

Consumers' Intention to Use Digital Shopping Operations Post COVID-19 Pandemic: Consumers' Value Perspective

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ABSTRACT

Through the lens of the value adoption model (VAM), this study examines the consumers' perceived value and intentions to adopt digital shopping post covid. The hypothesized model is tested using structural equation modelling with the responses of 325 Indian consumers. The purposive sampling technique was used to reach out to individuals who had made an online purchase in the last six months. This work indicates the importance of Perceived technological innovativeness and Perceived credibility as the important predictors of consumers' intentions to use digital shopping. Moreover, Perceived value is also found to be one of the most important predictors of digital shopping. The study identifies the Risk of Covid 19 as a moderating variable, which has a favourable significant influence on the behavioural intentions to adopt Digital shopping. This study has revealed that the existence of value perceptions is a major impediment to customers' intention to continue online shopping. This study sheds light on drawing upon the trust-based factor called perceived credibility, which was the limiting factor in Technology Adoption Model (TAM) theory. The study's findings will help retailers and marketers to attract more consumers with the power of technological-based digital shopping.

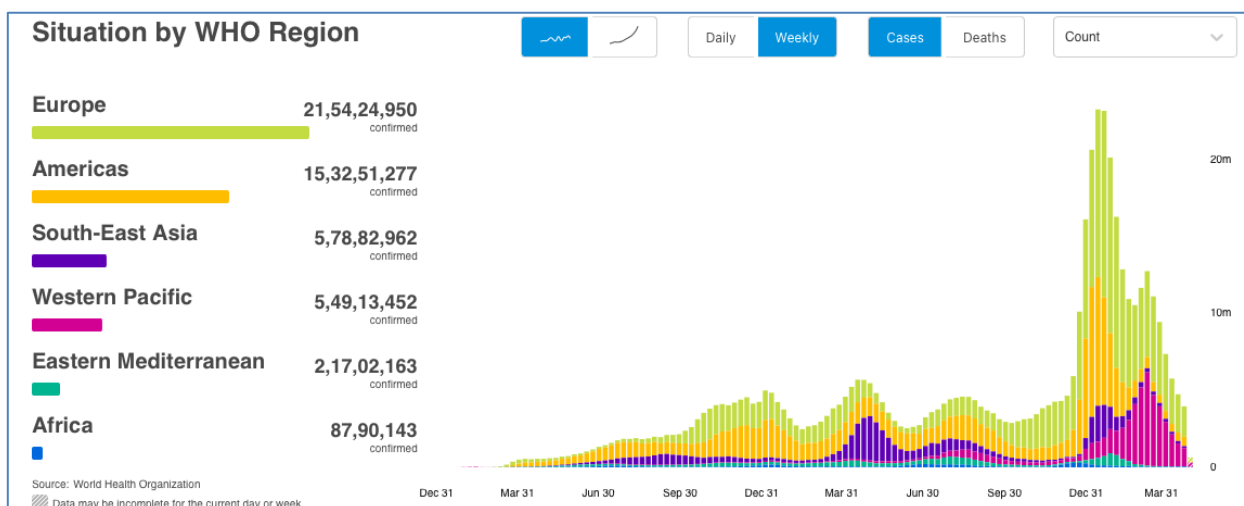
Keywords: Digital shopping, Perceived technology innovativeness, Credibility, Perceived value, Covid 19

INTRODUCTION

The Covid 19 health problem has a significant effect on personal, social, and commercial relationships. It is in stark contrast to the technological disruption, economic recession, or other difficulties that leaders have encountered. Each business and sector will face unique problems. Nearly half (47.2 percent) of US internet users report completely avoiding shopping centres and malls at the moment. If the epidemic worsens in the future years, nearly three-quarters

(74.6 percent) indicated they will avoid shopping malls entirely. 32.7 percent of respondents indicated that they avoided physical stores, and more than half indicated that they will continue to do so if Covid 19 spreads (Coresight Research, 2020). There has been a significant increase in CPG staples' sales. Oat milk sales increased by 305.5 percent in the week ending February 22 according to Nielsen statistics. Dried beans, energy drinks, and pretzels all saw increases in sales, but water only had a 5.1 percent increase. Medical mask sales increased by 78 percent in the first week of a four-week period ending on February 22 compared to the same period last year. By the end of week 4, sales had increased by a whopping 319 percent (Nielsen, 2020). The market for online grocery shopping in India is anticipated to reach a value of INR 1310.93 billion by the year 2026, expanding at a compound annual growth rate (CAGR) of around 68.66 percent (ResearchAndMarkets.com's, 2022). There is 76% increase in the demand for the online groceries. A large section of people is working from their homes. Using online grocery platforms to buy even the perishables such as milk, eggs and bread. Schemes and offers such as express delivery, contactless delivery, and digitally integrated payments for safe consumption.

The COVID 19 pandemic is one of the most unpredictable global health crises in recent memory. It has irreversibly shaken the planet in several ways. As of May 23rd, 2022, the WHO had confirmed 511 million cases of COVID-19, resulting in 6 million deaths. Vaccine doses totalling 11,532 million have been provided as of 30 April 2022 (WHO, 2022). But the pandemic has affected almost everyone's life in one or other aspect. The coronavirus has a big influence on the patterns that emerge all over the planet. Every sector has experienced a rapid transition in recent years. It has changed human behaviour as well as the character of business and trade, and it has even disrupted the conventional way of life. People get terrified as a result, and as a direct consequence, they avoid having contact with one another.

Figure 1. Confirmed Cases Region Wise (WHO, 2022)

The effect of COVID 19 on Market and Consumers

The COVID 19 has a significant role in decelerating the market as well as accelerating the digital market. Lockdowns of various types have influenced our lifestyle in the months after COVID-19 emerged on the scene. These shutdowns, along with a desire to avoid intimate interpersonal interaction with strangers, have resulted in a massive increase in online grocery shopping (Stolp, 2020). The effects of the Coronavirus are variable, depending on the kind of product; this suggests that the COVID-19 contamination has a significant impact on certain things, whilst it has a less significant impact on others (Andrienko, 2020). It played a significant role in improvising the digitalization. According to projections made by Emarketer, the total value of all transactions conducted online will reach \$908 billion in the year 2025. This will be the case even when the epidemic has passed, in-store shopping has resumed, and a greater proportion of consumer spending goes back to services such as travelling and seeing live performances. People are staying home to escape the pandemic, keeping their social distance, doing their shopping online from the comfort of their own homes, and working remotely. For example, the number of online grocery orders placed through Walmart's supermarket has surged by 74% (Bhatti et al., 2020). The Digital India programme has resulted in greater use of the internet and smartphones. Furthermore, internet shopping became increasingly prevalent during the Covid-19 outbreak. E-commerce in India has the potential to reach US\$ 111.40 billion by 2025, with 220 million online buyers. Furthermore, online retail buying is predicted to grow by 10.7 percent by 2024 (IBEF, 2022). In addition, the use of social media has increased during this time period, and both Facebook and Google have improved their

platforms' capacities to connect more users during a single session. For example, Facebook has introduced a messenger for doing business online that can be used by multiple people at once, which is a direct competitor to Zoom. Top ten online shopping websites in pandemic is as shown below.

