

# APPLICATION OF TECHNOLOGY ACCEPTANCE MODEL (TAM) IN CONSUMER BEHAVIORAL INTENTION TOWARDS ONLINE SHOPPING

RKAR. Kariapper

Department of Information and Communication Technology  
Faculty of Technology, South Eastern University of Sri Lanka  
rk@seu.ac.lk

## ABSTRACT

Online shopping is buying products or services via the internet using a computer or mobile platform. It provides a different policy and environment to both consumers and suppliers for having business activities in a digital environment than a traditional way. Some countries are highly adopted and utilizing online shopping for their day to day operations. There are some differences among countries in consumers' buying behavior toward online shopping, which may be the reason for comfortability and reliability about the procedure and policies of digital environments. Online shopping is one of the convenient and best solutions for the busy life of today's world. This study aims to identify those options for why users select online shopping rather than traditional shopping. The research model explained and predicted the behavioral intention and attitude towards online shopping. The convenient sampling method was used to select the sample units, and the Snowball sampling method was used to identify online shopping users. The questionnaire consists of two main sections. The first section analyzes the demographic factors related to online shopping. The second section included TAM variables. among the participants, 35(56%) were males, and 27(44%) females. The majority of 31(50%) of the online shopping users were between 25 to 30 years, and the rest (6%) were above 40 years. As expected, the experience of online shopping almost 34% of the respondents have less than ten years. Whereas the rest differ in their online shopping experience, those who used online shopping for 1-3 years stood at 31%. Moreover, 24% of the respondents have 3-5 years' experience. Only a few respondents have more than five years' experience. It stood for 11%. This study revealed that users comprehensively supported online shopping behavior except for four hypotheses. Thus, it could be concluded that people prefer online shopping because of their knowledge, usefulness, and attitude towards online shopping. The relation between attitude and behavioral intention is strongly positive and significant.

**Keywords:** Online Shopping, e-commerce, consumers satisfaction, TAM, Behavioural intention

## 1. INTRODUCTION

After the advent of web 2.0 [1], most of the global pieces of stuff reached people's hands without an effort, which makes people's life advanced, fashion [2], and simplification [3] by doing almost all tasks online via the internet [4]. This technology is applied in a variety of areas by humans. Significant areas as identified are; e-learning [5]–[8], online shopping [9], [10], health services [11], and so on. Working with such platform users feels comfortable, and sometimes users perceived a sore level.

Online shopping [12] is a practice of buying products or services via the internet using a computer or mobile platform [13]–[15]. It provides a different policy and

environment to both consumers and suppliers for having business activities in a digital environment than a traditional way. There are differences we can be identified among countries regarding the usage of online shopping these days. Some countries like Taiwan, China, and South Korea are highly adopted and utilizing online shopping for their day to day operations. At the same time, Vietnam, Thailand, Indonesia, and Malaysia are delivered low adaptability [16]. Also, SME & Entrepreneur Magazine [17] mentioned that the growing online shopping rate is increased by 76% once a month in Malaysia. There are some differences among countries in consumers' buying behavior toward online shopping, which may be the reason for comfortability and

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reliability about the procedure and policies of digital environments rather than traditional ones.

Online shopping has its advantages and disadvantages. Sometimes consumers' attraction toward online shopping may be the reason for its benefits. They may hate this due to the disadvantages. The key advantages of online shopping considered are; It saves time and cost of the consumers' [18]–[20], consumers' can be searched and find a variety of product and services [21], Provides reasonable price [22], Easiness of refund the product or services [23], Provide and maintain consumers' privacy [24] and provide global coverage meanwhile disadvantages listed as; Problems in delivery times [25], [26], Insufficient experience in online shopping [27], Fraud activities [28], [29], and lack of reliability of products or services [30].

