

Online Grocery Shopping Intention after the COVID-19 Pandemic

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Received: July 20, 2024

Accepted: August 20, 2024

Online Published: September 20, 2024

doi:10.5539/ijbm.v19n6p1

URL: <https://doi.org/10.5539/ijbm.v19n6p1>

Abstract

Grocery shopping is a vital activity in people's lives. During the Coronavirus 19 (COVID-19) pandemic, many consumers turned to online platforms to purchase food, resulting in a significant increase in online grocery shopping. Hence, this study aims to investigate the post COVID-19 online grocery shopping intentions in the USA using quantitative research conducted via online surveys on Amazon's Mechanical Turk (MTurk). The sample of this study is composed of two hundred fifty-two (252) validated data collected for analysis. The majority of participants perceive online grocery shopping as a reassuring, useful, and convenient method for purchasing food. Merits of online grocery shopping include reduced impulse buying and a lower risk of injury compared to traditional grocery shopping. Suggestions regarding online grocery shopping from peers or other influential people do not directly impact participants' future purchasing decision. Participants diligently review grocery items on website before making online purchases. The availability of a wide range of high-quality food products in online grocery stores encourages continued online shopping post-pandemic. It is anticipated that in the near future, online grocery stores may become the preferred choice for consumers to purchase their foods.

Keywords: The Coronavirus 19 (COVID-19) Pandemic, online grocery shopping behaviors, online grocery shopping intentions

1. Introduction

Grocery shopping is widely considered one of the essential activities in human life. Traditionally, consumers visited the brick-and-mortar stores to purchase food items. With the development of technology, the internet revolutionized shopping, offering a wide range of items including clothing, books, electronics, shoes, and groceries. Online grocery shopping first emerged in the late 1980s in the USA and began to develop in the late 1990s. Initially, it was primarily used by consumers facing challenges, such as illness, lack of transportation, or other health issues (Belsie, 1998; Kurnia, Chien, & Westarp, 2003; Kennedy, 2024). Due to barriers, such as the inability to smell, touch, and check quality in grocery shopping, the adoption of online grocery shopping in the USA was slow, accounting for less than 2% of online sale categories (Upton, 2020). In contrast, online grocery shopping in Europe is popular even before the COVID-19 pandemic, with over 25% of Europeans purchasing their food items online (Chevalier, 2022). In Asia, South Korea notably adopted the online grocery shopping method in 2011, with companies offering same-day delivery for order placed before 1:00 pm. Many consumers in South Korea can conveniently shop for groceries anytime and anywhere even while on the subway, using smartphones or electric devices (Strother, 2011). The market size of online grocery shopping is substantial and expanding in both Asia and Europe (Pennisi, 2011). However, before the COVID-19 pandemic, only a small percentage of the population in the USA utilized online grocery shopping. In comparison, online grocery shopping in the USA has lagged behind that of Asia and Europe (Eger et al., 2021).

On March 11, 2020, the World Health Organization (WHO) declared the COVID-19 pandemic prompting widespread concerns for public health. To mitigate the spread of the virus, individuals were advised to stay at home and adhere to social distancing protocol. The pandemic brought about unprecedented changes in human lifestyle, promoting a significant transition from traditional shopping patterns to online shopping, including groceries. Consumers, prioritizing safety and convenience, increasingly turn to online platforms for their shopping needs. This shift is further facilitated by the widespread familiarity with the electric devices, such as laptops, desktop computers, iPads, cellphones, and others, across all age groups. Consequently, there is a notable surge in the popularity of online grocery shopping during the pandemic. By 2022, more than 141.7 million

Americans over age 18, representing 54.1% of population, purchased foods through online (Capital One Shopping Research, 2024).

Due to the increase in online grocery shopping, many studies have investigated online grocery shopping behaviors and intentions during the COVID-19 pandemic (Rout *et al.*, 2022; Anas *et al.*, 2023; Bezirgani, & Lachapelle, 2021). These studies have revealed that the pandemic has significantly influenced the consumers' grocery shopping behaviors, suggesting that preference for online food purchases may persist even after the pandemic in Europe and Asia. Indeed, online grocery shopping has emerged as an innovative method of shopping (Alaimo *et al.*, 2020). Online grocery shopping is likely a strong research topic. While much previous research has focused on current online grocery shopping habits and predicted the future of online grocery shopping intentions, limited research has explored these intentions in the USA following the post-COVID-19 pandemic. Many consumers may have subtly reshaped their food shopping patterns. Therefore, this study aims to examine consumers' attitudes toward online grocery shopping and their intentions in the USA following the post-COVID-19 pandemic, in order to better prepare for the future online grocery market. Additionally, it explores the merits of online grocery shopping to understand its influence on future intentions in the post-pandemic period.

