Research on Purchasing Behavior on E-commerce Platforms of Low-income People of Vietnam

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The purpose of this study is to analyze factors affecting the purchasing behavior of low-income Vietnamese on e-commerce platforms. 700 questionnaires were dispersed among universities, coffee shops, and Facebook community groups in Vietnam. Respondents to the questionnaires were consumers of those places in Vietnam, which were randomly selected. Finally, SEM analysis was used on the data to test the hypotheses of the study. The study identified that "Subjective norms" and "Consumer attitudes" have no effect on shopping behavior on e-commerce platforms, while "Perceived behavioral control" is most affected and "Perceived risks" are least affected on shopping behavior.

Keywords: B2C e-commerce, e-commerce platforms, low-income people, purchasing behavior

Introduction

In the digital era, the Internet is growing rapidly, and more and more people have access to useful tools using the Internet to improve their lives. Their habits and lifestyles are changing according to this development, and one of them is purchasing behavior. Consumers tend to buy goods via the Internet, social media, or e-commerce platforms. It is forecast that in the period from 2022 to 2025, Vietnam's e-commerce will increase by an average of 25% per year, reaching 35 billion USD in 2025, accounting for 10% of total retail sales and consumer service revenue nationwide. Electronic commerce plays an essential role in advancing information technology as well as communication.

In the context of the boom of e-commerce, many studies on online purchasing behavior have been conducted in Vietnam and it has become an important field (Nguyen, & Do, 2019; Trinh et al., 2021; Nguyen, 2022; Nguyen et al., 2022). However, when it comes to low-income groups, there seems to be a lack of research in this area. As a result, very little research has been conducted on the shopping behavior on e-commerce platforms of low-income people, a vulnerable group of people who need more attention and support from the government. This leads to the motivation for the authors to conduct a new study in this scope.

The General Statistics Office offers statistical methodologies for categorizing income into five groups: the lowest income group (poorest), the below-average income group, the average income group, the good income group, and the highest income group (richest). The income distribution of different groups is presented in the

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Press Release announcing the findings of the "2022 residential living standards survey" as follows: there are 1.352 people in group 1; group 2 and 3 has 2.702 and 3.866, respectively; while the number of people in group 4 is 5.207, the number of people in group 5 approximately double.

The authors selected three specific income groups to focus on for their research: the group with the lowest income (group 1), the group with below-average income (group 2), and the group with average income (group 3). These groups are collectively referred to as the "low-income group". To streamline the data collection and analysis process, the authors established a benchmark of 4,000,000 VND as the threshold for identifying individuals in the low-income category.

Literature Review and Theoretical Framework

Literature Review

Subjective norms. According to Ajzen (1991), the subjective norm is defined as perceived social pressure to perform or not perform a behavior. Social pressure can influence a person's behavior differently in different societies (Husin, & Rahman, 2013). Ajzen (1991), and Orapin (2009) advocate that external factors such as perceived social pressure can influence a person's behavior.

However, Blanca Hernandez's 2011 study found that socioeconomic variables (age, gender, and income) did not moderate the effects of previous Internet use and awareness of e-commerce. That is, they do not dictate the behavior of e-shoppers once they are experienced. Additionally, this study demonstrates that other, more intricate factors like personality, way of life, and familiarity with information technology can affect e-shopping behavior.

H1: Subjective norms affect positively on shopping behavior on e-commerce platforms of low-income people.

Services and policies. The policies and customer care services of e-commerce platforms play a significant role in shaping customers' purchasing behavior. Gronroos (1982; 1984) was the first to model the idea of service quality. According to research by Anwar, and Climis (2017), online service quality is the difference between customers' expectations about service performance and their actual perception of the service provided. Furthermore, online service quality is very important because some researchers believe that if customers are satisfied, loyalty to online platforms will increase, and service quality also has a positive effect for customer trust (Kitapci, Akdogan, & Dortyol, 2014).

H2: Services and Policies have a positive impact on shopping behavior on e-commerce platforms of low-income people.

