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Evolution of the Online Grocery Shopping Experience during the COVID-19 Pandemic: Empiric Study from Portugal

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Abstract: Online shopping has intensified in the last decade. The COVID-19 pandemic has imposed circulation limitations and more restrictive behaviors on consumers due to fears of contracting the virus, boosting online grocery shopping. This study aims to assess the relationship between the online food purchasing experience during the pandemic and the intention to purchase food online after the pandemic. The sample of this quantitative study is composed of 358 Portuguese consumers who carried out grocery shopping online during the pandemic and was collected through an online questionnaire. First, a cross-sectional description of the variables was applied to this sample and then an analytical cross-sectional survey was carried out using the partial least squares method. Due to health concerns, food and beverage consumption behaviors changed positively during the pandemic compared to before. Healthier consumer behavior towards food and beverages during the pandemic, compared to before the pandemic, may influence a greater propensity for online grocery shopping. Sociodemographic characteristics (age, education, income) were also determinants of the propensity to shop online during the pandemic. Specifically, the results of this study demonstrate a positive influence of young male consumers, with higher levels of education and income, regarding the online supermarket shopping experience. The results also demonstrate that a good online shopping experience during the pandemic can positively influence online shopping intentions after the pandemic. This study makes it possible to identify determinants of the online food shopping experience, serving as guidance and preparation for strategic marketing for retail grocery companies that wish to position themselves online. It also helps marketers and policymakers understand the potential influence of sociodemographic characteristics such as age, income, and education on building a relationship with consumers. Finally, the relationship between personal characteristics and the online grocery shopping experience requires further substantiation and this study contributes to this gap in the literature.

Keywords: online grocery shopping; e-commerce; food retail; consumer behavior; online shopping experience; pandemic COVID-19



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1. Introduction

The COVID-19 pandemic has brought economic problems on a global scale [1,2]. Thus, all over the world, policymakers had to restrict the activities of companies (e.g., closure of restaurants, hotels, and shopping centers), thus shrinking the economy and increasing unemployment. The aim was to avoid the loss of human lives [1,3].

In this context, policymakers further limited the movement of humans for long periods to decrease contact between humans. Humans were only allowed to leave home in particular situations such as needing medical care, physical activities (in the vicinity where they lived), legal obligations, or shopping. Telework was imposed in the activities, except for workers in essential sectors (e.g., food factories, supermarkets, pharmacies) [4].

Thus, shops that sold food remained open all the time. Moreover, policymakers closed their borders, which led to food availability and distribution problems. All these restrictions may have led to possible changes in food shopping habits [5,6] and it is crucial to study them in different contexts.

At the beginning of the COVID-19 pandemic, consumers focused on panic buying as they were afraid of future shortages [7,8]. On the other hand, consumers also wanted to decrease the number of times they went shopping to reduce the risk of catching the virus. Generally, consumers bought more packaged rice, pasta, milk, and vegetables [2,9]. These situations accentuated supermarket stock-outs, leading to price increases in consumer products [10]. The first confinement brought about changes in human consumption habits, altering, in some cases, their diets. The consumption of processed foods (food with change in the fundamental nature of an agricultural product such as heating, freezing, dicing, juicing) and ultra-processed foods (food is mainly made from substances extracted from food, such as added sugars, hydrogenated fats, and starches) increased, and the consumption of vegetables and fruit reduced. The method of purchasing food products during the COVID-19 pandemic also changed. To avoid getting infected with the virus when physically going to the shops, some people started shopping for food online [1,8].

In this framework, e-commerce increased during the COVID-19 pandemic [11]. However, this trend was already present before the COVID-19 pandemic. In the European Union, about six out of ten consumers aged 16–75 were purchasing services and goods online in 2017. However, in 2007, it was only three out of ten [12]. This increase was accentuated with the COVID-19 pandemic because consumers could receive food at their homes, thus avoiding contact, which reduced the possibility of catching the virus. Therefore, it is essential to understand how consumers changed their online food shopping habits during the COVID-19 pandemic and its implications on retail food markets [13].

According to Klarna's Survey [14] carried out with 1013 Portuguese consumers aged between 18–65 years in February 2022, 47% of consumers surveyed believe that in a year, they will mostly buy online, showing a growing preference for online shopping and 15% of Portuguese consumers shop online at least once a week. The most purchased products are clothing and shoes (51%), electronics (43%), entertainment (30%), and groceries (26%). The main advantages of online shopping identified by Portuguese consumers are that they can shop from home whenever they want, it saves time, the possibility of comparing prices, and obtaining products at lower prices.