2. Literature Review

2.1 Online Grocery Shopping

Online shopping offers the convenience of purchasing multiple products with a single click and the flexibility to shop anytime, anywhere, 24/7. Online grocery shopping, a form of e-commerce, allows individual consumers to conveniently purchase a diverse range of food items, including the perishable products such as vegetables, fruits, seafoods, and dairy products, as well as various household supplies. This eliminates the necessity of visiting physical markets (Driediger & Bhatiasevi, 2019). However, early research from the 2000's indicated reluctance among consumers to purchase food items online due to difficulties in finding products and inconvenient delivery methods. Some consumers were skeptical about the quality of grocery items purchased online, leading to a lack of trust in the online grocery shopping experience (Hansen, 2006; Raijas, 2002). As the result, online grocery shopping was not popular during that time, with only few consumers utilizing this option.

However, advancements in technology have led many consumers have embraced online grocery shopping as a means to enhance their quality of life. This trend is particularly notable among individuals proficient with electronic devices such as cell phones, iPads, and computers, or individuals without access to transportation (Bezirgani & Lachapelle, 2021; Seo, 2024). Research from the late 2010's indicates that consumers perceive online grocery shopping as a useful and satisfying method, appreciating the convenience of shopping for food items online (Driediger & Bhatiasevi, 2019; Bauerová & Klepek, 2018). When consumers have large families with young children and busy schedules, they increasingly turn to online grocery shopping (Asgari *et al.*, 2023). Additionally, Bauerová and Klepek, (2018) suggest that positive practical experiences with online grocery shopping increase intentions to repurchase from the website. Moreover, the easy to website navigation significantly influences customers' satisfaction and their intention to engage in online grocery shopping.

2.2 COVID-19 Pandemic and Online Grocery Shopping

The world has experienced the unprecedented COVID-19 pandemic since early 2020. At this time, consumers began seeking the safest way to grocery shop while maintaining social distancing protocols. This led to a notable shift in traditional shopping habits towards online grocery shopping. Consequently, the demand for online grocery shopping surged significantly, sparking increased interest in market science. Many studies are focusing on evaluating the impact of the COVID-19 pandemic on consumers' online grocery shopping behaviors (Asgari *et al.*, 2023; Eger *et al.*, 2021; Bauerová, 2021; Warganegara, & Babolian Hendijani 2022; Tyrväinen, & Karjaluoto, 2022; Seo, 2024). These studies indicate that many consumers are aware of the usefulness and convenience of online grocery shopping, and they express satisfaction with this shopping method.

During the COVID-19 pandemic, consumers exhibit trust in the quality of the goods purchased online and demonstrate intention to repurchase their grocery items through online platforms. Moreover, the social influence from family members or friends has been affected consumers' intentions to purchase groceries online. The easiness and convenience of online grocery shopping have been found to encourage increased usage, intention to shop online, and overall satisfaction among consumers (Bezirgani & Lachapelle, 2021; Tyrväinen, & Karjaluoto, 2022; Warganegara, & Babolian Hendijani 2022). Despite the significant shift in consumer online shopping behaviors caused by the COVID-19 pandemic, there is a lack of exploration into consumers' online grocery shopping behaviors in the post-pandemic period. There is pressing need for comprehensive research to better understand these grocery shopping behaviors and to develop effective design and marketing strategies in the

online shopping environment, providing a competitive advantage after the COVID-19 pandemic. Therefore, this study focuses on the consumers' online grocery shopping intention after the COVID-19 pandemic, aiming to define the factors influencing this intention.

3. Methodology

3.1 Research Hypotheses

Based on the literature review above, the following research hypotheses have been developed to explore consumers' intentions regarding online grocery shopping in the post COVID-19 period. The hypotheses are stated as follows:

H1: Online attitudes towards online shopping are significantly associated with online grocery shopping merits.

