

Kashyap, Anil Kumar; Kumar, Ajay

Article

Application of theory of planned behaviour in determining attitude and to measure purchase intention under the fear of Covid-19

Cogent Business & Management

Provided in Cooperation with:

Taylor & Francis Group

Suggested Citation: Kashyap, Anil Kumar; Kumar, Ajay (2024) : Application of theory of planned behaviour in determining attitude and to measure purchase intention under the fear of Covid-19, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 11, Iss. 1, pp. 1-11,
<https://doi.org/10.1080/23311975.2024.2376108>

This Version is available at:

<https://hdl.handle.net/10419/326419>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Application of theory of planned behaviour in determining attitude and to measure purchase intention under the fear of Covid-19

Anil Kumar Kashyap & Ajay Kumar

To cite this article: Anil Kumar Kashyap & Ajay Kumar (2024) Application of theory of planned behaviour in determining attitude and to measure purchase intention under the fear of Covid-19, Cogent Business & Management, 11:1, 2376108, DOI: [10.1080/23311975.2024.2376108](https://doi.org/10.1080/23311975.2024.2376108)

To link to this article: <https://doi.org/10.1080/23311975.2024.2376108>



© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 12 Jul 2024.



Submit your article to this journal [↗](#)



Article views: 1213



View related articles [↗](#)



View Crossmark data [↗](#)



Citing articles: 3 View citing articles [↗](#)

Application of theory of planned behaviour in determining attitude and to measure purchase intention under the fear of Covid-19

Anil Kumar Kashyap^a  and Ajay Kumar^b

^aDepartment of HPKV Business School, Central University of Himachal Pradesh, Dharamshala, India; ^bDepartment of Management, Sharda School of Business Studies, Sharda University, Greater Noida, Uttar Pradesh, India

ABSTRACT

This study attempts to examine the role of health consciousness and Covid-19 protocol on attitude towards online shopping followed by its effect on purchase intention. The framework of the study is derived from TPB theory. Data for the study are collected from the online shoppers during the Covid-19 outbreak. Structural equation modelling (SEM) is used to test the relationship and to predict shopping behaviour. The results report that health consciousness and Covid-19 protocol have shown significant and positive effect on attitude towards online shopping. Further, attitude and Covid-19 are found the predictor of behaviour intention to purchase online. However, health consciousness has shown insignificant effect on behaviour intention. The outcome of the study may help retailers to understand consumer shopping behaviour and the changes occurred during Covid-19 outbreak. Findings may help retailers to rationalize their resources as per the change in customer preference.

ARTICLE HISTORY

Received 29 January 2022
Revised 15 May 2024
Accepted 1 July 2024

KEYWORDS

TPB; purchase intention; covid-19; E-commerce; health consciousness; customer preference; online shopping

REVIEWING EDITOR

Huifen (Helen) Cai,
Middlesex University
Business School, United
Kingdom

SUBJECTS

Health & Development;
Business, Management
and Accounting; Industry
& Industrial Studies

1. Introduction

It is evident that Covid-19 is responsible for the significant change in behaviour. Whether to avoid the risk of infection or due to lockdown restriction, behavioural changes were constantly observed. The longevity of Covid-19 made some of these changes stable. It further stressed out business activities but also flourished opportunities for new ideas in business. Researchers across the World researched the impact of changes witnessed due to Covid-19 outbreak (Mehta et al., 2020; Pham et al., 2020). In this series the impact of Covid-19 on consumer behaviour is also addressed (Zwanka & Buff, 2021). Study confirmed that Covid-19 accelerated the shift towards a more digital world and triggered changes in online shopping behaviours that are likely to have lasting effects (UNCTAD, 2020). A surge in number of customers shopping online and first time users are observed during the pandemic (Halan, 2020). Under these circumstances examining the validity of theory of planned behaviour (TPB) make sense. This theory advocates that behavioural achievement or changes depends on both motivation (intention) and ability (behavioural control). Ajzen (1991) stated that intention to perform different kind of behaviour can be predicted with high accuracy from attitudes toward the behaviour, subjective norms, and perceived behavioural control; and these intentions, together with perceptions of behavioural control, account for considerable variance in actual behaviour.

The outbreaks of Covid-19 produce the circumstances where performing normal shopping behaviour was not possible. Fear to spread of virus, restrictions imposed, mandate of Covid-19 protocol including social distancing norms, and wearing a mask are the factors responsible for change in shopping behaviour. Lockdown and curfew which lead closure of markets and shop are also responsible to shift shopping

CONTACT Anil Kumar Kashyap  kumarkashyapanil@gmail.com  Department of HPKV Business School, Central University of Himachal Pradesh, Dharamshala 176215, India.

This article has been corrected with minor changes. These changes do not impact the academic content of the article.

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

physical to online. Recently conducted studies concluded that health concerns positively increases the likelihood of ordering online during the pandemic and post pandemic (Unnikrishnan & Figliozzi, 2021). Also the study in the context of Malaysian retail industry by Naseri (2021) highlighted the challenges of shopping during pandemic and discussed the online shopping activities during Covid-19 outbreak. Therefore it can be assured that to ensure the safety and to avoid the breach of social distancing or to follow the Covid-19 protocol customers preferred online shopping during the outbreak.

