Online grocery shopping intentions in the post COVID-19 context: a case of millennial generations in Bangladesh

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Abstract

Purpose – The purpose of this paper is to explore factors and their impacts influencing online grocery shopping intentions among customers in the post COVID-19 situation. Moreover, the study aims at evaluating the mediating roles of shopping habits during COVID-19 between perceived usefulness, perceived ease of use and post COVID-19 online grocery shopping intentions.

Design/methodology/approach – Based on a review of the literature and collection of 401 useable valid responses, the study was conducted through structured questionnaires applying personal interview technique. The subsequent analysis was conducted through partial least squares structural equation modeling (PLS-SEM) using Smart PLS 3.3.3.

Findings – The study findings revealed that perceived usefulness, perceived ease of use and shopping habits during COVID-19 have a significant influence on post COVID-19 online grocery shopping intentions. Also, the study has uncovered that perceived usefulness and perceived ease of use significantly influence shopping habits during COVID-19 among customers. Furthermore, the current study has revealed that hopping habit during COVID-19 significantly mediates the relationship between perceived usefulness, perceived ease of use and post COVID-19 online grocery shopping intentions.

Practical implications – The study findings have provided practical suggestions of developing and improving technological platforms to attract new customers for online grocery shopping. Further, the study suggests that online grocery retailers should apply adjusted pricing strategies using coupons and discount offers.

Originality/value – This paper investigates factors and its impacts on online grocery shopping intentions in post COVID-19 context. Therefore, the study uncovers the factors that add value to understanding customers' post COVID-19 online grocery shopping intentions by integrating perceived usefulness, perceived ease of use and shopping habits during COVID-19.

Keywords Perceived usefulness, Perceived ease of use, Shopping habits during COVID-19, Post COVID-19 online grocery shopping intentions, Millennial generations in Bangladesh

Paper type Research paper

Introduction

Globally, travelling reluctance to grocery markets has been increasing due to the availability of online grocery shopping substitutes and fear of COVID-19 since the world wide outbreak of

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COVID-19 pandemic (Kim *et al.*, 2021). The prevalence of online grocery shopping intentions caused by disinformation and misinformation in the digital era (Behl *et al.*, 2022, 2023; Jayawardena *et al.*, 2022), including in times of crisis, has serious repercussions on shaping the perishability and variability of the product, and frequency of the shopping activity societal perceptions and thus needs to be addressed with informed strategies. Besides, intermittent lockdown regulations during COVID-19 have changed customers' buying patterns and consumption behaviors (Luciano *et al.*, 2021). Furthermore, today's people are becoming busy at doing multiple jobs due to the global economic crisis (Sus *et al.*, 2023), and thus they prefer to shop for groceries through online platforms. Moreover, the enhancement of internet and information technologies has penetrated millennial generations to adopt online grocery shopping platforms (Maheshwari, 2023).

Online grocery shopping has been arguably a discontinuous innovation, which has been emerged through the rapid digitalization and online retailing across the world (Alaimo *et al.*, 2020). Online grocery shopping facilitates shoppers of forfeiting the social interactions of offline shopping, evaluating groceries prior to purchase, and experiencing new, smooth and convenient shopping means (Neumayr and Moosauer, 2021). These attributes of online grocery shopping have triggered millennial generations' online grocery shopping tendency during COVID-19 pandemic (Bauerová, 2021).

Millennial generations refer to generation Y who are the children of generation X and parents of generation Z (Christensen *et al.*, 2018). Valenti (2019) define millennials as micro-generations who are born in the year between 1982 and 2004 with the characteristics of both generation Y and generation Z. Besides, Greenberg and Weber (2008) argue that millennial generations are regarded as technologically advanced generations born in the year between 1978 and 2000, and cover almost 1.80 billion (23%) of the total global population. Nawaz (2020) mentions that millennial generations are web-savvy, curious, independent, tolerant and technology natives, and thus they are growing up with technology such as laptop, desktop computer and smartphone. Due to these arguments, the investigation of online grocery shopping intentions among millennial generations has been a crucial decision in the post COVID-19 context. However, understating the factors influencing customers' post COVID-19 online grocery shopping intentions is a complex issue because of customers' perceptions towards online grocery shopping systems and during COVID-19 shopping habits.

COVID-19 pandemic has changed customers' shopping habits and perceptions towards online shopping (Valaskova *et al.*, 2021). Intermittent lockdown regulations and customers' reluctance to visiting outside for buying daily necessities have pushed customers to adopt online grocery shopping among younger consumers (Mohiuddin, 2020). Thus, customers have shifted their physical purchasing habits into online shopping using available online portals. The customers' online grocery shopping habits during COVID-19 have motivated researchers to explore the actual online grocery shopping intentions among millennial generations in the post COVID-19 context. However, limited research has focused on understating factors that influence post COVID-19 online grocery shopping intentions (Gomes and Lopes, 2022; Tyrväinen and Karjaluoto, 2022).

