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## Factors Affecting Students' Online Shopping Behavior

Truong Doan The

Associate Professor, Department of Business Administration,  
National Economics University Hanoi, Vietnam

### Abstract:

*This study examines factors affecting the attitude towards online shopping, and thus, the online shopping behavior of students in Hanoi, specifically, within National Economics University. The study consists of three sections. The first section is the literature review and research model. This is followed by the Research methodology. The third section is the results and discussion. The final section is the conclusion and policy implications. The study found three statistically significant factors influence student attitudes toward online shopping, which were perceived usefulness, hedonic incentive, and website design. The study proposed practical implications for businesses that sell their products in cyberspace, and recommendations for regulatory agencies to ensure sustainable e-commerce.*

**Keywords:** Measurement Model, Online Shopping, Structural Equation Modeling, PLS analysis

### 1. Introduction

The 4th wave of Covid-19 is serious and unpredictable, social distancing has been one of the primary measures of coping with pandemic. However, life goes on. In order to satisfy the needs of consumers, goods are still sold, but traditional shopping activities have been restricted, thus, online shopping is the perfect alternative. Online shopping is associated with the use of digital devices, which is more advantageous for young people. The purpose of this study is to determine the factors affecting online shopping behavior of students in the context of the Covid-19 pandemic and to propose policy implications for sustainable development of online shopping e-commerce in the future. The study consists of four sections. The first is a literature overview and theoretical background and the research model. The second is the research method and data. The third is the results of research and discussion. Conclusions, policy implications, limitations of the article and directions for further research are in the final section.

### 2. Literature Review and Research Model

Consumers have different shopping preferences. People who prefer personal communication with sellers and experience of shopping in malls or traditional markets would consequentially prefer the traditional way of shopping. According to Anderson and Sarkon (2009), the biggest benefit of traditional shopping is personal interaction with sellers, while the biggest benefit of online shopping is convenience, and saving money and time. Evans (2011) considered the physical stores, compared to online stores, are a reassurance for buyers. Previous researches have shown that online shopping behavior was affected by numerous factors. Among these, the recurring factors were perceived usefulness, perceived risk, psychological factor, hedonic incentive, and web design.

#### 2.1. Perceived Usefulness

Baber, Rasheed, and Sajad (2014) identified the factors affecting online shopping behavior as perceived usefulness and perceived ease of use.

Online shopping is possible through technological advancement. If the use of new technology improves productivity, saves time and effort, then that technology is useful for life. If the use of technology reduces costs, or increases benefits, then the usefulness of technology will be high and will increase businesses' intention to use technology. (Venkatesh, Morris, Davis, and Davis, 2003). Purchase intention is also directly influenced by the effort required to learn and use an information technology component, especially in discovery phase of technology use (Venkatesh and Davis, 2000; Gefen, 2003).

According to Hansen (2006), customers choose an online shopping channel to maximize convenience, as it helps them reduce the physical and mental effort required to complete a shopping task that is not available on other alternative channels. Therefore, the research hypothesis is

- H1: Perceived usefulness from online shopping has a positive effect on attitudes towards online shopping and, thus, on online shopping behavior.

#### 2.2. Perceived Risk

Kumar and Dange (2014) analyzed the perceived risks of online shopping, which were financial, time, social, and security risks. They also pointed out that non-buyers (people consider goods in virtual store but do not buy) face the same financial and security risks as online buyers, in addition, non-buyers were also hindered by psychological risk and physical

risk. The higher the perceived risk, the lower the intention to shop online. In other words, perceived risk has a negative effect on online shopping behavior. Perceived risk from online purchases is reflected in the difficulty of assessing product quality and the possibility of receiving substandard goods. Yeniceri and Akin (2013) argue that product risk is associated when working function is not as expected. This is explained by the limitations in buyer's skills in evaluating products in the virtual space because they have no guide on how to use the product in reality, and they have no chance to touch the product with their own hands, see the color of the product with your own eyes. The perceived risk also lies in the possibility of not receiving the goods. Customers are afraid of not receiving goods or late delivery, leading to high delivery risks (Yeniceri and Akin, 2013). Studies confirmed that there is a relationship between delivery risk and online shopping behavior (Hong, 2015; Adnan, 2014; Moshref, Dolatabadi, Nourbakhsh, Poursaedi, and Asadollahi, 2012). The perceived risk of online shopping also includes the difficulty of exchange delivered goods for other or returns it. The hypothesis is:

- H2: Perceived risk of online shopping has a negative effect on attitudes towards online shopping and, therefore, on online shopping behavior.

