The Influence of Perceived Usefulness and Perceived Risk on The Online Shopping Intention of Washburn University Students

Xiushan Zhou[1], Rongwei Yi[2],*

[1]Faculty of Business, SEGI University, Technology Street, Damansara City, Kuala Lumpur, Malaysia

[2]Department of Personnel, Wuhan University of Engineering Science, No.8, Xiong Tingbi Street, Zhifang Street, Jiangxia District, Wuhan, China

* corresponding author

Abstract: With the fast growth of the Internet, online shopping has become a popular method of buying for many people, particularly university students, who are the primary consumers of online goods. The study object in this work is Washburn University students, and it is analyzed the impact of perceived usefulness and perceived risk on their online shopping intention. First and foremost, this study reviews the existing knowledge on how to influence online shopping intent. Then, based on the conventional idea, a questionnaire survey of Washburn University students is done. The survey data was then analyzed using SPSS 25.0. The impact of perceived usefulness and perceived risk on Washburn University students' online shopping intentions was described using the data analysis findings. It also offers some advice for the growth of internet merchants, as well as some ideas for further research.

1. Introduction

With the rapid advancement of Internet technology and the widespread popularity of smart phones, online shopping has penetrated all areas of people's lives, such as the purchase of electronic goods online, the buying of food and other daily essentials online, and so on. Online shopping also covers people of different ages, including university students, white-collar workers, retired people, and so on. Among them, university students are an important group in mobile online shopping. The University students' online shopping intention is of great significance to merchants and worth studying. In 1989, a decisive factor in the TAM model proposed by Davis was perceived usefulness. Online shopping can save consumers time, improve shopping efficiency, and so on, all of which can reflect the content of perceived usefulness [1]. However, online shopping also has certain risks, and the receiving address and personal phone number will also be known by the merchants, as the security risks of online payment, etc., which inevitably increases the risk awareness of consumers.

The students of Washburn University mostly have no jobs and no independent financial resources. On the one hand, they don't shop casually but consume by perceived usefulness when shopping online. On the other hand, they are less able to resist risks economically, so they are more sensitive to risk awareness. As a result, it's critical to look into how perceived usefulness and perceived risk influence Washburn University's online shopping intentions. Therefore, the impact of perceived usefulness and perceived risk on Washburn University students' online shopping intentions is investigated in this study using Washburn University as the research subject.

Based on the TAM model, this paper analysis the influencing factors of Washburn University students' online shopping intention. However, with the popularity of the Internet and mobile phones, this theory can not be directly applied to the influencing factors of online shopping intention. So it is necessary to expand and extend the technology acceptance model. Therefore, based on the perceived usefulness of the TAM model, and the perceived risk theory, this paper established a research model to quantitatively analyze the influencing factors of Washburn University students' online shopping intention, to verify and revise the hypotheses put forward in this study.

The students of Washburn University are used as the research subjects in this work. Research

questions are presented below. (1)Do Washburn University students' perceived usefulness positively relate to their online purchase intention? (2)Do Washburn University students' perceived risk negatively related to their online purchase intention?

Combined with the previous research questions, research objects have the following points: (1)Explore whether Washburn University students' perceived usefulness has a positive relationship with their online purchase intention. (2)Explore whether Washburn University students' perceived risk has a negative relationship with their online purchase intention.

2. Literature Review

2.1. Dependent Variable

Hsu pointed out that shopping intention refers to the exchange behavior of customers after a comprehensive evaluation of products by combining their cognition of products with external stimulus factors [2]. It is a tendency toward certain behavior, and it is an early stage of behavior formation [3]. Fishbein and Ajzen think that will represent the motivation of a behavior trend, and this motivation is that people make conscious efforts to implement a certain behavior [4]. According to the research, shopping intention refers to trying to understand a product or service through various channels before purchasing it [5].

To sum up, from the scholars' point of view, this paper holds that shopping intention can measure consumers' behavior intention and is the antecedent variable to measure consumers' purchasing behavior. Therefore, shopping online intention is the tendency of consumers to be willing to a certain product and to collect and understand the product information with the help of web pages.