Previous literature mainly focused on explaining factors influencing customers' buying behaviors during COVID-19 (Anas *et al.*, 2022; Hasan, 2022a, b). As such, Arachchi *et al.* (2022) examined the effects of consumer–brand identification, brand trust and perceived corporate citizenship on consumer purchase intentions during COVID-19. Furthermore, Habib and Hamadneh (2021) explain that how customers' perceptions towards online shopping impact online grocery shopping intentions during COVID-19, and Rout *et al.* (2022) identify that perceived usefulness and perceived ease of use significantly influence online grocery shopping intentions during COVID-19. Notably, existing studies have focused on the antecedents and consequences of online grocery shopping intentions, centered around the

customers' experiences, satisfaction and attitude (Luna-Nevarez and McGovern, 2021). Furthermore, Gruntkowski and Martinez (2022) explore that perceived usefulness and perceived ease of use significantly impact on online grocery shopping intentions during COVID-19. Thus, the following questions may arise: Do perceived usefulness and perceived ease of use influence customers' online grocery shopping intentions in post COVID-19 situation? Does customers' shopping habits affect their online grocery shopping intentions in the post COVID-19 situation? To solve these questions, the current study has applied technology acceptance model (TAM) and extended TAM, including shopping habits during COVID-19 as a mediator which can uniquely explain factors influencing customers' online grocery shopping intentions in the COVID-19 context. However, limited efforts have been given to examining the factors that influence customers' online grocery shopping intentions after COVID-19 situation (Gomes and Lopes, 2022; Tyrväinen and Karjaluoto, 2022).

Literature mainly demonstrated several theories that have been used for explaining customers' online grocery shopping intentions during the COVID-19 pandemic situation, where, Bouarar *et al.* (2021) apply theory of planned behavior (TPB) to predict online grocery shopping intentions during COVID-19 pandemic; Kurniasari and Ryadi (2021) verify online grocery shopping intentions using the extended TAM during COVID-19; and Habib and Hamadneh (2021) extend and use TAM to predict online grocery shopping intentions during COVID-19 pandemic. Thus, it can be deduced that extended TAM might be a powerful model for predicting customers' online grocery shopping intentions in the post COVID-19 context. However, limited studies have explained post COVID-19 online grocery shopping intentions (Gomes and Lopes, 2022; Habib and Hamadneh, 2021). Therefore, the current study extends TAM (see Figure 1) including shopping habits during COVID-19 to explore customers' online grocery shopping intentions in the post COVID-19 perspective, fulfilling the following specific objectives:

(1) To assess the casual relationships among perceived usefulness, perceived ease of use, during COVID-19 shopping habits and post COVID-19 online grocery shopping intentions.

(2) To evaluate the mediating effect of COVID-19 shopping habit in the relationship between perceived usefulness, perceived ease of use and post COVID-19 online grocery shopping intentions.

The rest of the study is arranged as followed by literature review, methodology, results and discussions, theoretical and practical implications, and limitations and future research.

Literature review

Technology acceptance model (TAM)

TAM has been broadly utilized for examining customers' intentions to use technology since its development (Vanduhe *et al.*, 2020). TAM has received much attention in the area of e-commerce. Recently, TAM has been extended and extensively used for predicting online shopping behaviors in different contexts, where Arslan and Turan (2022) extend TAM and

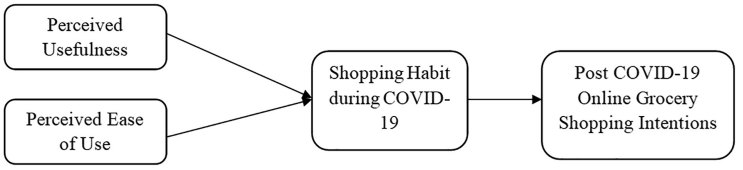

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Figure 1. Proposed research framework

apply it to measuring customers' online grocery shopping intentions in the COVID-19 pandemic situation; Ryadi *et al.* (2021) examine factors that can influence e-grocery shopping intentions through extending the TAM; and Assaker (2020) explore the travelers' user-generated content (UGC) adoption intentions, extending TAM. Although TAM is originated from theory of reasoned actions (TRA), it is used for predicting customers' intentions towards new technology or system adoption (Saleem *et al.*, 2022). According to Hasan *et al.* (2021), TAM consists of two independent constructs: perceived usefulness and perceived ease of use, and thus, these constructs are used for explaining the technology adoption intentions such as new software adoption intentions, online shopping intentions and new systems adoption intentions. Thus, the extension of TAM, including shopping habits during COVID-19, can be useful for predicting customers' online grocery shopping intentions in post COVID-19 context.