### 2.3. Psychological Factor (Trust and Security)

Many authors asserted that there is a relationship between psychological factors (trust, and security) with online shopping behavior. (Ariff, Yan, Zakuan, Bahari, Jusoh, 2013; Roman, 2007; Monsuwé, Dellaert, Ruyter, 2004; Grabner-Kraeuter, 2002). Online buyers often worry that their personal information (mail address, phone number) may be disclosed to others, fear that their credit card details may be unprotected, or worry that their shopping habits and processes can easily be tracked. At the same time, they find online shopping unsafe because of the lack of strict laws to punish fraud and hackers. The feeling about safety and security of retail selling websites is very important. Only virtual sellers who carefully consider this aspect (amongst others) can attract customers and build their loyalty. The research hypothesis is:

- H3: Psychological factors of online shopping influence attitudes towards online shopping and, therefore, on online shopping behavior

### 2.4. Hedonic Incentive

Consumers find that searching for product information on the internet is a good way to spend their time, fun and enjoyable, they may bring interesting discoveries, and they can buy goods as advertised. Novak, Hoffman, and Duhachek (2003) in their study found that more and more people buy spontaneously, satisfy their hedonic incentives. Jones, Reynolds, Weun, and Beatty (2003) also pointed out that in cyberspace, consumers tend to make immediate and unintended purchases; Wu, Chen, and Chiu (2016) found that consumers' online buying intention can be easily derived from the complexity or simplicity of use of the selling website. Beatty and Ferrell (1998) showed that due to hedonic incentive, consumers tend to buy more than what they actually need. Bellini, Cardinali, & Grandi (2017), Flight, Rountree, & Beatty (2012) also found that unintentional and thoughtless purchases make up a significant portion of consumer spending. The hypothesis is:

- H4: Hedonic incentive of online shopping has a positive influence on attitudes towards online shopping and, therefore, on online shopping behavior.

### 2.5. Web Design

There is a statistically significant relationship between the quality of web design and consumer's online buying intention (Suwunniponth, 2014; Adnan, 2014; Hassan and Abdullah, 2010; Osman, Yin-Fah, Hooi-Choo, 2010; Lin, 2007). The quality of web design is reflected in aesthetics, ease of use, page load speed, navigability, technological friendliness, consumer's information security, and so on.

The more user-friendly; attractive design interface; complete and easy-to-understand information; ease of access; reliable; professionally designed; without errors in ordering and transaction procedures the website is, the more it stimulates customers to buy online. The hypothesis is:

- H5: The website design affects attitudes towards online shopping and, therefore, online shopping behavior.

The research model is shown in Figure 1.