Table 1: Top Ten Online Shopping Websites in the Pandemic

Sl no.	Retail website	Millions (M) gained
1	Amazon.com	4059M
2	Ebay.com	1227M
3	Rakuten.co.jp	804M
4	Samsung.com	648M
5	Walmart.com	614M
6	Appel.com	562M
7	Aliexpress.com	532M
8	Esty.com	395M
9	Homedepot.com	292M
10	Allegro.pl	272M

(Andrienko, 2020)

Since it becomes ever more apparent how contagious COVID-19 is, some shoppers have posed concerns regarding the safety of getting their online purchases. And shipping circumstances create a difficult environment for COVID-19 as well, so it's not likely individuals will be exposed through the package alone, though.

Customers Transition to Adapt Online Digital Shopping (DS)

As more people get comfortable purchasing online, the popularity of shopping online increases (Goldman, 2021). Individuals get a pleasure from purchasing anything, a tingling of excitement, which is really the brain generating dopamine. During the lockdown, people were forced to rely more and more on the internet to acquire their doses of retail dopamine. During this time, the internet was the only source available. The actual amount spent on online purchases in 2020 was over 4 trillion dollars, which is almost a third more than the amount spent the previous year. Shopping is currently going through a significant transition, and the

pandemic has intensified the process that is taking place. Retailers are being obliged to evolve and adapt, but the extent to which customers are willing to continue using Digital Shopping (DS) remains an open question.

Objective of this Study

The objective of this study is to examine the consumers intentions to usage of Digital shopping, post covid scenario. The present work examines the effect of Perceived usefulness, Perceived ease of use, Perceived technological innovativeness and perceived credibility on Continued intentions to usage of Digital shopping (DS). It then examines the mediating effects of Perceived value and moderating effects of Risk of Covid 19 on Continued intentions to usage of DS. Here the current study postulates to analyse the behaviour of consumers in usage of DS with the accelerated impacts created by Covid 19 scenario and also advancements in digitalisation. Thus, this study adds to the literature by analysing the critical aspects in the adoption and maintenance of online shopping in the Indian context.

LITERATURE REVIEW

Digitalization in Shopping

Customized services come at a premium price. Subsequently industrial revolution has brought bringing with it vast factories, assembly lines, and automated processes. Mass production of an item can bring down its price, but it also makes that object less customizable and makes it more difficult to distribute. It was necessary to convey goods from the makers to what was essentially a small warehouse located close to the houses of the consumers, which was almost a shop. Fast forward to the time when out-of-town retail complexes and superstores first started popping up. And, while these possibilities have grown in number, everything has altered as a result of the introduction of the internet (Droesch, 2021).

China's rise to the top of the e-commerce world has been aided in no little part by the country's pioneering efforts in livestreaming retail sales. It is forecast that in 2021, half of everything bought in China will be bought online. The vast majority of consumers now favour buying online over going to traditional stores because of the greater number of available options and more affordable prices. Internet marketing is highly developed the scale of the market over two trillion dollars' worth, of consumption online. A concept called as single day has been developed by them, wherein they accomplish billions of worth US \$'s millions of payment

transactions in an hour. Alibaba jd.com is dominated by three massive corporations, which account for over 80% of the market (Kshetri, 2016). Another intriguing aspect of this industry is that, unlike Google search, Facebook in social networking, Amazon in E-commerce, and PayPal in payments, they have combined all of these services under a giant business (Moore & Tambini, 2018).

Figure 2: Retail E-commerce sales, 2020-2025, \$ trillion (Source: eMarketer)



These mega app ecosystems provide merchants with in-depth knowledge of what their customers like, desire, and order. Of course, all of this necessitates a massive quantity of data. And the Chinese are far more prepared to enable data tracking of everything they do than many individuals who have a better understanding of customer expectations. Retailers may increase their profit margins while decreasing waste. Some Chinese companies are even leveraging people's digital traces to influence how things are made, a practise known as consumer to manufacturer, which effectively removes brands from the game. As a result, factories begin engaging directly with consumers and, of course, may stretch their industrial capacity. They relaxed on their laurels seeing the internet as secondary to the store, which may not have helped probably since they had invested a lot of money into shop location. For instance, the United States of America has 2.2 square metres of retail space dedicated to each and every one of its citizens (Andrienko, 2020; Droesch, 2021).

Technological Innovations in Online Shopping - A Revolution

Nike, for example, has opted to solely sell online on the Nike website. Then it devised methods for keeping a far closer eye on its clients (Matthew Stern, 2022). For example, Nike's Loyalty system allows the company to construct consumer profiles for its 250 million members, 70 million of whom joined during the pandemic. Nike's app provides a customised experience in exchange for extensive information on the user's habits. Nike can observe your location and use that information when deciding where to locate their retail locations, which helps them develop better products. Nike's applications enable customers build their own sneakers, which helps the company learn about their preferred colour schemes and shoe styles. Customers may even get a heads-up whenever it's time to buy a new pair of shoes by tracking how far they run. Nike and its consumers are able to form a more personal relationship as a result (Matthew Stern, 2022).