The proposed study is an effort to examine the application of theory of planned behaviour in measuring the changes in shopping behaviour during Covid-19 outbreak. First, the study explained the conceptual framework of TPB (Theory of Planned Behaviour) followed by its components such as attitude and behaviour intention and perceived control. Later, it explains Covid-19 related factors responsible for the changes in attitude and behavioural intentions and accountable to form perceived control. These factors are termed as health consciousness and Covid-19 protocol.

Online shopping behaviour, purchase intention and shopping attitude towards online are extensively researched in the pre Covid era or in normal circumstance. But, because of intense impact of Covid-19 on behavioural aspects it is significant to explore behavioural change and also to identify the factors responsible for these changes. As per TPB, any action a person takes is guided by three types of considerations: behavioral beliefs, normative beliefs and control beliefs. As of now TPB (theory of planned behavior) is mostly applied to predict health behavior (Conner & Norman, 1994). However, its application to determine the change in consumer behavior is rarely available in literature.

To validate the application of TPB, the proposed study aims to examine the influence of health consciousness and Covid-19 protocol on attitude and its influence on behaviour intention to purchase. The outcome of the study may help retailers to understand consumer shopping behaviour and respective changes during Covid-19 outbreak. Findings may help retailers to rationalize their resources as per the change in customer preference. Confirmatory factor analysis is used to predict shopping behaviour followed by AMOS to validate the model. Data for the study is collected from the online shoppers during Covid-19 outbreak. Items used in the instrument are extracted from the previous studies and wherever required a little modification are made.

2. Conceptual framework and hypothesis development

2.1. Theory of planned behaviour (TPB)

Theory of planned behaviour (TPB) is proposed by Ajzen (1991) to address the relationship between attitude, subjective norm, perceived behaviour control, intention and behaviour. TPB is the extension of Theory of Reasoned Action developed by Ajzen and Fishbein (1977). TRA carried some limitations in dealing voluntary behaviour of consumers. However, both the theories predict the behaviour of consumers. But TPB is more likely used in prediction of consumer behaviour (Ahmmadi et al., 2021; Chen & Tung, 2014). In online shopping TPB and its application are discussed in various studies (Akar, 2021; Crespo & Rodríguez del Bosque, 2008; Ha et al., 2019; Hsu et al., 2006; Rehman et al., 2019). Lim et al. (2016) reported subjective norm and perceived usefulness as the significant influencers to the online purchase intention

Online shopping attitude is driven by the concept of utility, accessibility, convenience, perceived usefulness, perceived price and information etc. While predicting change in behavioural using TPB model attitude, subjective norms and behaviour control are the major components. During the outbreak of Covid-19 several factors emerged in support of online shopping. A noteworthy change in consumer perception for online shopping is thoroughly observed during the spread of corona virus. It may assume that these changes followed the pattern of theory of planned behaviour where online shopping was influenced by behavioural beliefs (beliefs about the probable consequences of the practiced behaviour), normative beliefs (beliefs about the normative expectations of other people), and control beliefs (beliefs about the presence of factors that may enable or obstruct the performance of the behaviour).

During the outbreak of Covid-19 shopping in usual practice was not possible. There was a tangible risk of getting infected in the usual way of shopping. Therefore, behavioural belief was affected during the pandemic. As far as normative belief is concerned previous study argued that subjective norm has direct relationship with online purchase behaviour (George, 2004). In online shopping context, subjective

norms refer to consumer perception regarding the use of online shopping by the opinions of the referent group (e.g., friends or colleagues) (Lin, 2007, p. 434). In the stressed situation of pandemic consumer perception for online shopping was persuaded by the opinion of other users (friends and colleagues). However, the change in consumer perception was apparently influenced by the utilitarian aspects of online shopping. In case of control beliefs there were number of factors present during the Covid-19 pandemic especially the Covid protocol (social distancing, wearing a mask, frequent hand washing etc.). These beliefs enabled online shopping and hindered the physical shopping (Figure 1).

2.2. Health consciousness, attitude and behaviour intention

The lockdown came up with shop closure, restrictions on person-to-person contact and public gathering significantly influenced consumers purchase liberty (Addo et al., 2020). Online shopping was considered more useful due to its perceived benefits and utility. In pandemic researcher stressed on safety practice which muted consumer buying behaviour (Sehgal et al., 2021). Customer concerns about health and safety emerged as the prime motive to buy online rather than the monetary and utilitarian benefits they derived from online shopping. Therefore, it is evident that online shopping in pandemic is not only driven by its conventional benefits but also motivated by the circumstantial factors. Customer preference to reduce the health risk is identified as one of the reasons to shift towards online shopping (Ivanović & Antonijević, 2020). Change in consumer preference due to pandemic associated risk is stated in other study too (Kulkarni et al., 2020). Under the fear of spread of virus, hygiene, health and safety are anticipated as new shopping standard (Leggett, 2021). Online retailers took over the lead in executing and promoting these standards. Contactless delivery, sanitization of each consignment and promoting Covid-19 protocol are some of the initiatives which gave an advantage to the online retailers.

Customer concern about health and safety termed as customer pandemic concern had an impact on their purchase intentions (Akar, 2021). Study also stated that health concern and anxiety might impact a customer's online purchase intention with the occurrence and spread of Covid-19 (Chan et al., 2020). Therefore, customers started following Covid preventative strategies in their shopping. Online shopping emerged as one of such strategy. Study confirmed that perceived potential threat to life (death threat) is positively related to online purchase intention (Öztürk, 2020).

H1: Health consciousness has a significant positive effect on customers' online shopping attitude.