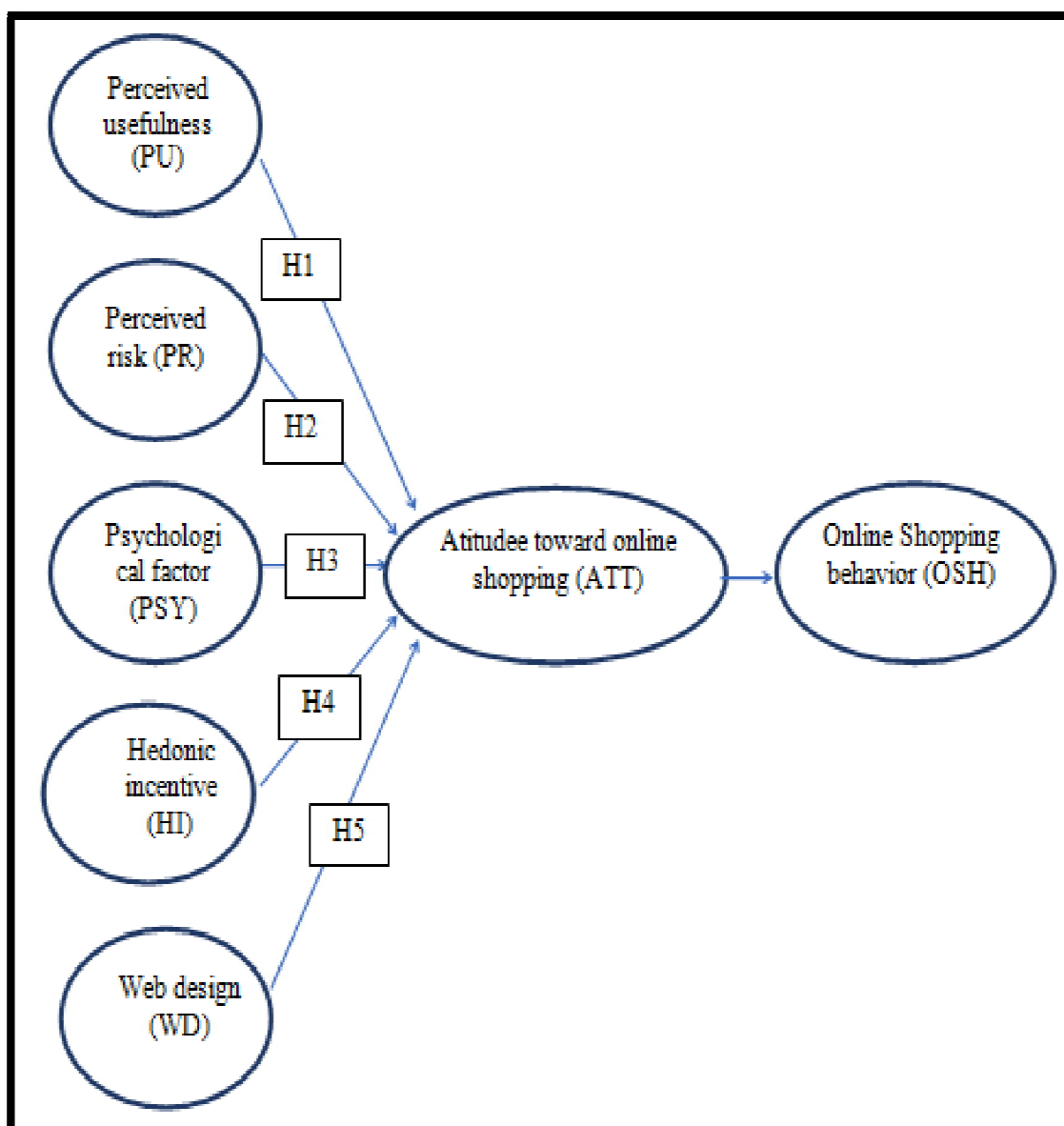


Figure 1: Research Model

### 3. Research Methodology

Online shopping is raised as one of the consequences of the development of digital technology. This activity expands at an increasing speed. Online shopping (or e-commerce) positively affects production and consumption, so it should be further promoted in the future. Online shopping is associated with understanding and using information technology, so it is the advantage of young people who were born and raised in era 4.0. The Covid-19 pandemic spread to Vietnam at the beginning of 2020. The first wave and the second wave have been controlled quite successfully. The third wave in Vietnam began in July 2020 with a much larger number of infected people than the previous two waves. Social distancing was proven to be an effective measure to prevent the spread of the Covid-19 pandemic. During the period of isolation, activities related to production and consumption of products continues but in a way that is adjusted to fit new the circumstances. The purpose of this study is to identify the factors that influence young people's attitudes towards online shopping and, therefore, online shopping behavior in order to propose policy implications, and to promote e-commerce in Vietnam.

Based on reviewing previous studies in this field, we built a two-part survey questionnaire. The first part includes questions related to demographic information, the second part includes questions related to 5 factors that potentially influence attitudes towards online shopping and, therefore, online shopping behavior: perceived usefulness, perceived risk, psychological factor, hedonic incentive, and web design. Respondents marked their agreement on a Likert 5-point scale, ranging from 'do not agree at all' to 'completely agree' with each statement stated in the questionnaire. The estimated time to respond to the survey was about 10 minutes. This survey was conducted in cyberspace using Google Forms. The online address (URL) of the survey questionnaire was posted on social groups of students of National Economics University. The survey was conducted in January and February 2021. Collected data was processed using the SmartPLS 3.2.7 software.

#### 4. Results and Discussion

The data was collected from the anonymous survey. 138 responses were received. The characteristics of the research sample are provided in Appendix B and Appendix C. This research topic is in the field where the theory is not well developed, so we use structural equation model-based PLS to test the research model shown in Figure 1.