2.2. Independent Variable

Davis' TAM model in 1989 included a critical aspect called perceived usefulness, which measured how much a person believed that using a given system would improve his work performance. Perceived risk was put forward by Ashby in 1981 at the beginning. Consumers would bear certain unknown risks in the process of shopping. Therefore, consumers' intention to buy implies worry about the behaviour result, which is the initial understanding of risk [6]. With the continuous progress and development of the Internet, scholars introduce risk theory into the research of online consumption, which is usually called online perceived risk [7]. Kumar thinks that the perceived risk of online shopping refers to consumers' subjective fear of unknown results when shopping online [8].

To sum up, this paper holds that the perceived risk of online shopping is a kind of guess or prediction of the loss that consumers may suffer from online shopping.

2.3. Hypothetical Development

H1: Perceived usefulness has a positive correlation with the intention to online shopping intention of Washburn University.

Perceived usefulness is defined in Davis' TAM model as the degree to which users believe that employing technology will improve job performance. According to Jayasarathy's research, perceived usefulness has a significant positive impact on online purchase intention [9]. Consumers can buy goods by browsing and clicking online, which saves them a lot of time. In addition, with the improvement of network speed and the simplification of online shopping platforms, the efficiency of online shopping for university students is usually much faster than that in physical stores.

H2: Perceived risk has a negative relationship with the intention to online shopping intention of Washburn University.

Mitcheh and other scholars think that consumers take risks to a certain extent in the process of shopping, so in the process of online shopping, consumers are trying to reduce the risk of uncertainty [10]. Therefore, he believes that perceived risk has a negative correlation with online

shopping intention. Dillon and other scholars also added perceived risk in the study of key influencing factors of online shopping intention and pointed out that perceived risk can reduce consumers' online shopping willingness [11].

3. Research Method

3.1. Research Framework

Based on the analysis and discussion of the TAM model, and perceived risk theory, this paper puts forward the research model of this paper, combined with the relevant theoretical achievements of predecessors. Since the TAM model's perceived utility can't fully describe the impact of Washburn University students' online shopping intentions, this paper changes the variables of TAM, such as adding perceived risk variables in Figure 1.
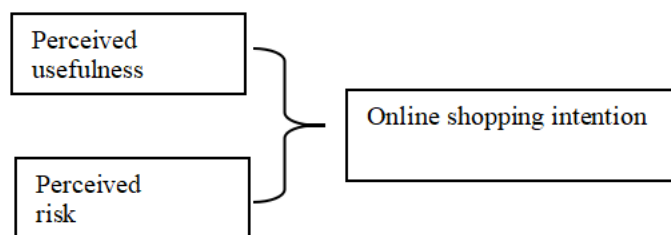

Figure 1 Research model

3.2. Research Design

The original data are collected through the questionnaire filled out by Washburn University students. Try to find perceived usefulness, perceived risk, and their influence on the online shopping intention of Washburn University students.

After the questionnaire survey, with the help of quantitative analysis software SPSS25.0, The impact of perceived usefulness and perceived risk on Washburn University students' online purchase intentions is summarized. Then, make a reliability test, validity test, normality test, Pearson correlation analysis, and multiple linear regression analysis. Finally, draw the general conclusion of the research problem.

3.3. Population and Sampling

This paper's major survey subject is Washburn University students. so 100 questionnaires are distributed to Washburn University students online. The questionnaires are distributed and recycled in a centralized manner, with 100 questionnaires distributed and 82 returned, with a recovery rate of 82%. Among the 82 questionnaires, except for incomplete and invalid questionnaires, there are 71 valid questionnaires, and the effective recovery rate is about 71%.

This paper mainly uses the questionnaire survey method. There are two parts to the questionnaire. The first part is basic information, that is, descriptive questions, to understand the basic consumption and online shopping situations. The second part is the items of the variable measurement scale. The first part adopts the form of general multiple-choice questions, and the second part is a five-level scale, that is, some respondents rate each scale index according to their real feelings, from strongly disagreeing to

 strongly agreeing, which is expressed by numbers 1, 2, 3, 4, 5. See the appendix for details.

3.4. Instrumentation

1. Literature analysis method
By summarizing and summarizing the research literature on online shopping intention at home and abroad, we can further understand the research status and significance of the online shopping intention of Washburn University students.
2. Questionnaire survey method

By referring to the variable measurement items of related research at home and abroad, and strictly following the requirements of domestic and foreign scholars for the questionnaire survey, this paper puts forward the corresponding questionnaire scale. Statistical analysis software is used to sort out and analyze the sample data, and the model and hypothesis are tested.

