

Online Shopping Behavior of Consumers during COVID-19 Outbreak: Evidence in Vietnam

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Abstract. The paper aims to estimate the determinants of consumers' online shopping behavior in Vietnam during the pandemic, especially in Ho Chi Minh City. Based on consumer behavior theory, theory of planned behavior, and theory of reasoned action, the author has explored how personal and economic factors affect how people shop online during COVID-19. By using qualitative and quantitative methods, the following factors have a significantly positive influence on consumers' online shopping behavior: perceived usefulness, risk perception, trust, website quality, and COVID-19. The contribution of this paper is to highlight the importance of encouraging consumers to shop online during the COVID-19 outbreak.

Keywords: COVID-19, online shopping behavior, consumers, Ho Chi Minh City.

1. Introduction

E-commerce or electronic commerce (EC) plays a significant role in the activities of businesses. E-commerce websites increase in popularity in many countries, especially in developing countries such as Vietnam. The use of EC is more accelerated in the Vietnamese market such as Lazada, Zalora, Tiki, Shopee, Sendo, Adayroi, because the number of consumers using smartphones to purchase commodities online is increasing (Table 1). As a result, EC websites have been designed for mobile applications so that consumers can do shopping directly on those applications conveniently and easily with many forms of attractive promotion and discounts. Besides these shopping channels, the other social networks could be used as Facebook, Instagram, Zalo.

Currently, with the information technology and internet explosion, online trading, and delivery trading, which have become indispensable components in the trading industry, are more systematic. Especially, generation Z (Gen Z) is a group of young people who are familiar with using the Internet and applying technology quickly. In Vietnam, E-commerce has grown significantly, with the revenue in 2017 reaching 3.6 percent of the total sales of consumer goods and services in the retail industry, and e-commerce sales can be forecasted from 7.2% to 7.8% in 2022 (Table 1).

Table 1. Consumer-related indicators

Content	2017	2018	2019	2020	2021	2022
Estimated number of consumers shopping online (million)	33.6	39.9	44.8	49.3	54.6	57-60
Estimated the value of a person's online shopping (USD)	186	202	225	240	251	260-285
The proportion of business to consumers EC revenue in the total retail sales of consumer goods & services	3.6%	4.2%	4.9%	5.5%	7%	7.2%-7.8%
The proportion of consumers using the internet	58.1%	60%	66%	70%	73%	75%

Source: *The White Book on Vietnamese E-Business 2018-2022*

Besides, in 2019, COVID-19 opened up the potential chance for the EC market and has driven more online spending to ensure the health and safety of consumers. In this context, EC is considered the most effective mechanism to assist the enterprises collect market information quickly and promptly, and make the commercial transactions take place faster. Businesses can also provide information about their products and services to potential customers anytime, anywhere, using the Internet. In addition, consumers can exploit this tool in the best way to meet their shopping needs and prevent epidemics from arising.