##### 4.1. Measurement Model Test

This data analysis begins with estimating the convergent and discriminant values of the items, and then tests the measurement model. Most of the factor loading coefficients of the 5 factors are  $> 0.70$  (Table 1), indicating that the reflective measures are reliable (Chin, 1998). All measures of reliability are also greater than the recommended level of 0.70 (Table 1), which indicates that they satisfy the condition for internal consistency (Fornell&Bookstein, 1982; Nunnally& Bernstein, 1994).

Variables	Factor Loading
Attitude towards online shopping	1
Hedonic incentive	
IC = 0.889	
AVE = 0.728	
HI1	0.795
HI3	0.891
HI5	0.87
Online shopping behavior	1
Perceived risk	
IC = 0.849	
AVE = 0.654	
PR2	0.777
PR3	0.912
PR4	0.726
Psychological factor	
IC = 0.894	
AVE = 0.678	
PSY1	0.808
PSY2	0.783
PSY3	0.826
PSY4	0.875
Perceived usefulness	
IC = 0.879	
AVE = 0.646	
PU1	0.766
PU2	0.844
PU3	0.804
PU4	0.798
Web design	
IC = 0.912	
AVE = 0.723	
WD1	0.766
WD3	0.859
WD4	0.876
WD5	0.894

Table 1: Convergence and Discriminant Values of the Model's Constructs

IC = Internal Consistency; AVE = Average Variance Extracted

Source: Extracted from Processed Data by Author

Discriminant values were evaluated by comparing the AVE for each factor (constituent) by its correlation coefficient with other factors in the model (Chin, 1998; Fornell&Larcker, 1981). All components in the estimated model satisfy the discriminant value (Table 2).

	Attitude	Hedonic Incentive	Behavior	Perceived Risk	Psychological Factor	Perceived Usefulness	Web Design
Attitude	1						
Hedonic incentive	0.534	0.853					
Behavior	0.756	0.56	1				
Perceived risk	0.341	0.238	0.277	0.809			
Psychological Factor	0.188	0.155	0.077	0.491	0.823		
Perceived Usefulness	0.552	0.496	0.509	0.338	0.179	0.803	
Web Design	0.558	0.496	0.427	0.486	0.299	0.525	0.85

Table 2: Correlation among Construct Scores (Square Root of AVE in the Diagonal)

Source: Extracted from Processed Data by Author

All the VIFs of the structures were < 3 (Table 3), suggesting that there may be no autocorrelation between the constituent parts.

Attitude towards online shopping	1
Searching for product information on the internet is a good way to spend time	1.623
Online shopping is fun	1.881
I can buy as I like depended on advertisements	2.084
Online shopping behavior	1
It is possible not receive the goods	1.396
It is possible to receive goods of poor quality	1.858
It is difficult to swap or return goods	1.521
I worry that personal information (mail address, phone number) may be disclosed to others	2.153
I worry that your credit card details may not be safe	2.622
Feeling unsafe because of the lack of strict laws to punish fraud and hackers	2.194
Shopping habits and processes easily be tracked	1.884
I can shop anytime and anywhere	1.57
Rich information for making choice	1.855
Time saving	1.776
Good transactions are available	1.672
The website has a user-friendly, beautiful and attractive design interface	1.716
Website is easy to access	2.057
Trusted website and professional design	2.749
Free-error accessing the website and free- error order and transaction procedures	2.946

Table 3: Inner Model VIF

Source: Extracted from Processed Data by Author

## 4.2. Structural Model Results

### 4.2.1. R2for Dependent Constructs

The results show that 43% of the variance of the attitude towards online shopping variable and 56.8% of the variance of the online shopping behavior variable can be explained by this structural model. This interpreted percentage is higher than 10%, implying that the intrinsic value and predictive power of the PLS model satisfy the requirements of the PLS model (Falk & Miller, 1992).

### 4.2.2. Structural Path Coefficient

The results of the estimated model show that 3 out of 5 factors that are hypothesized to affect the attitude towards online shopping behavior are statistically significant, including hedonic incentive, perceived usefulness, and web design at the  $p < 0.001$  significance level. And the attitude towards online shopping affects online shopping behavior at the significance level  $p < 0.001$ .

The estimated results are presented in Table 4 (and Figure 2), showing the total influence of the factors on the dependent variables.