H2: Health consciousness has a significant positive effect on customers' online behaviour intentions.

2.3. Behaviour control in Covid-19 protocol, attitude, and behaviour intention

Based on theory of planned behaviour (TPB), perceived behaviour control is defined as an individual's confidence that he or she is capable of performing the behaviour (Ajzen, 1991). It has two aspects first, how much a person has control over behaviour and the second, how confident a person feels about being able to perform or not to perform the behaviour. Online shopping during pandemic exerts on

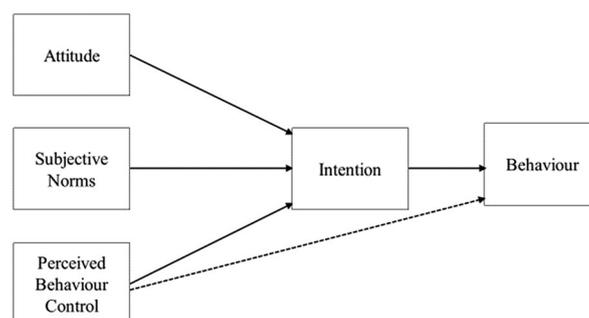


Figure 1. Theory of Planned Behaviour (TPB).
Source: Ajzen (1991).

shopping behaviour without breaking Covid-19 norms or protocol such as social distancing, bearing mask, and stay at home etc. Further, it allows shoppers to control their shopping behaviour. The more control an individual express to follow Covid protocol and making purchase online, more likely he or she will do online shopping.

In previous studies, behavioural control in online context is addressed as customers' perceived ease (Pavlou & Fygenson, 2006). But as per this study, e-shopping platform enable customer to control shopping in Covid-19 protocol. With the occurrence and spread of Covid-19, customers perceived online shopping an easy way to stay away from physical stores and places to avoid crowd to decrease the possibility of virus infection (Öztürk, 2020).

H3: Covid-19 protocol has a significant positive effect on customers' attitude towards online shopping.

H4: Covid-19 protocol has a significant positive effect on customers' online behaviour intentions.

2.4. Attitude and behaviour intention

Consumer attitude is "a psychological tendency expressed by evaluating a particular entity with some degree of favour or disfavour" (Eagly & Chaiken, 1993, p. 1). Initially, Chen and Wells (1999) conceptualised attitude towards a web site. Attitude captures the degree to which an individual may evaluate behaviour as favourable or unfavourable. Attitude is formed by the beliefs held towards an object by the individual (cited Al-Debei et al., 2015 study after checking belief concept). As per Ajzen and Fishbein (1980), in theory of planned behaviour, attitude is a key predictor of behavioural adoption intention. Generally, online shopping attitude is determined based on perceived usefulness, perceived service quality, perceived trust, perceived ease of use, product offer and customized information (Atcharyachanvanich et al., 2008; Ha et al., 2010; Teo, 2002). Perceived advantages are found the key predictors of consumer attitude toward online shopping (Akroush & Al-Debei, 2015). It means if shopping website is able to offer benefits, it results in forming attitude. The impact of perceived benefits on attitude is stated in the study (Arora & Aggarwal, 2018). Also, attitude's effect on behaviour intention is reported significantly (Hsu et al., 2014; Jayawardhena, 2004) and emerged as a direct predictor of e-shopping behaviour (Jayawardhena, 2004) (Figure 2).

H5: Attitude towards online shopping has a significant positive effect on customers' behaviour intentions to purchase online.

3. Research methodology

3.1. Sampling design and procedure

A convenience sampling technique was employed to collect the data from targeted population. The online survey was conducted. The target population for the study was online shopper who was involved in online shopping during Covid-19 pandemic. Whether they were involved in online shopping, was ensured by asking a filtering question "have you ever done shopping online during Covid-19 pandemic"

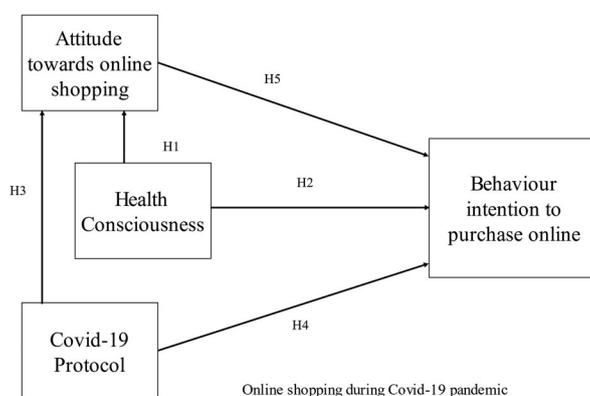


Figure 2. Proposed research model based TPB Theory.

at the beginning of the survey questionnaire. When they opted yes, they were directed to continue with the remaining questions of the survey questionnaire. The sample elements were chosen because they are believed to be representatives of online shoppers. The link of the questionnaire was developed over Google form and shared on social media (Facebook, WhatsApp) and e-mails. In recent studies, collecting a sample through social media is seen (Alhaimer, 2021). Also, data collection through social media is quite reasonable during Covid-19 because of safety and health concerns. The sample size in this study is calculated as per Hair et al. (2009) recommendations.