Table 1

Dimensions of Perceived Risk

Dimension	Definition
Finance risk	"Financial risk is the perception that a certain amount of money may be lost or additional expenditure is required for the product to function properly" (Masoud, 2013). "Financial risks include consumers' feelings of insecurity about using credit cards online" (Maignan, & Lukas, 1997).
Product risk	"Product risk related to the effectiveness or quality of goods and services that consumers choose through online shopping" (Wai et al., 2019).
Convenience risk	"Convenience risk is related to the buyer's perception that they need to spend a lot of time and effort adjusting the purchased product before using it" (Chang et al., 2018). "Convenience risk in online shopping refers to the feelings of frustration that buyers may experience" (Wai et al., 2019).

Perceived risks. According to the research of Younghoon Chang in 2019, one of the most important variables in users' decision-making is risk. To define it, Peter and Ryan defined perceived risk as "a kind of subjective expected loss", while Featherman and Pavlou defined it as "the possible loss when pursuing a desired result". Perceived risks in this study are divided into 3 risks: finance risks, product risks, and convenience risks. The table below will show the definition for each risk.

H3: Perceived Risks have a negative impact on shopping behavior on e-commerce platforms of low-income people.

Consumer confidence. McKnight, Choudhury, & Kacmar (2002) argue that consumer trust is consumers' positive expectations of manufacturers' ability to produce products that meet customer needs. Although there is no online interaction in online commerce, store reputation and brand strength can strengthen consumer trust. Additionally, the global and unregulated nature of the Internet highlights the need to establish trust mechanisms in communications.

H4: Consumer Confidence impact on shopping behavior on e-commerce platforms of low-income people.

Consumer attitudes. Consumer attitudes toward online shopping play an important role in determining purchase decisions. Attitude significantly influences online shopping and purchasing behavior. Positive attitudes promote online purchases, and previous research shows that attitudes toward online shopping are important predictors of online purchase likelihood and purchase behavior. In their research in 2005, Chiu et al. defined consumer attitudes as consumers' positive or negative emotions when they are about to make a purchasing decision. While Haque suggested an opinion in research in 2006 that attitudes are formed through motivation and perception, ultimately influencing the decision-making process.

H5: Consumer Attitudes impact on shopping behavior on e-commerce platforms of low-income people.

Perceived behavioral control. Ajzen, and Madden (1986) drew on the results of the Theory of Reasoned Action (TRA) to introduce the Theory of Planned Behavior (TPB). In this new model, they added a new component called perceived behavioral control (PBC), which serves as a predictor of both intention and behavior. Perceived behavioral control refers to customers' subjective assessments of the ease or difficulty of performing a particular behavior. Perceived behavioral control includes an individual's beliefs about both internal limitations (such as self-efficacy) and external limitations (such as the availability of resources) that can influence their behavior. Previous research has shown that perceived behavioral control (PBC) has a direct impact on individuals' online shopping behavior (George, 2004). In addition, a significant correlation exists between perceived behavioral control and actual purchasing actions on the Internet (Khalifa, & Limayem, 2003).

Perceived behavioral control (PBC) includes all consumer actions (such as purchasing, using, and disposing of goods and services). These actions are linked to consumers' emotional, mental, and behavioral responses that precede, determine, or follow these actions (Kardes, Cronley, & Cline, 2010). According to results from research by Gupta et al. (2011), perceived behavioral control (PBC) is the main factor that creates the first impression on customers.

H6: Perceived Behavioral Control affects positively shopping behavior on e-commerce platforms of low-income people.

Theoretical Framework

Original theory and some basic concepts. Numerous scholarly investigations have employed established theoretical frameworks to elucidate the phenomenon of internet shopping behavior in general and e-commerce

platforms in particular. Previous studies have demonstrated that numerous variables influence e-commerce platforms' customer behavior. However, it is exceedingly challenging to encompass all conceivable aspects within a single research model. The majority of studies have concentrated on a limited number of primary components. Specifically, the study incorporated the technology acceptance model from information systems, consumer behavior from marketing, and concepts of flow and environmental psychology. Similarly, Pavlou (2003) explored the interconnections between consumer acceptance of e-commerce and several factors, including trust, risk, perceived usefulness, and perceived ease of use. The expanded theory of planned behavior (TPB) put forth by Ajzen (1991) served as the basis for the study by Pavlou, and Fygenson (2006), which looked into consumer adoption of e-commerce.