Online grocery shopping intentions

Online grocery purchase intentions have been emerged as the most popular activity during COVID-19 pandemic situation (Hasan, 2022b, 2023; Koch *et al.*, 2020). Habib and Hamadneh (2021) define online grocery shopping intentions as the customers' intentions (Arachchi and Samarasinghe, 2023) of shopping goods or products through using online platforms instead of traveling to physical markets. Furthermore, Jiang *et al.* (2021) define online grocery shopping intentions as the readiness of shopping for groceries via the internet or virtual shopping carts. Besides, de Magalhães (2021) defines online grocery shopping as the customers' willingness to purchase grocery items using internet services through comparing products' price and quality. In previous literature, Jun *et al.* (2022) mentioned that customers' online grocery shopping intentions are vital for forecasting customers' actual behaviors that obviously depend on some influential factors under different circumstances; Bhattacharya *et al.* (2023) explain that privacy and security statements substantially lead to higher online purchase intentions; and Ilhamalimy and Ali (2021) mentioned that online purchase easiness influences customers' online purchase intentions. Moreover, earlier studies have revealed that customers' perceived usefulness and perceived ease of use have positive impacts on customers' online purchase intentions (Hasan and Rahman, 2023; Ha, 2020; Vahdat *et al.*, 2021). Based on these studies, it can be inferred that investigating the factors influencing online grocery shopping intentions may be crucial in post COVID-19 situations.

Shopping habit during COVID-19

Before describing shopping habits, the concept of habit must be precisely described. The habit was first introduced in psychology such as customers' behavior and organizational behavior (Verplanken and Wood, 2006). Wood *et al.* (2022) define that habit is a usual way of behaving or a tendency which someone has settled into. Harvey *et al.* (2022) demonstrate that when an individual's habit is strongly present, the expression of intentions for performing the specific behaviors is vividly existent. Thus, Geetha (2020) defines shopping habit as the tendency of customers to purchase products/services. Customers' shopping habits during COVID-19 are determined by the growth of social media, the rise of online shopping portals, fear of COVID-19 and economic recession during COVID-19 (Ali Taha *et al.*, 2021; Lakmali and Kajendra, 2021).

Previous literature demonstrates that with the outbreak of COVID-19, the customers' behaviors have been significantly changed and deviated from their usual shopping behavior, where Eger *et al.* (2021) point that lower accessibility of store promises, shopping regulations and customers' health consciousness have immediately increased the demand for alternative distribution channels for grocery shopping during COVID-19 pandemic; and Dannenberg *et al.* (2020) explain that customers are accustomed to shopping grocery through online platform during COVID-19 pandemic crisis. Thus, shopping habits during COVID-19 can be a

potential indicator of customers' online grocery shopping intentions after COVID-19 depending on some factors such as perceived usefulness and perceived ease of use.

Perceived usefulness, post COVID-19 online grocery shopping intentions and shopping habit during COVID-19

Perceived usefulness refers to users' subjective perceptions or beliefs that certain technologies can improve their work performance (Huang and Teo, 2021). Hasan *et al.* (2021) define perceived usefulness as the fleeing of efficacy when performing the behaviors. In the online shopping context, perceived usefulness is the value addition and efficacy when customers perform online shopping. Besides, Alfadda and Mahdi (2021) define that perceived usefulness is the degree to which a person believes that using a particular system or technology enhances an individual's job performance.

According to previous studies, Chen and Aklikokou (2020) note that perceived usefulness significantly influenced online shopping intentions; Wu and Song (2021) mention that perceived usefulness is positively related to online grocery shopping intentions; and Yen and Wu (2016) examine the relationship between personal habit and perceived usefulness. Thus, it is pertinent to investigate the causal relationships between perceived usefulness, post COVID-19 online grocery shopping intentions and shopping habits during COVID-19, and the subsequent hypotheses are as follows.

H1. Perceived usefulness significantly influences post COVID-19 online grocery shopping intentions.

H2. Perceived usefulness significantly influences shopping habits during COVID-19.

Perceived ease of use, post COVID-19 online grocery shopping intentions and shopping habit during COVID-19

Perceived ease of use (PEOU) is a widely recognized predictive component of TAM. Alsswey and Al-Samarraie (2020) define perceived ease of use as the degree of a person's belief that use of a particular system or technology would be free of effort and easy to comprehend or use. Besides, Andri (2022) defines perceived ease of use as the degree to which a person believes that using or applying a particular system would be free of efforts, and thus, it has been used in explaining technology adoption intentions in different contexts.