3. the SPSS 25.0 tool

SPSS is an umbrella word for a collection of software tools and services used for statistical analysis, data mining, and decision assistance. The first element is personal fundamental information. SPSS 25.0 was used to perform a reliability test, a validity test, a normality test, a Pearson correlation analysis, and multiple linear regression analyses.

4. Data Analysis

Questionnaires from Washburn University students were used to compile the data for this chapter. Using the reliability test, normality test, Pearson correlation, and multiple linear regression, this paper investigates the impact of perceived usefulness and perceived risk on students' online shopping intention at Washburn University.

4.1. Reliability Test & Validity Test

4.1.1. Reliability Test

After sorting out relevant data, it is concluded that most scholars think that the reliability coefficient is acceptable between 0.60 and 0.70, and it is relatively good between 0.70 and 0.80. According to Table 1, when the α coefficient is larger than 0.8, it indicates that the created questionnaire is extremely reliable. When the α coefficient is less than 0.6, it shows that there are some problems in the designed questionnaire items, and it is necessary to revise the design again to achieve the required reliability level. The total reliability test of the questionnaire is 0.721, the perceived risk reliability test is 0.972, the perceived usefulness reliability test is 0.947, the online shopping intention reliability test is 0.958, and the reliability coefficient values of each dimension are greater than 0.7, indicating that the variable research data reliability quality is good.

Table 1 Reliabilty test-cronbach'a coefficient of each index.

Variable name	Number of items	Cronbach a coefficient	Standardized Cronbach's a coefficient
Perceived risk	11	0.972	0.972
Perceived usefulness	5	0.947	0.947
Online shopping intention	7	0.958	0.958
Total questionnaire	23	0.721	0.720

4.1.2. Validity Test

According to the questionnaire, validity analysis is mainly measured by content validity and structure validity. Table 2 is extremely suited when the KMO value is more than 0.9. Generally, two conditions need to be met in the validity test. First, the value of KMO needs to be greater than 0.7. Second, the spherical test of Bartlett is significant, with Sig smaller than 0.05. From the analysis results of this paper, we can see that the KMO value of the total questionnaire validity is 0.991, and the other KMO values in the table are 0.979, 0.910, and 0.956, respectively, all of which are greater than 0.7. And the significant Sig of Bartlett and S spherical test are all less than 0.05, all of which are significant. The results show that the reasonable degree of item design and the correlation degree of each variable in the questionnaire is reasonable, and the data has good validity.

Table 2 Validity test-KMO and bartlett of each index.

Dimension	KMO	Bartlett's test		
		Approximate chi-square	df	P value
Perceived risk	0.980	3791.828	66	0.000***
Perceived usefulness	0.910	1396.704	10	0.000***
Online shopping intention	0.956	2084.524	21	0.000***
Total questionnaire	0.983	8047.727	253	0.000***
Note:***, ** and * represent the significance level of 1%, 5% , and 10% respectively.				

4.2. Normality Test

The K-S test is used since the sample size of the study data is more than 50, as shown in Table 3. The absolute value of skewness of perceived risk is 0.697, the absolute value of skewness of perceived usefulness is 0.656, and the absolute value of skewness of online shopping intention is 0.673, all of which are less than 3. The kurtosis absolute value of perceived risk is 1.408, the kurtosis absolute value of perceived usefulness is 1.320, and the kurtosis absolute value of online shopping intention is 1.350, all of which are less than 10. It can be concluded that perceived risk, perceived usefulness, and online shopping intention all conform to the normal distribution (p<0.05). [Special note: if | Kurtosis | < 10, | Skewness | <3, the data adopts a normal distribution although it is not normal]

Table 3 Normality test-descriptive statistic of each index.

	Median	Average Vale	Standard deviation	Skewness	Kurtosis	S-W test	K-S test
Perceived risk	4.182	3.492	1.236	-0.697	-1.408	0.734(0.000***)	0.313(0.000***)
Perceived usefulness	4.2	3.481	1.282	-0.656	-1.32	0.800(0.000***)	0.264(0.000***)
Online shopping intention	4.143	3.499	1.239	-0.673	-1.35	0.779(0.000***)	0.284(0.000***)
Note:***, ** and * represent the significance level of 1%, 5% , and 10% respectively.							

