



Factors Affecting Consumer's Online Shopping Behavior During the Covid-19 Pandemic: An Integrative Model

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Abstract. Along with the development of the Internet and digital technologies, online shopping is becoming more and more popular worldwide in recent years. It is worth noting that online shopping has been increasingly noticeable by consumers in the half of 2020, since the COVID-19 pandemic outbreak. Amidst the complicated developments of the COVID-19 pandemic over the past year, Vietnam has seen strong growth in online shopping in terms of the number of online shopping users and purchase revenue, contributing significantly to national economic growth. However, up until now, there are not many studies on the online shopping behavior of Vietnamese customers in the context of the COVID-19 pandemic. Hence, this paper aims to review existing studies of online shopping behavior and then propose an integrative model to understanding consumer behavior commendations towards online shopping, help companies deal with similar situations in the future.

Keywords: Online Shopping · COVID-19 · Technology Acceptance Model (TAM) · Theory of Planned (TPB) · Perceived Risk

1 Introduction

The emergence of internet technology has positively changed our daily lives and routines, as well as the way businesses, operate globally. It can't be denied that the internet has opened a new means of communication for businesses and individuals. It has also provided opportunities to communicate and access information in completely different ways [47]. Online shopping has emerged as one of the most popular internet applications and has been widely accepted as a way to purchase goods and services. This is an easy solution for the busy lifestyle in today's world [9], especially during the COVID-19. Even before the pandemic, consumers have expressed their acceptance of the digital shopping setting in which they were more empowered and influential than ever before. Consumers are spending more time online and are also shopping more online. Online shopping experienced continuous growth worldwide and gaining more and more popular among consumers in recent years, fueled by high internet penetration. The development of the internet has opened the door to the rapid growth of e-commerce, contributing

significantly to the global retail industry. E-commerce experienced continuous growth worldwide, estimated at around 21% per year in the period 2014–2019, with global retail e-commerce sales jumping \$3.354 trillion in 2019 [46].

Since the pandemic erupted, e-commerce and online shopping saw “strong growth trend”. The COVID-19 outbreak which originated from Wuhan City, China, has spread to almost all countries and territories. Witnessing its spread and severity across frontiers, the WHO declared that the COVID-19 outbreak, a contagious disease that transmits from human to human, constituted a Public Health Emergency of International Concern on 30 January 2020. The global COVID-19 pandemic is much more than a health crisis that seriously disrupts human lives, economic activities all over the world and has hit various sectors of society in different ways. This pandemic has severely affected every life of consumers, consumers’ buying behavior and dramatically changed how businesses operate [34, 50]. The emergency of COVID-19 has accelerated an already exploding trend of online shopping even more important worldwide. As lockdown and social distancing are being implemented in many countries, consumers’ freedom of shopping choices and mobility is restricted and localized at home. In this time, the internet and new digital technologies have played a significant role in daily activities, that range from searching, interacting, and even ordering products online. Customers changed their shopping behavior from traditional to online in response to economic pressures, store closings, and changing priorities. As consumer’s behavior changes, this provides new opportunities for organizations to adapt and tailor the experiences of the targeted audience. As a result, businesses, and consumers increasingly “went digital”, providing and purchasing more goods and services online, raising e-commerce’s share of global retail trade from 14% in 2019 to about 17% in 2020. E-commerce sales worldwide topped \$4.280 trillion with 27.6% growth in 2020, accounted for almost 18% of total worldwide retail sales and are expected to reach more than \$5.4 trillion by 2022 [46] (Fig. 1).

Globally, from small businesses to big brands, just about everyone is setting up shop on the major online channels, and Vietnamese enterprises are no exception. Despite the outbreak of the COVID-19 pandemic, Vietnam has seen positive changes in online purchasing with both consumers and firms moving online.