H2a: Suggestions for online grocery shopping from family members or friends are significantly associated with online grocery shopping merits.

H2b: Suggestions for online grocery shopping from family members or friends are positively associated with the intention to shop for groceries online in the future, post-COVID-19 pandemic.

H3: Shopping merits of online groceries are significantly associated with the intention to shop for groceries online in the future, post-COVID-19 pandemic.

Four hypotheses are formulated to explore the intention to shop for groceries online in the future. To gain a deeper understanding of the pathway of online grocery shopping intentions, this study employs the Structural Equation Modeling (SEM) method. To achieve the study's aims and test the specified hypotheses, the model is depicted in Fig 1.

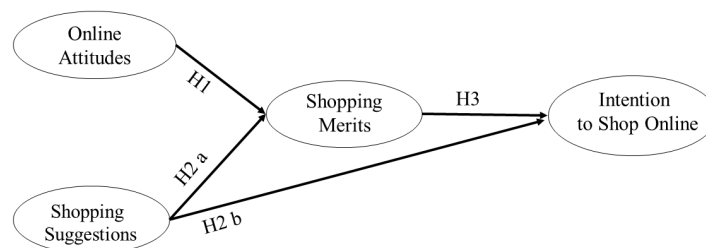


Figure 1. Proposed hypotheses for Structural Model investigating the intention to shop for groceries online

3.2 Sampling and Data Collection

To collect data, the current study employed a quantitative research method using convenience sampling via online surveys conducted on Amazon's Mechanical Turk (MTurk) from participants aged 18 and older in the USA. MTurk is a widely utilized crowdsourcing platform for research collaboration (Cummings & Sibona, 2017). The online survey link was sent to participants in the United States via Amazon Web Services. Participants received compensation for their responses through MTurk. The survey data were collected during the fall semester of 2023 amidst the COVID-19 pandemic. A total of 252 valid respondents were included in the data analysis.

3.3 Research Questionnaire

The questionnaire is composed of 4 sections: (1) 2 items for grocery shopping frequencies, (2) 1 item for online grocery shopping factors, (3) 16 items for online shopping behaviors and opinions, (4) 7 items for demographics. In order to understand online grocery shopping behaviors, the researcher adopted validated studies from prior research (Bezirgani & Lachapelle, 2021) after making minor modifications as necessary. The participants were assessed using 7-point Likert-type scales, ranging from 1 ("Strongly Disagree") to 7 ("Strongly Agree"), across 14 statements. Their opinions on online grocery shopping were similarly measured, with responses ranging from 1 ("Extremely stressful or useless") to 7 ("Extremely reassuring or useful"). Importantly, the researcher queried the participants about their grocery shopping habits, including their experiences with online grocery shopping. Prior to the formal online survey, a pilot study involving 45 in-person participants was conducted. The questionnaire took approximately 15-20 minutes to complete.

4. Data Analysis and Results

4.1 Description of Sample

In total, 71.8% ($n=181$) were male, and 28.2 % ($n=71$) were female among the valid participants. Numerous previous studies have indicated that females are often the primary individuals responsible for grocery shopping, and they are also prominent among online grocery shoppers (Blanck *et al.*, 2011, Frank & Peschel, 2020, Zatz *et al.*, 2021, Gomes & Lopes, 2022, Seo, 2024). However, an intriguing finding of this study is that more male participants reported shopping for their food online compared to female participants. The age range of participants spans from 22 to 69 years, with a mean age of 33 years. Notably, 56.7% of the participants fall within the age range of 20 to 30 years. The predominant ethnic group is White/ Caucasian ($n=222$, 88.1%). In this study, the majority of participants are married or living with a partner ($n=197$, 78.2%) and have full-time employment ($n=243$, 96.4%). The most common household size is four individuals ($n=95$, 37.7%), and the majority of participants have households with more than three people ($n=198$, 78.6 %). Additionally, 52.4 % ($n=132$) of the participants reported an annual household income exceeding \$50,000.00. A significant portion of participants ($n=248$, 98.4%) reported engaging in online grocery shopping experiences in the past year, with 61.5% ($n=155$) indicating that they shop for grocery shopping once a week. Table 1 displays the descriptive statistics of the survey data. To understand the factor influencing survey participants' shopping behaviors, they were asked about their online grocery shopping habits before and during the COVID-19 pandemic, as depicted in Table 2. As shown, the price (37.7%, $n=95$) emerges as the primary factor influencing participants' online food purchases.