This online shopping phenomenon changed the traditional way upside down. Nowadays, it could be seen that even food orders are done by online shopping. The rapid advancement of the mobile platform also another reason for the increased online shopping consumers' behaviors [31]–[33]. Online shopping is one of the convenient and best solutions for the busy life of today's world. At present, people are very busy and running life in an emergent environment. With the population increase, people's workload even increases proportionally. They have not much time to spend more on traditional shopping activities. When considering fraud activities, security issues, reliability of the product, and technology adaption still insist that people work with traditional shopping practices.

Online shopping and traditional shopping have their advantages and disadvantages. People who select both options have their reason. This study aims to identify those options for why users select online shopping rather than traditional with selected variables and the Technology Acceptance Model(TAM).

## **2. LITERATURE REVIEW**

Ying Sun and Shanyong Wang [34] conducted a study to identify consumers' intention to purchase green products via social media online marketing and discover the bond amid product knowledge, subjective norm, perceived behavioral control, price consciousness, consumer effectiveness, social media marketing, and attitude toward use. The result of this study revealed that social media marketing influence perceived consumer effectiveness, subjective norms, and product knowledge. In contrast, it negatively influences the price consciousness.

Fan et al. [35] stated that with the change of environment, consumer's consumption behavioral intention delivers negative impact while the economy and industrial development deliver a positive impact on consumer behavioral intention [36]–[38].

Jihyun Lee and Yuri Lee [39] had accomplished a study to identify the relationship between online shopping and consumer attitude toward online shopping. From the outcome of this study, it could be identified that consumers' attitude toward online positively influences the Aesthetics of web pages; meanwhile, it negatively influences model attractiveness.

From some other studies, it could be realized that fashion is one of the crucial factors which affect online shopping among consumer. Commonly, customers go through money to purchase fashion items [40]–[42].

Whenever a person's condition goes out of his/her control, they perceive a negative or sad mood [43], [44]. From many

studies and researchers, it is a surprising fact that users get to relax and feel fine when they are doing shopping [45], [46]. Online shopping is making this highly rather than offline [47].

Jarvenpaa et al. [48] did a study to identify Consumer Reactions to Electronic Shopping. For this study, they have used Regression analysis via Dana Analysis. This study forecasting that to improve and affect consumer behaviors, online suppliers need to improve product perception, customer services via the world wide web, and shopping experience.

Zuroni and Goh did [49] a study to identify the factors influencing the consumers' attitude toward e-commerce online shopping. This study was done with Pearson's correlation and one-way ANOVA. Results revealed that there is a positive relationship found between product perception, customer services, and e-commerce experience with online shopping consumer attitudes. In contrast, the negative relationship between online time spends hours and customer risk with attitude toward online shopping.

Another similar study is done by Jun and Jaafar [50] with Multiple regression analysis to identify the consumer attitude toward online shopping in china. This study revealed that perceived reputation, perceived privacy, perceived security, perceived after-sales service, perceived marketing mix, and perceived usability positively impacted consumer attitude toward online shopping.

Alsubagh [51] done a study to identify the Impact of Social Networks on Consumers' Behaviors by Regression Analysis method. The result of this study discovered that there was a significant correlation between consumers' buying behavior with consumer interaction. Also, they stated that social networking sites reduce the maximum obstacles between consumers and online communities.

Katawetawaraks & Wang [52] examined the online shopper behavior via a study with descriptive analysis. This study proved that information, available products and service, convenience, and cost, and efficiency are the causes that encourage customers to buy online products while security, social contact, the intangibility of online products, and dissatisfaction are discouraging consumers from buying an online product.

Vegiayan et al. [53] accomplished a similar study to identify Online Shopping and Customer Satisfaction in Malaysia with Reliability, Correlation, and Multiple Regression Analysis. The result of this study exposed that purchase quality, post-purchase quality, and Information quality positively impacts customer satisfaction to buy online products.