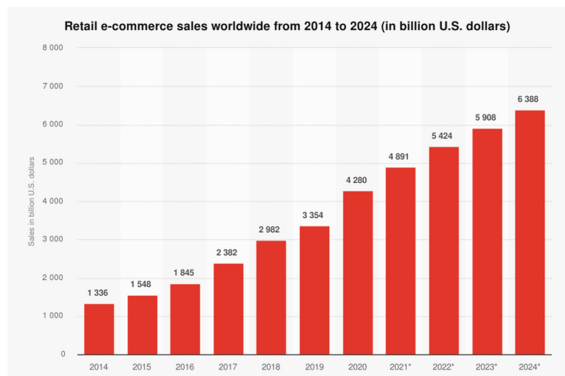


Fig. 1. Retail e-commerce sale worldwide from 2014 to 2024

Along with the outbreak of COVID-19 and the adaptation of technology advancement on e-commerce, the COVID-19 pandemic has changed the way of shopping from the traditional way to online. The online market is facing a new wave of competition when more companies join the market, old ones deploy more online services, any electronic vendor will have to survive in a fiercely competitive environment. Retaining existing consumers and attract new one has become increasingly important for both online and offline businesses. Retaining customers becomes imperative for e-vendors, particularly as attracting new customers is much more expensive than for comparable, traditional, brick-and-mortar stores; then makes customers return to an e-vendor since it serves as a means of gaining competitive advantage [48]. In the increasing competition of stores, there is a need for online retailers and marketing as well as businesses to monitor the changes in consumer's shopping behavior and habits to understand in the face of the COVID-19 pandemic which changes in strategies and tactics they need to adopt [14].

There have been many pieces of research analyzed the online shopping behavior of consumers. However, most of the previous studies were carried out before the spread of COVID-19, it is still a question of how this pandemic may impact consumer behavior towards online shopping. Hence, the purpose of this paper is to support and expand consumers' behavior theory towards online shopping, particularly in the context of the COVID-19 pandemic. The model proposed in this paper is the combined TAM and TPB with perceived risk related to online shopping to understand the user's behavior toward online shopping. Furthermore, the authors add the awareness of COVID-19 variable and demographics variable into the research model as moderator variables to consider the impact of the COVID-19 on online consumer behavior. Also, the authors also aim to conduct this research to explore the situation in the specific context of Vietnam.

2 Literature Review

2.1 Online Shopping

Online shopping is also known as electronic shopping, internet shopping, web shopping, online retailing or internet retailing [33]. Online shopping refers to the process of purchasing products or services from sellers through the Internet. It means going online, landing on a seller's website, selecting items, arranging for its delivery and having the item delivered to home. The buyer either pays for the good or service online with a credit or debit card or upon delivery (Mastercard Worldwide Insights, 2008). Consumers often go through a series of sequential steps while buying a product or service product, called consumer decision making processes. The online shopping decision process is very similar to traditional shopping. Consumer purchase typically starts with need awareness, then information search, next evaluation of alternatives, deciding to purchase the product or service that fulfil a need and finally, post-purchase evaluation [8, 23].

Online shopping does not only include buying things online but also involves searching items online via web searches and by conducting online research. In other words, consumers may be engaged in online shopping but not buying anything. Today, online shopping has grown in popularity significantly, people can purchase nearly anything online from anywhere in the world via a digital platform [41]. Online shopping has been shown to provide more satisfaction to modern consumers seeking convenience and

speed, as most people are loaded with a hectic schedule. Online shopping offers plenty of benefits to consumers, benefits that cannot be offered by physical stores, such as convenience, readily available information, more options, as well as make the purchase at any time of the day and receive the product directly at home, and reduces the physical effort to go shopping, saving time and money [48]. Consumers can easily buy anything anytime and anywhere without actually going to the store, with just a click of the mouse [32]. From a business owner's perspective, with the advent of e-commerce and online shopping, retailers and entrepreneurs have completely changed how they do business. It simplifies business, making them more efficient, reducing paperwork and raising overall productivity. And so, the merits of online shopping are undeniable.

2.2 Online Shopping in a Time of COVID-19 Emergency

Current studies on consumer responses to the COVID-19 pandemics tend to focus on the following themes: panic buying behavior, consumer spending and consumer consumption. To date, there are very few academic works that examined how online shopping behavior changes during a global pandemic, it has generated several new research opportunities anchored to the real world. Table 1 presents recent analyses on internet shopping behavior during the COVID-19 pandemic. As in Table 1, recent literature analyses on online shopping behavior in the context of COVID-19 emergency has been conducted in developed countries or from those seeing a proliferation of online shopping since before COVID-19 occurred. Meanwhile, the same is not unsuitable for developing countries, including Vietnam. Besides that, most studies have focused on the general internet shopping, not on groceries or food. Factor analysis techniques have been used in the most of research to derive underlying constructs from attitudinal items and have neglected the associations between socio-demographic variables when entering online shopping.