3.2. Survey instrument

The items measuring the attitude, health consciousness, behaviour control in Covid-19 protocol, and behaviour intention are extracted from the literature review. The items to define health consciousness are adapted from Michaelidou and Hassan (2008), Shah et al. (2021) and Pu et al. (2021), items for attitude toward online shopping from Al-Debei et al. (2015) and for behaviour intention towards online shopping from Akar (2021) and Tarun (2011). Single item on behaviour control in covid-19 protocol adapted from Segal and 2 items are self-developed. The adapted items were modified in Indian context (see Table 1). All items were measured on five-point Likert-type of scale (ranging from 5 “Strongly agree” to 1 “Strongly disagree”). Also, questions about respondent’s demographic characteristics such as gender, age, family income, occupation, online shopping frequency and family size were asked.

4. Data analysis and results

4.1. Demographic profile of the respondents

Table 2 exhibits the respondents’ demographic characteristics. It shows that 57.7% respondents are male and 42.3% are female. Data in age category shows that most of the respondents are young age range upto 20 and 21-35 year. Related to family income, more than 50% respondents come family income range Up to Rs. 25,000 and Rs. 25,001-Rs. 50,000 per month. The next family income group ranged Rs.1,00,00 and above represents 24.20%. Data related to education shows that 48.50% respondents are post graduate, followed by 42.00% graduate, 8.20% High school/intermediate (10th/10th +2) and 1.4% are doctorate. Variation in online shopping frequency can be seen in Table 2. Most of the shoppers do shopping normally 50%.

4.2. Measurement model

Confirmatory factor analysis (CFA) is used to know whether the construct within a proposed model is fit or not to produce desire results. The model fit is determined based on the indices such as GFI, CFI, RMSEA, TFI and NFI. Also, χ^2 , chi-square/df. In the current study, value of CMIN = 106.966, df = 58, $p=0.000$, CMIN/DF = 1.844, RMSEA = 0.054 GFI = 0.950, AGFI = 0.921, IFI = 0.969, TLI = 0.958, CFI = 0.969, and NFI = 0.935, RMR = 0.031, are under the accepted criteria. Thus, based on values the model is fits the data reasonably well.

Further, the reliability and validity of the measurement model is also examined. Both, composite reliability and Cronbach alpha reliability are calculated and reported in Table 3. All constructs’ composite reliability and Cronbach’s alpha reliability are above than the threshold value (>0.7). Also, the discriminant validity is assessed on the basis of the square root of AVE should be greater than the variance shared/correlation between latent constructs in the model (Fornell & Larcker, 1981). The results of discriminant validity and the value of AVE are given in Table 4, which indicates the presence of discriminant validity (Figure 3).

4.3. Structural equation modelling (SEM) and hypothesis testing

The structural equation modelling using Amos 24 software was run to test the proposed research model and hypothesised relationship (see Figure 1) and the results of tested hypothesis are exhibited in Table 5. Five research hypotheses had been developed. The value of model fit indicates for a structural model

Table 1. Measurement items.

Construct	Measurement items	Previously used items	Source of items
Health consciousness			
HC1	During covid-19 I am worried about my health therefore I prefer to shop online than to go out for store shopping	I'm very self conscious about my health	Michaelidou and Hassan (2008); Shah et al. (2021); Pu et al. (2021)
HC2	Due to Covid-19 outbreak I prefer online shopping as I become conscious while going out for shopping	I'm alert to changes in my health	
HC3	To stay healthy in Covid-19 era I prefer to buy online than to go for frequent shopping	I take responsibility for the state of my health	
HC4	As a preventive measure in current scenario I prefer online shopping and avoiding in store shopping.	I'm aware of the state of my health as I go through the day	
Covid-19 protocol			
PT1	"Social Distancing" is not a limitation in Online shopping	Physical distancing and Safety measures	Sehgal et al. (2021)
PT2	"Wearing a face mask while in public place" is not required in online shopping	Self developed	
PT3	There is no need to frequently hand washing with soap protocol while shopping online.	Self developed	
Attitude towards online shopping			
AT1	I prefer online shopping than physical or store based shopping in current scenario	The idea of buying from this online catalogue retailer web site is a good idea.	Al-Debei et al. (2015); Michaelidou and Hassan (2008)
AT2	In pandemic like situation online shopping is anyways the best way to shop than any other modes of shopping	Buying from this online catalogue retailer web site is better than buying from a real store/shop	
AT3	During Covid-19 outbreak I preferred online shopping	Buying from this online catalogue retailer web site is a pleasant thing to do	
Behaviour intention to purchase online			
BI1	During the covid-19 I started buying products online	I plan to shop online more frequently.	Akar (2021); Tarun (2011)
BI2	I intend to purchase through online even in the near future	I intend to shop online in the near future.	
BI3	In the pandemic online shopping provide me complete satisfaction	I think I would prefer to shop online rather than traditional shopping.	

Table 2. Demographic profile of the respondents.

		Frequency	Percentage
a) Gender:	(i) Male	169	57.7
	(ii) Female	124	42.3
b) Age (in Years)	(i) Up to 20	98	33.4
	(ii) 21–35	172	58.7
	(iii) 35–50	18	6.1
	(iv) 51 and above	5	1.7
	(v) 51 and above	5	1.7
c) Family income (Monthly in Rs.)	(i) Up to 25000	68	23.2
	(ii) 25,001–50,000	99	33.8
	(iii) 50, 001–75,000	41	14.0
	(iv) 75,001–1,00,000	14	4.8
	(v) 1,00,000 and above	71	24.2
d) Education	i) High school/intermediate	24	8.2
	ii) Undergraduate	123	42.0
	iii) Post-graduate	142	48.5
	iv) Doctorate	4	1.4
e) Online shopping frequency	(i) Very often	27	9.2
	(ii) Regularly	39	13.3
	(iii) Normally	161	54.9
	(iv) Rarely	56	19.1
	(v) Not very often	10	3.4

Table 3. Construct reliability.

