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Antecedents of online shopping behavior amidst fear of Covid-19 Pandemic in Jordan: An Empirical study

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A B S T R A C T

The frightening COVID-19 has considerably affected global marketing and the behavior and attitudes of consumers worldwide. Equally, it has changed the lifestyle, and the patterns of purchasing and consumption of consumers in Jordan as evidenced by the reduced popularity of in-store purchases. Quantitative research methods were applied in examining the relationships among the primary variables of the study. Data was obtained from 300 completed questionnaires collected from Facebook users in Jordan. Data was analyzed via AMOS software version 21.0, and hypotheses were examined by applying Structural Equation Modelling. Results revealed that trust issues, perceived ease of use and fear of complexity had a positive effect on online shopping behavior. Also, the study showed that perceived risk negatively affected online shopping behavior. Increased confidence in an online site increases the regularity of online shopping, while decreased perceived risk increases online purchase decisions.

1. Introduction

The world has been shaken by the novel coronavirus 2019 (COVID-19), and this extremely transmittable disease has been very tough to manage. Among the symptoms include fever, dry cough, fatigues, and myalgia (Wang et al., 2020) and these symptoms usually would manifest themselves within 2 to 14 post infection. The mortality rate of COVID-19 was 3.6% in China, while it was 1.5% in other countries, as of March 1, 2020 (Baud et al., 2020). The World Health Organization (2020) reported that 135 countries/territories had affirmed COVID-19 cases by March 14, 2020. COVID-19 has generated fear to the world population, and as found in some studies (e.g., Guan et al., 2020; Huang et al., 2020; Centers for Disease Control and Prevention, 2020; Lin, 2020), such fear has led to stigma. Additionally, Lin (2020) found that those infected by COVID-19 are feared and such fear may make the disease more destructive.

Unlike non-infectious diseases, infectious diseases often create fear among people, and it has been found that fear of disease is directly linked to the spread rate of the disease, the medium of infection, and the rate of morbidity and mortality of the disease. Hence, diseases that are regarded as rapid and visible are feared more. Appositely, Pappas et al. (2009) indicated that psychosocial problems can arise from fear. Discrimination, stigmatization, and loss are among the psychosocial problems associated with fear towards certain disease. Notably, extreme fear towards COVID-19 could make people irrational in their thinking. Following the outbreak of COVID-19, the world has begun to focus on controlling the infection, and on providing

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effective treatment and vaccine (Dong et al., 2020; Wang et al., 2020). Nonetheless, the psychosocial aspect must not be overlooked in combating this disease.

Jordan experienced the COVID-19 impact quite late, but with comparable severity. This disease has affected the economics and health of this country, and the severity was increased by globalization. Like other affected countries, Jordan has also taken a few measures to curb this disease like the imposition of social distancing, movement restrictions, and lockdowns. Additionally, businesses deemed as non-essential were forced to halt operation. Along the line, the disease has drastically changed the way consumers in Jordan purchase goods and services, in addition to changing their lives as humans – the disease has changed their behavior and attitude, and their lifestyle due to the change in their income and leisure time. As in-store purchases were restricted, consumers had to find alternative ways of purchasing goods and services, whether they are classed as essential or non-essential goods or services.

As mentioned, the pandemic presented Jordanians with new personal and social situations, like new level of income (e.g., some may have lower income, while some may have more income), different lifestyle (e.g., from a freely moving person to a homebound person), different leisure time (from less leisure time to more leisure time, and vice versa), and all of these have shifted the values and priorities of consumers. The pattern and trends of purchases of consumers have also changed. Their purchasing was more on essential items and in fact, consumers were found to decrease their spending on non-essential items (e.g., jewelries, clothing, travelling) and this has caused sales in non-essential items to drop. It has in fact been reported that the fashion and the apparel industry was hit hard because of the pandemic, and indeed, the economy was severely hit, while a lot of consumers were facing uncertainties concerning their future financial situations.