These researches have pointed online shopping behavior is not only influenced by the demographic characteristics of consumers such (age, gender, and occupation, etc.), the perception of the characteristics of online order (product, price, time...), risks, convenience, social effects, the benefits, belief factors (attitudes, trust...) but also the COVID-19 emergency [30, 39]. The outbreak of COVID-19 pandemic is associated with the changes in customer behavior and influence traditional and online shopping [30, 34, 44]. When facing a pandemic crisis, consumers change their buying patterns during hard and stressful times due to economic crises and virus outbreaks.

In examining the impact of COVID-19 pandemic on consumer behavior, Sheth claims that contextual influence consumption have are four major contexts that govern disrupting consumer habits, including social contexts (changes in the workplace and in interaction with neighbors and friends), the implementation of new technology (including Internet and digital technology), rulers and regulations especially related to public policy (the COVID-19 pandemic regulation), and natural disasters and pandemics (the development of the global COVID-19 pandemic) [44]. In the current context of the COVID-19 pandemic, all these contextual aspects have a certain degree of effect on consumers and their purchasing behavior in general and online shopping in specific. It is also helped to build new buying behaviors for the online market. And those reactions might potentially persist even after the emergency time [14].

Table 1. Synthesis of research on factors contributing to online shopping behavior during COVID-19 pandemic

Study	Sample size	Country	Factors	Analysis method
Pham et al. [39]	472	Vietnam	Awareness of utility (AU), Easy to use awareness, Awareness of marketing policy, Awareness of price and cost and Affection of society and Awareness of COVID	Factor analysis and SEM
Nguyen et al. [30]	355	Vietnam	Background information, attitudes towards shopping, and the impact of COVID-19	Factor analysis and ANOVA
Koch et al. [24]	451	German	Age, Frequency of online shopping, Perceived usefulness, Internal subjective norms, External subjective norms, Hedonic motivation	Factor analysis and SEM
Severinus et al. [43]	200	Malaysia	Trust, Time, Price, Safe & Security, Privacy, Gender, Age, Education	Factor analysis and ANOVA
Al-Hattami [4]	222	India	Confirmation, Perceived usefulness, Satisfaction, Perceived TTF, Trust	Factor analysis and PLS-SEM
Almajali & Hammouri [6]	5	Jordan	Trust, Perceived ease of use, perceived risk	Descriptive statistics
Parlakkiliç et al. [35]	150	Turkey	Gender, Marital status, Age, Graduation, Income, Internet connection preference, Social network usage, Trust, Cargo-Tracking, Website Features, Satisfaction	Factor analysis and ANOVA
Neger & Uddin [29]	230	Bangladesh	Product, Price, Time saving, Payment, Security, Administrative, Psychological	Factor analysis
Prebreza & Shala [40]	250	Kosovo	Convenience, Pricing, Quality, Website design, Saving time, Security, Socialization	Correlation analysis
Vinerean [50]	155	Romani	Attitude and Budget Considerations	Factor analysis and SEM

(continued)

Table 1. (continued)

Study	Sample size	Country	Factors	Analysis method
AL-Hawari et al. [5]	208	Oman	Customer service, Quality of the products, Price, Delivery time	Descriptive statistics
Iriani & Andjarwati [22]	100	Indonesia	Perceived Usefulness, Perceived Ease of Use, Perceived Risk	Factor analysis

During the COVID-19 pandemic crisis, online shopping has skyrocketed, with the stronger growth than ever of the overall internet sector. To prevent the infection socially, the lockdown, restrictions on person-to-person and public gathering were imposed globally, which disrupted the halt of all economic, social activity in society and the everyday life of consumers. Anti-epidemic measures have also significantly influenced consumers' purchase liberty. With time flexibility but location rigidity, while the activities outside the home remain limited, and safety concerns around shopping and gathering in person, consumers have learned to improvise in creative and innovative ways. They find that digital technology helps them meet their needs, whether it's entertainment, searching ways to keep in touch with others and shopping. The internet has enabled the continuation of these activities, they are carrying on with their lives - online. People now are spending more time online and are also shopping more online. Interestingly, Koch et al. find that consumers seem to shop online for enjoyment purposes and to consider online shopping a distraction or leisure activity during the lockdown [24].