Recently, the online food shopping industry has developed increasingly [15]. The boost in online grocery shopping during the pandemic was due to the confinement imposed on consumers by the health authorities that prevented the free movement of people for long months and the fear of contracting COVID-19 on the trip to supermarkets. On the other hand, online shopping platforms are becoming increasingly user-friendly, helping online sales grow [13]. Despite this development, before the COVID-19 pandemic, online food shopping only accounted for about 5% of total sales [13], so there is still much room for businesses to develop this market. Most grocery shoppers prefer to do it in person in physical stores due to the distrust in e-shoppers to choose the best and freshest grocery store and due to the tendency to buy less healthy and more pre-cooked products online. In addition, hedonic reasons and pleasure in the shopping experience when going to physical stores are also driving factors for shopping in person, due to the time delay between making online purchases and delivery and having to pay for the delivery service [16].

The COVID-19 pandemic has increased online shopping and the interest in studying this new trend. There is still dubiousness regarding the determining factors of online shopping behavior during and after the COVID-19 pandemic [1,17]. Therefore, further research is needed to understand how consumption has evolved during the COVID-19 pandemic and the potential role of e-commerce after the COVID-19 pandemic [17–20].

This paper aims to evaluate the relationship between the online grocery shopping experience during the pandemic and the intention to purchase food online after the pandemic. Thus, two research questions were formulated: (1) What factors can influence the

online grocery shopping experience during the pandemic? (2) How can the online grocery shopping experience influence the intention of online grocery shopping after the pandemic? This paper is original because it identifies the online food consumption behavior during the COVID-19 pandemic in the Portuguese context. It also allows us to identify the determinants of the online food shopping experience, which can guide and prepare for the strategic marketing of retail food companies that want to position themselves in e-commerce. This study also contributes to the development and enrichment of the literature about the online grocery shopping experience during and after the COVID-19 pandemic.

2. Literature Review

Online grocery shopping is a form of online shopping for food and other household items processed through e-commerce websites or mobile apps [21]. The studies on online grocery shopping started in the 1990s with the rise of the high-tech generation [22], who began shopping online for convenience as it simplified their lives.

The Technology Acceptance Model (TAM) was one of the first theoretical models adopted to predict acceptance and purchase intention by online grocery consumers [23]. This model assumes that the acceptance of new technology is influenced by perceived usefulness and ease of use, and this approach is valid for online grocery shopping [21]. According to these authors, perceived ease of use of online shopping demonstrates to consumers that it is useful and positively influences the intention to use it again, although this decision may be affected by the consumers' environment. Shang and Wu [24] extended TAM to the Expectation Confirmation Model (ECM) developed by Oliver [25], emphasizing that consumer perceived value along with perceived ease of use influence technology acceptance for online grocery shopping. Consumer perceived value involves a positive experience related to satisfaction that determines the intention to continue shopping online. The food literature has sought to determine the elements that affect acceptance and intention to continue shopping online, with a positive experience of online grocery shopping positively affecting future purchasing intention [21,24,26,27].

Hansen [27] presented a model of acceptance and adoption of online grocery shopping, which is influenced by the following characteristics: perceived social norms (influence of family and friends), the perceived complexity of using the technology, perceived compatibility regarding the perception that online grocery shopping relates to one's personality, perceived relative advantage of online shopping compared to face-to-face shopping, and perceived risk regarding the quality and payment methods of the online shopping process. The model presented by Hansen [27] has been tested in different studies [28] in which the importance of personal values have been emphasized as determinants of perceived compatibility and, as such, influencers of consumer behavior. Thus, the Theory of Planned Behaviour (TPB) constructed by Ajzen and Fishbein [29] shows that personal values influence consumers' attitudes measured by the previous positive online shopping experience. However, these personal values are often related to consumers' characteristics.