Consumers also have started to buy items online. By making the purchase online, consumers are saved from having to go to the physical store, and this prevents them from the risk of getting the virus from infected individuals who may also visit the store. As online purchases are actually easy to perform, the desire of consumers to visit the physical stores has reduced. Still, online shopping has issues as well, for instance, Almajali and Hammouri (2021) mentioned trust, perceived risk, and perceived ease of use as some of the issues associated with online shopping stores. Additionally, they indicated that trust in a given online store will reduce perceived risk, and this results in online purchase. Jordan has seen an increase in online purchasing, in line with the increase in the number of online stores in social media. Hence, the present study examined the ineffectiveness of in-store purchases during COVID-19 pandemic and fear towards COVID-19 in Jordanian context. Accordingly, this study looked at the online sales of products by retail brands to offer convenience to target customers. Also, the resultant new lifestyle of consumers from the pandemic was examined, especially in regards to online shopping. This research has the following composition: The ensuing Section 2 describes the literature review, while Section 3 provides the details on the study's research methodology. Section 4 covers the research finding, while section 5 discusses the conclusion of the study. Finally, Sections 6 presents the research conclusion, limitation, and recommendation for forthcoming works.

2. Literature review

With the internet access, people can shop online from any location, and online shopping is favored owing to its convenience, and it's better selection and price. This study examined online shopping among consumers in Jordan based on two established theories namely Theory of Planned Behavior (TPB) by Ajzen (1991) and Technology Acceptance Model (TAM) by Davis et al. (1989). TPB and TAM have been widely applied in the evaluation of people's willingness towards technology usage (Gefen et al., 2003; Hsu et al., 2006; Wu & Chen, 2005).

In order to make TAM more appropriate to the study context, many have modified this model in their study (Venkatesh et al., 2000). Meanwhile, the potency of TPB was evaluated in this study in order to improve TAM. In this regard, some external independent variables that significantly impact the consumer's technology adoption decision were added. Notably, the social and interpersonal factors are not included in TAM (Ukoha et al., 2011; Almajali and Masa'deh,2021; Hammouri & Abu-Shanab ,2017), and so, perceived behavioral control and subjective norms were included in TAM via TPB. As indicated by Orapin (2009), these variables portray the ease or trouble in carrying out some act amid resource constraints. Perceived behavioral control and subjective norms have been found to affect online shopping.

In Morocco, Nachit and Belhcen (2020) found that COVID-19 pandemic has considerably changed the behavior of consumers, as can be observed by the shift of priorities of consumers in this country. It was observed that consumers were buying more hygiene products and some other products, and there were also incidences of panic buying. For online shoppers, they were affected by factors including attractiveness, outside information, alternative products, conformity, and loyalty (Liao et al., 2017; Almajali et al.,2021). Nachit and Belhcen (2020) in Jordan examined the digital transformation readiness of Jordanian consumers and reported that COVID-19 and government measures had an impact on knowledge, attitude, and perception on digital transformation of the public and private sector. Consumers were provided with some digital tools to ease their online shopping process.

Online shopping is a process of direct purchasing of goods and services by customers from a seller via the internet with no mediation (Moling, 2011; almajali, 2021a). Customers could easily view the goods or services of interest over the internet, with no requirement for face-to-face communication between seller and consumer. However, trust cannot be controlled in

online shopping, rather, it can only be supported. For sellers, building trust in customers is a long-term investment, and trust must be earned. As reported by Monsuwe et al. (2004), many find online shopping difficult because it is perceived as a new and foreign way of buying things.

In buying behavior, Kumar and Grisaffe (2004) found Perceived Risk a crucial element, while Gefen et al. (2002) described it as an attribute of a substitute decision demonstrating the difference of its possible consequences. Purchase decisions are affected by Perceived risk particularly with unknown outcomes. It was reported by Hong and Yi (2012) that consumers who expressed preference towards Internet transactions appear to score low on risk avoidance. As such, consumers who would alternately purchase, and postpone and cancel a purchase are actually concerned about the risks.

Perceived ease of use is about how easy it is to use a given technology (Venkatesh & Davis, 2000), and this construct was examined in the present study, in terms of its impact on the use of different online stores. Notably, consumer behavior was found to be affected by COVID-19 pandemic and the imposed restrictions, and during this time, Armando (2021) found that consumers generally would purchase their goods and services online, as evidenced by a considerable shift towards e-commerce use and the increase in online shopping. Barbu et al. (2021) accordingly found that online consumer behavior during COVID-19 pandemic is motivated by factors including the intensity of internet use, increased awareness towards online shopping, increase in the amount of products offered online, and low-price bulk purchases. Social distancing requirements and movement restrictions also factored the increase in online shopping activities.

Scholars and retail marketers could benefit from the study as it could expand their awareness towards the perceptions of online shopping intentions of consumers during COVID-19, and their management of fears of consumers towards COVID-19. Hence, certain strategies of marketing could be formulated to encourage online shopping, especially among Jordanian consumers.