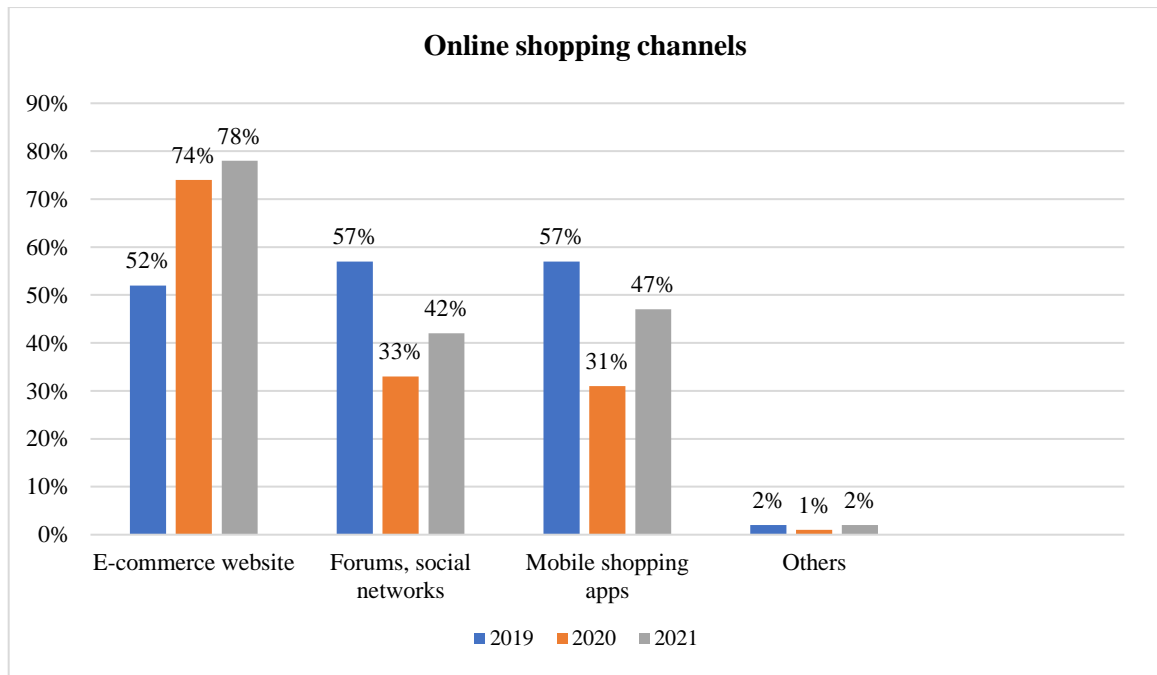


Fig.1: Online shopping channels

Source: *The White Book on Vietnamese E-Business 2019-2022*

According to *The White Book on Vietnamese E-Business 2019-2022*, Internet users make higher purchases through e-commerce websites than other forms (Figure 1). This shows that Vietnamese consumers are gradually preferring online shopping because it is earning the consumers' trust and security. According to the Book, the level of e-commerce users is over 50% and has increased sharply over the years. Besides, Ho Chi Minh City is the economic center in South of Vietnam and the busiest trading center region. In recent years, online shopping has become more widely known and has become attractive to many consumers because of its convenience and quickness. Therefore, in the current COVID-19 pandemic situation, shopping and trading on EC channels is increasingly developed.

The research objective is to estimate the determinants of consumers' online shopping behavior in Ho Chi Minh City. Hence, the author aims to answer the question "To what extent, do the factors have an effect on online shopping behavior of consumers in Ho Chi Minh City during COVID-19 outbreak?".

2. Literature Review and Research Model

Researching consumer behavior assists businesses in understanding how customers purchase goods/commodities. On the basis of being aware of consumer behavior, businesses will have solid grounds to answer questions related to marketing strategies as follows: (i) Who are the buyers? (ii) What goods and services do consumers purchase? (iii) What is the purpose of purchasing goods and services? (iv) How do they buy? When to buy? The study of consumer behavior refers to how they make decisions relating to their needs, want, and desires and how they consume products. It includes emotional, mental, and behavioral reactions. Specifically, customers' behavior is influenced by four factors: cultural, social, personal, and psychological (Kotler & Armstrong, 2018). The difference in consumer behavior will influence how consumers react to the products because consumer behavior affects how product information is searched and evaluated (Solomon, 2011).

According to Turban et al. (2017), online shopping can be defined as a service where consumers use Internet-connected electronic devices for shopping transaction. It includes behaviors such as searching for information, ordering, and paying the transactions through the Internet. Some businesses have taken the advantages of online sale instead of traditional sales because they can reduce transaction costs, shorten the gap between buyers and sellers, and accelerate their markets.

Theory of planned behavior (TPB) (Ajzen, 1991) is developed based on Theory of reasoned action (TRA) (Fishbein & Ajzen, 1975). TPB was created because of the limitations of previous theory and shows that all behaviors over which people can exert self-control. TRA is used to predict behaviors in general and becomes a theoretical basis for further development of behavioral intent models. One of them is the Technology Accentance Model (TAM) (Davis, 1985). TAM drew particular attention from researchers in the field of management information systems as it became the core theoretical foundation, and was used for successful information system development (Taylor & Todd, 1995). In this study, the author select the TAM because TAM predicts behavior using information technology (Davis, 1985). In addition, in the TAM, behavior (BI) is influenced by attitude (A) and sense of usefulness (U), while behavior in the TRA model is influenced by subjective attitudes and norms.

2.1. Perceived usefulness

Perceived usefulness expresses the customer's realization about a particular system that enhances personal life's performance (Davis, 1989). The degree to which users believe that performance can be improved by using technology assistance is referred to as perceived usefulness (Ellitan & Prayogo, 2022). Usability is defined as the sharpness that using this new tool will increase or improve its performance. Perceived usefulness is the basis for predicting user acceptance of information technology, and it significantly influences online purchasing behavior (Hsu et al., 2013). In detail, shopping online supports the customer's life with benefits such as saving time, costs, and convenience. Perceived usefulness has a direct impact on behavioral intention to use (Ta & Dang, 2021; M. T. Nguyen & Nguyen, 2020; Adnan, 2014). Therefore, the hypothesis is proposed as follows perceived usefulness affect shopping online behavior positively.