Rastogi [54] did a study to categorize Online Consumers and Buying Behavior among Indians. The result of this study discovered fascinating facts. In India, more than 73% of online shopping customers are males, more than 51% of employees of many companies adapt to online shopping, 38% feel online shopping is easy, 54% deliberate that online product information is outstanding, 23% having troubles in online shopping, 46% brought online product 2 to 5 times per year, and 61% prefers to search online and buy that product cash on delivery.

Chen and Barnes [55] examined Initial trust and online buyer behavior with descriptive statistics, reliability, validity, correlation analysis, and Regression analysis. The result proved that familiarity with online purchasing and Online initial trust is delivered to buy online products.

Hoque et al. [56] studied the factors for adopting E-Commerce in Bangladesh by the Technology acceptance

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model. Computer Self Efficacy, Perceived Usefulness Perceived Ease of Use, and Perceived Credibility positively impact E-commerce adoption.

Liao et al. [57] detailed a study to analyze online group buying behaviors. This study was conducted via the Apriori algorithm and data mining technology. The result indicated that online buyers like to buy a product using ATM and credit cards. Most buyers are high-income parties.

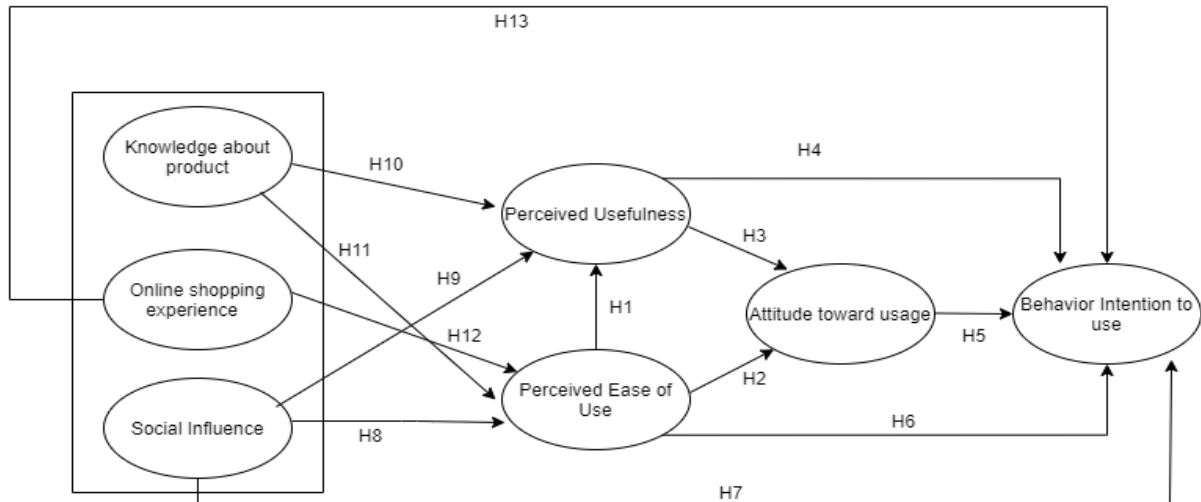
Hajli [58] conducted a study to investigate the social media impact regarding online shopping. The result has shown that

waiting time [59].

## 3. METHODOLOGY

### 3.1. Research model

The current use of online shopping and previous online shopping use among the sample units was examined based on the research model. The convenient sampling method was used to select the sample units. The research model explained and predicted the behavioral intention and attitude towards online shopping among familiar non-



social media positively influence the consumer to buy online products.

The advantage of online shopping from consumer behavior is listed as it saves time, price is reasonable, can place order anytime, save fuel amount, and eliminates unnecessary

familiar users. According to the literature review, the research model was constructed with three external variables and two essential technology acceptance variables. Figure 1 explains the research model.

Figure 1: Research Model

### 3.2. Hypothesis related to TAM variable

According to the literature review, perceived ease of use and perceived ease of use have a positive relationship between the behavioral intention and attitude towards using online shopping. The following section discusses the development of relevant hypotheses. The correlation analysis conducted test the hypothesis.