Table 1. Statistics of the sample

	Frequency	Percent
Gender		
Male	181	71.8
Female	71	28.2
Age		
Between 20 and 30 years	143	56.7
Between 30 and 40 years	82	32.6
Between 40 and 50 years	14	5.5
Between 50 and 60 years	12	4.8
More than 51 years	1	.4
ethnic group		
ethnic group		
Race/ Ethnic Group		
White/ Caucasian	222	88.1
African American	9	3.6
American Indian/ Aleut	11	4.4
Asian/ Pacific Islander	7	2.8
Hispanic Origin	1	.4
Other	2	.8
Marital Status		
Single/ Never Married	54	21.4
Married/ Living with Partner	197	78.2
Divorced/ Separated	1	.4
Occupation		
Students	5	2.0
Part-time	3	1.2
Full-time	243	96.4
Unemployed	1	.4

Household		
Only One	15	6.0
Two	39	15.5
Three	76	30.2
Four	95	37.7
Five	27	10.7
Household Income		
Less than \$24,999.00	15	6.0
\$25,000.00 to \$34,999.00	26	10.3
\$35,000.00 to \$49,999.00	79	31.3
\$50,000.00 to \$74,999.00	86	34.1
\$75,000.00 to \$99,999.00	37	14.7
Over \$100,000.00	9	3.6
Shop for Food		
Every Day	84	33.3
Once a Week	155	61.5
Once a Month	13	5.2
Currently Do Online Grocery Shopping		
Yes	248	98.6
No	4	1.6
Total	252	100%

Table 2. The Important Factor for Online Grocery Shopping

Factors	Frequency	Percent
Price	95	37.7
Delivery time	53	21.0
Freshness	46	18.3
F Convenience	29	11.5
Customer service	27	10.7
Other	2	.8
Total	252	100%

4.2 Data Analysis

In further analysis, IBM SPSS and IBM AMOS were utilized. Factor Analysis was employed to reduce the large dataset and identify underlying relationships between variables. A principal component factor analysis with Varimax rotation was conducted on sixteen (16) items related to online shopping behaviors and opinions to preserve the scale's dimensionality. Items with factor loading less than 0.45 were eliminated, while those with factor loadings greater than 0.45 were retained as a part of a factor. After conducting factor analysis, confirmatory factor analysis was performed to assess the overall validity and reliability of the research model. All factor loading was significant, exceeding 0.46, and t-values ranged from 5.46 to 11.06. To assess reliability of observed items, Cronbach's alpha (α) was calculated. The composite reliability ranged from 0.67 to 0.84. The Cronbach's alpha (α) values of all variables were greater than 0.67, indicating that the items under constructs exhibited reasonable reliability (Taber, 2018). The average variance extracted (AVE) and the composite reliabilities (CR) of all indicators were calculated. The measurement model, comprising four latent constructs with 13 items as detailed in Table 3, demonstrated an excellent model fit. Table 4. Presents the results of mean, standard deviation (SD), median, and Cronbach's alpha (α). Discriminant validity of the model was assessed by comparing maximum squared correlations squared variances (MSV) with the average variance extracted (AVE) estimates. The AVE estimates for all constructs (ranged from .56 to .78) exceeded the MSV estimates (ranged from .23 to .98), indicating that all the constructs are sufficiently distinct from each other. This supports the discriminant validity of the model. A matrix of AVE and MSV for discriminant validity is provided in Table 5.