Construct	Estimate	Composite Reliability	Cronbach alpha Reliability
Health consciousness		0.811	0.802
HCS3	0.752		
HCS2	0.795		
HCS1	0.723		
HCS4	0.602		
Behaviour control in Covid-19 Protocol		0.757	0.749
BCCP1	0.659		
BCCP2	0.808		
BCCP3	0.670		
Attitude towards online shopping		0.833	0.831
ATOS1	0.784		
ATOS2	0.788		
ATOS3	0.800		
Behaviour intention		0.800	0.798
BIN1	0.798		
BIN2	0.761		
BIN3	0.708		

Table 4. AVE & discriminant validity.

	AVE	BIN	ATOS	HCS	BCCP
BIN	0.572	0.757			
ATOS	0.625	0.677	0.791		
HCS	0.521	0.569	0.704	0.722	
BCCP	0.512	0.509	0.516	0.487	0.716

Note: BIN-behaviour intention, ATOS-attitude towards online shopping, HCS-health consciousness, BCCP-behaviour control in Covid-19 protocol.

Since the discriminant validity is assessed on the basis of the square root of AVE and it should be greater than the variance shared/correlation between latent constructs in the model (Fornell & Larcker, 1981). Therefore, this value is highlighted/bold in the table.

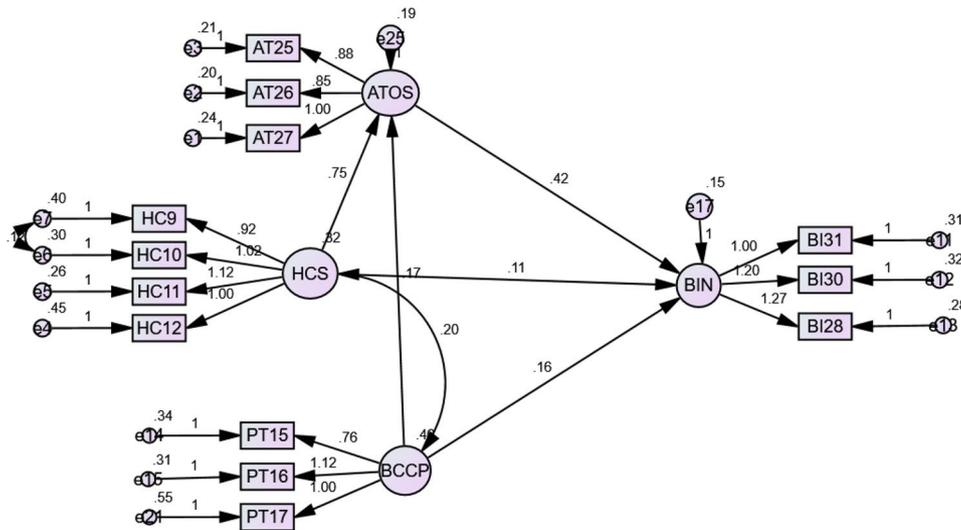


Figure 3. Structural model.

are $\chi^2=106.966$, $p=0.000$, $df=58$, chi-square/degree of freedom = 1.844, RMSEA = 0.054, GFI = 0.950, AGFI = 0.921, IFI = 0.967, CFI = 0.969, TLI = 0.958, RMR = 0.031. These values seem to be a good fit for structural model. After testing model fit, we examined the proposed relationships.

In the structural equation analysis, except hypothesis H2, all hypotheses are accepted. The hypothesis H1 health consciousness ($\beta=0.646$, $t=7.030$) has shown a positive significant impact on attitude towards online shopping at <0.001 . Hypothesis H3, government protocol ($\beta=0.177$, $t=2.351$) has shown significant positive impact on attitude towards online shopping at <0.05 , the hypothesis H4, government protocol ($\beta=0.196$, $t=2.468$) has positive significant impact on behaviour intention towards online shopping at <0.05 , hypothesis H5, attitude ($\beta=0.496$, $t=4.377$) has positive significant impact on behaviour intention towards online shopping at <0.001 . The hypothesis H2, developed to measure the impact of health

Table 5. Results of hypothesis testing.

Hypothesis	Independent Variable	Path	Dependent variable	Estimate (β)	S.E	C.R	P	Results
H1	HCS	→	ATOS	0.646	.107	7.030	***	Accepted
H2	HCS	→	BIN	0.108	.109	0.971	.332	Rejected
H3	BCCP	→	ATOS	0.177	.074	2.351	.019	Accepted
H4	BCCP	→	BIN	0.196	.065	2.468	.014	Accepted
H5	ATOS	→	BIN	0.496	.095	4.377	***	Accepted

* $p < 0.05$.** $p < 0.01$.*** $p < 0.001$.

consciousness on behaviour intention is rejected. It means that there is no significant relationship between health consciousness and behaviour intention towards online shopping during the covid pandemic.

5. Discussion and conclusion

The aim of this study is to test the framed relationship under the TPB model. The relationships are established through literature review and tested. The results report that health consciousness has shown significant and positive effect on attitude towards online shopping but not on behaviour intention. It means that health consciousness is important measures in attitude formation towards online shopping during Covid-19 pandemic. In previous studies, attitude towards online shopping is formed based on ease of use, usefulness, perceived benefits etc. Hence, health consciousness becomes an important consideration of attitude especially during pandemic when there was a chaos to safe shopping.