	Path Coefficient	Observed t Value	Sig. Level
Impact of the attitude to behavior	0.756	16.126	****
Impact of the hedonic incentive on the attitude	0.258	3.954	****
Impact of the perceived risk on the attitude	0.069	0.689	ns
Impact of the psychological factors on the attitude	-0.011	0.109	ns
Impact of the perceived usefulness on the attitude	0.266	3.544	****
Impact of the web design on the attitude	0.26	2.715	****

Table 4: Structural (Inner) Model Results

\*\*\*\* P < .001, Ns = Not Significant

Source: Extracted from Processed Data by Author

4.2.3. Effect Size (F Square)

f square represents the magnitude of the influence of the independent variables on the dependent variables. According to Cohen (1988), f squared < 0.02 implies that the effect is very small; 0.02 ≤ f squared < 0.15 indicates a small effect, and 0.15 ≤ f squared < 0.35 represents the mean effect, and f squared ≥ 0.35 indicates a large effect. The estimated model shows that hedonic incentive, perceived usefulness, and web design all have an average influence on attitude towards online shopping and online shopping behavior, while psychological factors and perceived risk have very little influence (and as discussed above, the relationship between these factors and attitudes towards online shopping/online shopping behavior is statistically significant). The effect of attitude on behavior in this model is large, f-square is 0.756 (Table 5 and Figure 2).

	Attitude towards Online Shopping	Online Shopping Behavior
Attitude towards online shopping		0.756
Hedonic incentive	0.258	0.195
Perceived risk	0.069	0.052
Psychological factors	-0.011	-0.008
Perceived usefulness	0.266	0.201
Web design	0.26	0.196

Table 5: F Square

Source: Extracted from Processed Data by Author

The results of the estimated model are shown in Figure 2.

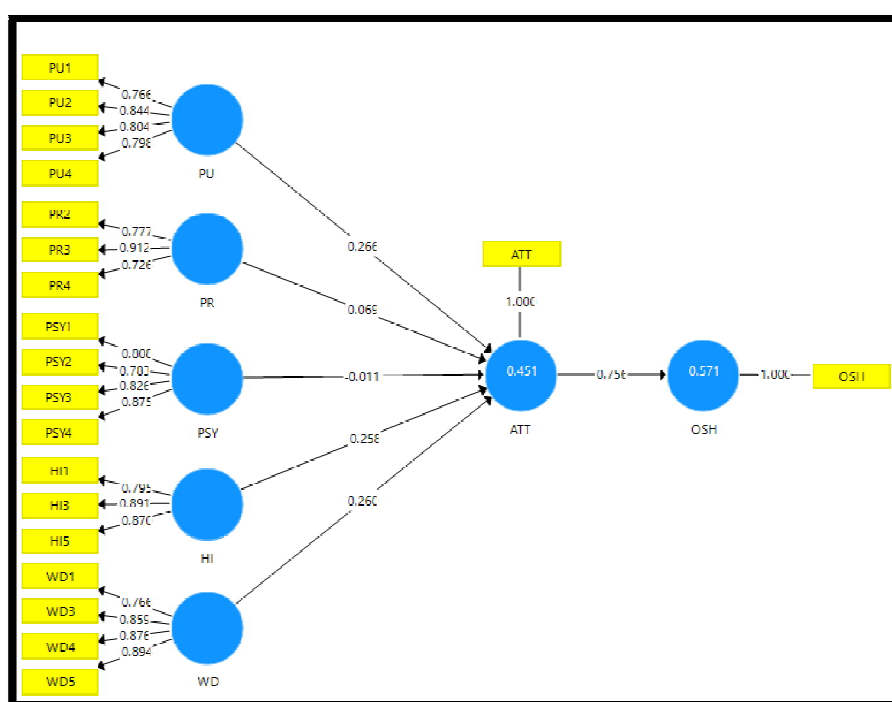


Figure 2: Estimated Model

## 5. Discussion

This study examines the factors affecting the attitudes towards online shopping, and therefore, the online shopping behavior of students in Hanoi, an empirical case of the National University of Economics. We found 3 statistically significant factors: hedonic incentive, website design, and perceived usefulness. This is similar to the findings of previous studies (Luong, Dao, Dam, and Nguyen, 2020). They pointed out three factors that affects impulsive and continuous online shopping behavior are ease of use, usefulness, and stimulation. Nguyen, Pham, Tran (2020) also identified three factors affecting the impulsive buying behavior of young people on e-commerce sites, which are: perceived value, impulse buying motivation and attitude towards impulsive purchasing. Another finding in this study is that attitude towards online shopping has a positive effect on online shopping behavior, and the relationship is statistically significant. This finding is similar to that of Ha (2016): The attitude and cognition controlling consumer behavior have a positive influence on consumer's online purchase intention. Mir Md. TariquAlama (2018) also showed that web design was one of three main factors affecting student attitude towards online shopping.