In online shopping context, perceived ease of use positively influences intentions to shop online, where Hong *et al.* (2021) point that perceived ease of use significantly affects online grocery shopping intentions; Driediger and Bhatiasevi (2019) note that perceived ease of use is positively correlated with intentions towards online grocery shopping; Gruntkowski and Martinez (2022) explain that perceived ease of use is the most powerful predictor of online grocery shopping intentions; and Yen and Wu (2016) explain that perceived ease of use is related to personal habit. Thus, it is assumed to be pertinent to examine the casual relationships between perceived ease of use, post COVID-19 online grocery shopping intentions and shopping habits during COVID-19. The present study proposes the following hypotheses.

H3. Perceived ease of use significantly influences post COVID-19 online grocery shopping intentions.

H4. Perceived ease of use significantly influences shopping habits during COVID-19.

Mediating role of shopping habit during COVID-19

Habits are defined as a settled tendency or usual manner of behavior (Skotnicka *et al.*, 2021). Besides, Yang *et al.* (2021) define habits as learned behaviors reflexive over time. Thus, the

shopping habit of COVID-19 can be defined as a settled purchasing manner under COVID-19 pandemic situations (Skotnicka *et al.*, 2021). In previous studies, Amoroso and Lim (2017) examined the mediating effect of habit on continuance intention, Wang and Lin (2021) explored the moderating role of habit in online repeat purchase intentions in Taiwan, Serenko and Turel (2019) investigated the role of habit in dual enjoyment driving process, and Maqableh *et al.*(2021) and Mouakket (2015) explored the mediating role of habit towards continuance intentions to use social networking sites. Thus, it is assumed to be pertinent to examining the mediating role of shopping habits during COVID-19 between perceived usefulness, perceived ease of use and COVID-19 online grocery shopping intentions. Consequently, the current study proposes the following hypotheses.

H5. Shopping habits during COVID-19 significantly influence post COVID-19 online grocery shopping intentions.

H6. Perceived usefulness, including shopping habits during COVID-19, significantly influences post COVID-19 online grocery shopping intentions.

H7. Perceived ease of use including shopping habits during COVID-19 significantly influences post COVID-19 online grocery shopping intentions.

Methodology

Data collecting and sampling procedure

To collect data, the current study employed a quantitative research method by using structured questionnaires from young generations of Bangladesh whose age is between 19 and 22 or equal to 22 years (Valenti, 2019). Importantly, participants are selected conveniently and asked to fill up the questionnaire voluntarily. In fact, due to the study purpose, the respondents were briefed about the objectives and the research concept in detail. Initially, respondents are screened and purposively (using convenience sampling technique) selected who have prior online shopping experiences (Etikan and Babtope, 2019). Among the selected participants, the structured questionnaires are distributed and asked for a rerun filling it up during September 1, 2022 to November 30, 2022. The questionnaire contains two types of questions such as demographic questions and close-ended questions, signifying the constructs. A total of 550 questionnaires were personally provided and 401 valid responses (with 72.90% of valid response rate) were returned and used for further analysis (Hennink and Kaiser, 2022; Cerny and Kaiser, 1977).

Research instrument

The constructs of the research are measured using simple unbiased statements that can be easily understood. The items of the constructs were adopted from prior validated studies after minor modifications. Three measurement items of perceived usefulness are borrowed from Abdullah *et al.* (2016). The three validated items recommended by Abdullah *et al.* (2016) are used for measuring perceived ease of use. Shopping habits during COVID-19 comprise three items that are adapted from Chiu *et al.* (2012). Three measurement items (such as intentions of online grocery shopping, prediction of online grocery shopping and plan of online grocery shopping of post COVID-19 online grocery shopping intentions) are adapted developed by Abdullah *et al.* (2016). Importantly, the responses of each construct are evaluated through five point Likert scales, where 1 indicates strongly disagree and 5 indicates strongly agree. Before conducting the formal survey, a pilot study was conducted among 25 respondents who comprised actual online grocery purchasers, academics and industry professionals. After the pilot study, the constructs' Cronbach's alpha values were found to be greater than the recommended value of 0.70 (Nunnally, 1978), which represents

that the constructs' internal consistency is adequate enough. Subsequently, these adopted measurement items are used for the formal survey.

Common method variance (CMV)

To minimize the common method variance effects, the respondents are informed that there are no right and wrong answers, and all responses are evaluated anonymously. Moreover, all measurement items of all constructs are mingled to achieve a minimum common method variance.