Direct-to-consumer selling became more prevalent as online shopping became more commonplace. Anyone may set up an online store using Shopify, an e-commerce platform. In the first six weeks of the pandemic, the number of new stores established surged by even more over 60% compared to the previous six weeks. With the increasing importance of online purchasing, it is important to research the customers' transition to online shopping (Bhatti et al., 2020). As a result, in this study, we examined the many antecedents that influence customers' shift to online buying.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Theory Underpinnings

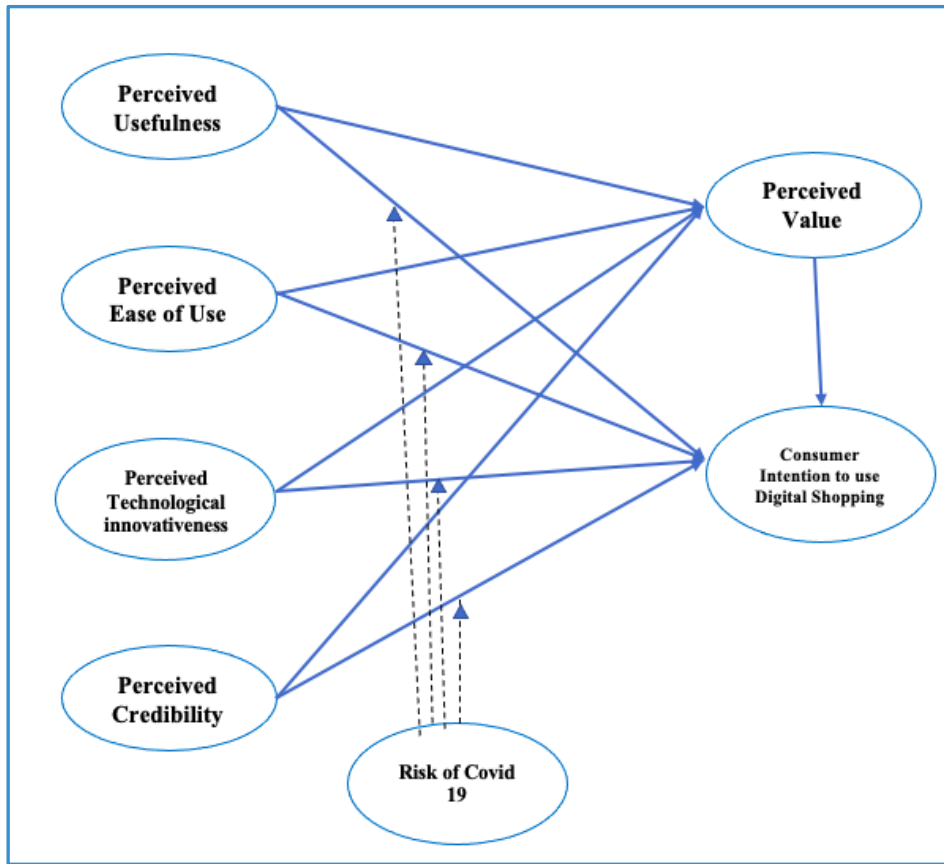
The research proposed a conceptual research framework based on the Technology Adoption Model (TAM) and Value based adoption model (VAM), with additional constructs of Perceived technological innovativeness, Perceived credibility, and Perceived value, which aids in understanding customers' adoption of Digital Shopping (DS) in order to experience the innovativeness of online shopping technology solutions.

In the world of technology adoption, TAM has received a lot of attention. In a study of information system acceptance and utilisation works, (Venkatesh & Davis, 2000) stated that TAM is the most prominent paradigm in research. TAM is frequently utilised, and extended TAM has been employed in numerous recent studies, proving its utility (Haider et al., 2018; K.

J. Kim & Shin, 2015; Riquelme & Rios, 2010; Tarhini et al., 2014). TAM has already been employed as a foundation model in various studies (Govender & Sihlali, 2014; Sánchez-Prieto et al., 2017; Wahid, 2007). TAM was also used to explain the role of information technology in a variety of contexts, such as knowledge sharing systems in virtual communities (Noor et al., 2005), 3 Dimensional virtual world (Huang et al., 2013), mobile technology adoption (Ooi & Tan, 2016), virtual reality in medical education (Huang et al., 2016) and big data tool adoption (Okcu et al., 2019). In addition to variables of TAM, Value perspective is extended in this theory, with the help of VAM by analysing the impact of Perceived value construct. (H. W. Kim et al., 2007), developed the VAM idea while researching consumer acceptance of mobile Internet. They said that the VAM saw adoption from the consumer's standpoint rather than the technology user's perspective. The VAM is based on the notion of perceived value, which is described as “the consumer's total judgement of a product's (or service's) utility based on perceptions of what is received and what is offered” (Zeithaml, 1988). The VAM's point of view is how customers optimise their perceived value. It implies that if individuals perceive a large pay-out, they will engage in a given action. The VAM, which was introduced by (H. W. Kim et al., 2007) has been successfully used for evaluating individual behaviour, primarily in the fields of Internet shopping (Gupta & Kim, 2010), tourism (Chung & Koo, 2015), and hospitality (S. H. Kim et al., 2019), among others. The VAM was used in a recent study by (Lau et al., 2019), to assess the adoption of augmented reality (AR) technology in the context of hospitality and tourism. In addition, a recent research by (Vishwakarma et al., 2020), employed VAM to understand travellers' acceptance of virtual reality from the standpoint of consumers. The authors considered the Perceived technological innovativeness, Perceived credibility, and Perceived value are useful elements and significant predictors of continued intentions to use Digital shopping.

Conceptual Framework

Figure 3: Proposed Research Model



Measures

The following table 2, indicates the constructs used in the model, their operational definitions and items used in each construct are tabulated.

Table 2: Details of Constructs and Items used

Constructs	Operational Definition	Items	Scale adapted from References
Perceived Usefulness (PU)	Users perception of the expected benefits of Digital shopping Use.	<ol style="list-style-type: none"> Digital Shopping is useful mode of purchase. Using Digital Shopping, makes handling of purchase activity easier. 	Adapted from Davis et al., 1989 perceived usefulness scale.

