic the consumers most appreciated: 1) the total time spent during the shopping experience; 2) space available to customers and store layout; 3) waiting time, unavailability, and availability of products; 4) advertising; 5)

equipment and facilities available for shopping; 6) product price; 7) means of payment; 8) problem solving; 9) attendance of store employees (Brandtner et al., 2021).

CONCLUSIONS

The rapid transmission and contamination of the COVID-19 virus meant that governments had to adopt severe measures that included lockdown, liberty restrictions, access to national health service, individual and community protection, restraint or temporary shutdown of state departments and schools functioning, as well as other services, leading to the implementation of teleteaching and teleworking whenever possible. Such measures conduced to alterations in people's lifestyles and changes in consumer behavior.

From the obtained results, it was possible to comprehend that the pandemic brought changes in the population's behavior. Our main findings point to a consumer reduction in their purchases of food in street stores and a preference for online shopping. Another important result is the less usage of public transport, such as the bus and the metro, in favor of private transport. As for the shopping hours, the Portuguese preferred the early morning hours (whereas before the pandemic the preference was for the late afternoon).

The results analysis also shows that the amount of time inside the store is now shorter, therefore, increasing the efficiency in purchases. This efficiency is also supported by a higher average expenditure per purchase, nonetheless, the average monthly amount of expenditure is lower than before the pandemic.

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