2.1 Research model and hypotheses formulation

The present study proposed four hypotheses as follows:

H_1: *Perceived risk has a negative impact on online shopping behavior*.

H_2: *Trust has a positive impact on online shopping behavior.*

H_3: *Perceived ease of use has a positive impact on online shopping behavior.*

H_4: *Fear of COVID-19 has a positive impact on online shopping behavior.*

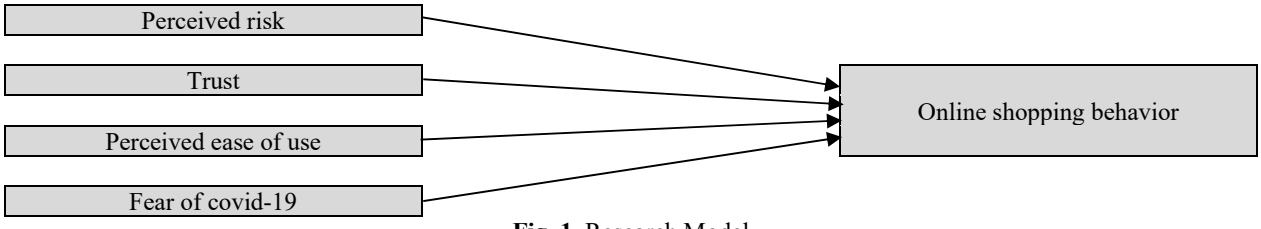

Fig. 1. Research Model

3. Methodology

Empirical data were used in validating the study's proposed conceptual model and in testing the research hypotheses. The questionnaires were distributed online, focusing on active Facebook users in the age group of between 25 and 34 years old. Jordan has a large number of Facebook users (roughly 6 million) (NapoleonCat, 2020) and choosing this group was considered fitting for the study context. Additionally, the majority of Facebook users in Jordan were between 25 and 34 years old. The survey link was thus sent to 800 Facebook users, and 322 responded (40.2% response rate). However, 22 of the responses had to be excluded due to incompletion. Hence, the analysis was carried out on 300 completed responses. The questionnaires comprised 25 scale items that measure the conceptual model's constructs. The items were adapted from past studies, and the details are as follows: Items on Online purchasing behavior were adapted from Forsythe et al. (2006), George (2004), and Swinyard and Smith (2003); items on Perceived risk and trust were adapted from Miyazaki and Fernandez (2000); items on Perceived ease of use were adapted from Davis (1989); and items on Fear of COVID-19 were adapted from Lin et al. (2021). Additionally, there were five close-ended questions covering the demographic variables of the respondents, namely age, gender, income, education level and internet experience. Also, the questionnaire was in Arabic because the respondents were all Arabic speaking individuals. The back-to-back translation method was used in producing the Arabic version of the questionnaire. This method prevented the problem of cultural and language differences (Brislin, 1976). The measurement items in this study were adapted from past related studies. Details on them are as presented in Table 1 in the appendix section.

4. Finding

A total of 300 valid questionnaires on the internet shopping habits of Jordanian consumers were received. From the data obtained, the majority of respondents were male representing 60.1%, and the majority of respondents were between the age of 25 and 30 years representing 80 %. With respect to the monthly income of the respondents, the study found the following: the majority earned 300 and 400 Jordanian Dinar per month representing 38.1%, while 31% earned between 401 and 500 Jordanian Dinar per month. In terms of education level, the majority were holders of Bachelor's Degrees at 55.1%, and concerning the respondents' experience with internet use, the majority (89.1%) had more than five years of experience of internet use, which is classed as adequately experienced.

4.1 Normality and Multicollinearity

The univariate normality for each variable was tested using the skewness-kurtosis approach as proposed by Byrne (2010), Black et al., (2010), and Kline (2005), run with AMOS 21.0. The results show that all attained values demonstrate normality of univariate distribution because the skewness values were all smaller than their cut-off point of '3, while the kurtosis values were all smaller than '8 as proposed by Kline (2005) and West et al., (1995).

Multicollinearity is caused by high correlation between independent variables in a regression model (Kline, 1998), and multicollinearity affects SEM in terms of its reliability. Multicollinearity is examined by determining the values of tolerance and VIF through the use of SPSS. In this study, the value of tolerance was smaller than 0.10, while that of VIF was greater than 10 – the values of both are considered tolerable.