		<ol style="list-style-type: none"> 3. Digital shopping allow for a faster usage of mobile applications (e.g., ticket purchase) 4. Digital shopping help to choose suitable and better product for me. 	
Perceived Ease of Use (PEU)	Users feels that using digital shopping is effortless.	<ol style="list-style-type: none"> 1. It is easy to become skilful at using digital mode of shopping. 2. The interaction with digital shopping services is clear and understandable. 3. Digital shopping will help to choose product more conveniently. 	Adapted from Davis et al., 1989 Perceived ease of use scale.
Perceived Technological Innovativeness (PTI)	The extent to which the customer perceives the newness in the technology, its creativity in using digital shopping.	<ol style="list-style-type: none"> 1. I had personalized shopping experiences with AR , VR technologies in Digital shopping. (AR: Augmented Reality, VR: Virtual Reality). 2. I felt that I was actually viewing the product with presence of Visual cues in digital shopping. 3. Prescence of Auditory cues (Music/ Audio) in digital shopping enhances my experience of shopping. 4. Prescence of Interactive Content (Chat bot) gives me better information to choose the product in digital shopping. 	Adapted from (Lowe & Alpert, 2015)

Perceived credibility (PC)	The degree to which an individual feels that digital purchasing poses no security or privacy risks.	<ol style="list-style-type: none"> 1. When using digital shopping, I think my information is kept private. 2. I feel my transactions are safe when I purchase online. 3. I believe my privacy would not be divulged. 	Adapted from (Wang et al., 2003).
Perceived Value (PV)	The consumers overall assessment of the utility of digital shopping based on the perceptions of what is given and received.	<ol style="list-style-type: none"> 1. Compared to the time I need to spend, the use of digital shopping is worthwhile to me. 2. The price I pay offers better value in digital shopping. 3. Overall digital shopping delivers better value to me. 	Adapted from (Zeithaml, 1988).
Risk of Covid 19 (ROC)	The extent to which user perceives the fear of Covid to be risky.	<ol style="list-style-type: none"> 1. I feel safe using digital mode of online shopping. 2. Use of digital mode shopping help to reduce social contact / physical contact with humans. 	Adapted from (Kaplan et al., 1974)
Customer Intention (CI)	The extent to which customer intends to use digital shopping.	<ol style="list-style-type: none"> 1. Given the opportunity I will use Digital shopping. 2. I am likely to use digital shopping in near future. 3. I intend to use Digital mode of shopping even after Covid 19. 	Adapted from (Davis, 1989)

Hypothesis Development

Linking Perceived Usefulness to Continued intention to use Digital Shopping

Perceived usefulness (PU) is introduced by (Davis, 1989), is defined as “the extent to which an individual feels that adopting a specific system will be comfortable and useful”. One of the

most important aspects in determining intents to utilise Internet technologies was shown to be perceived usefulness (H. W. Kim et al., 2007). Furthermore, the evaluation of “perceived usefulness” has an impact on the perceived value of the customer's intention to embrace emerging innovations (Shaw & Kesharwani, 2019). Regardless of the study contexts, it is widely accepted that the PU of any given system is a significant component in shaping the behavioural decisions made by customers when they are shopping (Chen et al., 2018). PU was substantially connected to continuing intention in the majority of the research that were conducted in the context of e-commerce (Chou et al., 2010; D. J. Kim et al., 2009; G. Kumar & Shenbagaraman, 2017). In the case of m-commerce, (Hung et al., 2007) and (Lin & Shih, 2008) hypothesised that PU is a key antecedent of continuation intention.

H1a: Perceived usefulness of Digital shopping has positive impact on Continued intentions to usage of DS.

H1b: The relationship between Perceived usefulness and Continued intentions to use DS is mediated by Perceived value.

H1c: The relationship between Perceived usefulness and Continued intentions to use DS is moderated by Risk of Covid 19.

Linking Perceived Ease of Use to Continued intention to use Digital Shopping

The Technology acceptance model (TAM), which is designed to explain the consumer adoption of technological innovations, consists of three dimensions: perceived usefulness (PU), the perceived ease of use (PEOU), and intention to use. The previous research, which was carried out in a variety of settings, has shown that PU and PEOU do, in fact, have an effect on the process of adopting new technologies (Chen et al., 2018; Hew et al., 2015; S. J. Kim et al., 2015; Wallace & Sheetz, 2014). Regardless of the study contexts, it is widely accepted that the PEOU of any given system is a significant component in shaping the behavioural decisions made by customers when they are shopping (Chen et al., 2018). (S. Kumar & Maan, 2014) in their research on Current Situation and Future Prospects for Online Shopping: An Interactive Analysis found that shopping online is a fun and easy method to find things that are hard to buy, to make purchases and uncover deals, but that there is also some amount of risk involved. The level of complexity of any given system is what determines this antecedent (Sadia, 2011). The ease with which a system may be utilised is directly correlated to the degree to which a consumer is interested in making use of that system. PEOU has been discovered to have an

explicit impact on post-adoption usage, despite the fact that its role in promoting continuous intention to use is less significant than that of PU (G. Kumar & Shenbagaraman, 2017). If the consumer can take the appropriate safety measures, buying online can be a pleasant and stress-free experience.

H2a: Perceived ease of use of Digital shopping has positive impact on Continued intentions to usage of DS.

H2b: The relationship between Perceived ease of use and Continued intentions to use DS is mediated by Perceived Value.

H2c: The relationship between Perceived ease of use and Continued intentions to use DS is moderated by Risk of Covid 19

Linking Perceived Technological Innovativeness to Continued Intention to Use Digital Shopping

Thakur & Srivastava, (2015) conducted research on consumer purchasing patterns in relation to online shopping, and then analysed the features of the purchasing patterns of online consumers. The innovativeness variable is a worldwide measure that represents the degree to which customers are prepared to take chances and experiment with new ways of doing things. It is a variable that can be measured in a variety of contexts. The research looked into how innovative internet shopping is in comparison to traditional shopping methods from the perspective of customer purchasing patterns. According to the findings of the research conducted by (Ruiz-Alba et al., 2021), the degree to which a company is inventive in its use of technology is a critical factor in determining whether or not consumers will embrace the most recent technical developments in online purchasing. The combination of virtual and augmented reality with enhanced pictures, a broader range of viewpoints, and condensed video formats. When it comes to online shopping, it's clear that the content is extremely crucial, and it seems that technology has now caught up to the point where it can provide customers with what they want and need to view before making a purchase (Goldman, 2021). These outcomes, confirmed by other research, claims that perceived technical innovativeness has a magically substantial effect in digital shopping. The following hypotheses are thus investigated within the scope of this study.

H3a: Perceived technological innovativeness has a positive impact on Continued intentions to usage of DS.

H3b: The relationship between Perceived technological innovativeness and Continued intention to use DS is mediated by Perceived Value.

H3c: The relationship between Perceived technological innovativeness and Continued intention to use DS is moderated by Risk of Covid 19.