Data analysis

Anderson and Gerbing (1988) have suggested a two-step approach, which is used for confirmatory factor analysis (CFA) to determine whether the observed variables reflect the latent constructs (factors) using covariance matrix and structural model analysis through partial least squares structural equation modeling (PLS-SEM) using Smart PLS 3.3.3.

Results

Table 1 demonstrates the psychometric characteristics of respondents, where 215 (53.61%) are male and 186 (46.39%) are female. Respondents' age is between 15 and 22 or equal to 22 years, with the majority (59.35%) being approximately 19–22 years old. In case of occupation, 364 (90.77) are students, 23 (05.73%) are workers and 14 (3.50%) are in other professions. Given the relatively young sample, monthly income of respondents is comparatively low, where 369 (92.01%) have income below 20,000 Bangladesh taka (BDT), 29 (07.24%) have income between BDT 20000 and 40,000, and 3 (0.75) has income above BDT 40000. Among the respondents, 351 (87.53%) were unmarried, 48 (11.97%) were married and 02 (0.50%) were widowed. The subsequent analysis is conducted using Smart PLS 3.3.3 due to its characteristics of estimating complex models with many constructs without imposing

Variables	n	Percentage (%)
Gender		
Male	215	53.61
Female	186	46.39
Age (years)		
15 to 18	163	40.65
19 to 22	238	59.35
Occupation		
Students	364	90.77
Workers	23	05.73
Others	14	3.50
Monthly income (BDT)		
Below 20,000	369	92.01
20,000–40000	29	07.24
Above 40,000	3	0.75
Marital status		
Unmarried	351	87.53
Married	48	11.97
Widowed	02	0.50

Source(s): Created by authors

Table 1. Demographic profile of respondents (n = 401)

distributional assumptions on the data (Zeng *et al.*, 2021). Importantly, before conducting PLS-SEM, data normality is measured by testing Harman's common method bias using SPSS, and thus the Harman's common method bias results indicate that the data set is free from common method bias as the cumulative extraction sums of squared loadings is 49.358%, which is less than 50% (Aguirre-Urreta and Hu, 2019).

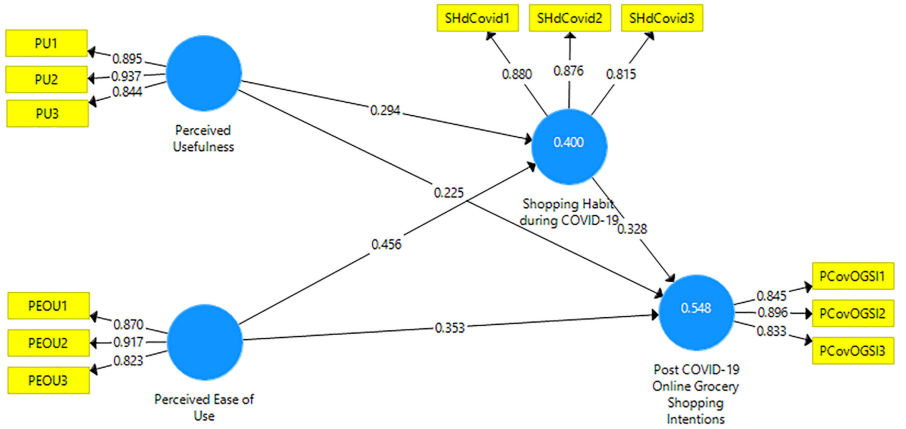
Measurement model

The study used a two-step approach of data analysis, where confirmatory factor analysis (CFA) is performed to ensure the quality of data and proposed constructs, and PLS-SEM is used to test the casual relationships between constructs. The data quality is examined in terms of reliability and validity values. The measurement model's results are presented in Table 2 and Figure 2 show that Cronbach's alpha values are between 0.819 and 0.873 greater than 0.70 (Nunnally, 1978), indicating an acceptable internal consistency of measurement

Constructs/Items	Factor loadings	Cronbach's alpha (α)	Composite reliability (CR)	Average variance extracted (AVE)
Perceived usefulness				
Online grocery shopping would allow me to purchase groceries more quickly	0.937	0.873	0.922	0.797
Online grocery shopping would improve my grocery shopping performance	0.844			
Online grocery shopping would make grocery shopping easier	0.895			
Perceived ease of use				
Online grocery shopping is easy for me	0.870	0.840	0.904	0.758
It would be easy for me to become skillful at making online grocery shopping	0.917			
I would find online grocery shopping easy to do	0.823			
Shopping habit during COVID-19				
I did online grocery shopping frequently during COVID-19	0.88	0.819	0.893	0.735
Online grocery shopping was a routine task for me during COVID-19	0.876			
I had been doing online grocery shopping for a long time during COVID-19	0.815			
Post COVID-19 online grocery shopping intentions				
I indented to shop groceries over online after COVID-19	0.845	0.821	0.894	0.737
I predict that I would make online grocery shopping after COVID-19	0.896			
I plan to have online grocery shopping after COVID-19	0.833			