The hypothesis H3 and H4 developed to measure the effect of behaviour control in covid-19 protocol on attitude and behaviour intention. Behaviour control in covid-19 protocol is stated significant positive influences. Based on this hypothesis, online shopping allows the shopper to control their shopping in covid -19 protocol. H4 supports the result of Rehman et al. (2019), they confirmed the direct positive relationship between perceived behaviour control and consumer purchase intention.

Hypothesis H5 was formulated to measure the attitude towards online shopping in Covid-19 and its effect on behaviour intention to purchase. The result of this hypothesis is in concurrent with the previous work of Akar (2021), Tarun (2011), Rehman et al. (2019), Jayawardhena (2004) and Hsu et al. (2014). Further it is proved again that the attitude which is determined on the basis of variable from previous studies conducted in the pre Covid-19 era again emerged as the strongest predictor of behaviour intention in online shopping even in Covid-19.

The hypothesis H2, the effect of health consciousness is shown unexpectedly insignificant influence on behaviour intention to online shopping during Covid-19 pandemic. However, this may because of sample selection which holds 92 percent people below the age of 35. Also in the previous study it is concluded that young population such as students were not concerned about Covid-19, but they followed governmental measures Berg-Beckhoff et al. (2021). Constant restrictions and compulsion to stay at home during Covid-19, they were eager to go out and considered shopping as an opportunity to go out. Therefore, even after having positive attitude towards online shopping their purchase intentions to buy online are found insignificant during Covid-19. Covid-19 protocol and health consciousness are not examined previously to measure online shopping attitude and behaviour intention to purchase online. However, to make marketing decisions in the complex environment understating these relationships is important. This contribution adds value in the literature as it came out with health conscious and Covid-19 protocol as predictor in forming online shopping attitude. Comparatively, health consciousness emerged as a stronger predictor in forming online shopping attitude in Covid-19 pandemic which accounts 60 percentages to variance. This study also contributes to the literature of Theory of planned behaviour (TPB) and confirmed its applicability in pandemic affected attitude and intentions.

6. Managerial implications

The outcome of this study suggests multiple implications. First, the study conclude that even if people have a positive attitude towards online shopping it doesn't ensure that they will purchase products online. In

the unprecedented challenges of Covid-19 pandemic when the spread of the deadly virus making people tense, anxious and in fear, they followed Covid protocol but don't show intensity to purchase online. However, it is important to note that during pandemic most of the purchase items were groceries, fruits and vegetables, health and life style related products. The shopping for durable goods was restricted. Online retailers were also offering the limited products. Therefore, they changed the attitude towards shopping online but failed to change the intention to purchase online. Managers must understand the fact that when there is an excessive hype of going online, it is still a strong potential in store based shopping. Online retailers have to work on addressing purchase intention of shoppers. There is no substitute of human relationship, machine and robots may assist customers better than anything but the lack of sentiments which came out in the form of interaction with shopkeepers and fellow customer are irreplaceable.

The rise in online shopping is not new or sudden but the outbreak of Covid-19 accelerated its potential to grow. Online shopping minimise the risk getting infected from the virus and therefore it influence the attitude of shoppers. But, change in attitude doesn't guarantee the sales, for that building trust, instant availability of products, seller's image and extended relationship are required. Online shoppers may work on instant delivery mechanism, adds local sellers and highlight seller's identity. Also it is advisable to expand e-commerce into the omnichannel retailing.

Other than previously suggested factor of attitude formation, health consciousness and covid-19 protocol are two important measures to change attitude towards online shopping. While drafting marketing and e-retailing strategy, e-retailer must focus on these factors of attitude formation. Conventional retailers and the respective managers should bring out technological interface in the retail practices. Covid-19 protocol affects the business of conventional retailers who failed to serve the market as per the circumstances. It highlighted the scope of flexibility in retail business as well as the importance of technology enabled distribution and supply network.

7. Limitation and future research

It is acknowledged that this study has some limitations. First, most of the respondents are young, and they belong to relatively higher income group. However, in the current pandemic, almost everyone is affected. Therefore, other age groups of online shoppers can be studied in further studies. Second, the sample from other geographic area can also be collected in further studies. Third but not least, two constructs i.e. attitude and covid-19 protocol is employed to measure behaviour intention to purchase. Other construct influencing online shopper behaviour can be considered in further studies.

Disclosure statement

No potential conflict of interest was reported by the author(s).

About the authors

Dr. Anil Kumar Kashyap is associate professor at Department of HP KV Business School, Central University of Himachal Pradesh at Dharamshala (Himachal Pradesh), India. Previously he has worked as assistant professor at Dr. Harisingh Gour Vishwavidyalaya and National Institute of Fashion Technology. He has served Indian Institute of Management, Ahmadabad in the capacity of academic associate. He obtained his MBA and Ph.D. degree from the University of Lucknow. His broad area of interest is marketing and consumer behaviour and his research belongs to e-commerce and online shopping, emerging technologies and its application in marketing, consumer based business strategies etc. He has published article in ABDC and Scopus indexed journals and participated in various National and International Seminars.

Dr. Ajay Kumar is an Assistant Professor at the School of Business Studies, Sharda University, India. He holds Ph.D. in Management. He published research papers in ABDC and Scopus indexed journal. He has research interest in retailing, consumer behaviour and e-commerce.