Linking Perceived Credibility to Continued intention to Use Digital Shopping

Ganguly et al., (2009), developed a conceptual model in which they identified various aspects of website characteristics such as information design, visual design, navigation design, communication, social presence, privacy, and security as antecedents of online trust and their effect on perceived risk and purchase intention. Specifically, the authors focused on the relationship between these antecedents and the level of trust that users have in a website. Many studies focus their attention on various aspects of consumers, including their levels of trust and their intentions to make purchases. According to the findings of the study conducted by (Akroush & Al-Debei, 2015), trust may be predicted by perceptions of the reputation of online shopping websites and the advantage they have over their competitors. Also, (Kaur & Khanam Quareshi, 2015) came to the conclusion that trust was affected by a variety of issues during the process of online purchasing. These elements included issues over quality and safety, to name just a few. Therefore, it can be concluded that the trust-based element perceived credibility has an effect on the frequency with which online buying is done. As a result, the following hypotheses have been established to test within the scope of this research.

H4a: Perceived Credibility has positive impact on Continued intentions to usage of DS.

H4b: The relationship between Perceived Credibility and Continued intentions to usage of DS is mediated by Perceived Value.

H4c: The relationship between Perceived Credibility and Continued intentions to usage of DS is moderated by Risk of Covid 19.

Linking Perceived Value to Continued intention to use Digital Shopping

The perceived value of an online store's image in the context of an e - commerce setting has been shown to influence both planned and unplanned purchasing behaviour, according to several empirical studies (Yin & Qiu, 2021). When customers just focus on the obvious benefits that the product offers, perceived value will play a part in the decision-making process. It will also encourage consumers to pick items in accordance with their own requirements when they

are engaging in online shopping. The value that is brought about by the convenience of technology and the enhancement of shopping efficiency can lead to increased levels of customer pleasure, a heightened desire for consumption, and increased rates of re-consumption (Bag et al., 2021). (Y.-Y. Wang et al., 2018) observed that the effect of advantages and sacrifices on the construction of perceived value is what further leads to the intention of users to acquire a GPS navigation app. They discovered that a user's perception of value had an important role in the uptake of GPS navigation apps. (Yu et al., 2019) conducted research that was published not too long ago in which they discussed the importance of perceived value in the process of adopting an online services and discovered that it was a favourable determinant of behavioural intention. Hence Perceived Value is observed to be most influencing factor on intentions to usage of a technology, thereby following hypothesis is examined in this study.

H5: Perceived Value has positive impact on Continued intentions to usage of DS.

METHODOLOGY

Measures: The research employs Seven Constructs. Their Perceived Technology Innovativeness has four items that have been adopted and modified from the (Lowe & Alpert, 2015). Perceived Value with three items adapted and changed to account for the perceived value of DS. from (Zeithaml, 1988). Perceived ease of use with three items is adapted from (Davis, 1989). Perceived credibility with three items is adapted from (Luarn & Lin, 2005) and modified for Perceived Credibility- trust based factor. Perceived Usefulness is with three items and is adapted from (Bhattacharjee, 2001) and is modified for Perceived usefulness. Customer Intentions to usage of digital shopping with three items adapted and modified from (Davis, 1989). Table 2 contains the definitions of the constructs as well as the sources of the constructs. The items of the constructs are included in the same table. The questionnaire was developed with 5-point Likert scale. The following scoring strategy was used: 5 = Strongly Agree, 4 = Agree, 3 = Neither Agree nor Disagree, 2 = Disagree, 1 = Strongly Disagree.

Subjects: As the dependency on online shopping has increased exponentially due to safety measures. The high demand has increased chances of irregularities such as: poor quality, some other products instead of what is ordered, delivery of other company products and mal practices by the middlemen are potential threat (search in media for reference). Other hand, the payments gateways of online shopping websites were technologically not completely ready for this pandemic traffic. This enabled the risk of failure transactions and delay in re-imburement.

These experiences adversely affect the customers perceptions to use online shopping. For data collection, we approached respondents from major cities in India - Bangalore, Hyderabad, Chennai, Delhi, Noida, and Trichy and requested for the details of the respondents on the assurance that the data would be used strictly for academic purposes. Thereby, for ascertaining the customer intentions towards digital shopping we have administered online questionnaires sent by email and WhatsApp groups. The purposive sampling technique was used to reach out to individuals who had made a online purchase in the last six months. The data collection process took place from November 2021 to February 2022.

The survey instrument was administered among approximately 1000 subjects who are using smart phones and have experience with online shopping for 6 months and 328 filled questionnaires received. A small number of responses were eliminated as a result of the data's outlier analysis. All the respondents were guaranteed confidentiality and anonymity. The final sample of 325 consist of 48.9 % females and 51.1% of Males. The age-wise distribution of participants was as follows: 20 years and Younger (27.1 %), 21-30 years (42.5 %), 31 – 40 years (18.5 %), 41 – 50 years (6.8 %), and 50 years and older (5.2 %). The literacy level of sample was observed as 11.4 percent completed 'High School', 49.2 % completed their 'bachelor's degree', 30.5 % completed their 'Master's degree' and 8.9 % have completed education not specified in this questionnaire. The following table 2 indicates the complete demographics of the respondents.

Table 3: Demographics (N = 325)

Characteristic	Frequency	
	N (325)	%
Gender		
Male	166	51.1
Female	159	48.9
Age (In Years)		
< 20	88	27.1
21 – 30	138	42.5
31 – 40	60	18.5
41 – 50	22	6.8
>50	17	5.2
Education		
High school	37	11.4
Bachelors	160	49.2
Masters	99	30.5
Others	29	8.9
Income		
<10,000	55	16.9
10,000 – 20,000	42	12.9
20,000 – 30,000	49	15.1
30,000 – 40,000	118	36.3
>40,000	61	18.8

Data Analysis

Partial least squares structural equation modelling (PLS- SEM) in SPSS 22 and SmartPLS 3.2 was used to assess the reliability and validity of the data collected (Cordeiro et al., 2010). The structural model, which incorporates the coefficient of determination (R²) and the root-mean-square error, is also examined (RMSEA). These evaluations determine the validity of the research model. To verify the validity of multivariate analysis assumptions, PLS allows the examination of Composite Reliability (CR) and Extracted Average Variance (AVE). Path coefficients, Mean, Standard deviations, and P values are also taken into consideration when

coming to a conclusion about whether the hypotheses should be accepted or rejected. Finally, the study paradigm examines the mediating (indirect) and catalyst (moderation) effects to see how they relate to one another.