The pandemic generates negative emotions for consumers, and one key emotion is fear. As Solomon et al. explained, fear and negative associations to fear and negative associations related to a particular event can lead to changes in consumer behavior [45]. When facing a pandemic negative association related to a particular event can lead to changes in consumer behavior. When facing a pandemic crisis, many consumers experience a lack of control over their choices, stemming from increased anxiety and uncertainty about future supply of products for basic needs due to disruptions of transport networks, labor shortages, and individual emergency supplies [3].

Consumers displayed stockpiling behaviors that significantly deviate from their usual shopping behavior. During this time of confusion, they are getting panicked and emotionally unsecured, prompting them to stockpile utilitarian products for daily consumption in panic, such as rice, pasta, frozen food, etc. It is has resulted in temporary shortages in stores [7]. However, online shops may not struggle this issue, it provides customers with access to a massive variety of items and products from their homes. Therefore, consumers may turn to online shopping to seek products that are unavailable in stores. Online shopping is also a scheme adopted by consumers for limiting the risk of contagion by avoiding the crowds in stores and supermarkets [25], with a high level of convenience, safety, door to door delivery services [40]. This will impact demand as well as shifts across online product categories [30, 50].

In this context, consumers are deeply concerned about the long-term impact of COVID-19, both from a health and economic perspective, as a result, are purchase more consciously. When consumers are fearful or uncertain on the future, they will not engage in normal shopping and will restrain their budget spending. Purchases were focused on the most basic needs and saving money on shopping due to online platforms features, while cutting back on most discretionary categories. Thus, it comes as no surprise that the online purchasing intent of consumers for health and personal care, food and hygiene, cleaning products have increased worldwide. Globally, 79% of consumers have bought their grocery needs online in the grocery shopping field, with an increase of 19% compared with a year ago. One of the biggest areas of e-commerce growth was over the counter medicine, which is expected to see a 44% increase in consumers shopping online in 2020 [28]. Further, demands for laptops, computers and portable external hard drives also increased due to work from home, online classes, teaching etc. [1]. The COVID-19 outbreak, has not only catalyzed a radical, broad-based shift towards online channels across a wider range of product categories, but also across a wider of consumer demographics [30, 43]. According to a recent ALP survey of more than 2,000 Americans, people in more affluent households with incomes over \$125,000 increased their online shopping, while only 20% of households with incomes under \$400 began shopping more online. Younger people (those under 35) who were most likely to shop online before the COVID-19 pandemic, were more likely to increase their online shopping than older people (those over 55) and Households with children were slightly more likely to shop online daily than households without children. And people in urban areas increased their online shopping more than people in rural areas, during the pandemic. Females increased their online shopping than males.

A further consequence of the lower accessibility of store premises, combined with consumers' higher health concerns, has led new online users, with a large numbers' transactions moving online shopping after they have discovered benefits from online shopping, home-deliveries and cashless payment, which they never used before [34]. The Government's regulations to limit the gathering of people are further having a vast impact on the consumers' previously preferred channel for buying. Consumers have moved to minimize physical interactions and maximize digital interactions. This has resulted in an immediate increase in demand for alternative distribution channels. E-commerce channels are increasingly used as a substitute for physical shopping activities. Especially, older and less technologically savvy customers have begun to discover and appreciate online shopping, embracing the security that technology provides.

Acknowledging that online shopping has become a necessity for the community, along with the lockdown resulting from the pandemic. More and more, customers now appreciate the convenience of online shopping [40]. With the unforeseen and unpredictable development of COVID-19, 49% of consumers shifted their shopping behavior from traditional to online, more now than they did before the COVID-19 [28]. Social distancing measures by COVID-19 and a greater health and wellness focus have made online shopping even more appealing, this is actually a long-term trend that's likely to continue well into the post-emergency future [14, 44].