Table 3. Results of measurement model

Constructs/ Items	CFA Loadings	Chronach's Alpha (α)	t-value	Composite Reliability (CR)	Average Variance Extracted (AVE)
Online Shopping Attitudes		.76		.76	.61
Online grocery shopping is useless -useful	.79		5.46***		
Online grocery shopping is stressful – reassuring	.77		-		
Shopping Suggestions		.67		.67	.50
The most important people in my life think I should buy a portion or all of my groceries online	.70				
The most important people in my life recommend that I use online grocery shopping.	.72		9.52***		
Shopping Merits				.65	.32
I have all of the necessary resources and abilities to shop online for food.					
Online grocery shopping is useful for more variety and buying products of good quality.	.64		-		
Online grocery shopping is safer since it prevents the risk of failing and getting injured.	.54		7.62***		
I would make less impulsive purchases online than in person.	.46	.69	6.62***		
	.60		8.33***		
Intention to Shop Online					
I intend to continue to visit the online grocery retailer's site in the future.	.71		-		
I intend to purchase from the online grocery site in the future.	.74		11.06***		
I have a favorable attitude toward continue to do business with the online grocery retailer over the next few years.	.66	.84	9.94***	.84	.50
I intend to continue doing business with the online grocery retailer over next few years.	.72		10.80***		
In the future, the online grocery is one of the first places I intend to look when I need the food items.	.68		10.26***		

Notes. Standard estimate, $\chi^2 = 107.92$ ($df= 61$), $p < .0001$; AGFI= .91, GFI= .94, NFI = .92, CFI = .96; Standardized RMR= .058; RMSEA= .06, ** $p < 0.05$; *** $p < 0.05$, *** p

Table 4. Descriptive Statistic Results of Variables

Variables	Mean	SD	Median	Cronbach's
Online Shopping Attitudes	4.77	1.50	5.00	0.76
Shopping Suggestions	5.34	1.08	5.50	0.67
Shopping Merits	5.33	0.96	5.50	0.69
Intention to Shop Online	5.38	0.97	5.40	0.84

Notes: Scores ranged from 1 (Extremely Useless) to 7 (Extremely Useful), Scores ranged from 1 (Extremely Stressful) to 7 (Extremely Reassuring), or Scores ranged from 1 (Strongly Disagree) to 7 (Strongly Agree). Correlation is significant at the 0.05 level (2-tailed)

Table 5. Discriminant Validity Assessment Matrix of the Measurement Model

Latent Variables	Online Attitudes	Shopping Suggestions	Shopping Merits	Intention to Shop Online
Online Shopping Attitudes	0.78			
Shopping Suggestions	0.23	0.71		
Shopping Merits	0.39	0.82	0.56	
Intention to Shop Online	0.44	0.93	0.98	0.70

Notes. Boldfaced: Average variance extracted (AVE). Other estimates are Maximum Shared squared Variances (MSVs).

4.3 Model Fit

This study utilized Structural Equation Modeling (SEM) for data analysis, with four hypotheses formulated and evaluated within the comprehensive model. Table 6 presents the results of the model fit, which were assessed using parameters such as the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normal Fit Index (NFI), Comparative fit Index (CFI), incremental Fit Index (IFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). It has been suggested that RMSEA values less than 0.05 are considered good, while values between 0.05 and 0.08 are generally acceptable (Fabrigar *et al.*, 1999). Consequently, the measurement model demonstrated values within the recommended range. The overall SEM model fit was adequate: $\chi^2 = 107.92$, $df = 61$, $p = .000$. The Model demonstrated a GFI of .94, NFI of .92, CFI of .96, IFI of .96, TLI of .95, Standardized Root Mean Square Residual (SRMR) of .06, and RMSEA of .06.

Table 6. Model Fit

Absolute fit Measure	Recommended Value	Model Value
CMIN/DF	< 5.00	1.77
GFI	>0.90	0.938
AGFI	>0.90	0.908
NFI	>0.90	0.916
CFI	>0.90	0.961
IFI	>0.90	0.962
TLI	>0.90	0.950
RMSEA	<0.05	0.055

4.4 Hypotheses Testing and Structural Model

Hypothesis testing was conducted using path analysis among the four variables, resulting in the establishment of a structural model. Table 7 presents the results of standardized regression estimates. This study examined the direct effects of determinants on intention to shop online groceries, online attitudes, shopping suggestions, and shopping merits. The results reveal that the relationship between online attitudes and shopping merits (H1) was significant ($\beta = 0.18$, $p < 0.001$), supporting H 1. Interestingly, there was a strong positive effect of shopping suggestions on shopping merits (H2 a, $\beta = 0.78$, $p < 0.001$). However, the effect of shopping merits on intention to shop for online groceries (H2 b, $\beta = 0.11$, $p = 0.38$) was nonsignificant. Thus, H2 a was supported, but H2 b was not. Additionally, the result for H3 demonstrated that shopping merits had a significantly positive impact on intention to shop for online groceries ($\beta = 0.89$, $p < 0.001$), supporting H3. The results of these hypotheses are illustrated in Figure 2.