Table 2. Measurement model results

Source(s): Created by authors



Source(s): Created by authors

Figure 2.
Measurement model

items of the constructs. As shown in Table 2, the values of composite reliability (CR) range from 0.893 to 0.922 higher than 0.60 (Fornell and Larcker, 1981). To test the convergent validity, the average variance extracted (AVE) was assessed and found that the AVE value of all constructs was higher than 0.50 (Hair *et al.*, 2013), as depicted in Table 2, indicating acceptable convergent validity.

To verify the discriminant validity, the AVE of each construct was compared with the constructs' highest squared root correlation with another construct. As depicted, the squared root value of each construct in Table 3 is greater than the AVE of each indicator, indicating adequate discriminant validity (Fornell and Larcker, 1981). Besides, the variance inflation factors (VIFs) values presented in Table 3 of each construct is lower than 3.3, implying that there no multicollinearity issue is detected in this study (Kock, 2017).

Structural model: model fit and hypothesis testing

After justifying the reliability and validity through the measurement model, the goodness of fit indices of the theoretical framework are assessed using the structural model. To verify the theoretical model fitness, the cross-validated redundancy (Q^2) and effect size (f^2) are measured. The Q^2 is appropriate when a valid model cannot be distinguished from invalid model (Henseler and Sarstedt, 2013). Q^2 values of 0.290 and 0.396 of Shopping habit during COVID-19 (SHdCovid) and Post COVID-19 online grocery shopping intentions (PCovOGSI)

	PU	PEOU	SHdCovid	PCovOGSI
PU	*0.893*			
PEOU	0.398	*0.871*		
SHdCovid	0.475	0.572	*0.857*	
PCovOSI	0.521	0.630	0.637	*0.858*
VIF	1.332	1.535	1.667	1.524

Note(s): PU = Perceived usefulness, PEOU = Perceived ease of use, SHdCovid =Shopping habit during COVID-19, PCovOGSI = Post COVID-19 online grocery shopping intentions
Source(s): Created by authors

Table 3.
Results of discriminant validity and collinearity

presented in Table 4 are greater than zero, indicating predictive relevance for dependent variables under consideration (Henseler *et al.*, 2009).

In another way, f^2 measures the variation of R-square in terms of the impacts of independent variables on dependent variables. f^2 measures the inflated R-square of independent variables proportionately to dependent variables. The f^2 values of PU and PEOU presented in Table 5 are, respectively, 0.12 and 0.29. According to the suggestion of Cohen (2013), f^2 values of 0.02, 0.15 and 0.35 are, respectively small, medium and large effects on the dependent variable. Thus, perceived usefulness and perceived ease of use have small and medium effects on shopping habits during COVID-19. Similarly, the f^2 values presented in Table 6 of PU, PEOU and SHdCovid are 0.08, 0.18 and 0.14, respectively, suggesting small, medium and small effects on post COVID-19 online grocery shopping intentions.

Hypothesis testing

Table 7 and Figure 3 detail the results of hypothesis testing, where the hypothesized relationships are estimated through path coefficient (β), t-values and p-values. The strength of association between perceived usefulness and post COVID-19 online grocery shopping intentions (H1) was found significant ($\beta = 0.225, t = 4.544, p = 0.000$), supporting *H1*. Aligned with this result, Lim *et al.* (2016) explain that perceived usefulness has a significant influence on online purchase intentions. However, Ramayah and Ignatius (2005) mention that perceived usefulness does not significantly influence intentions to shop online. Thus, the current study result implies that perception of usefulness in shopping for groceries over the internet is a significant determinant of customers' online grocery shopping intentions after COVID-19.

Table 4.
Blindfolding results

Total	SSO	SSE	Q^2 (=1-SSE/SSO)
SHdCovid	1,203	854.282	0.290
PCovOSI	1,203	726.649	0.396

Note(s): SHdCovid =Shopping habit during COVID-19, PCovOGSI = Post COVID-19 online grocery shopping intentions
Source(s): Created by authors

Table 5.
Effect size of latent variables on shopping habits during COVID-19

Latent variables	f^2	Decision
PU	0.12	Small
PEOU	0.29	Medium

Note(s): PU = Perceived usefulness, PEOU = Perceived ease of use
Source(s): Created by authors

Table 6.
Effect size of latent variables on post COVID-19 online grocery shopping intentions