General, changing demographics, public policy and technology are major contextual forces in developing new online purchasing habits as well as giving up old habits.

2.3 Overview of Vietnam's Online Retail Market

It is clear that online shopping is becoming the popular modern channel for Vietnamese consumers in recent years, fueled by high internet penetration. Within the country, there were about 68.72 million of them use the internet, accounting for 70% of the population in 2020. On average, Vietnamese spent about 6 h and 30 min using the internet daily. Among consumers using the internet, up to 88% of consumers have purchased their commodities through websites and online platforms. With the connection to the internet, e-commerce and online shopping is growing strongly in Vietnam. However, online shopping blooms in the first half of 2020, especially during the social distancing period. Especially, in this emergency scenario, online shopping and home deliveries have been classified as “essential services”. Despite the severe impacts of COVID-19 on the whole economy, Vietnam's e-commerce sales reached \$11.8 billion in 2020, up 18% against last year and representing 5.5% of the total retail sales. Vietnam is the only country in Southeast Asia to record double-digit growth in the sector amidst the Covid-19. Vietnamese e-commerce sales will likely reach \$52 billion in value with around a 29% compound annual growth rate by 2025 [17].

There is a fact that Vietnamese adjusted their purchases behavior when COVID-19 occurred, there are more than 50% of Vietnamese consumers have reduced their frequency of visits to physical stores, while 25% of them have increased their online shopping [31]. Due to the enjoyable experiences, Vietnamese people now find shopping online a more regular practice or even a hobby. In response to a survey by the Business Association of High-Quality Vietnamese Good, 98% of the Vietnamese people who had purchased goods online during the outbreak said that they will continue to shop online in the time to come.

Since the beginning of the COVID-19 outbreak (early 2020), the Vietnamese government has taken strong solutions and the call to leave house only in the most urgent cases to prevent the disease, including social isolation, encouraging online shopping to prevent crowds and social exposure. It has resulted in an increasing number of Vietnamese shoppers begin making more purchases online. Additionally, the COVID-19 outbreak has also introduced e-commerce to large number of online shoppers for the first time. Thousands in Vietnam having their buying behaviors changed during the pandemic: they either shop online for the first time in their lives or start to order things that they have never bought before. Vietnam has continuously recorded strong growth in terms of the number of online shopping users and purchase value. Statistics from the E-commerce White Book 2021, released by the Vietnam E-commerce and Digital Economy Agency (IDEA), showed that the rate of internet users shopping online also increased from 77% in 2019 to 88% in 2020, with some 49.3 million people shopping. The value of goods purchased online also increased from \$229 in 2019 to \$240 in 2020. Online shopping traffic in Vietnam so far this year skyrocketed by 150% against the year prior, with daily visits to e-commerce sites growing to 3.5 million. Currently, Vietnam's two largest cities – Hanoi and Ho Chi Minh City – account for 70% of total e-commerce transactions. Specifically, 74% of online shoppers were buying on websites and e-commerce platforms, and 33% buying on forums and social networks. This was a significant increase from the previous year with 52% on e-commerce channels and 57% on social networks in 2019. E-commerce platforms continued to see high growth

in terms of revenue, users and sales. The top four players on the e-commerce scene are Shopee, Tiki, Lazada, and Sendo.

The pandemic has boosted Vietnamese consumers' receptiveness towards e-commerce and online purchasing channels. The COVID-19 outbreak has catalyzed a radical, broad-based shift towards e-commerce channels, both across a wider range of consumer demographics beyond the young urban consumer base and across range of product categories [12, 21, 30]. Essential items such as food and household appliances account for an increasing proportion of online sales. The data from the IDEA showed more than 52% of users shop for food online; 43% shop for shoes, clothes, and cosmetics; and 33% shop for household appliance (Fig. 2).