Table 7. Hypotheses Conclusion

Hypotheses	Path	Estimate (β)	S.E.	C.R. (t-value)	P-value	Label
H1	Shopping Merit \leftarrow Online Attitudes	0.200	0.047	4.244	***	Accepted
H2 a	Shopping Merit \leftarrow Shopping Suggestions	0.781	0.108	7.249	***	Accepted
H2 b	Intention to Shop Online \leftarrow Shopping Suggestions	0.112	0.128	0.879	0.380	Rejected
H3	Intention to Shop Online \leftarrow Shopping Merit	0.888	0.160	5.548	***	Accepted

Notes: *** $p < 0.001$

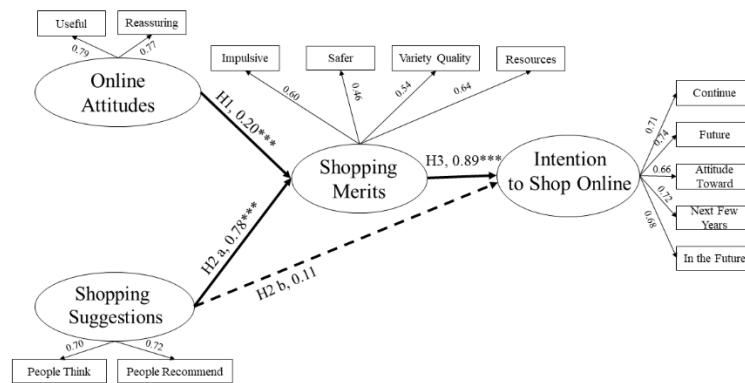


Figure 2. Results of hypotheses testing for online grocery shopping intention

Note. Dotted lines indicate non-significant Relationship; Structural paths in bold represent significant. $\chi^2 = 107.92$ (df= 61), $p = .000$, AGFI= .91, GFI= .94, NFI = .92, CFI = .96; SRMR= .06; RMSEA=.06. *** $p < 0.001$.

5. Discussion

The COVID-19 pandemic has significantly influenced consumers' shopping patterns and their lifestyles. Many consumers adopted online grocery shopping, and numerous retailers offered online platforms and mobile apps during the pandemic. Online grocery shopping has become a significant trend, and it's shopping behaviors need to be researched for future online market strategies. Hence, the objective of this research is to investigate the intention to continue shopping for grocery online after the COVID-19 pandemic. The results of this study indicate that most of the participants ($n=248$, 98.6%) purchase their food items online once a week ($n=155$, 61.5%). Interestingly, participants between 20 and 30 years old ($n=143$, 56.7%), particularly those in households of more than three people, and males ($n=181$, 71.8%) predominantly shop for their food online. This finding contrasts with previous research, which found that females are primary grocery shoppers in households (Zatz *et al.*, 2021, Frank & Peschel, 2020). Due to their busy schedules and full-time jobs ($n=243$, 96.4%), participants may prefer online grocery shopping for its timesaving and convenience benefits. These results align with the previous findings by Eriksson and Stenius (2022), Lo *et al.*, (2021), and Titiloye *et al.*, (2023), which showed that full-time workers living in large households with children prefer to shop for grocery items online. When shopping online for grocery items, the primary factors influencing item selection are price ($n=95$, 37.7%), delivery time ($n=53$, 21.0%), and freshness ($n=46$, 18.3%). This study aligns with the previous research by Tyrväinen and Karjaluoto, (2022), which found that online grocery shoppers are sensitive to price.

The participants in this study believe that online grocery shopping is a useful and reassuring activity due to their familiarity with electronic devices such as computers, iPads, and smart phones, which they have grown up using. This study suggests that online grocery shopping is perceived as an easy and enjoyable activity across all generation. This finding is consistent with previous research (Ali & Naushad, 2021; Frank & Peschel, 2020). The important finding in this study is that suggestions and recommendations from close friends and relatives regarding online grocery shopping greatly influence the merits of online shopping. The online shopping merits include offering a greater variety of food products, reducing impulsive shopping, and preventing the risk of

injury compared to the traditional grocery shopping. It appears that after evaluating the merits of online grocery shopping, participants intend to purchase their foods online. They will continue to shop for their food items online both now and in the future, even after the COVID-19 pandemic. However, this study finds that suggestions from close friends and relatives do not directly influence the intention to shop for groceries online. These results are not consistent with the previous studies by Tyrväinen and Karjaluoto (2022) and Warganegara, and Babolian Hendijani (2022).