Many studies suggest that personal characteristics are determinants of online grocery shopping, namely gender, age, education, and income [30]. In general, more technological and innovative consumption tends to be adopted by men, younger consumers, and those with higher education and income levels [31–33]. However, several studies have been inconclusive about the influence of gender on online grocery shopping [27,34,35]. According to Naseri and Elliott [36], online grocery shopping is adopted more by women due to their role in the family. There is also evidence that men are more likely to shop online due to their busy professional lives [33]. In this context, the following hypothesis was formulated:

Hypothesis 1 (H1a). *Woman are prone to the online grocery shopping experience during the pandemic.*

Regarding age, several studies indicate that online grocery shopping decreases with age, that is, younger consumers are more accustomed to buying groceries online. Younger consumers have greater technological skills, seek differentiated and innovative consumption, and perceive greater benefits from online shopping, such as timesaving, the possibility of buying at any time, and the fact that it allows the comparison of prices and the buying of products with greater promotions [31,36]. Thus, the following hypotheses were formulated:

Hypothesis 1 (H1b). *Younger consumers are prone to the online grocery shopping experience during the pandemic.*

Consumers with higher levels of education are more likely to shop online because they are more confident, have lower perceived complexity of technology, and recognize greater relative advantages (timesaving and ease) in online grocery shopping [30,33,35,37]. The following hypothesis was formulated:

Hypothesis 1 (H1c). *Higher-educated consumers are prone to the online grocery shopping experience during the pandemic.*

Higher-income consumers tend to embrace online shopping because they are typically busier individuals in terms of work, seeing advantages to online shopping such as convenience and saves time [27,35,36]. On the other hand, individuals with higher incomes have more flexible budgets, allowing them to buy differentiated and innovative products, often only online [38]. The following hypothesis was formulated:

Hypothesis 1 (H1d). *Higher-income consumers are prone to the online grocery shopping experience during the pandemic.*

However, in situations such as the COVID-19 pandemic, online grocery shopping intention cannot be solely related to consumers' perceptions of the benefits, risks, and satisfaction of shopping online, i.e., solely centered on personal values. This way, specific events can impose particular behaviors, the growth of online grocery shopping being an imposition of the pandemic [13,28,39]. A healthier, more diverse, and balanced diet is part of risk management strategies during pandemics [40]. Consumer awareness of the importance of health, wellness, and more sustainable food choices positively altered food and beverage consumer behavior during the COVID-19 pandemic [5,6]. Motivation for better diets, with changes in consumer behavior during the pandemic, positively influenced online grocery shopping as consumers needed access to healthier foods and could not travel to supermarkets as frequently [6]. For example, during the pandemic, the demand for vegetables and fruits grew exponentially on online platforms [13]. Thus, we formulated the following hypotheses:

Hypothesis 2 (H2). *Consumers with healthier behaviors towards food and beverages during the pandemic compared to before the pandemic are more likely to carry out online grocery shopping during the pandemic.*

Expectation–Confirmation Theory has been used in marketing studies to demonstrate that customer satisfaction can lead to post-purchase behavior [41]. This theory is based on a process that demonstrates that before the purchase behavior, the consumer creates a specific expectation about a product or service that can later be generalized and expanded due to their beliefs in relation to the offer of the same [42]. During the consumption of the product or service, general perceptions are developed that evaluate the product or service consumed in the post-purchase period [43]. Then, the consumer evaluates the relationship between the expectation formed before the purchase and the reality perceived through the post-purchase evaluation to confirm their formulated expectations [44]. This way, the expectation created

can directly create satisfaction in relation to the consumption of a product or service, and high expectations can increase the satisfaction of its consumer [43,45]. Thus, customer satisfaction can be defined as using online stores to make their purchases [46,47], with satisfaction being an important determinant of willingness to shop online again. In online shopping, consumers are more likely to develop a sense of satisfaction since services such as interaction provided by surveys and ease of use are more easily perceived as useful [47]. Therefore, satisfaction is an antecedent of online purchasing intention [48–50]. In this context, the following hypothesis was formulated:

Hypothesis 3 (H3). *Higher levels of satisfaction with the online grocery shopping experience during the pandemic positively influence the intention to buy groceries online after the pandemic.*

Considering the literature review and the hypotheses that were formulated, the following structural model was defined (Figure 1).