Cash remains the main payment method for online shopping in Vietnam, however, epidemics have become a driving force behind the number and value of transactions through non-cash payment methods have increased sharply compared to the previous period. Despite the sharp increase, it was undeniable that cash payments were still popular in Vietnam because of their consumption habits and that the e-payment coverage had not reached rural and remote areas. Citing data from FIS Global payment, cash payment methods in e-commerce still accounted for the highest rate at 28%, money transfers at 26%, e-wallets 21% and credit cards 14%. However, the booming e-commerce market and favorable regulatory changes are driving the rapid adoption of digital payment modes in Vietnam. However, despite the fact that online shopping provides many advantages the lack of a comprehensive logistics ecosystem, as well as concerns surrounding security and transaction errors, continues to remain an impediment in driving greater consumer uptake of online channels [12].

The new online shopping habits that many Vietnamese consumers have picked up during the COVID-19 period may become permanent changes that e-commerce players will need to adapt to. As consumer behavior shifts towards minimizing purchases in physical stores and maximizing online buying is high time for brick-and-mortar and e-commerce retailers will need to reexamine consumer preferences and habits and then reconsider their channel strategies in the new normal. On top of that, a variety of different impediments remain in the way of the greater adoption of online channels such as

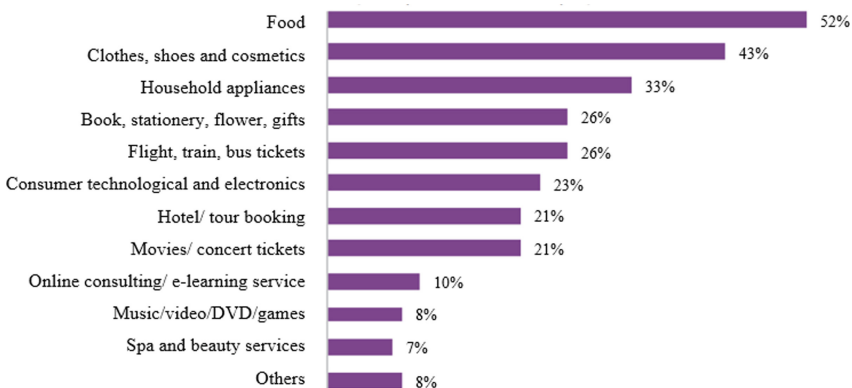


Fig. 2. Main products that were purchased more often online in Vietnam in 2020

delivery and fulfilment, which e-commerce companies will need to address in longer term. Companies can quickly reinvent their processes and services to survive and even benefit from the pandemic by addressing these concerns.

3 Proposed Research Framework

As the importance of online shopping rises, researchers have sought to understand the factors leading to greater adoption, explain certain behaviors, and predict how consumers might conduct online transactions, during the COVID-19 pandemic. The study of online consumer behavior in the context of COVID-19 pandemic has become one of the most critical research agendas [44]. The researchers' attention grows considerably in this area, and they try to reveal the motivation of online shopping with different models. Theoretical foundations for research in this area include the theory of reasoned action (TRA), the theory of planned behavior (TPB), and the technology acceptance model (TAM). In conjunction, these theories are used to explain consumer behavior under uncertain conditions, which have their origins in information systems, psychology, and sociology. However, knowledge of online consumer behavior is very limited because it is a complex social-technical phenomenon that involves too many previous factors. Most previous studies in this area have often offered conflicting or even contradictory results findings due to the use of various simple research models to achieve parsimony. This study will integrate the TAM and TPB for online consumer behavior in Vietnam during the COVID-19.

TAM was initially built by a scholar named Davis in 1985 and 1989 used the theory of reasoned action to explain and predict individual acceptance of technology and found two critical beliefs to determine one's intention to use technology: perceived usefulness and perceived ease of use [10, 11]. Moreover, numerous empirical studies have shown that TAM consistently explains a substantial proportion of the variance (typically about 40%) in usage intentions and behavior, and TAM as superior to the TRA and TPB models in its ability to predict the buyer's behavioral intentions [16, 49]. Despite TAM is applied in many IS/IT contexts, many researchers found extending TAM or integrating it with other relevant models enables to better predict the use intentions of users [49]. Besides TAM, many studies also use the TPB to investigate shopping intention of online shopping consumers. TPB theory is built by Ajzen by adding the variable "behavioral perception control" to the TRA model [2]. According to TPB, user's actions are determined by their intentions and perceptions of control, while their intentions are affected by their attitudes toward behavior, subjective norms, and perceptions of behavioral control [2]. TAM and TPB have clear strengths and extensive theoretical to explain consumers' online shopping behaviors. Lin and Hamit Turan found that the TAM may be more suitable to predict actual online shopping usage in terms of technology adoption [20, 27]. However, the TPB model better explains behavioral intention to shop online. Factors in the TPB provides a more detailed and complete understanding of the behavior and usage definitions for the TAM models. However, most previous studies have been done in the developed countries which have fully developed technology infrastructure, more positive attitude, higher level of control behavior and lower perceived risks for online shopping [18]. There are many pieces of influential factors that are different among developed and developing