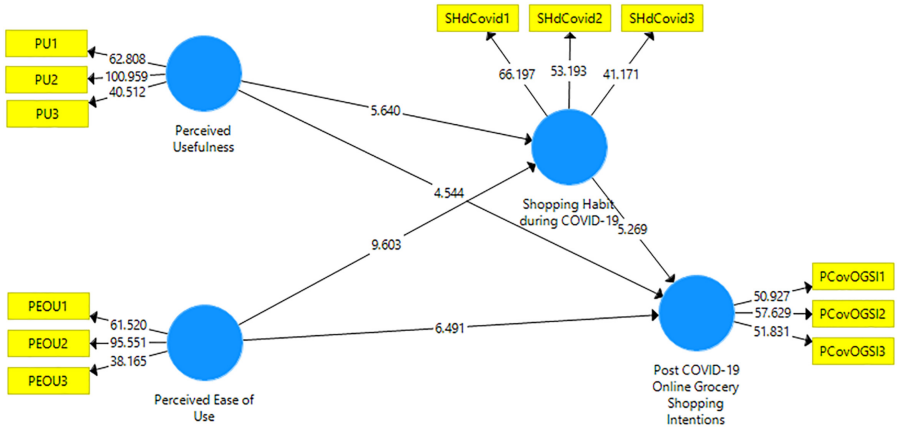
Latent variables	f^2	Decision
PU	0.08	Small
PEOU	0.18	Medium
SHdCovid	0.14	Small

Note(s): PU = Perceived usefulness, PEOU = Perceived ease of use, SHdCovid =Shopping habit during COVID-19
Source(s): Created by authors

Hypothesis	Relationships	Beta	*T*-statistics	*p*-values	Decisions
H1	Perceived usefulness → Post COVID-19 online grocery shopping intentions	0.225	4.544	0.000	Supported
H2	Perceived usefulness → Shopping habit during COVID-19	0.294	5.640	0.000	Supported
H3	Perceived ease of use → Post COVID-19 online grocery shopping intentions	0.353	6.491	0.000	Supported
H4	Perceived ease of use → Shopping habit during COVID-19	0.456	9.603	0.000	Supported
H5	Shopping habit during COVID-19 → Post COVID-19 online grocery shopping intentions	0.328	5.269	0.000	Supported
H6	Perceived usefulness → Shopping habit during COVID-19 → Post COVID-19 online grocery shopping intentions	0.096	4.211	0.000	Supported
H7	Perceived ease of use → Shopping habit during COVID-19 → Post COVID-19 online grocery shopping intentions	0.149	4.636	0.000	Supported

Source(s): Created by authors

Table 7.
Path coefficients and hypothesis testing



Source(s): Created by authors

Figure 3.
Structural model

Similarly, in accordance with the results, perceived usefulness significantly influences shopping habit during COVID-19 (H2) ($\beta = 0.294$, $t = 5.640$, $p = 0.000$), which supports *H2*, which is consistent with Khalifa and Liu (2007), who demonstrate the casual relationship between online shopping satisfaction, perceived usefulness and online shopping habit, and thus the result indicates that customers' shopping habit during COVID-19 is determined by online shopping usefulness. Furthermore, the strength of relationship between perceived ease of use and post COVID-19 online grocery shopping intentions (H3) is found significant ($\beta = 0.353$, $t = 6.491$, $p = 0.000$), which is consistent with the study of Kahar *et al.* (2019) who explain that perceived ease of use significantly influences repurchase intentions at Tokopedia, and thus it supports *H3*. Furthermore, in accordance with the study result, perceived ease of use significantly influences shopping habits during COVID-19 (H4) ($\beta = 0.456$, $t = 9.603$, $p = 0.000$), supporting H4. These results imply that when customers'

find online grocery shopping as easy to use, they show positive intentions towards online grocery shopping and become habituated to shopping online. Moreover, the relationship between shopping habits during COVID-19 and post COVID-19 online grocery shopping intentions (H5) was found significant ($\beta = 0.328$, $t = 5.269$, $p = 0.000$), which supports H5. Yang *et al.* (2019) mention that online shopping habits significantly influence repeat purchase intentions.

To evaluate the mediating effect of shopping habits during COVID-19, the current study has found a significant relationship between perceived usefulness including shopping habits during COVID-19 and post COVID-19 online grocery shopping intentions (H6) ($\beta = 0.096$, $t = 4.211$, $p = 0.000$), supporting *H6*. This indicates that shopping habits during COVID-19 partially mediate the relationship between perceived usefulness and post COVID-19 online grocery shopping intentions. Furthermore, the effect of perceived ease of use including shopping habit during COVID-19 on post COVID-19 online grocery shopping intentions (H7) was found significant ($\beta = 0.149$, $t = 4.636$, $p = 0.000$), which supports *H7*, indicating that shopping habit during COVID-19 partially mediates the relationship between perceived ease of use and post COVID-19 online grocery shopping intentions. In accordance with this study's findings, Khalifa and Liu (2007) explain that online shopping habit significantly moderates the relationship between online shopping satisfaction and online repurchase intention.