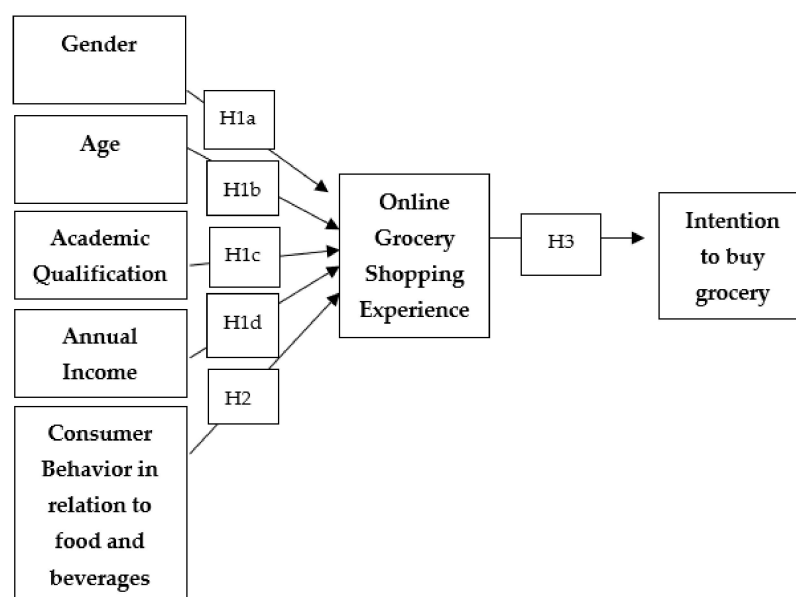


Figure 1. Structural model.

3. Methods

3.1. Sample and Measures

The questionnaire was applied between November 2020 and March 2021 (during the second wave of the COVID-19 pandemic) through social networks (Facebook and LinkedIn) and the authors' contacts. The main requirements for respondents to participate in this study were: having purchased online groceries during the pandemic and being over the age of 18. Participation was voluntary and participants were informed about the purpose of the study. Informed consent was obtained from all participants. A pre-test was conducted to validate the participants' understanding of the questions. The sample consists of 358 Portuguese consumers who purchased food online during the pandemic.

The questionnaire is composed of four groups of questions: (G1) online grocery shopping experience with seven questions; (G2) food and beverage consumption behavior during the pandemic with eleven questions; (G3) post-pandemic grocery purchasing intention; (G4) sociodemographic variables (gender, age, education, annual income); and (G5) situational factors with two questions related to the perception of physical health in general. A Likert scale measures the questions in groups G1, G2, and G3, with G1 and G2 using the scale 1—totally dissatisfied to 7—totally satisfied and G3 the scale 1—totally unlikely to 7—totally likely. In G5, the questions related to physical health in general, from 1—very bad to 7—very good and from 1—much worse to 7—improved a lot.

The characterization of the consumers surveyed is described in Table 1. In total, 68.2% of the consumers surveyed are women. As the literature presented in this study demonstrates, women are the most prominent online grocery consumers [36] and the main ones responsible for grocery shopping [38,51]. This way, the composition of our sample mirrors the conclusions of other studies reviewed. In total, 64.5% of the respondents are aged between 18 and 30 years. The fact that most respondents are young is in line with the studies by [31–33], which showed that most online grocery consumers are young. Overall, 73.8% of the respondents have an annual household income of fewer than 40,000 euros, 43.3% have completed secondary education, and 39.4% have a university degree.

Table 1. Statistics of the sample.

	Frequency	Percent
Gender		
Male	114	31.8
Female	244	68.2
Age		
Between 18 and 30 years	231	64.5
Between 31 and 40 years	39	10.7
More than 41 years	88	24.7
Annual household income		
Less than 20,000 euros	131	36.6
Between 20,000 and 39,999 euros	133	37.2
Between 40,000 and 59,999 euros	40	11.2
More than 60,000 euros	54	15.1
Education level		
Secondary level	155	43.3
Undergraduate	141	39.4
Masters	41	11.5
Other	21	5.90

3.2. Data Analysis

This study used a quantitative method, allowing the quantification and generalization of results and replicating the methodology for other types of samples [52–54].

Taking into account the objective of the study and the structural model defined in Figure 1, a statistical analysis was initially carried out, providing the mean and standard deviation of the questions from G1 to G3 (Table 2), and then the relationships established in the structural model were tested by the partial least squares (PLS) method. This method is the most appropriate since the answers were obtained through questionnaires, not presenting a normal distribution [55,56]. PLS does not require normality of the data and is a covariance-based method allowing the multi-analysis of factor analysis with ordinary least square (OLS)-estimated regressions. The PLS method was applied in two stages: in the first stage, the PLS logarithm was applied to the structural model, and in the second stage, a bootstrap analysis was performed, testing the hypotheses formulated [56,57].

Table 2. Validation of the PLS model.