ORCID

Anil Kumar Kashyap  <http://orcid.org/0000-0002-9006-3317>

References

- Addo, P. C., Jiaming, F., Kulbo, N. B., & Liangqiang, L. (2020). COVID-19: fear appeal favoring purchase behavior towards personal protective equipment. *The Service Industries Journal*, 40(7–8), 471–490. <https://doi.org/10.1080/02642069.2020.1751823>
- Ahmmadi, P., Rahimian, M., & Movahed, R. G. (2021). Theory of planned behavior to predict consumer behavior in using products irrigated with purified wastewater in Iran consumer. *Journal of Cleaner Production*, 296, 126359. <https://doi.org/10.1016/j.jclepro.2021.126359>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I. Y., & Fishbein, M. (1980). *Understanding attitude and predicting social behaviour*. Prentice-Hall.
- Ajzen, I., & Fishbein, M. (1975). A Bayesian analysis of attribution processes. *Psychological Bulletin*, 82(2), 261–277. <https://doi.org/10.1037/h0076477>
- Akar, E. (2021). Customers' online purchase intentions and customer segmentation during the period of COVID-19 pandemic. *Journal of Internet Commerce*, 20(3), 371–401. <https://doi.org/10.1080/15332861.2021.1927435>
- Akroush, M. N., & Al-Debei, M. M. (2015). An integrated model of factors affecting consumer attitudes towards online shopping. *Business Process Management Journal*, 21(6), 1353–1376. <https://doi.org/10.1108/BPMJ-02-2015-0022>
- Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping: The effects of trust, perceived benefits, and perceived web quality. *Internet Research*, 25(5), 707–733. <https://doi.org/10.1108/IntR-05-2014-0146>
- Alhaimer, R. (2021). Fluctuating attitudes and behaviors of customers toward online shopping in times of emergency: The case of Kuwait during the COVID-19 pandemic. *Journal of Internet Commerce*, 21(1), 26–50. <https://doi.org/10.1080/15332861.2021.1882758>
- Arora, N., & Aggarwal, A. (2018). The role of perceived benefits in formation of online shopping attitude among women shoppers in India. *South Asian Journal of Business Studies*, 7(1), 91–110. <https://doi.org/10.1108/SAJBS-04-2017-0048>
- Atcharyachanvanich, K., Okada, H., & Sonehara, N. (2008). Theoretical model of internet shopping: evidence from a survey in Japan. *International Journal of Electronic Customer Relationship Management*, 2(1), 16–33. <https://doi.org/10.1504/IJECRM.2008.019566>
- Berg-Beckhoff, G., Dalggaard Guldager, J., Tanggaard Andersen, P., Stock, C., & Smith Jervelund, S. (2021). What predicts adherence to governmental COVID-19 measures among Danish students? *International Journal of Environmental Research and Public Health*, 18(4), 1822. <https://doi.org/10.3390/ijerph18041822>
- Chan, D. K., C. Q. Zhang, & K. Weman-Josefsson. (2020). Why people failed to adhere to COVID-19 preventive behaviors? Perspectives from an integrated behavior change model. *Infection Control & Hospital Epidemiology* 42(3), 375–376. <https://doi.org/10.1017/ice.2020.245>.
- Chen, M.-F., & Tung, P.-J. (2014). Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels. *International Journal of Hospitality Management*, 36, 221–230. <https://doi.org/10.1016/j.ijhm.2013.09.006>
- Chen, Q., & Wells, W. D. (1999). Attitude toward the site. *Journal of Advertising Research*, 39(5), 27–38.
- Conner, M., & Norman, P. (1994). Applying the health belief model and the theory of planned behaviour to predicting attendance at health screening. *Psychology and Promotion of Health*, 2, 187–197.
- Crespo, A. H., & Rodríguez del Bosque, I. (2008). The effect of innovativeness on the adoption of B2C e-commerce: A model based on the Theory of Planned Behaviour. *Computers in Human Behavior*, 24(6), 2830–2847. <https://doi.org/10.1016/j.chb.2008.04.008>
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich College Publishers.
- Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy and Rhetoric*, 10(2), 130–132.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and Statistics. *Journal of Marketing Research*, 18(3), 382–388. <https://doi.org/10.2307/3150980>
- George, J. F. (2004). The theory of planned behavior and Internet purchasing. *Internet Research*, 14(3), 198–212. <https://doi.org/10.1108/10662240410542634>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Prentice Hall.
- Ha, H., Muthaly, S. K., & Akamavi, R. K. (2010). Alternative explanations of online repurchasing behavioral intentions: A comparison study of Korean and UK young customers. *European Journal of Marketing*, 44(6), 874–904. <https://doi.org/10.1108/03090561011032757>
- Ha, N. T., Nguyen, T. L. H., Nguyen, T. P. L., & Nguye, T. D. (2019). The effect of trust on consumers' online purchase intention: An integration of TAM and TPB. *Management Science Letters*, 9(9), 1451–1460. <https://doi.org/10.5267/j.msl.2019.5.006>
- Halan, D. (2020). "Impact of Covid-19 on online shopping in India - Re-Tales by Dr. Deepak Halan: Et Retail." *ETRetail.com*, March 25. [www.ETRetail.com. https://retail.economicstimes.indiatimes.com/re-ales/impact-of-covid-19-on-online-shopping-in-india/4115](https://retail.economicstimes.indiatimes.com/re-ales/impact-of-covid-19-on-online-shopping-in-india/4115).