#### a. Perceived Ease of Use and Perceived Usefulness

Perceived ease of use and perceived usefulness are two specific approaches used to judge the user's behavior intention of use toward any technologies [60]. Also, these approaches are used to recognize the user's attitude toward using technology[61]. Behavior Intention of users in different technologies has been confirmed by these two approaches so far and which includes social networking media [62]–[64], online shopping [65]–[68], e-learning [69], etc. [70]. From some studies, it could be identified that Perceived ease of use and perceived usefulness influence the behavior influence of online customers considerably [71]–[74]. Therefore the identified hypothesizes are;

H1: Perceived ease of use positively affects perceived usefulness in online shopping.

H2: Perceived ease of use positively affects attitude towards usage in online shopping.

H3: Perceived usefulness positively affects attitude toward usage in online shopping.

H4: Perceived usefulness positively affects behavior intention to use in online shopping.

H6: Perceived ease of use positively affects behavior

intention to use in online shopping.

#### b. Attitude toward use

Attitude toward use is identified as the target behavior of a user of technology [75]. Attitude toward use contains the positive or negative feelings of users regarding the usage of new technology. It may either be positive or negative, depending on the technology [76]–[78]. A positive attitude is identified as an actual state for implementing that particular technology [79]. Moshrefjavadi et al. [80] identified that attitude toward online shopping positively affects the behavior intention of the consumer. Also, many studies proved and revealed that there is a connection between positive feelings of the consumer and behavior intention to use technology usage toward online shopping [81]–[83]. So the hypothesis identified here as;

H5: Attitude toward use positively affects the behavior intention to use in online shopping.

#### c. Social Influence

Whenever any user using technology, social influence is one of the key features affecting an individual's desire toward the usage of technology. It is influencing the individual based on the situation [84]. Rice et al. [85] detailed that social influence changes an individual's behavior and decision-making process based on rules and the environment. This social influence is even considered as perceived pressure, which changes the personality's behavior to execute specific tasks [86]. This social pressure is the fundamental cause that made the user accept the

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technology with the help of change of mind [87]—also stated by Demei Shen et al. [88], social influence the perceived ease of use and perceived usefulness. The following hypothesis proposes identifying the significance of social influence, perceived usefulness, and perceived usefulness.

H7: Social Influence positively affects the Behavior Intention to use in online shopping.

H8: Social Influence positively affects the Perceived Ease of use in online shopping.

H9: Social Influence positively affects the Perceived Usefulness in online shopping.

### d. Knowledge about product

Without the proper knowledge, users are often reluctant to buy any product. Y.Wang and B.Hazen identified consumer product knowledge and purchase intention conducted by a study. This study revealed that Perceived value is influenced by green, quality, and cost knowledge [89]. Furthermore, stated by many studies that product knowledge impacts the consumers to buy products traditionally as well as online [57], [90], [91]. Therefore this study focuses on hypothesis as;

H10: Knowledge about product positively affects perceived usefulness in online shopping.

H11: Knowledge about product positively affects the perceived ease of use in online shopping.

### e. Online shopping experience

Insufficient experience in online shopping and lack of

circumstance regarding online shopping made a significant influence on risk about consumers' online shopping decisions [92]. Optimistic experience influence consumers' to buy products toward online shopping. In contrast, negative experience deals with the risk of opinion about online purchasing [93]. Zuroni Md Jusoh and Goh Hai Ling found a correlation between shopping experience and online shopping attitude [94]. Hence, we hypnotized the online shipping experience as;

H12: Online shopping experience positively affects the perceived ease of use in online shopping.

H13: Online shopping experience positively affects consumers' behavior intention to use in online shopping.