	Academic Qualifications	Age	Annual Income	Consumer Behavior towards Food and Beverages	Gender	Intention to Buy Groceries Online	Online Grocery Shopping Experience
Cronbach's Alpha	1.000	1.000	1.000	0.917	1.000	1.000	0.813
Composite Reliability	1.000	1.000	1.000	0.930	1.000	1.000	0.859
Average Variance Extracted (AVE)	1.000	1.000	1.000	0.547	1.000	1.000	0.468
Fornell–Larcker Criterion							
Academic Qualifications	1.000						
Age	0.334	1.000					
Annual Income	0.068	0.143	1.000				
Consumer Behavior Towards Food and Beverages	0.066	−0.141	0.101	0.740			
Gender	0.078	−0.048	−0.083	0.018	1.000		
Intention to Buy Groceries Online	0.002	0.045	0.127	0.106	−0.057	1.000	
Online Grocery Shopping Experience	−0.047	0.048	0.128	0.184	−0.075	0.404	0.684

4. Results

The sample gathers responses from a questionnaire applied online that was adapted from Wang et al. [58]. The sample ($n = 358$) was previously validated through a pre-test conducted with 25 responses. Cronbach's Alpha of the pre-test sample was 0.856, concluding that the measurement scales and the items that make up the scales are reliable.

4.1. Evaluation of the PLS Model

The first step is to validate the PLS model. According to Hair et al. [59], the model obtained by applying the PLS algorithm to the structural model (Figure 2) must be validated in terms of reliability, convergence, and discriminant validity. The latent variables are represented in the circles, measured by the indicators (squares) collected by the questions from groups G1 to G4. The relationships between the latent variables are referred to as structural paths and are in accordance with what is established in the structural model.

The PLS model must be validated in predictive precision, reliability, and discriminant validity (Table 2). Predictive precision is assessed through R^2 within the circles of the latent variables. The latent variable online grocery shopping experience ($R^2 = 0.065$) has, according to Cohen [60], a “weak” effect, and the variable intention to buy groceries online ($R^2 = 0.159$) a “moderate” effect.

Cronbach's Alpha, composite reliability, assesses the model's reliability and Average Variance Extracted (AVE) measures. According to Table 2, the values of Cronbach's Alpha and composite reliability are higher than the reference value (0.70), as is the AVE (greater than 0.50), revealing that the internal convergence of the model is good [61]. Finally, the model presents discriminant validity since, according to the Fornell–Larcker criterion, the average variance extracted from each latent variable (bold diagonal) is higher than the squared relations with the remaining latent variables (Table 2).

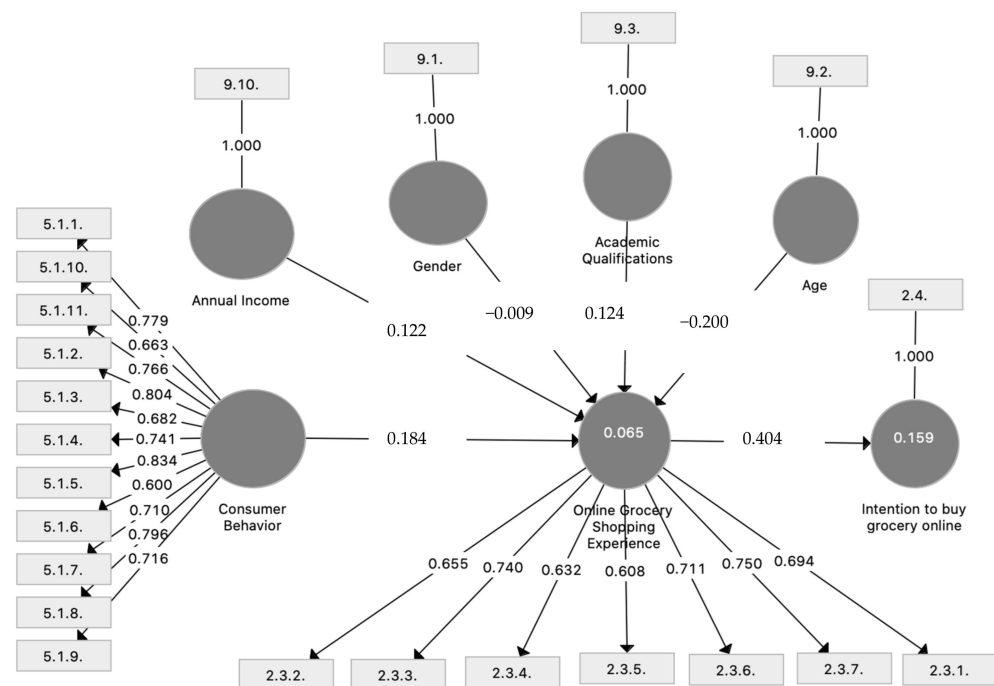


Figure 2. PLS model.