4.2 Structural equation modelling analysis

4.2.1. Measurement model

Confirmatory factor analysis Model fitness (unidimensionality) was tested in the CFA. Then, the reliability and validity of the constructs were evaluated.

4.2.1.1 Model fitness

The fitness of the model was determined by testing the model's key fit indices (CMIN/DF, NFI, AGFI, GFI, NFI, CFI, and RMSEA), and the results are as follows: CMIN/DF = 3.81, GFI = 0.76, NFI = 0.77, AGFI = 0.74, NFI = 0.77, CFI = 0.71 and RMSEA = 0.161. The details are provided in Table 2 in the appendix section .

Based on Hair et al. (2010), the values of some indices were regarded as unsatisfactory, especially for GFI and NFI. In order to increase the model's fitness, refinements and reassessments were performed as recommended by Anderson and Gerbing (1988), Bagozzi and Yi (1988), and Byrne (2010). The process of refining is to improve the fitness of the model and it involves the examination of the standardized regression weights (factor loading), modification indices, and standardized covariance matrix, as recommended by Byrne (2010), Black et al., (2006), and Holmes-Smith et al., (2006).

In this study, the evaluation of the standardized regression weights (factor loading) found that four items scored value lower than the tolerable value of 0.50 proposed by Byrne (2010) and Hair et al. (2010), and were removed. These items were: OPB4 from online purchasing behavior, PEOU6 from perceived ease of use, FCV7, FCV9 and FCV10 from fear of COVID-19. Then, the CFA was retested and the results showed considerable improvement of the model fitness. As can be observed in Table 2 in the appendix section, the chi-square values were tolerable based on Anderson and Gerbing (1988) and Hair et al. (2010), as follows: CMIN/DF = 0.921, GFI = 0.94, AGFI = 0.82, NFI = 0.91, CFI = 0.93 and RMSEA= 0.050. The modified measurement model showed highly adequate goodness of fit to the data, and thus, it needed no re-specification or improvement (Byrne 2010; Hair et al., 2010).

4.2.1.2 Construct reliability

Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE) of the latent constructs were computed to determine the reliability of the scales (see Table 3 in the appendix section). The results show that the Cronbach's alpha of all latent constructs was larger than the cut-off point of 0.70 as recommended by Nunnally (1978), specifically, between 0.82 (Trust) and 0.90 (Perceived ease of use). Meanwhile, the obtained CR for all constructs was below the value of 0.70 proposed by Hair et al. (2010). Accordingly, as can be observed in Table 3 in the appendix section, the highest value of CR was scored by perceived ease of use at 0.94, while the smallest value was scored by perceived risk at 0.84. Also, Table 3 in the appendix section shows that perceived risk scored AVE between 0.86 and 0.95 (fear of COVID-19). All values were larger than the threshold value of 0.50 proposed by Hair et al. (2010).

4.2.1.3 Construct validity

The construct validity of the measurement items was measured by examining their convergent validity and discriminant validity. The examination of convergent validity shows that all the retained items had significant standardized regression weight with their latent constructs. Further, all the retained items showed low factor loading at 0.54, and this value is greater than the proposed tolerated value of 0.50, and the items also showed statistical significance with a p - value smaller than 0.0001 (Anderson & Gerbing, 1988; Hair et al., 2010). Meanwhile, the correlation estimates among the latent constructs show that the highest value of inter-correlation estimates was lower than 0.66, and this value is smaller than the cutoff value of 0.85 proposed by Kline (2005). Also, the square root of AVE for all latent constructs is greater than their inter-correlation estimates with other resultant constructs. Table 4 in the appendix section can be referred to.

4.2.1.4. Common method bias

A dataset needs to be examined for common method bias, and this study performed an examination of Harman's single-factor involving five constructs (OPB, PR, TR, PEOU, and FCV) and 21 scale items as proposed by Harman (1976), and Podsakoff et al., (2003) to examine it. The results were showing that no single factor was able to emerge. Additionally, the first factor accounted for 44.12% of variance, and this is lower than the cut-off value of 50% proposed in Podsakoff et al. (2003). Hence, there was no common method bias issue for the dataset in question.