RESULTS

Testing for the reliability of the research model

Reliability is referred to the internal consistency of the constructs used in research model. The indicator reliability is achieved when there are stronger outer loadings, which means at least 0.60 and ideally 0.7 or greater for each latent variable/ construct (Hair et al., 2020). The internal consistency is achieved when the CR composite reliability developed by (Fornell & Larcker, 1981), which is equal to or greater than 0.7. The following table 4 summarizes the results of indicator reliability and internal consistency of the measuring items. This indicates the reliability of the research model where all the indicators for each latent variable/ construct are above threshold value of 0.7, meeting the recommendation levels of CR and AVE.

Table 4 Reliability of the constructs.

Items	Item loadings	Cronbach α	Composite reliability	Average Variance extracted
PTI		0.821	0.82	0.54
PTI1	0.773			
PTI2	0.764			
PTI3	0.72			
PTI4	0.677			
PV		0.824	0.83	0.61
PV1	0.772			
PV2	0.74			
PV3	0.834			
PEU		0.765	0.77	0.52
PEU1	0.744			
PEU2	0.671			
PEU3	0.75			
PC		0.798	0.81	0.60

PC1	0.719			
PC2	0.641			
PC3	0.934			
CI		0.841	0.84	0.64
CI1	0.773			
CI2	0.868			
CI3	0.761			
PU		0.861	0.86	0.68
PU1	0.805			
PU2	0.887			
PU3	0.773			
ROC		0.735	0.74	0.58
ROC1	0.741			
ROC2	0.786			

Note: PTI = Perceived Technological Innovativeness; PV = Perceived Value; PEU = Perceived Ease of Use; PC = Perceived Credibility; CI = Customers Intention; PU = Perceived Usefulness; ROC = Risk of Covid-19.

Fit Indices: RMSEA = 0.033; CMIN/df = 1.452; CFI = 0.971; GFI = 0.934; TLI = 0.964; NFI = 0.915; IFI = 0.972; AGFI = 0.909; RMR = 0.066

The following table 5 indicates the descriptive statistics of the constructs used in the research model and the inter construct correlations among them.

Testing for the Validity of the research model

The analysis was initiated with knowing sample characteristics adopted in the study. Prior to hypothesis testing the measures assessed for reliability. The Cronbach's Alpha results of measures are greater than .70 indicates the internal consistency of sample (Nunnally & Bernstein, 1999). Further, "confirmatory factor analysis" (CFA) was adopted to assess the convergent validity and discriminant validity. The composite reliability of measures is greater than .70, average variance extracted (AVE) values exceeded 0.50 and standardized item loadings are greater than 0.70 except PTI4, PEU2, and PC2 whose loadings greater than .60. The results satisfied the criteria of convergent validity (Fornell & Larcker, 1981; Hair et al., 2020; Nunnally & Bernstein, 1999). Each construct's square root of AVE is higher than

respective inter-construct correlation values bolster discriminant validity between the constructs of proposed model (Campbell and Fiske, 1959;(Hair et al., 2020)).

Table 5: Descriptive Statistic, Inter-construct Correlations, and Square Root of AVE

Variable	Mean	S.D.	PTI	PV	PEU	PC	CI	PU	ROC
Perceived Technological Innovativeness (PTI)	3.4	1	0.73+						
Perceived Value (PV)	3.3	1	0.29	0.78+					
Perceived Ease of Use (PEU)	3.3	1	0.27	0.32	0.72+				
Perceived Credibility (PC)	3.1	0.9	0.05	0.17	0.04	0.77+			
Customers Intention (CI)	3.1	1	0.3	0.36	0.22	0.28	0.8+		
Perceived Usefulness (PU)	3.5	1.1	0.14	0.25	0.18	0.21	0.35	0.82+	
Risk of Covid-19 (ROC)	3	1.1	0.17	0.11	0.13	0.04	0.43	0.07	0.76+

Note: + depict the square root of AVE;

Common Method Bias (CMB)

The validity of hypothesis mainly threatened by the measurement errors and the method biases are the potential source for this (Bagozzi et al., 1991). The relationship between the measures were substantially affect up to 25% of variance by the Common method bias (CMB) (Cote & Buckley, 1987). Further, CMB can “inflate or deflate” the relationship between the measures leading to Type I & Type II errors. Eventually, CMB jeopardizes the validity of the results. Therefore, CMB needs to be examined systematically and addressed.

A two-stage diagnosis was adopted to ascertain the presence of (CMB) in the sample. First, CMB was examined by adopting Herman's single factor technique (Podsakoff et al., 2003), if the results of factor analysis modelled in single factor affirm the presence of CMB. Factor analysis was carried out using principle component analysis and results extracted seven factors with a variance of 22.119 by the first factor. Thereby indicating that one factor is not influencing total variance in the sample (Table 6). Second, presence of high correlations between the measures r greater than 0.9 indicates the potential threat of CMB (Pavlou et al., 2007). Whereas, results of correlation matrix exhibit the absence of high correlation between measures (Table 5). Therefore, results of factor analysis, and correlation matrix indicates CMB do not exist.

Table 6: Total Variance Explained (Common Method Bias)

Factor	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.645	22.119	22.119
2	2.830	13.475	35.595
3	2.038	9.705	45.300
4	1.842	8.769	54.069
5	1.711	8.145	62.215
6	1.286	6.124	68.338
7	1.073	5.108	73.447

Mediation Analysis

The hypothesized mediation model (figure 4) was examined by considering the recommendations of (Baron & Kenny, 1986; Hayes, 2009; and Zhao et al., 2010). The results of mediation assumptions presented in Table 7, indicates the PU, PEU, PTI & PCI postulates an effect on PV (Condition 1). Further, PV postulate to exert an effect on CI (Condition 2), and finally, PV significantly caused CI and causal relationships of PU, PEU, PTI & PCI on CI are significant. Satisfying above conditions substantiate the PV as a potential mediator. The fit indices of three tests are acceptable for model fit criteria.

The positive indirect effects of PU, PEU, PTI & PCI on CI through PV were assessed using Bootstrapping technique with 5,000 samples at 95% in AMOS 20 found significant (Table 8). The presence of non-zero values in direct effects indicates the partial mediation (Baron & Kenny, 1986). Therefore, we may accept the mediation hypothesis that, PV positively mediates the relationship between PU, PEU, PTI & PCI and CI.