The theoretical frameworks utilized in this study are the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). The Technology Acceptance Model (TAM) is a modified version of the Theory of Reasoned Action (TRA) that has been employed to evaluate users' adoption of computers. The attitude part that was originally in the Theory of Reasoned Action (TRA) was taken out of the Technology Acceptance Model (TAM) variables because it was found that attitude did not have a big effect on the variables. Previous research conducted by Yusniza (2007) and Roca et al. (2009) has demonstrated that perceived utility has a substantial role in shaping individuals' desire to use a particular technology. However, the influence of perceived ease of use on intention to use was found to be statistically negligible (Bagozzi, 2007). Taylor, and Todd (1995) say that the modified version of the Theory of Planned Behavior (TPB) is better at explaining things than both the pure TPB and the Theory of Reasoned Action (TRA) models. Because of this, the Theory of Planned Behavior (TPB) model is thought to be a good fit for this empirical study. This will help us understand online shopping behavior better since it depends on technology. Moreover, the applicability of perceived ease of use in the Technology Acceptance Model (TAM) is questionable. As individuals gain more experience using the internet, the impact of perceived ease of use on intention diminishes.

Online Shopping and e-commerce platforms. According to research conducted by Aonerank (2019), products can be ordered anywhere on the planet with just a simple tap on an Internet-connected mobile device. With such an easy way, consumers can easily choose goods from many different sources without any physical obstacles. Besides, the diversity of product sources and prices can help buyers make the best choices. Nowadays, there are many types of online stores, such as selling via social networks (Facebook, Instagram, etc.) or opening stores via e-commerce platforms (Shopee, Lazada, Amazon, etc.). With the rapid and strong development of e-commerce platforms, this research will focus on studying customer shopping behavior in this market. Using e-commerce platforms, consumers have more opportunities to view different prices and features and thus choose cheaper and superior options (Clarke, 2000). In the same study, Clarke stated that e-commerce provides customer purchase history whenever needed with a huge amount of data. As a result, customers not only see relevant details within seconds, but can also review their previous purchases.

Method

The purpose of this study is analyzing factors which impact shopping behaviors on e-commerce platforms of Vietnam consumers. This goal has been followed by examining the effect of subjective norms, services and policies, perceived risks, consumer confidence, consumer attitudes, and perceived behavioral control toward shopping behaviors on e-commerce platforms.

Model

The model that was used in the article was developed to examine the shopping behaviors on e-commerce platforms of Vietnamese consumers. The model examines the influence of subjective norms, services and policies, perceived risks, consumer confidence, consumer attitude, and perceived behavioral control toward shopping behaviors on e-commerce platforms.
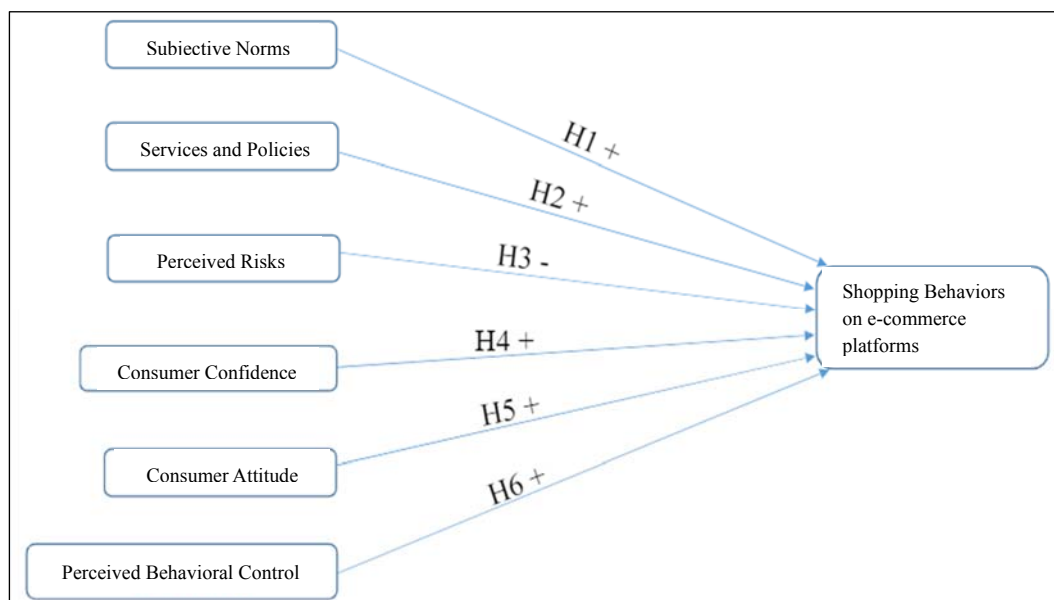

Figure 1. Conceptual model.
Source: The author group proposed, 2023.