4.2. Descriptive Analysis

Respondents' perceptions of their general health status are described in Table 3. Portuguese consumers classify, on average, their health as good (5.30) and that it neither improved nor worsened during the pandemic (4.17).

Table 3. Perception of physical health in general by the consumers.

	Mean	Std. Deviation
G5—Situational Factors		
(1) How would you describe your overall physical health?	5.30	1.253
(2) During the COVID-19, how did your physical health change?	4.17	1.477

Note: (1) scale: 1—very bad to 7—very good; (2) scale: 1—much worse to 7—improved a lot.

4.3. Statistical Analysis

Statistical analysis was carried out for the indicators collected by the questions in groups G1 to G3 (Table 4).

The sample contains responses from 358 Portuguese consumers who bought groceries online during the pandemic and successfully completed the questionnaire. We can conclude that, on average, the main determinants of the Online Grocery Shopping Experience were ease of ordering (5.99), the order arriving as ordered (5.73), and the food being fresh (5.62). During the pandemic, consumer food and beverage behavior changed [8,62]. On average, the Portuguese consumers surveyed drank more water (4.99), are more “lean meats, such as poultry, fish, and eggs” (4.62), and more vegetables (4.44) and fruits (4.47). Consumers expressed willingness to continue buying food online after the pandemic (5.34).

4.4. Explanatory Analysis

Once the PLS model was validated in Section 4.1 a bootstrap analysis was carried out with the estimation of regression in order to test the formulated hypotheses (Table 5).

Table 4. Statistical results of indicators from G1 to G3.

	Mean	Std. Deviation
G1—Online Grocery Shopping Experience		
2.3.1. Easy to order	5.99	1.201
2.3.2. I find everything I want	5.30	1.386
2.3.3. The food is fresh	5.62	1.216
2.3.4. Food price	4.83	1.431
2.3.5. Delivery fee	4.51	1.729
2.3.6 Delivery time	5.13	1.526
2.3.7. The order arrived as requested	5.73	1.419
G2—Consumer Behavior Towards Food and Beverages During the Pandemic *		
5.1.1. I eat more fruit	4.47	1.797
5.1.2. I eat more vegetables	4.44	1.850
5.1.3 I eat more whole grains (e.g., brown rice, buckwheat, quinoa, oats)	3.76	1.851
5.1.4. I eat more foods low in saturated fats and cholesterol	4.07	1.747
5.1.5. I eat more foods that are rich in monounsaturated and polyunsaturated fats (i.e., fish, olive oil, avocados, nuts, and seeds)	4.35	1.683
5.1.6. I use more natural sweeteners (i.e., raw honey, coconut sugar, dates)	3.31	1.931
5.1.7. I drink more water	4.99	1.792
5.1.8. I eat more cooked, steamed, grilled, or poached foods	4.41	1.800
5.1.9. I eat more lean meats, such as poultry, fish, and eggs	4.62	1.787
5.1.10. I consume more low-fat dairy products (i.e., low-fat milk, yogurt, sour cream, cheese)	4.12	1.909
5.1.11. I consume more vegetables (i.e., beans, lentils, peas, peanuts)	4.15	1.804
G3—Intention to Buy Groceries Online		
2.4. What is the probability of buying food after the pandemic (shopping online)?	5.34	1.845

Note: * The questions of this group aim to compare consumption behavior in relation to food and beverages during the pandemic with consumption behavior before the pandemic. G1 and G2 using the scale 1—totally dissatisfied to 7—totally satisfied and G3 the scale 1—totally unlikely to 7—totally likely.

These results demonstrate that being female negatively influences the online grocery shopping experience during the COVID-19 pandemic ($\beta = -0.009$), rejecting hypothesis H1a. Younger consumers positively influence ($\beta = -0.200$) the online grocery shopping experience during the COVID-19 pandemic, confirming hypothesis H1b. Consumers with higher education levels positively influence ($\beta = 0.124$) the online grocery shopping experience during the COVID-19 pandemic, confirming hypothesis H1c. Consumers with higher annual income levels positively influence ($\beta = 0.122$) the online grocery shopping experience during the COVID-19 pandemic, confirming the hypothesis H1d. Positive change in food and beverage consumption behaviors during the COVID-19 pandemic positively influenced ($\beta = 0.184$) the online grocery shopping experience, confirming the hypothesis H2. Higher levels of satisfaction with the online grocery shopping experience during the COVID-19 pandemic positively influenced ($\beta = 0.404$) the intention to buy groceries online after the COVID-19 pandemic, confirming hypothesis H3.