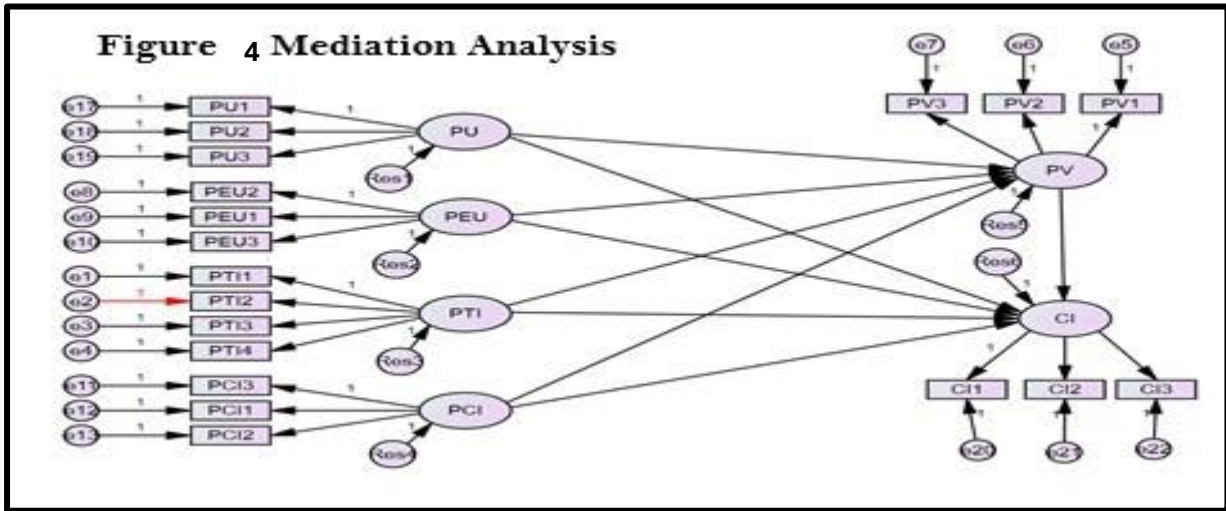
Table 7: Regression Estimates of Mediation Assumptions

Relation	Std. Regression*	R ²	χ^2 /df	CFI, GFI	TLI, NFI	RMSEA
Assumption – 1						
PU → PV	0.207	0.231	1.173	0.965, 0.940	0.959, 0.922	0.047
PEU → PV	0.331					
PTI → PV	0.180					
PCI → PV	0.215					
Assumption - 2						
PV → CI	0.423	0.179	2.221	0.989, 0.982	0.980, 0.981	0.061
Assumption - 3						
PU → CI	0.275	0.265	2.049	0.941, 0.911	0.932, 0.892	0.057
PEU → CI	0.186					
PTI → CI	0.163					
PCI → CI	0.257					
PV → CI	0.250					

Table 8: Regression Estimates Direct and Indirect Effects*

Hypothesis	Direct	Indirect	Total	p	Result
PU → PV → CI	0.263	0.043	0.307	0.002	Significant
PEU → PV → CI	0.177	0.070	0.296	0.002	Significant
PTI → PV → CI	0.155	0.038	0.189	0.007	Significant
PCI → PV → CI	0.251	0.046	0.283	0.002	Significant
CMIN/df = 1.656; CFI = 0.964; GFI = 0.931; TLI = 0.957; NFI = 0.915; RMSEA = 0.045.					
* Bootstrap results of 5000 sample at 95 % Confidence Interval.					

Figure 4: Mediation Analysis



Moderating Effect

The presence of moderation effect between the relationship path need to be ascertained initially by performing inferential statistics (Edwards & Lambert, 2007; Muller et al., 2005; Preacher et al., 2007). Further, moderated analysis can be carried out using bootstrap method(Hayes, 2015). The proposed model’s conditional indirect effects were examined using PROCESS macro (Hayes et al., 2017). The results exhibit the potential moderator Covid-19 risk has significantly increased the consumers’ intentions towards online shopping ($\beta= 0.341, p<0.05$) as LLCI=0.249 and ULCI = 0.434 do not consist the Zero. The path was significantly moderated and thereby provided evidence to affirm that the relationship path could be moderated (Table 8). Further, the interaction effect of perceived usefulness and risk of Covid-19 found to be negative ($\beta= -0.118, p<0.05$) with non-Zero between LLCI = -0.206 and ULCI = -0.029 when compared to their individual positive effects in Figure 5. Similarly, (PTI x ROC) also observed significant negative coefficient of ($\beta= -0.116, p<0.05$) with LLCI = -0.207 and ULCI = -0.014 in Figure 6.

Table 8: Moderation Analysis

Hypothesis*	Coefficient	LLCI	ULCI	Result
ROC → CI	0.341	0.249	0.434	Significant
PU x ROC → CI	-0.118*	-0.206	-0.029	

PTI x ROC → CI	-0.116*	-0.217	-0.014	Significant Negative Moderation
Note: *Bootstrap results for 10000 with 95% level of CI;				