Sampling and Measurement

To show the result of this study, we used a non-probability convenience sampling method in which researchers need to choose only one suitable feature and survey. The study was based on ease of access to subjects. The questionnaire was randomly sent to consumers in Vietnam, and results collected from people who are suitable in terms of income level and workplace, specifically those with low income and working in Hanoi. After collecting the questionnaire, this study analyzed the results based on observations of people with a low income of less than 4 million VND/month. The total number of observations harvested is 393 observations.

The study conducted reliability testing of Cronbach's Alpha, Bartllet's test, and KMO of variable groups. Then analyze EFA to identify factors based on the results of factors affecting shopping behavior on e-commerce platforms of low-income people, then select and arrange group factors based on the results of the rotated factor matrix table and finally run SEM model analysis.

For testing hypotheses of the study, SEM (**Structural equation modeling) was used.** This technique is the combination of factor analysis and multiple regression analysis, and it is used to analyze the structural relationship between measured variables and latent constructs. This method is preferred by the researcher because it estimates the multiple and interrelated dependence in a single analysis. In this analysis, two types of variables are used: endogenous variables and exogenous variables. Endogenous variables are equivalent to dependent variables and are equal to the independent variable.

Data Collection

The overall official sample of the study is people with low income and working in Hanoi. Of the total 393 observations obtained, males accounted for 28.89%, females accounted for 70.70% and other genders contained 0.50%. Regarding age, 20/393 survey participants were under 18 years old (5.09%); 86.77% of people are between 18-22 years old and because the research only targets low-income people, the number of people over 22 years old only accounts for 8.14%. Regarding the level of use of e-commerce platforms, the sample group included in the study with 100% of survey participants using e-commerce platforms, specifically: 4.10% of people said they rarely use e-commerce platforms, 7.40% of survey participants said they do not often use e-commerce platforms; 30.00% of the sample said that their level of use of e-commerce platforms is normal and more than half of the survey participants said they regularly use e-commerce platforms with 230/393 observations (accounting for 58.50%).

Result

Test the Reliability of the Scale Using Cronbach's Alpha Coefficient

Preliminary assessment of the scale is to evaluate the appropriateness of the factors given in the scale through Cronbach's alpha coefficient. The purpose of this step is to analyze the reliability of the variables and then select appropriate variables to include in the next step of EFA exploratory factor analysis.

Table 2

Reliability of Measurement Scales in the Research Model

Factors	Coefficient Cronbach's alpha	Total variable correlation coefficient - adjusted
Behavior on E-commerce Platform (HV)	0.847	$0.651 \rightarrow 0.794$
Consumer Attitudes (TD)	0.803	$0.576 \rightarrow 0.675$
Subjective Norm (CCQ)	0.886	$0.589 \rightarrow 0.779$
Perceived Risks (RR)	0.888	$0.691 \rightarrow 0.771$
Services and Policies (CS)	0.845	$0.603 \rightarrow 0.732$
Consumer Confidence (NT)	0.758	$0.509 \rightarrow 0.634$
Perceived Behavioral Control (NTK)	0.790	$0.624 \rightarrow 0.648$

Source: Research results of the author group, 2023.

Cronbach's alpha value ranges from 0 to 1 and often researchers use 0.7 as the minimum level for Cronbach's alpha coefficient and the closer this value is to 1, the higher the reliability. However, some other researchers suggest that a Cronbach's alpha of 0.6 or higher is acceptable in cases where the measurement concept is new to respondents in the research context (Nunnally, & Bernstein, 1994). Correlation of the total variable (Corrected Item—Total Correlation) meets the condition ≥ 0.3, then that variable meets the requirements (Nunnally, & Bernstein, 1994).