4.2.1.5 Structural model

The resultant fit indices of the structural model are demonstrating adequate goodness of fit of the structural model to the observed data. The obtained chi-square was significant (χ^2 = 528.151, DF = 233, P = 0.000), but other fit indices appeared to be within their tolerance value, specifically: CMIN/DF = 2.66, GFI = 0.911, AGFI = 0.841, NFI = 0.901, CFI = 0.942 and RMSEA= 0.061. Additionally, results of path coefficient analyses demonstrate the significance of the majority of the proposed causal paths over the conceptual model. The path coefficient and t-value of all the proposed paths can be viewed in Table 5 in the appendix section . All the proposed four hypotheses were supported. Specifically, the results show that PR imparted a significant impact on OPB (P = 0.031), and therefore, H1 was supported. In addition, the results show that TR imparted a significant positive impact on OPB (P = 0.061), which means support to H2. Also, the results show that perceived ease of use had a positive and significant impact on online purchasing behavior, and H3 was hence supported (P = **). Furthermore, fear of covid-19 impacted online purchasing behavior significantly, demonstrating support towards H4. The details of the results can be viewed in Table 3 in the appendix section.

5. Discussion

Trust is about the willingness of customers to tolerate flaws in a given online transaction in exchange for the looked-for expectations in forthcoming online store behavior (Kimery & McCard, 2002; almajali, 2021b). Considering that the parties that shoppers or consumers are trading with are unknown, trust is crucial or otherwise, online shopping cannot happen. Meanwhile, payment may be made before or after the delivery of the product or service. In this regard, payment made before receiving the product or service puts the consumer in an uncertain position, because there is no assurance that the product or service will actually be delivered. Hence, it is important that both seller and consumer are in good communication to decrease uncertainty and establish trust. Also, a detailed product or service description provided by the seller will make consumers more confident towards purchasing it online.

Perceived Risk impacts online shopping, and according to (Park et al., 2010; Hammouri et al., 2021) there are two kinds of perceived risk namely behavioral risk and environmental risk. The former is associated with psychological risks and product risks (i.e., time and convenience risks) resulting from the use of techniques of internet marketing in transaction monitoring by online retailers. The latter involves the environmental risk from the internet, resulting in financial and security risks. This risk is beyond the control of both retailer and consumer. Respondents are generally aware of the risk of online purchasing, and as a way to reduce it, they will evaluate both the site and the product of interest, especially in terms of reviews of other people on the products sold and the site in general, the deals offered, the prices of the product, and so forth.

Perceived ease of use which also impacts online shopping behavior, is associated with the perception of users on the challenges associated with using the technology. Davis (1989) accordingly explained this term as the level of ease of the use of a technology in question. When a given system is perceived as complicated, users will opt for an available alternative method that is perceived as easier to use. Hence, technologies of online shopping that are challenging to utilize are perceived as less worthwhile. Additionally, fear of COVID-19 has affected both merchants and consumers, and causes uncertainty of consumer demand and supply chain. The pandemic has reduced the sales of certain products (e.g., clothing and cars) while increasing the sales of certain products (e.g., cleaning products and face masks) (Filimonau et al., 2021). It has also upset the supply chain (Filimonau et al., 2021).

6. Research conclusion, recommendations and limitations

6.1 Conclusion

Trust and perceived risk impart a significant impact on online shopping. Hence, confidence towards a given online site will increase the tendency of online purchase of consumers. Additionally, lower perceived risk could increase the potential of online purchasing. Easy-to-use online purchasing site could attract purchases from consumers as well. Further, the instrument to assess COVID-19 fear (FCV-19S) during pandemic needs to be examined more comprehensively, so that it could be validated. The psychometric properties of the instrument have been affirmed to be satisfactory by ten countries at least.

6.2 Recommendation and Limitations

Online stores could increase the loyalty of their consumers by assuring them online purchase security. Not only that, but the provision of such assurance could also solidify consumer's trust as well. At the same time, fraud potential could be reduced. The provision of product details by online stores helps consumers in making correct decisions, and it also could increase trust, and consequently, online purchasing. Furthermore, the use of established and trusted delivery services will assure timely and safe delivery of products to consumers. Also, reasonable, and applicable treaty agreements between seller and consumer will generate consumer satisfaction and repeat purchase, in addition to the store being promoted to new potential consumers.

Equally, this study has identified several limitations, the first being the size of sample, which is fairly small. Hence, future research should use larger sizes to make the results more generalizable. Additionally, the model proposed in this study could be expanded through the inclusion of individual characteristics and dimensions. Also, the factors that impact online purchasing behavior could be examined using a mixed-method approach to enrich the study outcomes.