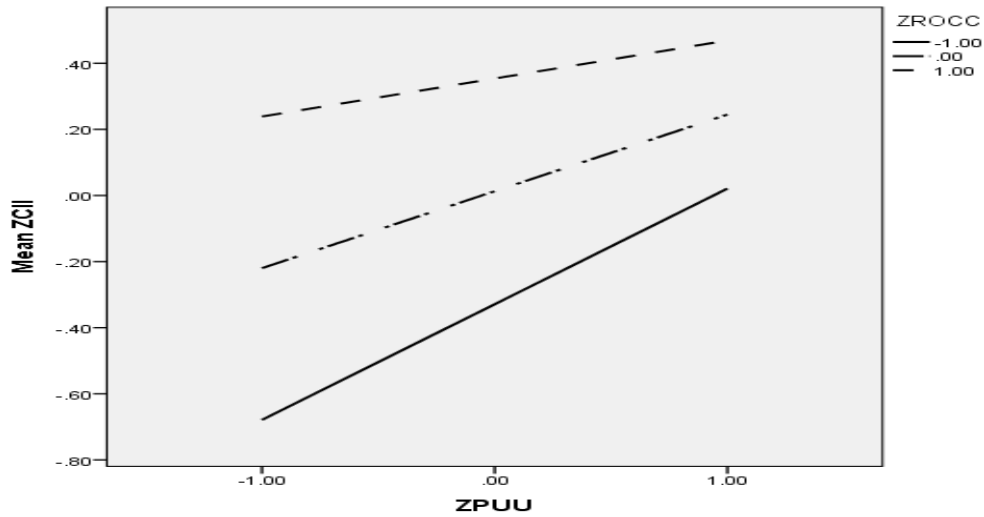


Figure 5: PU x ROC on CI

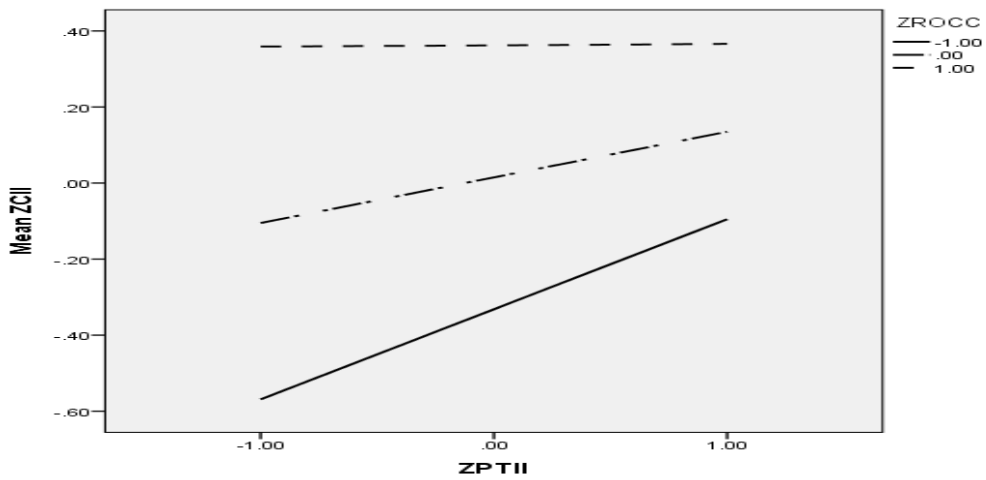


Figure 6: PTI x ROC on CI

DISCUSSION

Key findings and contributions

This study has several key findings that are validated with empirical analysis to understand the customers perception about online shopping. First the results confirm that there is significant positive impacts of Perceived ease of use, Perceived technology innovations, Perceived credibility and Perceived usefulness on Perceived value. This validates the propositions that the existence of value perceptions is a major impediment to customers intention to continue with online shopping. Secondly, the impact of customers perceptions (PU, PEU, PTI and PC) on customers intention is moderated by Risk of Covid 19. Further stressing the potentiality of the technology acceleration that has happened during the pandemic has an impact on customers usage of online shopping, which is very important to them. Third, this study sheds light on drawing upon the trust-based factor called perceived credibility, which was the limiting factor in TAM theory. Finally, the entire structural modal, with mediating role of Perceived Value and moderating role of Risk of Covid 19 helps is powerful enough to describe the directed dependencies and indirect effects among all the variables.

Theoretical Implications

This study's findings have various theoretical implications that support our suggested research methodology. By addressing a number of critical elements in the suggested research model, this body of work has the potential to have a significant influence theoretically on researchers working in the connected subject of interest. Through doing reliability and validity checks, it was determined that the study model that was suggested had a lot of potential. Following the establishment of the reliability and validity of the research model, the structural model was tested using the coefficient of determination (COD) (R^2). This study provides a great direction by assessing the mediating and moderating effects of value-based and risks associated with Covid-based variables that have impacts on online shopping intentions. This is something that, up until now, has not been well assessed in a great number of developing countries. Risk of Covid 19 is negatively moderated for both perceived usefulness and Perceived technology innovativeness over Continued intentions to use DS. This indicates that as there is increased Risk of Covid, the customers are more intended towards digital shopping. Moreover, with the interventions of technological advancements like, augmented reality, virtual reality etc., DS has gained lot of importance in E commerce. As a result, this study makes a significant

contribution to both the existing knowledge and the existing body of literature. The findings of this study endeavour give assistance for better understanding of the expectations of customers.

Implications for Practice

This study has revealed that existence of value perceptions is a major impediment to customers' intention to continue online shopping. The impact of customer's perceptions (PU, PEU, PTI and PC) on customer's intention is moderated by Risk of Covid 19. This shows that, although Risk of Covid 19 may cause customers to switch to buying more online, businesses should not neglect to improve and upgrade the interface to use their online platforms and direct marketers toward appropriate use of marketing tools and strategies in the future. This facilitates follow-up studies to expand surveys across different populations to compare differences in online shopping intentions of different economies and cultures. The article shows the technological innovations has impacts on shoppers' behaviour to use online digital shopping. Hence businesses could use new resources, upgrade themselves with upcoming technologies like Virtual reality, Artificial intelligence based online stores to attract customers. Retailers could work towards improvising the trust or credibility related factors. On their websites, retailers must clearly display their security and payment policies and provide encrypted, secure payment methods. These recommendations would help to increase online customers' perception of low risk.

LIMITATIONS AND FUTURE SCOPE

The current study has some limitations. The study has limited sample size. Because the study is conducted during critical covid times, not many respondents turned out. Nonetheless, future researchers can replicate this study on the large set of respondents. This study was limited to Indian participants; thus, it can be replicated in other cultures to increase its generalizability. The study was limited to urban users of digital shopping; consequently, the effect of perceived value on technology adoption was found to be unclear. Therefore, the intention of rural consumers to adopt DS was beyond the scope of this study. Notably, rural India has a significantly lower mobile Internet penetration rate than urban India (Agarwal, 2018). Despite the fact that Reliance Jio's low-cost 4G network is poised to penetrate India's rural areas. Therefore, future researchers can conduct a comparative study of rural and urban consumers to examine the difference in their adoption intent for DS. In addition, future research can investigate the adoption behaviour differences between urban and semi-urban areas.

As current research on the topic is fragmented, this article contributes to the body of knowledge on online consumer digital shopping behaviour. We elaborate on and describe in greater depth the future research perspectives for researchers and marketers interested in exploring consumers' digital shopping intentions. Some unexplored areas and factors, such as shopping frequency, payment options, cost considerations, demographic and geographic perspectives, trends perspective, socio-cognitive element enjoyment as a marketing tool, and other untapped segment perspectives, can be explored further in future research. In addition, our conceptual model could inspire online consumer behaviour researchers to validate it empirically through longitudinal studies and produce insightful results.

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