- Hsu, M.-H., Chuang, L.-W., & Hsu, C.-S. (2014). Understanding online shopping intention: the roles of four types of trust and their antecedents. *Internet Research*, 24(3), 332–352. <https://doi.org/10.1108/IntR-01-2013-0007>
- Hsu, M.-H., Yen, C.-H., Chiu, C.-M., & Chang, C.-M. (2006). A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior. *International Journal of Human-Computer Studies*, 64(9), 889–904. <https://doi.org/10.1016/j.ijhcs.2006.04.004>
- Ivanović, Đ., & Antonijević, M. (2020). The role of online shopping in the republic of Serbia during COVID-19. *Economic Analysis*, 53(1), 28–41. <https://doi.org/10.28934/ea.20.53.1.pp28-41>
- Jayawardhena, C. (2004). Personal values' influence on e-shopping attitude and behaviour. *Internet Research*, 14(2), 127–138. <https://doi.org/10.1108/10662240410530844>
- Kulkarni, S., Ravi, P., & Barge. (2020). Effect of COVID-19 on the shift in consumer preferences with respect to shopping modes (offline/online) for groceries: An exploratory study. *International Journal of Management*, 11(10), 581–590.
- Leggett, R. (2021). Quality and efficacy may beat out price sensitivities amid coronavirus concerns. *NielsenIQ*, August 11. <https://www.nielsen.com/us/en/insights/article/2020/quality-and-efficacy-may-beat-out-price-sensitivities-amid-coronavirus-concerns/>.
- Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: the mediating role of purchase intention. *Procedia Economics and Finance*, 35, 401–410. [https://doi.org/10.1016/S2212-5671\(16\)00050-2](https://doi.org/10.1016/S2212-5671(16)00050-2)
- Lin, H.-F. (2007). Predicting consumer intentions to shop online: An empirical test of competing theories. *Electronic Commerce Research and Applications*, 6(4), 433–442. <https://doi.org/10.1016/j.elerap.2007.02.002>
- Mehta, S., Saxena, T., & Purohit, N. (2020). The new consumer behaviour paradigm amid COVID-19: Permanent or transient? *Journal of Health Management*, 22(2), 291–301. <https://doi.org/10.1177/0972063420940834>
- Michaelidou, N., & Hassan, L. M. (2008). The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food. *International Journal of Consumer Studies*, 32(2), 163–170. <https://doi.org/10.1111/j.1470-6431.2007.00619.x>
- Naseri, R. N. N. (2021). Issues and challenges of online shopping activities on the impact of corona pandemic: A study on Malaysia retail industry. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, 12(10), 7682–7686. <https://doi.org/10.17762/turcomat.v12i10.5680>
- Öztürk, R. (2020). Health or death? The online purchase intentions of consumers during the COVID-19 pandemic. *Transnational Marketing Journal*, 8(2), 219–241. <https://doi.org/10.33182/tmj.v8i2.1069>
- Pavlou, P. A., & Fygenson, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, 30(1), 115–143. <https://doi.org/10.2307/25148720>
- Pham, V. K., Do Thi, T. H., & Ha Le, T. H. (2020). A study on the COVID-19 awareness affecting the consumer perceived benefits of online shopping in Vietnam. *Cogent Business & Management*, 7(1), 1846882. <https://doi.org/10.1080/23311975.2020.1846882>
- Pu, B., Du, F., Zhang, L., & Qiu, Y. (2021). Subjective knowledge and health consciousness influences on health tourism intention after the COVID-19 pandemic: A prospective study. *Journal of Psychology in Africa*, 31(2), 131–139. <https://doi.org/10.1080/14330237.2021.1903181>
- Rehman, S. U., Bhatti, A., Mohamed, R., & Ayoup, H. (2019). The moderating role of trust and commitment between consumer purchase intention and online shopping behavior in the context of Pakistan. *Journal of Global Entrepreneurship Research*, 9(1), 1–25. <https://doi.org/10.1186/s40497-019-0166-2>
- Sehgal, R., Khanna, P., Malviya, M., & Dubey, A. M. (2021). Shopping safety practices mutate consumer buying behaviour during COVID-19 pandemic. *Vision*, 27(5), 604–615.
- Shah, S. K., Zhongjun, T., Sattar, A., & XinHao, Z. (2021). Consumer's intention to purchase 5G: Do environmental awareness, environmental knowledge and health consciousness attitude matter? *Technology in Society*, 65, 101563. <https://doi.org/10.1016/j.techsoc.2021.101563>
- Teo, T. S. H. (2002). Attitudes toward online shopping and the Internet. *Behaviour & Information Technology*, 21(4), 259–271. <https://doi.org/10.1080/0144929021000018342>
- Unnikrishnan, A., & Figliozzi, M. (2021). Exploratory analysis of factors affecting levels of home deliveries before, during, and post-COVID-19. *Transportation Research Interdisciplinary Perspectives*, 10, 100402. <https://doi.org/10.1016/j.trip.2021.100402>
- Zwanka, R. J., & Buff, C. (2021). COVID-19 generation: A conceptual framework of the consumer behavioral shifts to be caused by the COVID-19 pandemic. *Journal of International Consumer Marketing*, 33(1), 58–67. <https://doi.org/10.1080/08961530.2020.1771646>