H1: Perceived usefulness affects consumers' online shopping behavior in Ho Chi Minh City positively.

2.2. Risk perception

Perceived risk refers to the nature and amount of risk perceived by a consumer in contemplating a purchase decision (Cox & Rich, 1964; Mitchell, 1999). Consumers' fear of taking a risk when shopping online gives rise to perceived risk, which develops from the conditions that permit online shoppers to take that risk (Zuelseptia et al., 2018). So, perceived risk directly affects online consumer purchases. Perceived risk related to products/services is a concern by customers involving getting the wrong goods, having their order delayed or damaged, or having their vouchers expire. Besides, Gerber et al. (2014) show that the characteristics of emerging markets are quite different from those of developed markets, in which consumers seem to be more cautious when buying online. According to Arshad et al. (2015), when the perceived risk is high, consumers feel that it is very troublesome for them to perform specific online purchasing behavior. As a result, during the pandemic, with high perceived risk, there are influences on the transition from shopping in-store to online shopping (Kim, 2020). Some studies taken by Gerber et al. (2014); Zhang & Yu (2020) have positively demonstrated the influence of risk perception on consumers' online shopping behavior.

H2: Risk perception affects consumers' online shopping behavior in Ho Chi Minh City positively.

2.3. Promotion

Opeodu & Gbadebo (2017) show that Promotion is a crucial factor on media platforms and a key for promoting products and services to customers. Under the promotion, consumers often conduct a cost-benefit analysis to purchase (Ahmad et al., 2015). According to Tong et al. (2022), efficient promotional strategies affect shopping online of customer behavior because of the product's advantage price. Ahmad et al. (2015); Hinson et al. (2013); Jogi & Vashisth (2021) have identified and evaluated the influence of Promotion affecting the online shopping intentions of consumers positively.

H3: Promotion affects consumers' online shopping behavior in Ho Chi Minh City positively.

2.4. Trust

According to Suh & Han (2003), trust is the foundation of commerce, especially in online shopping. When consumers have had a satisfying experience with previous results and are prepared to trust a certain online supplier, their beliefs about the outcome of the behavior or attitude towards online shopping will be greatly enhanced. So, trust is of great importance for the expansion of online shopping (Vos et al., 2014). Besides, online shopping with secured customers' personal information creates the customer's trust in the shopping transaction (Halimi et al., 2011). Ta & Dang (2021); Vu et al. (2021); M. T. Nguyen & Nguyen (2020) have identified and evaluated the influence of Trust affecting the online shopping intentions of consumers positively.

H4: Trust affects consumers' online shopping behavior in Ho Chi Minh City positively.

2.5. Website quality

A website's overall effectiveness or outstanding performance in conveying intended messages to target users and consumers is referred to as website quality (Jeong et al., 2003; Li et al., 2017; Ongsakul et al., 2021). Website quality is crucial in the e-commerce sector because users' perceptions of it directly influence their buying decision. Website quality has drawn significant attention from researchers and practitioners due to its essential function in enhancing consumers' purchase intentions (Ongsakul et al., 2021; Rahman & Hossain, 2022). Customers expect a high level of customer service when shopping online (Hossain & Rahman, 2021).

Another study conducted Vu et al. (2021) explore the factors affecting the online shopping behavior of students of Hanoi university in the context of the COVID-19 pandemic. The study really focus on the website quality with intereted design and contents about the products that can push the customer's online shopping demand (Ariff et al., 2013; Osman et al., 2010). The studies by Adnan (2014); Ashraf et al. (2019); Chiu & Yang (2016); Ganguly et al. (2010) have identified and evaluated the influence website quality affecting the online shopping intentions of consumers positively.

H5: Website quality affects consumers' online shopping behavior in Ho Chi Minh City positively.

2.6. COVID-19

Consumers' behavior has changed significantly during the pandemic, lockdowns, and economic instability (Hong et al., 2021). COVID-19 has appeared and restricted consumers' behaviors; thus, they must change from shopping in physical stores to online shopping (Pantelimon et al., 2020). As a result, online purchases and food deliveries are preferred more popular now than ever before due to the COVID-19 pandemic (Eger et al., 2021). Another study by Ali (2020) examines the effect of COVID-19 on consumers' online buying behaviors in Iraq. The author suggests that COVID-19 may have led Iraq consumers to embrace technology and adapt their lifestyles to limited circumstance. The COVID-19 pandemic affects their consumption behavior (Sheth, 2020), so more consumers prefer shopping online (McLean et al., 2020). Some studies conducted by Dalirazar & Sabzi (2023); Eger et al. (2021); Hardin & Twengström (2022); Jawaid & Karim (2021); Soares et al. (2022) support the relationship between COVID-19 and online consumers' behaviors in Vietnam.