Table 5. Testing the hypotheses formulated in the structural model.

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	p Values
H1a: Gender → Online Grocery Shopping Experience	−0.009	0.060	0.150	0.881
H1b: Age → Online Grocery Shopping Experience	−0.200	0.059	3.394	0.001 *
H1c: Academic Qualifications → Online Grocery Shopping Experience	0.124	0.062	1.999	0.046 *
H1d: Annual Income → Online Grocery Shopping Experience	0.122	0.051	2.407	0.016 *
H2: Food and Beverage Consumer Behavior → Online Grocery Shopping Experience	0.184	0.056	3.309	0.001 *
H3: Online Grocery Shopping Experience → Intention to Carry Out Grocery Shopping Online	0.404	0.047	8.546	0.000 *

Note: * $p < 0.05$.

5. Discussion

We have witnessed in recent years a change in consumer behavior regarding online food and beverage purchases. The COVID-19 pandemic has accentuated and accelerated these behavioral changes, as consumers have had to adapt to new policies to respond to public health problems. This created an environment of uncertainty in the markets and for people about the future [4,62]. Despite the advantages of online grocery shopping (timesaving, convenience, search for lower prices, differentiated products, among others), some flaws are still attributed to online grocery shopping, such as inadequate product substitution, the fee for online purchases, lack of control over perishable product selection, labeling limitations preventing consumers from having complete product information, and inability to find good deals online versus in-store [63]. Thus, this study aims to assess the relationship between the online food purchasing experience during the pandemic and the intention to purchase food online after the pandemic.

The results showed that the sociodemographic characteristics influenced food and beverage consumption behavior during the pandemic [64,65]. In terms of gender, since, in our study, zero are male and one is female, being male positively influences the online grocery shopping experience. However, as in Goethals, Leclercq-Vandelannoitte and Tütüncü [34], Hansen [27], and Hui and Wan [35], the gender variable is not statistically significant, and the influence of gender on the online grocery shopping experience is inconclusive. Thus, the results suggest that women are not likely to shop online for food during the pandemic. This result complements the results of Farag et al. [66]. Online grocery shopping is more effective among women because of their role in the household [36].

It was also found that younger consumers are prone to the online grocery shopping experience during the pandemic. These results complement the findings of Hiser et al. [67], Verhoef and Langerak [30], Farag, Schwanen, Dijst and Faber [66], and Droogenbroeck and Hove [33] that young people tend to buy more groceries online. This is due to the fact that young people are endowed with greater technological skills, seek a more innovative consumption, and perceive greater benefits of online shopping (saves time, possibility of shopping at any time, convenience, it allows the comparison of prices, and access to different products).

The authors state that age negatively influences the likelihood of shopping online for food. Thus, the results suggest that younger consumers shop online, and it is likely that as they age, these consumers will continue to purchase food online in the future. The reasons are related to convenience and the physical effort they have to make when they go to buy food physically. With online shopping, it is easier and quicker for them to find the products they want and find additional information about them. However, age does not

significantly influence the number of times they shop online. These findings suggest that older consumers are less comfortable using new technologies to purchase food online [62].

It was also found that consumers with higher levels of education are prone to the online grocery shopping experience during the pandemic. Therefore, it can be stated that having a college education increases the likelihood and frequency of consumers shopping online. These results reinforce and complement the results of Hiser, Nayga Jr and Capps Jr [67], Droogenbroeck and Hove [33], Etumnu and Widmar [68], and Jaller and Pahwa [69].

The results show that consumers with higher annual income levels are prone to the online grocery shopping experience during the pandemic. Therefore, consumers with higher incomes, as a rule, tend to adopt online shopping as they are usually busier individuals in terms of work and have more flexible budgets. Online shopping has a perceived utility for convenience and timesaving and allows the consumption of another type of grocery, different from those in physical stores [27,35,36,38]. On the other hand, lower-income households that suffered from a decrease in their income during the COVID-19 pandemic may not have been able to stockpile food as higher-income households did [70].

The results also show that consumers with healthier behaviors towards food and beverages during the pandemic compared to before the pandemic are more likely to carry out online grocery shopping during the pandemic. Laguna et al. [71] claim that no changes were found regarding where consumers purchased food during the COVID-19 pandemic. However, consumers did change their online food and beverage shopping behaviors as more consumers had their food delivered directly to their homes [62,72]. On the other hand, online food shopping increased as consumers were worried about supermarkets having too many people. Policymakers also implemented social distancing measures, which caused the increase in online food shopping [70,73].