### 3.3. Data collection

The questionnaire was collected based on previous studies with some minor changes. The validity of the questionnaire was checked before the distribution. Besides, questionnaires were distributed only in English. It is pre-tested by the English experts. The researcher distributed 100 questionnaires. The Snowball sampling method was used to identify online shopping users. The questionnaire consists of two main sections. While the first section analyse the demographic factors related to online shopping, the second section included TAM variables. This second section practices a 7-point Likert response scale where 7: Strongly disagree, 6: Moderately disagree, 5: Slightly disagree, 4: Neutral, 3: Slightly agree, 2: Moderately agree, and 1: Strongly agree. Section one is given in table 1, and section to given in table 2

**Table 1:** Demographic Characteristics Information - Questionnaire Section I

Gender	
1	Male
2	Female
Age	
1	Less than 25
2	25-30
3	30-40
4	40-50
5	Above 50
Online shopping experience	
1	less than 1 year
2	1 - 3 years
3	3 - 5 years
4	5 - 10 years
5	More than 10 years
Reason for the attraction to online shopping	
1	You know about online shopping
2	Online shopping is Enjoyment
3	Boring in traditional shopping
4	Online shopping is easy
5	Online shopping is cheap
6	Online shopping is quality
7	Online shopping is a fashion

**Table 2:** Questionnaire Section II

Constructs	Measures	Source
Perceived ease of use (PEU)	I believe online shopping is easy to use	PEU1
	I found it easy to use online shopping	PEU2
	I found flexible to interact with online shopping	PEU3
	I would find it easy to access online shopping]	PEU4
Perceived Usefulness (PU)	I believe online shopping is helpful	PU1
	I found online shopping is useful	PU2
	I would find online shopping is useful in future	PU3
	Online shopping increases the effectiveness of	PU4

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	shopping		
	I believe online shopping is helpful	PU5	
Knowledge about online shopping (K)	I have sufficient knowledge about the product which I buy from online	K1	[89],[57], [90], [91]
	I have knowledge about the online shopping product qualities	K2	
	I have knowledge about the prices of the product in online shopping	K3	
	I often learn about online shopping	K4	
Social Influence (SI)	People who can influence my behavior think that I should use online shopping	SI1	[84], [85], [86], [87], [88]
	People who are important to me think I should use online shopping	SI2	
	I use online shopping because others are using it	SI3	
	Using online shopping is trendy and fashion	SI4	
Online shopping experience (OSE)	Online shopping experience	OSE	[92], [93], [94]
Attitude toward using the online shopping (AU)	I believe it is good idea to use online shopping	AU1	[75], [76]–[78], [79], [80], [81]–[83]
	I like the idea of using the online shopping	AU2	
	Using online shopping is a good idea for all	AU3	
Behavioral intention to use (BI)	I plan to use online shopping in future	BI1	[80], [81]–[83]
	I predict to use online shopping	BI2	
	I suggest others to use online shopping in future	BI3	

The questionnaire was distributed through google forms. Among the 100 questionnaires, distributed 62 responses were recorded. The correlation analysis

### 4. RESULT AND DISCUSSION

#### 4.1 Demographic factors.

Respondents	Frequency	Percentage
<b>Gender</b>		
Male	35	56%
Female	27	44%
<b>Age</b>		
Less than 25	19	31%
25-30	31	50%
30-40	8	13%
40-50	2	3%
Above 50	2	3%
<b>Experiences</b>		
less than 1 year	21	34%
1 - 3 years	19	31%
3 - 5 years	15	24%
5 - 10 years	5	8%
More than 10 years	2	3%

The questionnaire responses were analyzed using version 21 of the Statistical Package for Social Program (SPSS). Table 3 shows the demographic and descriptive statistics of users. As the information presented in table 3, it explained, among the participants, 35(56%) were males and 27(44%) females. The majority of 31(50%) of the online shopping users were between 25 to 30 years, and the rest (6%) were above 40 years. As expected, the experience of online shopping almost 34% of the respondents have less than ten years. Whereas the rest differ in their experience in online shopping as follows: those who used online shopping 1-3 years stood at 31%. Moreover, 24% of the respondents have 3-5 years' experience. Only a few respondents have more than five years' experience. It stood for 11%.