H6: COVID-19 affects consumers' online shopping behavior in Ho Chi Minh City positively.

Table 2. Statistics of factors affect online shopping behavior based on empirical studies.

No.	Factors	Source
1	Perceived usefulness	Adnan (2014); Ellitan & Prayogo (2022); Hsu et al. (2013); M. T. Nguyen & Nguyen (2020); Ta & Dang (2021).
2	Risk perception	Adnan (2014); Gerber et al. (2014); Zhang & Yu (2020).
3	Trust	Halimi et al. (2011); M. T. Nguyen & Nguyen (2020); Ta & Dang (2021); Vos et al. (2014); Vu et al. (2021)

4	Promotion	Ahmad et al. (2015); Hinson et al. (2013); Jogi & Vashisth (2021).
5	Website quality	Adnan (2014); Ashraf et al. (2019); Chiu & Yang (2016); Ganguly et al. (2010); Hossain & Rahman (2021); Ongsakul et al. (2021); Rahman & Hossain (2022).
6	Macro-economic factors	Dalirazar & Sabzi (2023); Eger et al. (2021); Hardin & Twengström (2022); Hong et al. (2021); Jawaid & Karim (2021); McLean et al. (2020); Pantelimon et al. (2020); Soares et al. (2022).

Based on the TPB, TRA, and TAM, combined with the related empirical studies mentioned in Table 2, the authors build a research model as follow:

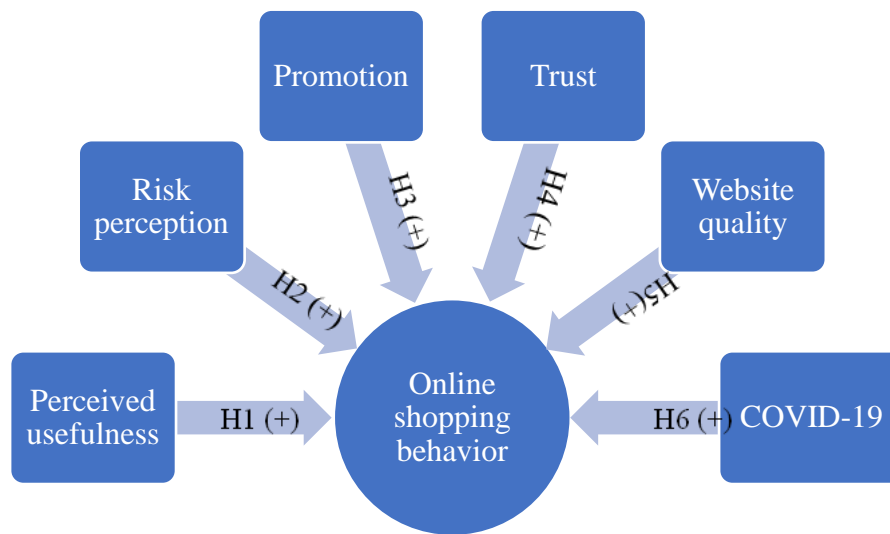


Fig.2: Research model.

3. Methodology

In this study, the choice of sample size is considered to satisfy the rule of thumbs proposed by Bollen (1989); Hair et al. (2017). In detail, the sample size should be at least five times the number of observed variables to meet Bollen’s requirement and the minimum number of observations is from 100 to 150 (Hair et al., 2017). The survey with 25 questions were given to 300 customers from July 2022 to December 2022. The shopping areas of respondents are limited to District 1, District 3, District 5, District 7, District 10, and Tan Binh District. As a result, 287 valid answer sheets, accounting for 95.6% of total survey sheets, were collected during the survey. It can be confirmed, the chosen sample size meets the requirements for Exploratory Factor Analysis (EFA) analysis as Bollen’s (1989) and Hair’s et al., 2017 suggestions. The questionnaire was designed as a five-point scale in which ‘strongly disagree’ to strongly agree level equivalent from 1 to 5.