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Appendix

Table 1
Measurements of Factors

Factor	Code	Measurement Dimensions of Factors
Online purchasing behavior (Forsythe et al., 2006; George, 2004; Swinyard & Smith, 2003)	OPB1	The internet is easy to use for online shopping.
	OPB2	I care about what my family and friends think when I make a purchase online.
	OPB3	I think my online shopping will be problem free if my family and friends find their online shopping problem free.
	OPB4	I will not perform online shopping on slow webpage.
Perceived risk (Miyazaki & Fernandez, 2000)	PR1	I think that online shopping is less risky now.
	PR2	I think that online shopping is safe now.
Trust (Miyazaki & Fernandez, 2000)	TR1	I feel confident about buying products or services online.
	TR2	I feel anxious about buying products or services online.
	TR3	Online shopping is dependable nowadays.
Perceived ease of use (Davis, 1989)	PEOU1	I think it will be difficult to learn the technology.
	PEOU2	I do not have to think much when shopping online.
	PEOU3	I think that technology makes online shopping easy to do.
	PEOU4	I think that the technology makes the interaction in online shopping flexible.
	PEOU5	I can become an online shopping expert easily.
	PEOU6	I think that online shopping technology will be easy to use.
Fear of COVID-19 (Lin et al.,2021)	FCV1	COVID-19 really scares me.
	FCV2	Thinking about COVID-19 puts me in distress.
	FCV3	I am so bothered by COVID-19.
	FCV4	I think that death is almost certain for those infected with COVID-19.
	FCV5	I think COVID-19 can change.
	FCV6	My hands become clammy when I think about COVID-19.
	FCV7	It scares me to die from COVID-19.
	FCV8	News and stories about COVID-19 on social media make me anxious.
	FCV9	I become sleepless when thinking about COVID-19.
	FCV10	The thought catching COVID-19 gives me heart tremors.

Table 2
Measurement of model fit indices

Model	CMIN	DF	P	CMIN/DF	GFI	AGFI	NFI	CFI	RMSEA
Initial measurement model	1221.144	320	0.00	3.81	0.76	0.74	0.77	0.71	0.161
Modified measurement model	327.188	355	0.00	0.921	0.94	0.82	0.91	0.93	0.05
Minimum recommended value	CMIN/DF ≤3.000 , GFI ≥0.90 ,AGFI ≥0.80 ,NFI ≥0.90 ,CFI≥0.90 , RMSEA ≤0.08								

Table 3
The reliability and convergent validity of the measurement scales

Latent variable	**Factor Loadings**	**Cronbach's Alpha**	**Composite Reliability CR**	**Average Variance extracted AVE**
Online purchasing behavior (OPB)		0.87	0.91	0.90
OPB1	0.620			
OPB2	0.611			
OPB3	0.558			
Perceived risk (PR)		0.85	0.84	0.86
PR1	0.633			
PR2	0.598			
Trust (TR)		0.82	0.87	0.93
TR1	0.721			
TR2	0.627			
TR3	0.544			
Perceived ease of use (PEOU)		0.90	0.94	0.88
PEOU1	0.611			
PEOU2	0.632			
PEOU3	0.510			
PEOU4	0.655			
PEOU5	0.578			
Fear of covid-19 (FCV)		0.87	0.90	0.95
FCV1	0.544			
FCV2	0.519			
FCV3	0.634			
FCV4	0.522			
FCV5	0.578			
FCV6	0.511			
FCV8	0.610			

Table 4
Correlations of constructs

Constructs	OPE	PR	TR	PEOU	FCV
OPE	**0.86**				
PR	0.45	**0.88**			
TR	0.54	0.47	**0.84**		
PEOU	0.65	0.52	0.49	**0.80**	
FCV	0.50	0.61	0.66	0.51	**0.81**

Note: Diagonal elements form the square roots of the average variance extracted for the entire five constructs. Off-diagonal elements constitute the correlations between constructs

Table 5
Summary of Proposed Results

Research proposed paths	Beta	t.value C.R	p-value	Empirical Evidence
P1: Perceived Risk → Online Purchasing Behavior	0.133	1.320	0.031	Supported
P2:Trust → Online Purchasing Behavior	0.122	2.010	0.016	Supported
P3: Perceived Ease of Use → Online Purchasing Behavior	0.121	4.150	**	Supported
P4: Fear of Covid-19 → Online Purchasing Behavior	0.241	3.521	0.020	Supported

Note: OPE: Online Purchasing Behavior; PR: Perceived Risk; TR: Trust; PEOU: Perceived Ease of Use; FCV: Fear of Covid-19