According to figure 1, 38 % of the respondents using online shopping because they think online shopping is easy. Less

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amount of respondents thinks online shopping is quality to use. It stood for only 3 %.

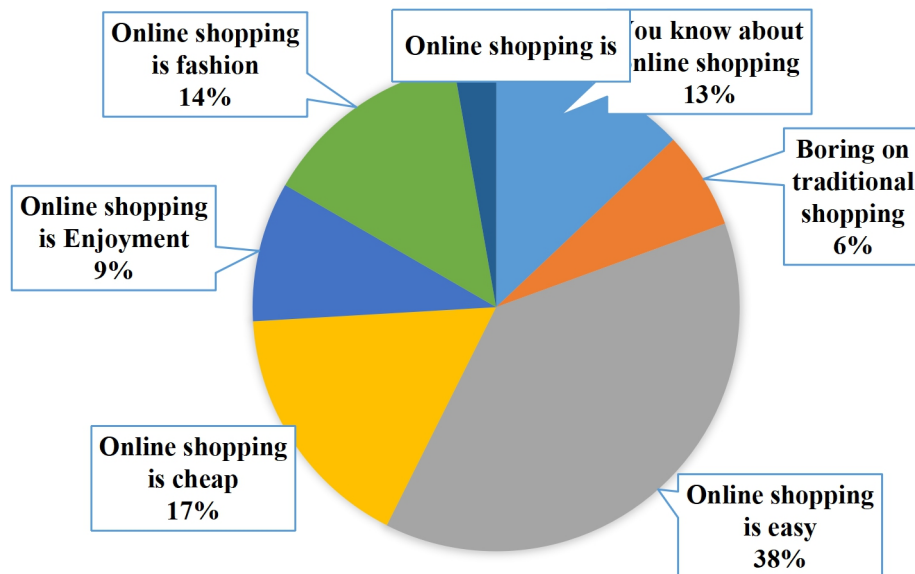


Figure 01: Respondents Attractions to Use online shopping

Table 5: The Measurement Model

Construct	Item	AVE	CR	Cronbach Alpha
Perceived ease of use (PU)	PEU1	0.45641	0.763576	.567
	PEU2			
	PEU3			
	PEU4			
Perceived Usefulness (PU)	PU1	0.4552	0.80599	0.906
	PU2			
	PU3			
	PU4			
	PU5			
Knowledge about online shopping (K)	K1	0.539231	0.821456	0.853
	K2			
	K3			
	K4			
Social Influence (SI)	SI1	0.4357	0.60726	0.68
	SI2			
	SI3			
	SI4			
Attitude toward using online shopping (AU)	AU1	0.48429	0.702434	0.79
	AU2			
	AU3			
Behavioral intention to use online shopping (BI)	BI1	0.44461	0.749331	0.87
	BI2			
	BI3			

The internal consistency assessment shows in table 6. The purpose of this measurement model is to find the reliability and validity of the set of questions, which use to construct the research model. In reliability analysis, Cronbach's Alpha was conducted to assess the reliability of each factor. According to the previous studies, Cronbach's Alpha is more significant than 0.7 is highly acceptable to show internal consistency. According to table 5, Cronbach's alpha values range from 0.79 to 0.906 for Perceived Usefulness, Knowledge about online shopping, attitude toward using online shopping & Behavioral intention to use online shopping, which is greater than 0.7. Besides, Cronbach's alpha values of Perceived Ease of use & Social Influence are respectively .567 & 0.68. It indicates moderate and robust internal consistency of the factors. Therefore, the model is reliable to conduct the analysis Invalidation analysis,

Table 6: Correlation Matrix

convergent validity conducted to show the validity of the model. It is measured by utilizing composite reliability (CR) and Average Variance Extracted (AVE). The composite reliability should be greater than 0.7, whereas AVE should be not less than 0.5 is highly acceptable. According to table 5, the composite reliability values range from 0.6072 to 0.8215. So it is considered acceptable. AVE values range from 0.5392 to 0.4357. So it is considered acceptable. All constructs show good convergent validity because all the criteria are met. Therefore, the model has the validity to conduct the analysis. According to the objective, the correlation analysis was conducted to examine the relationship between the variable. It used empirically decided on the hypothesis whether accepting or rejecting the null hypothesis