Discussions

This is the first study examining the post COVID-19 behavioral intentions in the context of grocery shopping in Bangladesh, adding context specific variables such as shopping habits during COVID-19 and post COVID-19 online grocery shopping intentions. The current study has figured out that when customers find usefulness of using online grocery shopping tools, they show positive intentions towards online grocery shopping intentions and shopping habits during COVID-19. Furthermore, this study has indicated that customers' feeling of using the easiness of online shopping tools significantly influences their online grocery shopping intentions in the post COVID-19 context and their shopping habits during COVID-19. Furthermore, the study has mentioned that customers' changing shopping habits during COVID-19 significantly explains their online grocery shopping intentions in the post COVID-19 context. Moreover, the current study has noted that customers' changing shopping habits during COVID-19 partially mediate (intervenes) in the relationship between perceived usefulness, perceived ease of use and online grocery shopping intentions in the post COVID-19 context. The current study has also left some managerial and practical implications for academics, policymakers and industry operators.

Theoretical implications

As customers' online grocery shopping tendency has soared up due to the emergence of new shopping online grocery platforms and outbreak of COVID-19, the current research has specifically examined the key factors and its impacts on customers' online grocery shopping intentions, applying TAM and extending it including the shopping habit in the post COVID-19 context, and thus this study has revealed that perceived usefulness and perceived ease of use significantly influence customers' shopping habit during COVID-19 and post COVID-19 online grocery shopping intentions. However, the existing studies mostly focus on factors (e.g., perceptions, value and image) that influence online shopping intentions (Qalati *et al.*, 2021; Nuseir, 2019). Thus, the current study uniquely contributes to posting COVID-19 agro-marketing literature that customers' online grocery purchase intentions and shopping habits during COVID-19 are dependent on systems' usefulness and using easiness variables. Furthermore, the study has uniquely contributed to online grocery shopping literature,

revealing that shopping habits during COVID-19 have a significant impact on post COVID-19 online grocery shopping intentions. However, Chou and Hsu (2016) explain that shopping habits influence repurchase intentions and Akar and Nasir (2015) mention that purchasing habits have significant impacts on online purchase intentions. Furthermore, the current study uniquely contributes to agro-marketing literature by revealing that shopping habits during COVID-19 partially mediate the relationships between perceived usefulness, perceived ease of use, and post COVID-19 online grocery shopping intentions, even though Khalifa and Liu (2007) mention that online shopping habits have significant moderating impacts between online shopping satisfaction and online repurchase intentions.

Practical implications

The present study has uncovered several insightful implications for industry policymakers of grocery producers and sellers in Bangladesh. First, grocery industry operators should introduce user friendly technology-based grocery selling systems such as artificial intelligence (AI), mobile applications and virtual reality (VR) to make organizations smarter, more efficient and more competitive. Second, online grocery sellers must develop a different type of social media marketing strategy (e.g., mobile marketing, face book marketing, YouTube boosting) to attract young generations in Bangladesh. Third, industry practitioners should carefully understand customers' needs, perceptions and situational shopping habits by arranging an open discussion platforms among customers and industry operators in some specific places at some specific dates. Fourth, grocery producers should develop separate online grocery selling units, including procurement officers, managers and distributors. Fifth, grocery industry operators should encourage customers' online grocery shopping habits by offering sales discounts and coupon gifts for their online transactions. Finally, industry operators should focus on developing marketing strategies in such a way (e.g. everyday low pricing strategy, community based boosting and customer focus strategy) which attracts customers regarding the environmental transitions such as during COVID-19 situations and post COVID-19 situations.

Conclusion

The current empirical research has embraced several limitations, leaving some potential lines for future research. First, the current study has been conducted for a specific period, which embraces potential data or resulting biasness, while future research can be conducted for a long period using a longitudinal research approach. Second, the study has approached only the young generation (millennial generation); thus, the study findings cannot be generalized for all types of customers, while future research could account for the mixing of all aged group people such as 15 or above years old. Third, the current study has considered perceived usefulness, perceived ease of use and shopping habit during COVID-19 as predictive variables, while future studies may explain the effects of online satisfaction, online purchase experiences and online purchase enjoyment as predictors of post COVID-19 online grocery shopping intentions in Bangladesh.

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