Before the official survey, a pilot test with a small sample size (50 consumers) was conducted to assess the appropriateness of the questions comprehensiveness of the language. The final version of the survey was built based on the feedback of the pilot test. The statistical program SPSS 20.0 was used to analyze the collected data. First, Cronbach's alpha and Exploratory Factor Analysis were run to test the reliability of variables. Then, the Kaiser-Meyer-Olkin (KMO) statistic and Bartlett's test of sphericity were applied to the check sufficiency of each variable in the model. Finally, Pearson correlation analysis was adopted to evaluate the relationship between the independent and dependent factors. Furthermore, regression analysis via Ordinary Least Squares regression (OLS) is performed to explore the impact of factors on consumers’ online shopping behavior in Vietnam.

Table 3. Dimensions and Items for Questionnaire

Dimensions	Measurement items	Reference
Perceived usefulness (PU)	<p>PU1: I can make online shopping any time.</p> <p>PU2: Online shopping can save my time when I want to buy something.</p> <p>PU3: Online shopping gives me more information to choose a product.</p> <p>PU4: I can use different convenient online payment methods.</p>	Adnan (2014); Ellitan & Prayogo (2022); Hsu et al. (2013); M. T. Nguyen & Nguyen (2020); Ta & Dang (2021)
Risk perception (RP)	<p>RP1: I can receive broken products.</p> <p>RP2: I feel difficult in exchange, return a product when shopping online.</p> <p>RP3: I do not prefer to be charged transportation costs when shopping online.</p> <p>RP4: I cannot rely on the product review.</p>	Adnan (2014); Gerber et al. (2014); Zhang & Yu (2020)
Promotion (PR)	<p>PR1: I receive a reasonable price discount when shopping online.</p> <p>PR2: I receive a coupon which will allow me to buy the other products for my next purchase.</p> <p>PR3: I receive free samples of new products when shopping online.</p> <p>PR4: I can buy a second product at a half price when shopping online.</p>	Halimi et al. (2011); M. T. Nguyen & Nguyen (2020); Ta & Dang (2021); Vos et al. (2014); Vu et al. (2021)
Trust (TR)	<p>TR1: My personal information (phone number, email, ...) will be kept confidential when shopping online.</p> <p>TR2: The e-commerce vendors/sites are highly reputed.</p> <p>TR3: The payment process is secured.</p>	Ahmad et al. (2015); Hinson et al. (2013); Jogi & Vashisth (2021)
Website quality (WEB)	<p>WEB1: When shopping online, I often purchase at the website which can provide me with more information of product and selection.</p> <p>WEB2: I shop online when the seller's website is trustworthy and professionally designed.</p> <p>WEB3: I make online purchases when websites are accessible.</p>	Adnan (2014); Ashraf et al. (2019); Chiu & Yang (2016); Ganguly et al. (2010); Hossain & Rahman (2021); Ongsakul et al. (2021); Rahman & Hossain (2022)
COVID-19 (MF)	<p>MF1: COVID-19 changes in-store shopping habits to online for consumers.</p> <p>MF2: COVID-19 has made me feel favourable towards online shopping.</p> <p>MF3: COVID-19 encourages consumers shopping online frequently.</p>	Dalirazar & Sabzi (2023); Hardin & Twengström (2022); Hong et al. (2021); McLean et al. (2020); Pantelimon et al. (2020)
Online shopping behavior (BE)	<p>BE1: Shopping online makes me happy.</p> <p>BE2: I will shop online whenever I need it.</p> <p>BE3: I will recommend my friends and relatives to shop online.</p> <p>BE4: I prefer shopping online compared to in-store.</p>	CETINĂ et al. (2022); McLean et al. (2020)

4. Research Results and Discussion

After performing regression in exploratory factor analysis including Varimax with Principal Component Analysis extraction. The reliability of the factors is evaluated based on Cronbach’s alpha coefficient. The obtained results show that the scales satisfy the conditions of reliability and research data is suitable for EFA analysis. From there, the model regression results are performed and showed in the following table:

Table 4. OLS regression results

Model	Standardized Coefficients		Sig.	Collinearity Statistics	
	Beta			Tolerance	VIF
1	(Constant)		0.147		
	PU	0.638	0.002	0.506	1.976
	RP	0.231	0.034	0.639	1.565
	PR	0.192	0.052	0.758	1.32
	TR	0.454	0.041	0.817	1.224
	WEB	0.352	0.006	0.779	1.283
	MF	0.508	0.008	0.607	1.648
Dependent factors: BE (online shopping behavior)					
Independent factors: PU: perceived usefulness; RP: risk perception of risk; PR: promotion &; TR: Trust; WEB: Website quality; MF: macro-economic factors					

In order to ensure reliable research results, testing of model defects is carried out. A model fit test using ANOVA shows that the model has a statistically significant $F = 165.168$ ($Sig = 0.000 < 0.05$). Therefore, the author concludes that there exists a set of factors independent of the dependent factors in the study model. At the same time, the study carried out tests related to the autocorrelation phenomenon and the residuals of the standard distribution compliance model (through Standardized residual frequency and Histogram histogram). Therefore, the research results of the model are reasonable and reliable.