Grocery shopping is an essential activity for human life. This study indicates that when online grocery websites provide a variety of high-quality food products, participants are more likely to shop online. Positive opinions and experiences about the merits of online grocery shopping from closer close friends and relatives influence future intentions to continue using it after the COVID-19 pandemic. Consequently, online grocery shopping has the potential to become a common practice among consumers in the future.

6. Conclusion

This study aims to explain the future online grocery shopping intension. Due to the COVID-19 pandemic, consumers developed unique shopping behaviors and habits, particularly in grocery shopping. Online grocery shopping emerged as an appealing alternative for individuals across all generations. Many consumers in the USA adopted this method during the pandemic and continue to use it for their food purchases. Participants in this study believe that online grocery shopping is a convenience and delightful method leading them to plan future purchases online. Similar findings are reported by Gomes and Lopes (2022) and Asgari *et al.*, (2023). Influenced by suggestions from close neighbors, friends, and relatives, participants visit the grocery store websites to compare, contrast, and/ or evaluate the food items before making purchase. Positive online grocery shopping experiences and recommendations significantly influence consumers to purchase food through websites. Additionally, when shoppers recognize the merits of online grody shopping, they are more likely to continue buying their food online. Consequently, the findings in this study suggest that people are likely to maintain this behavior even after the COVID-19 pandemic. Online grocery retailers should focus on creating well-organized websites with detailed food information to enhance the frequency of online grocery shopping. As online grocery shopping has become the “new normal” in our daily lives, improving the user experience is essential.

7. Implications

This study can make significant contributions to both researchers and practitioners in the fields of online grocery retailing and marketing. Based on the results in this study, online grocery retailers can enhance their understanding of current consumer shopping trends and future forecasts. The finding may help online grocery retailers improve their customer services. This study provides valuable insights into effective market strategies for promoting and enhancing online grocery websites. With consumers perceiving online grocery shopping as easy, convenient, and assuring, marketers should prioritize creating a seamless shopping experience on their platforms. This research indicates that online grocery shoppers prioritize high-quality, reasonably priced items. Therefore, retailers are encouraged to implement periodic scales events to attach and retain their target customers base. Most shoppers prefer to browse the website for food items before making a purchase. Online grocery retailers should regularly update their website with the latest food information and fresh pictures to boost sales. Additionally, online grocery retailers should communicate frequently with their consumers, as these consumers are often influenced by close friends and relatives. Sharing feedback from the online grocery shoppers can help increase online grocery sales and foster loyalty and satisfaction. Furthermore, providing more flexible delivery options to accommodate shoppers’ schedules is highly recommended.

8. Limitations and Recommendations for Future Research

This study has several limitations that should be considered for future research. First, this research does not include specific food items, which need to be studied to understand consumers’ shopping patterns for developing online marketing strategies. Second, the survey data were collected using online panels through MTurk in the USA. As a result, the results of this study may not be fully representative of the entire U.S. population and could be subject to potential bias. To gain a more comprehensive understanding of online grocery shopping patterns and behaviors, future research should consider including other regions and employing in-person survey or face-to-face interviews. Third, the grocery pickup service is a significant aspect of online grocery shopping and warrants future research and markets analysis. However, this study does not address the pickup service, which is currently utilized by many consumers after selecting food items on a website. Fourth, this study does not consider the income levels of shoppers, which may influence their likelihood of purchasing groceries online. Future research should investigate shopping behaviors with a focus on the income levels of online grocery

shoppers. Additionally, future studies should consider the impact of shipping and handling fees, as these factors may affect consumers' intentions to shop for groceries online.

Acknowledgments

This work was supported by the PROPEL Education Now Designed for the Future Center and the USDA National Institute of Food and Agriculture, 1890 Capacity Building Grants (Award No: 2023-38821-39971).

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Canadian Center of Science and Education.

The journal and publisher adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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