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Correlations								
		BI	AU	PU	PEU	K	SI	E
BI	Pearson Correlation	1						
	Sig. (2-tailed)							
AU	Pearson Correlation	.725**	1					
	Sig. (2-tailed)	.000						
PU	Pearson Correlation	.694**	.758**	1				
	Sig. (2-tailed)	.000	.000					
PEU	Pearson Correlation	.653**	.669**	.886**	1			
	Sig. (2-tailed)	.000	.000	.000				
K	Pearson Correlation	.558**	.593**	.769**	.773**	1		
	Sig. (2-tailed)	.000	.000	.000	.000			
SI	Pearson Correlation	.218	.370**	.312*	.221	.350**	1	
	Sig. (2-tailed)	.088	.003	.014	.085	.006		
E	Pearson Correlation	-.144	-.014	-.083	-.235	-.049	-.024	1
	Sig. (2-tailed)	.263	.914	.523	.066	.706	.853	
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: Author constructed (2020)

From the correlation analysis, table 6 shows the correlation coefficient and significant values of the respective variables. The results describe that there is a Strong positive significant correlation of behavioral intention to use online shopping with attitude toward using online shopping, Perceived Usefulness, Perceived Ease of use, and knowledge about online shopping. On the other hand, behavioral intention to use online shopping is not significantly correlated with Social influences and Experiences. The results also display a Strong positive significant correlation of attitude toward using online shopping with Perceived Usefulness, Perceived Ease of use & knowledge about online shopping, and weak positive significant correlation with Social influence. However, there is no significant correlation existed between attitude toward using online shopping and

Experiences.

The correlation between Perceived Usefulness, Perceived ease of use, and knowledge about online shopping show significantly a Strong positive. At the same, time no significant correlation with social influence. Nevertheless, there is no significant correlation between Perceived Usefulness and experience. Association between Perceived Ease of use and knowledge about online shopping is significantly positive strong. There is a weak positive significant association between Perceived Ease of use and social influence

In addition, knowledge and social influence have a weak positive significant correlation. In addition, this study finds the experience does not significantly correlate with perceived ease of use knowledge and social influence.