Table 4 Pearson correlation-list of correlation analysis of each index in the questionnaire.

	Perceived risk	Perceived usefulness	Online shopping intention
Perceived risk	1.000(0.000***)	-0.568(0.000***)	-0.691(0.000***)
Perceived usefulness	-0.568(0.000***)	1.000(0.000***)	0.947(0.000***)
Online shopping intention	-0.691(0.000***)	0.947(0.000***)	1.000(0.000***)
Note:***, ** and * represent the significance level of 1%, 5% , and 10% respectively.			

4.3. Pearson Correlation

Correlation analysis is used to analyze the correlation and it is used to represent the strength of the correlation. Based on Table 4, at the 0.01 level of significance, the correlation coefficient between online shopping intention and perceived risk is -0.691. It reveals a substantial negative link between Washburn University students' intention to shop online and their perception of risk. The correlation coefficient between online shopping intent and perceived usefulness is 0.947, which is

significant at the 0.01 level of significance. It shows that Washburn University students' online shopping intentions and perceived usefulness have a significant positive correlation.

4.4. Multiple Linear Regression

Using perceived risk and perceived usefulness as independent variables, as well as online shopping intentions as a dependent variable. From Table 5, the R-square value of the model is 0.931, according to the linear regression analysis. It suggests that perceived risk and perceived usefulness may account for 93.1% of the variation in Washburn University students' propensity to purchase online. The model passed the

F-test (F=1994.35, P=0.000***), indicating that perceived risk and perceived usefulness will influence Washburn University students' online purchase intentions.

The regression coefficient for perceived risk is -0.227(t=-12.193, p=0.000***), demonstrating that perceived risk has a negative impact on Washburn University students' online purchase intentions. The regression coefficient for perceived usefulness is 0.791 (t=44.058, p=0.000***), demonstrating that perceived usefulness has a significant positive impact on Washburn University students' online shopping intention.

Therefore, the regression model equation is that the Online shopping intention of Washburn University students =1.538+(-0.227)* perceived risk+0.791* perceived usefulness

Table 5 Multiple linear regression analysis result table

	Non-standardized coefficient		Standardized coefficient	t	P	VIF	R	Adjusted R	F
	B	Standard error	Beta						
constant	1.538	0.114	-	13.448	0.000***	-	0.931	0.93	F=1994.35 P=7.0646694704695e-173
Perceived risk	-0.227	0.019	-0.226	-12.193	0.000***	1.477			
Perceived usefulness	0.791	0.0179	0.818	44.058	0.000***				
A dependent variable: online shopping intention Note:***, ** and * represent the significance level of 1%, 5% , and 10% respectively.									

5. Conclusion

This research focuses on Washburn University students who have had online shopping experiences, based on relevant theories. The goal of this research is to determine which factors influence the online shopping intention of Washburn University students. The conclusions are as follows. First of all, combing and summarizing the related research, and based on the questionnaire survey, the influencing factors of Washburn University students' online shopping intention are determined and relevant research hypotheses are put forward. Then, first-hand data are collected through the questionnaire survey, and the data are statistically analyzed. The structural model of influencing factors of Washburn University students' online shopping intention constructed in this paper is tested, and the research results are analyzed. Finally, according to the analysis results, make the conclusions, suggestions, and prospects.

The following three characteristics of this paper's research limitations are most evident. First, due to the influence of time and funds, the number of questionnaires of Washburn University students' consumer groups collected in this paper is limited, so the research scope of this paper has certain limitations.

Secondly, the variables in this research model are based on relevant research literature. Although the reliability and validity tests have passed, further comprehensive tests are still needed to ensure the rationality of the conclusions.

In addition, based on the online shopping intention of Washburn University students, more in-depth research can still be done. First, the influencing factors of Washburn University students' online shopping intention studied in this paper are limited. There are still many factors influencing the online shopping of Washburn University students in real life, such as logistics and distribution factors, psychological characteristics, and so on, which need to be expanded to do more research. Secondly, this study did not consider the direct influence of antecedent variables on the result variables or compare and analyze the two measurement results, and the relationship between the research variables needs to be further expanded and refined.

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