From the results of testing reliability using Cronbach's alpha coefficient shown in Table 3 we see that the variables HV, TD, CCQ, RR, CS, NT, NTK are reliable and qualified for further analysis. next in the exploratory factor, CFA and SEM.

EFA Exploratory Factor Analysis

Factor analysis is used to summarize data and reduce the set of observed factors into main factors for subsequent analysis and testing. The KMO result reached a value of 0.897, greater than 0.5, Sig. = 0.00 < 0.05

shows that the EFA analysis is appropriate and the observed variables are correlated with each other and statistically significant at the 5% significance level (Hoàng Trọng, & Chu Nguyễn Mộng Ngọc, 2008).

Table 3

Results of KMO Analysis and Barlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		*0.897*
Bartlett's Test of Sphericity	Approx. Chi-Square	*6239.746*
	df	*406*
	Sig.	*0.000*

Source: Research results of the author group, 2023.

According to the test results of Eigenvalue > 1, the value of total variance extracted is 59.89% (> 50%, satisfactory).

Table 4

Factor Matrix After Rotation

	Factor						
	1	2	3	4	5	6	7
CCQ1	0.978						
CCQ3	0.931						
CCQ2	0.741						
CCQ6	0.672						
CCQ5	0.551						
CCQ4	0.546						
RR1		0.828					
RR4		0.820					
RR3		0.795					
RR5		0.788					
RR2		0.713					
CS2			0.905				
CS1			0.756				
CS4			0.750				
CS3			0.573				
HV1				0.930			
HV3				0.825			
HV2				0.612			
HV4				0.547			
TD3					0.819		
TD2					0.786		
TD4					0.630		
TD1					0.564		
NT1						0.831	
NT2						0.758	
NT3						0.465	
NTK2							0.756
NTK1							0.614
NTK3							0.613

Source: Research results of the author group, 2023.

In addition, factor loadings of 0.3 are considered minimal, > 0.4 are considered important and > 0.5 are considered practically meaningful (Hair, Black, & Babin et al., 2010). Hair et al. also suggested that the standard value of the factor loading should be considered with the sample size. In the study, the sample size is n = 393, so we still accept the factor loading value of variable NT3 as 0.465. From the results of implementing the Promax factor rotation method, we have formed 7 factors from 29 observed variables.

Test the Scale Using Confirmatory Factor Analysis (CFA)

The results show that the values and measurement criteria are appropriate. It can be seen that the indicators CMIN/df (2.329 < 3), CFI (0.922 > 0.9), RMSEA (0.067 < 0.08) produce good results. Regarding the GFI indicator, according to Baumgartner and Homburg [28, 29], the minimum value of 0.8 is still acceptable. Therefore, the GFI criterion (0.869 > 0.8) is satisfied. The above indicators have proven that the research model is completely consistent with the survey data.