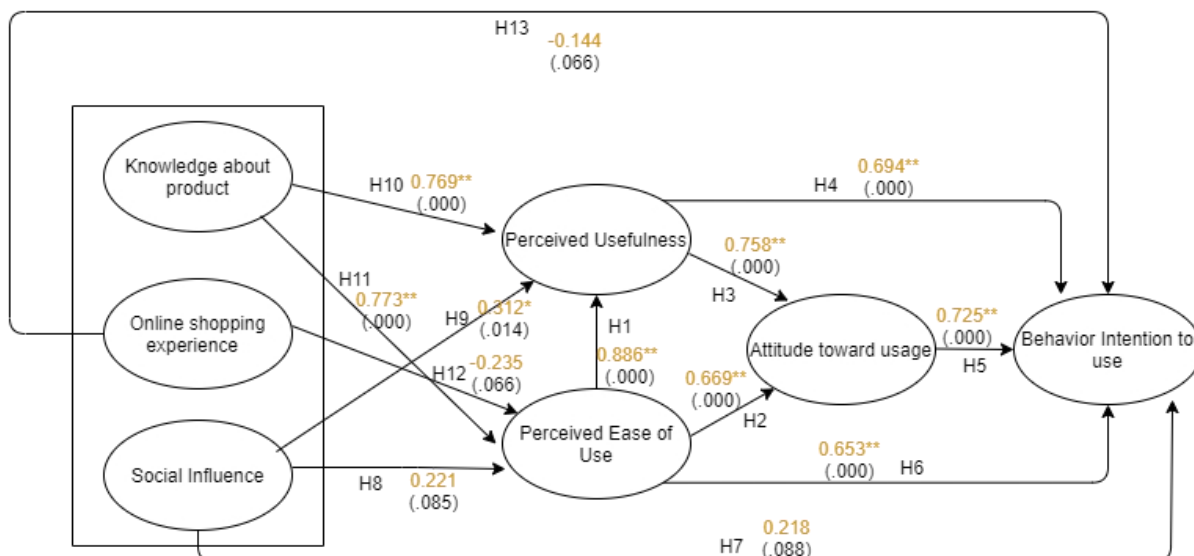
**Table 6:** Hypothesis summary

Hypothesis	Statements	Correlation coefficients	Results
H <sub>1</sub>	Perceived ease of use positively affects Perceived usefulness of online shopping	.886** .000	Supported
H <sub>2</sub>	Perceived ease of use positively affects attitude towards usage of online shopping	.669** .000	Supported
H <sub>3</sub>	Perceived usefulness positively affects attitude towards usage of online shopping	.758** .000	Supported
H <sub>4</sub>	Perceived usefulness positively effects Behavioral intention to use of online shopping	.694** .000	Supported
H <sub>5</sub>	Attitude towards usage positively effects Behavioral intention to use of online shopping	.725** .000	Supported
H <sub>6</sub>	Perceived ease of use positively affects Behavioral intention to use of online shopping	.653** .000	Supported
H <sub>7</sub>	Social Influence positively effects Behavioral intention to use of online shopping	.218 .088	Not Supported
H <sub>8</sub>	Social Influence positively affects Perceived ease of use of online shopping	.221 .085	Not Supported
H <sub>9</sub>	Social Influence positively affects Perceived usefulness of online shopping	.312* .014	Supported
H <sub>10</sub>	Knowledge about product positively affects Perceived usefulness of online shopping	.769** .000	Supported
H <sub>11</sub>	Knowledge about product positively affects Perceived ease of use of online shopping	.773** .000	Supported
H <sub>12</sub>	Online shopping experience positively affects Perceived ease of use of online shopping	-.235 .066	Not Supported
H <sub>13</sub>	Online shopping experience positively effects Behavioral intention to use of online shopping of online shopping	-.235 .066	Not Supported

Source: Author constructed (2020)

The table above summarizes the hypothesis after the testing was done. The hypothesis was to try to explain that peoples have positive attitudes towards using online shopping;

therefore, they intend to use online shopping in there day to day life. A significant positive correlation was used to explain this behavioral intention toward online shopping.



**Figure 2:** Coefficient result of model

## CONCLUSION

The current study tries to prove why users are select and prefer online shopping rather than traditional shopping. It validates the relationship between behavioral intention and other TAM core ideas. Overall, statistical analysis shows that People choose online shopping because of the knowledge about online shopping. It makes me feel that online shopping is accessible and useful. Also, some others think online shopping is useful because it is easy to handle. There is a strong positive relationship between the perceived usefulness, perceived ease of use, and knowledge about online shopping. When people confirm that online shopping is more useful, they change their attitude towards online shopping. There is a strong positive significant relationship that exists between useful and attitude. When attitude positively changes towards online shopping usage, the behavioral intention of using online shopping is influenced positively by the attitude change. There is a strong positive significant relationship exist between attitude and behavioral intention.

On the other hand, social influence lowly motivates to increase knowledge about online shopping. Not much, the number of Social factors cause to think online shopping is useful, and it has a lower significant association between the attitudes towards usage compare to the knowledge about online shopping. Nevertheless, the results emphasize that Experiences do not change the behavioral intention or any other TAM core constructs. It seems experience gives negative intention. It because of Bad experiences with online shipping. Such as sometimes, the user's expectation about the products does not meet reality. There is a delay in services that also cause a lack of association between the intentions to use in the future.

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