countries. Also, the results of the previous studies still contain many inconsistencies, which need further examination in specific contexts.

In Vietnam, online shopping is still in its early stages and consumers are reluctant to use the internet for their shopping because of some barriers which have not yet clearly defined. Perceived risk is among the most influential factors that prevent consumer behavior from shopping online. And, as mentioned earlier, we can see online shopping behavior of Vietnams’ consumer was not only affected by technology and social contexts but also demographics and the COVID-19. Additionally, since both are developed from TRA basic thus TPB and TAM have certain interference with each other. Ajzen said that conceptually, there is no difference between perceived behavior control and perceived self-efficacy, both refer to people’s beliefs that they are capable of performing a given behavior [2]. While Davis commented that perceived ease of use is also self-efficacy [10]. It can be argued, perceived behavioral control in TPB is similar to perceived ease of use in TAM [19]. In order to have better understanding of Vietnam consumers’ behavior towards online shopping during the COVID-19 pandemic in Vietnam, this research would combine the TAM model and the TPB model with perceived risk, and add 2 moderator variables, including the awareness of COVID-19 variable and demographics variable.

The proposed model consists of the following elements: behavior intention, perceived usefulness, perceived ease of use, attitude, subjective norm, perceived risk and 2 moderator variables, including the awareness of COVID-19 variable and demographics variable (Fig. 3).

Behavior Intention: According to Ajzen, behavioral intention is defined as an indicator of “how hard people are willing to try” and “how much of an effort they are planning to exert” [2]. Behavioral intention has major influences on actually performing that particular behavior and in mediating the effects of the determinants of actual performance. Hence, behavioral intention is the major mediating variable in intention-based theories towards the actual performance.

Perceived Usefulness: Perceived usefulness was defined as the extent to which a person believes that the use of a particular technology would enhance his or her job performance [11]. A large number of prior studies found perceived usefulness to be highly significant in influencing the adoption of research consumer behavior toward the Internet has clearly

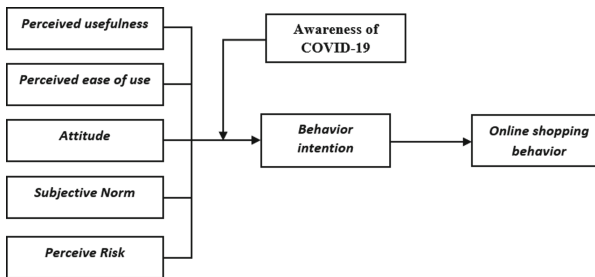


Fig. 3. An integrative model to measure online shopping behavior

suggested the significant influence of perceived usefulness on the intention to purchase on internet [11, 26, 42, 49]. [4, 24] found that there is a positive relationship between perceived usefulness and online purchasing behavior intention of consumers during the COVID-19 pandemic.

Perceived Ease of Use: According to [11], perceived ease of use deals with the degree to which a person believes that using a given system will be less costly in terms of effort or that the activity will be free of effort. [37] viewed perceived ease of use as the belief of the consumer that buying over the Internet will require minimal mental and physical effort. According to [22], perceived ease of use has a positive and significant influence on online shopping decision during the COVID-19 pandemic.

Attitude: [2] defines attitude as “the degree to which a person has a favorable or unfavorable evaluation or evaluation of the behavior in question”. In the Internet shopping context, attitude can be defined as consumers’ favorable or unfavorable feelings and evaluations towards online shopping [27]. The empirical studies that were performed by [50] reveal a strong relationship between attitude and the behavioral intention of consumers to adopt the same behavior learned during the pandemic.