In contrary to previous studies which showed that perceived risks negatively affect consumer online shopping behavior (Ha, 2016; Rajyalakshmi, 2015), and security positively affect online shopping behavior (Mir Md. TariquAlama, 2018), these studies did not find a statistically significant relationship between perceived risk and psychological factors (anxiety about insecurity) with attitude towards online shopping, and online shopping behavior. This can be explained by the fact that students have little experience, lack of practical knowledge, and naivety, so when making decisions, they often ignore risks (financial risks, product risks, financial risks, disclosure of personal information, etc.)

## 6. Conclusion and Policy Implications

E-commerce (online buying and selling) plays a very important role in production and consumption, especially in the circumstances of the Covid-19 pandemic. Identifying factors affecting online shopping behavior has practical implications for promoting sustainable e-commerce development. In recent years Vietnam's digital transformation has taken place at a high speed. In addition, Vietnam has more than half of the population using the internet, and Vietnam's total online shopping through mobile devices grows at an annual rate at two digits. Large foreign investors have been involved in the field of e-commerce in Vietnam, such as Alipay, AlibabaNapas, and Tencent. However, the results of this study show that only three out of five factors (which are hypothesized to have an influence on attitudes towards online shopping and therefore on online shopping behavior) are statistically significant on the attitude towards online shopping and thus on the online shopping behavior: perceived usefulness, hedonic incentive, and website design. This is the basis for companies to find measures to promote their online sales. *Firstly*, constantly ensure the benefits of convenience for online shoppers, so that customers not only see the benefits of being able to shop anytime, anywhere, but also see the benefits of reasonable prices, guaranteed product quality, and fast delivery. *Secondly*, the advertising and sales promotion should emphasize more on the fun of online shopping, as this is one of the three factors that affect the student's attitude towards online shopping and thus the online shopping behavior. *Thirdly*, website design should ensure aesthetics, ease of use, quick access, truthful information to attract and retain customers.

Surprisingly, the results of this study showed a statistically insignificant relationship between psychological factors and perceived risks with the students' attitude towards online shopping and thus on their online shopping behavior. This can be explained by the fact that the lack of online shopping experience prevented them from seeing the negative effects of unsecure personal information sharing as well as the risks of online shopping associated with product risks and delivery risks. The more online shopping, the more customers can realize the influence of these factors. Thus, to ensure the benefits for themselves and their customers, online sellers should strengthen information security measures and ensure product quality as well as reputation in online transactions. In other words, the *fourth* implication is that online stores need to strengthen information security and ensure that the goods sold on the virtual store must be of the same quality as informed on the website and has to be delivered on time. Regarding management agencies, it is necessary to improve law provisions on e-commerce in customers' interests and ensure enforcement to promote healthy competition for sustainable production and commerce development. Regulatory agencies should strengthen their educational activities for customers so that the customers can be aware of the risks associated with online shopping in the context of massive cheating on cyberspace as in the present.

## 7. Limitations and Directions for Further Research

This study conducted a survey among students at one university in Hanoi, so the results are hardly generalized to young people in Hanoi in particular and Vietnam in general. This is the reason for future research to expand to young people in Hanoi or throughout the country. In addition, further research will explore under what circumstances psychological factors and perceived risk will have an effect on attitudes towards online shopping and thus on the online shopping behavior of young consumers.