Analyze the SEM Structural Model and Test the Hypotheses
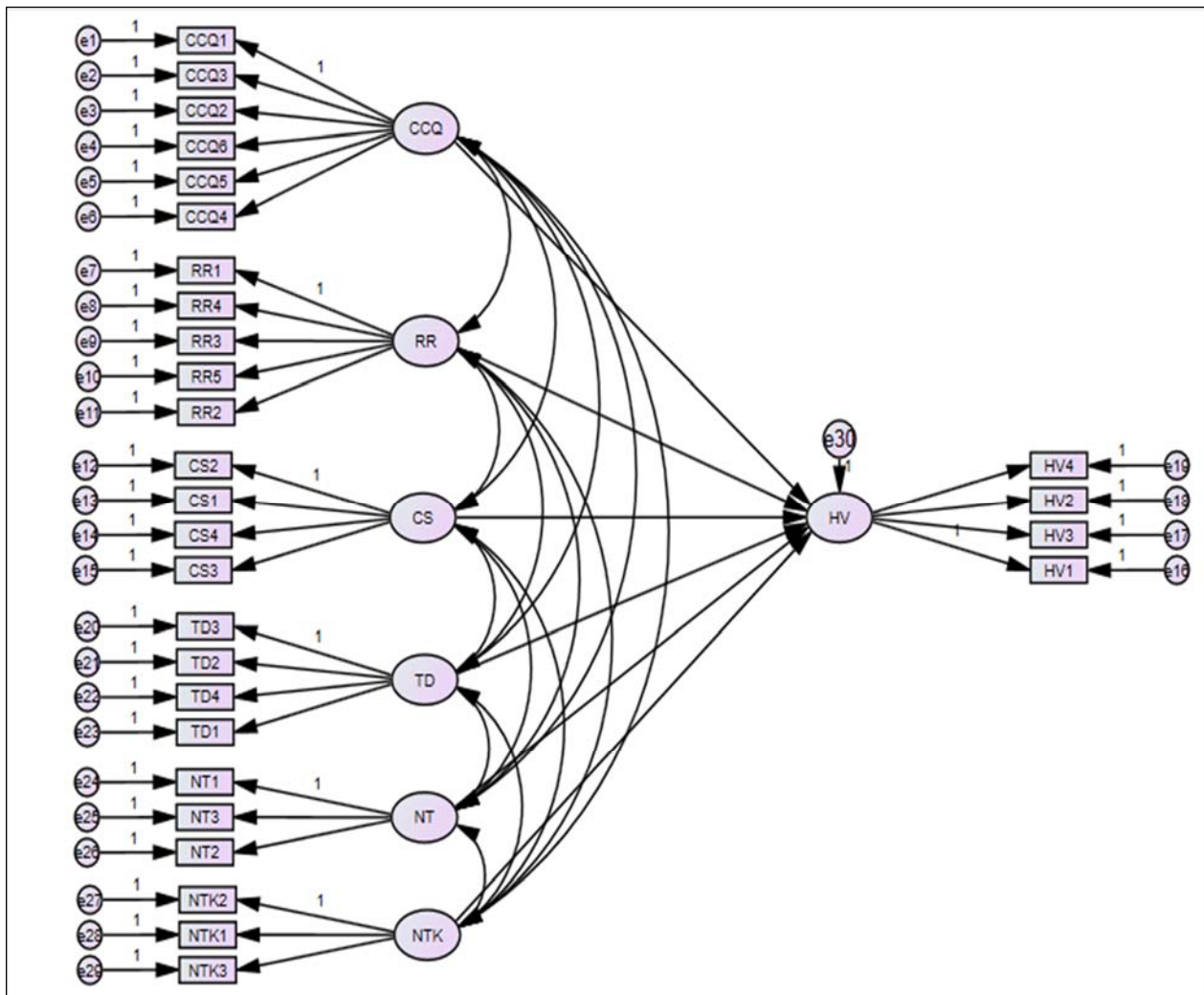

Figure 2. Result of the SEM structural model.
Source: Research results of the author group, 2023.

Table 5

Summary of Standards for Evaluating the Suitability of the Model

Standard specifications	Model Results	Evaluating
Chi-square has P-value < 0.05	824,628 0.000	Satisfied
CFI ≥ 0.8	0.922	Satisfied
GFI ≥ 0.8 CMIN/df ≤ 5	0.869 2,329	Satisfied
RMSEA ≤ 0.08	0.067	Satisfied
R^2	56.1	Satisfied

Source: Research results of the author group, 2023

The model has a correction factor R^2 = 0.561. This means that 56.1% of the variation in e-commerce shopping behavior of low-income people is explained by independent variables. At the same time, the indexes also satisfy statistical requirements.

Table 6

Results of Testing the Hypotheses of the Research Model

Hypotheses	Factors	Estimating	P	Note
H1	Consumer Behavior ← Subjective Norms	0.106	0.195	No impact
H2	Consumer Behavior ← Perceived Risks	-0.079	0.083	Impact
H3	Consumer Behavior ← Services and Policies	0.203	***	Impact
H4	Consumer Behavior ← Consumer Attitude	0.080	0.285	No impact
H5	Consumer Behavior ← Consumer Confidence	0.182	0.006	Impact
H6	Consumer Behavior ← Perceived Behavioral Control	0.371	***	Impact

Source: Research results of the author group, 2023.

The results of testing the hypothesis confirm that in the 7 factors of the adjusted model, 3 factors are: Perceived behavioral control; Policies and services and consumer confidence have had a positive influence on the shopping behavior on e-commerce platforms of low-income people (β2, 4, 6 > 0 and value P2, 4, 6 < 0.05) at the 5% significance level with an impact level of 37.1%; 20.3%; 18.2%. Besides, perceived risk has a negative effect on shopping behavior on e-commerce platforms of low-income people (β3 < 0 and P6 value < 0.1) at the 10% significance level of 7.9% impact. However, the remaining two groups of factors do not have an impact including Subjective Norms and Consumer Attitudes. Therefore, it can be concluded that hypotheses H2, H3, H4, H6 are accepted, hypotheses H1 and H5 are rejected.