The regression results show that model has four statistically significant factors at 5% and positively impact consumers’ online shopping behavior, including perceived usefulness, risk perception, trust, website quality, and macro-economic factors. Based on the regression results, the only factor which has no impact on consumers’ online shopping behavior in Ho Chi Minh City is Promotion and Advertising. The significant factors are discussed as follows.

First, table 3 shows that perceived usefulness has the strongest impact on online shopping behavior in HCMC (due to the highest regression coefficient). The findings are consistent with the studies by (Adnan, 2014; Ali, 2020; M. T. Nguyen & Nguyen, 2020; T. M. A. Nguyen et al., 2022; Pham et al., 2020; Ta & Dang, 2021). These authors claim that perceived usefulness is expressed through consumers perceiving the benefits they receive when shopping online, such as saving time and costs. Another advantage of online shopping is that consumers can make transactions at home or anywhere they want. During the lockdown period, online shopping is the best solution for consumers purchasing goods or commodities through the internet with payment using ATM cards and credit/ debit cards conveniently. Besides, consumers could then enjoy discounted items, free shipping, or other promotions. Online shopping is convenient and offers various products consumers can find more quickly than they do shopping at physical stores. Customers can be aware that their health is protected during Corona Virus Disease 2019 when shopping online.

The following factors affecting consumers' online shopping behavior in Ho Chi Minh City are trust, website quality, and risk perception. Risk perception has the weakest influence on the online shopping behavior of consumers in Ho Chi Minh City. This factor is associated with the risks incurred when consumers do online transactions, such as damaged products/ commodities, delayed delivery, expired vouchers, financial losses, or a waste of time getting the wrong products. In addition, trust plays an essential role in EC transactions because it shows the consumer's confidence and experience in shopping for quality goods and services. After consumers have purchased goods/ commodities and are satisfied with them, they are willing to believe or put their trust in certain online suppliers. As a result, consumer behavior or attitude toward the EC will be significantly enhanced.

Besides, the website is another factor directly related to the online shopping behavior of consumers in Ho Chi Minh City. Therefore, the suppliers must keep the quality of websites at high standards to attract consumers. Concretely, websites need to be focused on decoration, convenient functions, and engaging content combined with responsiveness, accessibility, mobile-friendliness so that consumers can access the website anytime and anywhere they want.

The final factors that positively affect consumers' online shopping behavior in Ho Chi Minh City are macro-economic factors, including the political environment, legal environment, and epidemic factors (COVID-19). The findings are consistent with the study of (Dalirazar & Sabzi, 2020; Eger et al., 2021; Hardin & Twengström, 2022; Jawaid & Karim, 2021; Soares et al., 2022). The COVID-19 outbreak has changed our life, working, shopping behaviors, and others. The study expands on the findings of Vietnamese surveys conducted in a selected context (Ho Chi Minh City - a big city with rapid population growth) during the COVID-19 pandemic (Eger et al., 2021), which aims to clarify how consumers react to their habits in shopping online to protect their health. The findings also predict a more effective implementation of online shopping during the pandemic (Eger et al., 2021), leading to modifying existing habits (Sheth, 2020).

5. Conclusion

Using both qualitative and quantitative research methods, the study looks at how perceived usefulness, risk perception, trust, website quality, and macro-economic factors affect online shopping behavior in Ho Chi Minh City. The findings also confirm that shopping online is more convenient than shopping in physical stores. Especially in this research, the author documents the role of EC and consumers' online shopping behavior patterns that came to dominate during the wave of the COVID-19 pandemic crisis in the context of Ho Chi Minh City.

Although specific results have been achieved, some limitations still exist. First, the sample was limited to Ho Chi Minh City, so the results were only achieved with a certain level of confidence. Therefore, it is possible for future studies to widen the scope of surveys across the country instead of just in Ho Chi Minh City. Second, other factors need to be considered in the model in order to make the research results more general and reliable, such as attitude and online shopping intention.

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