Subjective Norm (SN): According to [2], subjective norm is defined as “the perceived social pressure to perform or not to perform the behavior”. Subjective norms refer to the influences and effects by the opinions of the referent group to consumer perceptions regarding the use of online shopping [20]. [27] divided subjective norm into external and internal components. The internal subjective norm consists of close social networks, such as social networks of family and friends, etc., while the external subjective norm consists of the influences that stem from external sources such as media, advertising, etc. [24] pointed out that during the COVID-19 crisis, external subjective norm are positively related to behavior intention, while internal subjective norms do not show a significant influence on behavior intention.

Perceived Risk: *Perceived risk is defined as the “subjective expectation of losses” from product (or service) purchase and use. Perceived risk refers to prospective consumer awareness to uncertainty and adverse consequences of his/her when making purchasing decisions [13].* In accessing and making online buying, individuals encounter a host of risks. Consumers perceive a higher level of risk when purchasing through the Internet compared with traditional retail transactions as the buyer does not directly contact the seller and the underlying goods [36]. Online shoppers report there are many types of risks fear that consumers perceive when they shop online, including financial risk, performance risk, time risk, psychological risk, social risk, privacy risk and overall risk [15]. According to [6], perceived risk has a negative and insignificant influence on online shopping in the context of COVID-19 pandemic.

Awareness of COVID-19: Awareness of COVID revealed the level of knowledge regarding COVID-19. Knowledge and attitudes towards infectious diseases are associated with the level of panic emotion among the population. In the case of COVID-19 crises, due to lack of information, misinformation and spread of rumors with the pandemic, the more people perceive they are at risk of getting the disease, the more they will

want to protect themselves. With uncertainty, fear, and anxiety during health, the more they want to protect themselves, the more they will buy basic necessities or medical supplies, it is resulted in panic buying, making traditional shopping activities become chaotic. Improving COVID-19 knowledge is helpful for encouraging optimistic attitudes and maintaining safe practices during the COVID-19 pandemic outbreak [38].

In fact, people's awareness of the pandemic depends largely on how the government publishes information and controls society. In Vietnam, thanks to the quick response of the Government right, most Vietnamese are equipped a high alert and awareness of this disease. It is worth mentioning that during the COVID-19 pandemic, the health authorities launched a broad, multilanguage health education campaign. This campaign included national TV programs, the Ministry of Health website, social media platform, mobile phone SMS messages, and direct public awareness sessions. The broadcast materials contained information about the virus, its transmission, and precautionary measures. People are aware that they need to stay and limit going out. The vast majority of users have been able to meet their needs with technology. Whether it's entertainment, working, learning or keeping in touch, even shopping. [39] found that there is a positive relationship between the awareness of COVID-19 and online shopping intention of Vietnamese consumers during the COVID-19.

Demographic: Demographics are the characteristics of people that have been categorized by distinct criteria such as age, gender and income etc., as a means to study the attributes of a particular group. The study of demographic data which provide a broad understanding of the different characteristics of online consumers is essential for business, organizations and governments to make strategic business and marketing plans. In this paper, to characterize consumer engagement, the authors focus review existing research on factors that have been examined in prior studies with mixed results: gender, age, income, marital status, graduation, residence, time spent on internet.

4 Conclusion

The lockdown and social distancing to combat the covid-19 virus has generated significant disruptions on consumer behavior. The research of online shopping consumers in the context of COVID-19 pandemic is still a salient topic that needs more investigation in its emergence of online shopping. Thus, identifying of factors influence to online consumers behavior during the COVID-19 crisis is very important as it provides e-commerce business with solution to retain existing consumers and attract new one. To date, there is limits research analyzed the online shopping behavior of consumers during the COVID-19 crisis. The study significantly contributes and adds to the literature of online shopping consumers' behavior in the event of a pandemic such as COVID-19. Thus, our paper proposes an integrative model of TAM model and TPB model with perceived, with there are two moderator variables, like the awareness of COVID-19 and demographics. We also suggest that this model needs to be tested in the Vietnamese to validate the reliability of measurement scales.

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