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## Appendix

### Perceived Usefulness of Online Shopping

I can shop anytime and anywhere (PU1)  
 Rich information about products for making choice (PU2)  
 Save time when shopping (PU3)  
 Many good deals available (PU4)

### Perceived Risk of Online Shopping

Difficult to value product quality (PR1)  
 It is possible not receive goods (PR2)  
 It is possible to receive goods of poor quality (PR3)  
 Hardly to swap the goods for another or return it (PR4)

### Psychological Factors (Trust, Security) of Online Shopping

Worry about the personal information (mail address, phone number) may be disclosed (PSY1).  
 Worry that my credit card details may not be safe (PSY2)  
 I feel unsafe because of the lack of strict laws to punish fraud and hackers (PSY3)  
 My shopping habits and processes are easy to be tracked (PSY4)

### Hedonic Incentive of Online Shopping

Searching for product information on the internet is a good way to spend time (HI1)  
 Searching for information on the internet is fun (HI2)  
 Online shopping is fun (HI3)  
 The discovery in online shopping is fun (HI4)  
 I can buy as I like depending on advertisements (HI5)

### Web Design (Aesthetics, Contents)

The web has a user-friendly, beautiful and attractive design interface (WD1)  
 The web provides complete and easy-to-understand information (WD2)  
 The web is easy to access (WD3)  
 The web is reliable and professional designed (WD4)  
 Free-error accessing the website and free-error order and transaction procedures (WD5)

### Attitude toward Online Shopping (ATT)

I have a positive attitude towards online shopping (ATT1)  
 I find online shopping as good as or better than in-person shopping (the traditional way) (ATT2)  
 I think online shopping is a good way to prevent disease (ATT3).

### Online Shopping Behavior (OSH)

I often shop online (OSH1)  
 I will continue to shop online (OSH2)

### I Will Recommend my Friends to Shop Online

Yes  
 No

		Frequency	Proportion (%)
Sex	Male	30	22
	Female	108	78
	Total	138	100.00
Age	15 - 20	102	74
	21 - 25	32	23
	> 25	4	3
	Total	138	100.00
Level of study	First year	81	59
	Second year	19	14
	Third year	22	16
	Fourth year	16	11
	Total	138	100.00

Study program	Full-time - traditional program	86	62
	Full-time -Advanced education program	46	34
	Full-time - International Bachelor Degree Program	3	2
	Full-time - collaboration Program	3	2
	Total	138	100.00
Disposable amount per month	Less than VND 5 million	114	83
	5 to less thanVND 10 million	15	11
	10 to less than VND 15 million	6	4
	15 to less than VND 20 million	0	0
	More than VND 20 million	3	2
	Total	138	100.00
Consulted by others when buying	Yes	83	60
	No	55	40
	Total	138	100.00
Through what device do you usually buy online?	Laptop	3	2
	Smartphone	134	97
	Other	1	1
	Total	138	100.00
Payment	Pay in advance	39	28
	Pay later: pay through a third party when receiving goods (COD)	97	72
	Total	138	100
Has your online shopping behavior been affected by the COVID-19 pandemic	Before the Covid-19 pandemic, I rarely or never bought online	41	30
	Since the covid-19 pandemic, I have bought online or bought more online	97	70
	Total	138	100.00
	More than before	76	55
	No more than before	62	45
	Total	138	100.00

Table 6: Sample Characteristics

	No.	Missing	Mean	Median	Min	Max	Standard Deviation
PU1	1	0	4.138	4	1	5	0.949
PU2	2	0	4.116	4	1	5	0.925
PU3	3	0	3.739	4	1	5	1.072
PU4	4	0	3.71	4	1	5	0.957
PR1	5	0	4.022	4	1	5	0.928
PR2	6	0	3.246	3	1	5	1.062
PR3	7	0	3.971	4	1	5	0.978
PR4	8	0	3.645	4	1	5	0.999
PSY1	9	0	3.572	4	1	5	1.089
PSY2	10	0	3.674	4	1	5	1.016
PSY3	11	0	3.812	4	1	5	0.944
PSY4	12	0	3.754	4	1	5	0.977
HI1	13	0	3.203	3	1	5	1.117
HI2	14	0	3.333	3	1	5	1.072
HI3	15	0	3.616	4	1	5	0.903
HI4	16	0	3.514	4	1	5	0.965

	<b>No.</b>	<b>Missing</b>	<b>Mean</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>Standard Deviation</b>
HI5	17	2	3.382	3	1	5	0.986
WD1	18	0	3.797	4	1	5	0.861
WD2	19	0	4.043	4	1	5	0.824
WD3	20	0	4.051	4	1	5	0.774
WD4	21	0	4.014	4	1	5	0.917
WD5	22	0	3.884	4	1	5	0.933
ATT	23	0	3.739	4	1	5	0.879
OSH	24	0	3.536	4	1	5	0.941

*Table 7: Sample Statistics*