Discussion and Conclusion

Discussion

Regarding specifically each group of factors, the research has obtained a positive impact from the group of factors (1) Perceived Behavioral Control, (2) Services and Policies, (3) Consumer Confidence. The opposite is the negative impact from (4) Perceived Risks. This result correlates with several previous related research groups.

In terms of overall impact factors, if in the study of Moshref Javadi and colleagues [...], low-income people's shopping behavior on e-commerce platforms is affected by 5 factors: Consumer Attitudes, Subjective Norms, Innovativeness by product group, Financial Risk and Non-delivery Risk, in the author's research also mentioned shopping behavior on e-commerce platforms. But shopping behavior on e-commerce platforms is affected by

factors (1) Perceived Behavioral Control, (2) Services and Policies, (3) Consumer Confidence and (4) Perceived Risks. The reason is the difference in research scope and research objects. Specifically, the previous research did not focus on a specific field or characteristic of the researched object, while the authors' research chose a more specific aspect with the research object being income earners. low income in Hanoi.

About groups of factors that have an impact. Regarding the Perceived Risks factor group, Hooria Adnan affirmed that perceived risk has a negative impact on direct purchasing behavior, these risks include non-delivery of goods, the risk of receiving damaged goods. Glitches also have a negative impact on direct purchasing behavior. These findings are similar to Rehman et al. (2011) and Iqbal et al. (2011). Previous research by Al-Jabari et al. (2012) has shown that perceived behavioral control has a relative impact on purchasing behavior. In addition, the electronic service factor is also one of the factors affecting online purchasing behavior, in addition to supporting policies (Bangkit, 2022).

About groups of factors that do not have an impact. Regarding the consumer attitudes factor group, research by Noor and Norlina Mohamed also shows that there is no impact on purchase intention from attitude, but according to Ariff et al.'s opinion (2014), the correlation is the relationship between intention and behavior is predicated on the basic premise that customers attempt to make rational choices using the information available to them. Therefore, an individual's intention to perform or not perform a certain behavior is a direct determinant of that person's actual behavior (Ajzen, & Fishbein, 1980). Similar to the authors' research results, Lim et al. (2016) also determined that there is no impact on online purchasing behavior.

Conclusion

In Vietnam, shopping on e-commerce platforms becomes more and more popular and has strong developments. Along with that, there is an increasing amount of research about consumer shopping behavior on these platforms.

This study aims to comprehensively research the factors that affect low-income people's shopping behavior on e-commerce platforms, so the authors have chosen research methods that are application, specifically primary data collection, using a combination of qualitative and quantitative research methods through SPSS20 and AMOS20 software, with evaluation techniques using Cronbach's Alpha tool, analysis exploratory factor EFA, CFA confirmatory factor, linear structural model (SEM). Combined with the required number of research samples, 393 low-income people nationwide, helped the authors obtain accurate and highly reliable results.

The results of the hypothesis testing indicate that Perceived Behavioral Control, Services and Policies, Consumer Confidence has a positive impact on shopping behavior on e-commerce platforms of low-income people, Perceived Risks has a negative impact. Meanwhile, no relationship was found between Subjective Norms and Consumer Attitudes with their behavior.

Besides the scales used in previous studies, the study has developed scales for a number of new variables. In particular, the new point of the research is the specific research on low-income groups.

However, due to time and cost limitations, the research also has some limitations. Because of using a questionnaire as a data collection tool, respondents may not answer the question exactly according to what they think. In addition, the study did not specifically consider shopping on e-commerce platforms for each specific category of goods such as fashion, food, household appliances, etc.

The research has reference value on consumer behavior in general and shopping behavior on e-commerce platforms in particular. The authors' results are meaningful in helping e-commerce platforms and retail businesses

on e-commerce platforms have a more specific view of consumer shopping behavior, from which they can make recommendations about some solutions to attract and motivate low-income people to shop on this platform.

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