A better online grocery shopping experience during the pandemic positively influences post-pandemic online food purchasing intention. Thus, online food sales are expected to be higher after the COVID-19 pandemic compared to before the COVID-19 pandemic due to the positive experience consumers had during the pandemic [21,24,26,27]. However, some studies indicate that online shoppers are less likely to try new foods, more likely to be brand loyal, and less sensitive to price changes [74–76].

6. Conclusions

This study allows us to conclude that the food and beverage consumption behaviors of Portuguese consumers changed positively during the pandemic compared to before due to health concerns and that this change in consumption behavior, together with the sociodemographic characteristics of consumers (income, education, age), influenced the online grocery shopping experience. It was also found that a good online grocery shopping experience during the COVID-19 pandemic positively influenced online grocery purchasing intention after the COVID-19 pandemic.

Regarding theoretical implications, this study contributed to the literature about the online grocery shopping experience during the COVID-19 pandemic and purchase intent after the pandemic. Studies on the impact of sociodemographic variables on the online grocery shopping experience are still scarce and inconclusive. Thus, this study presents new evidence that demonstrates that the sociodemographic characteristics of consumers can be important determinants of the shopping experience. Regarding managerial implications, policymakers can develop policies to encourage older consumers to carry out their food shopping online. Policymakers can partner with supermarkets, giving vouchers to older consumers to spend on their food purchases. This could also include consumers on lower incomes. Policymakers can also organize and promote programs that teach how to plan daily meals by shopping online. These programs can also teach consumers how to make food lists online to help consumers better manage their household budgets. This measure will also contribute to social welfare by reducing food waste.

In terms of the practical implications for businesses selling food online, they must have a wide range of products available. Consumers during the COVID-19 pandemic were price-sensitive; however, they valued home delivery. So, companies can charge for this service. Extending the delivery period should also be considered by companies. Deliverers also need to be properly identified, i.e., look professional [77]. With the increase in online sales, consumers will also give more feedback, so watching all social networks and company forums are essential. Some nasty comments do not significantly affect the company's image and brand value.

This paper is original as it identifies the online food and beverage consumption behavior during the COVID-19 pandemic in the Portuguese context. This study also identifies the determinants of the online food shopping experience, which can serve as guidance and preparation in the strategic marketing of retail food companies. This study contributes to the development and enrichment of the literature about the online grocery shopping experience during the COVID-19 pandemic.

The present study has limitations because the data to prepare it were collected between November 2020 and March 2021. Therefore, further studies should be conducted as the pandemic COVID-19 went through several phases. The questionnaire applied was translated from English to Portuguese, and the meaning of some of the questions may have changed slightly. The questionnaire was only applied to Portuguese people. More specific data on the frequency of online grocery shopping should have been collected to allow us to analyze the difference between occasional versus regular online grocery shoppers. This analysis could allow us to examine interesting differences in consumers' online grocery shopping experiences. This paper only includes consumers who bought groceries online, so consumers who did not buy groceries online were omitted from the study. The comparison between consumer behaviors in relation to food and beverages before and during the pandemic that appear in hypothesis 2 should be carried out through a longitudinal analysis. Sociodemographic variables and behavioral variables were analyzed the same way in the estimated model. Due to the medication characteristics of sociodemographic variables, these should be used as moderating variables or, alternatively, as causal variables of any behavioral response.

Regarding future lines of research, it would be interesting to analyze more precisely the differences in online food shopping between men and women. It would also be interesting to analyze the determinants of purchases by each gender. It would also be interesting to evaluate differences in online food shopping among consumers with different higher education degrees (bachelors, masters, doctorate). It would also be pertinent to study generations' online grocery shopping experiences (Baby Boomers and Generations X, Y, and Z). It would also be pertinent to include and look at the differences between social classes (low, lower-middle, middle, upper-middle, and high), the inclusion of residence (rural or urban), and the perception of general health status. This study confirmed that higher levels of satisfaction with the online grocery shopping experience during the pandemic positively influenced the intention to buy groceries online after the pandemic. However, further quantitative or quantitative studies should be conducted. Whether retailers are adjusting their strategies, products, and services to boost online shopping during and after the COVID-19 pandemic could also be examined. In future studies, consumers who bought groceries online can be compared with consumers who did not buy groceries online during the COVID-19 pandemic.

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