

Original Research Article

Examination of Online Purchase Intention Towards Air-Conditioner

ABSTRACT

Aims: E-commerce allows businesses to expand their reach and provides customers with a convenient method to shop at any time, from any location. In recent years, Vietnam's online retail sector has expanded rapidly, but the market for air conditioners has lagged behind. It is important for businesses in the air-conditioner (AC) market to identify what factors influence consumers' intention to purchase air conditioners online.

Methodology: Regression analysis was conducted from data collected from 412 end-users in Vietnam to identify the primary factors that influence the online purchase intent of AC consumers by using SPSS version 22.

Results: In order of importance, the results indicate that perceived utility (PU), E-shopping quality (ESP), and sales policy (SP) positively influence online purchase intention. The remaining two variables Price sensitivity (PS) and Perceived risk (PR) have a substantial negative effect on AC consumers' online purchase intent.

Conclusion: These results provide retailers and AC brands with valuable guidance as they formulate a strategy to increase AC's online sales in Vietnam strategy to expand Internet sales for AC in Vietnam.

Keywords: Online purchase intention, Perceived usefulness, E-shopping quality, Sales policy, Price sensitivity, Perceived risk.

1. INTRODUCTION

Over the past few decades, the Internet has developed into a vast global marketplace for the exchange of goods and services. In many developed countries, the Internet has been adopted as an important medium, offering a wide assortment of products with 24-hour availability and wide area coverage [1]. In Vietnam, E-commerce platforms have constantly appeared and created a whole new wave of consumption. Online shopping saves buyers time, makes things easier to search, and offers many promotion programs that engage and satisfy customers. This market is hopeful and poised for growth. In 2023, Internet users in Vietnam have been growing strongly with 77 million users (accounting for 79.1% of the population). 70% of the population had access to the Internet, while 84% of 16-to-64-year-olds searched online for a product or service and 75% purchased one [2].

Vietnam is one of Asia's leading markets for AC with a hot and humid monsoon climate and a population of nearly 100 million people. With the ability to quickly adapt to consumption habits and quick online shopping, the rate of electronic device purchases has increased, especially after the COVID-19 pandemic. However, Vietnamese consumers are still wary of this form because of old shopping habits and trust in products and manufacturers, especially high-value products such as air conditioners. Therefore, researching the factors that influence consumers' purchasing decisions in the air conditioner market is essential so that

suppliers have a basis to enhance and improve products and add value. on the online shopping platform.

2. LITERATURE REVIEW

2.1. Online Purchase Intention

Intention to buy is defined as a statement related to the mind that reflects the plan of the buyer to buy a brand within a certain period [3]. Laroche, Kim [4] assert that variables such as consideration in buying a brand and expectation to buy a brand can be used to measure consumer purchase intention. Based on the argument of Pavlou [5], Online purchase intention is the situation when a customer is willing and intends to become involved in an online transaction which is considered an activity in which the process of information retrieval, information transfer, and product purchase are taken place [5].

2.2. E-Shopping Quality

E-shopping quality is what customers expect from websites or shopping applications such as providing accurate and reliable information on target products or services. It is also termed as the perceived quality of information, quality of system, and quality of service [6]. Website content/functionality and atmospheric/experiential quality have a significant impact on e-shopping satisfaction contributing to e-shopping intention, while customer service has a significant impact on e-shopping intention but not on e-shopping satisfaction [7]. From all the above points, E-shopping quality will positively affect the consumer's online shopping experience and satisfaction, leading to the online purchase intention of AC.

Hypothesis H1: E-shopping quality (ESP) positively affects the online purchase intention towards AC (OPI).

2.3. After-sales Service Policy

After-sales support, sometimes called after-sales service, is any service provided after a customer has purchased a product [8]. After-sales support may be provided by a retailer, manufacturer, or a third-party customer service or training provider. Typically, examples of after-sales service include support regarding warranty service, training, or repair and upgrades. After-sales service makes sure products and services meet or surpass the expectations of the customers. It is a crucial aspect of sales management and must not be ignored. After-sales service policy impacts customer overall satisfaction which leads to repurchase intention and word-of-mouth [9]. Therefore, After-sales service policy including delivery, Installation support, return policy, and warranty policy will positively significantly affect to online purchase intention of AC.

Hypothesis H2: After-sales service policy (ASP) positively affects the online purchase intention towards AC (OPI).

2.4. Perceived risk

Perceived risk is the uncertainty a consumer has when buying items, mostly those that are particularly expensive, for example, cars, houses, and computers. Every time a consumer considers buying a product, he or she has certain doubts about the product, especially if the product in question is highly priced [10]. According to Farrah, Perceived risk is also defined as the extent of a customer's belief about uncertain negative outcomes from online transactions [11]. In the context of online shopping perceived risk is the extent to which a user believes that using the web is unsafe or may have negative consequences. A further

study about customer intentions for online shopping proved that perceived risk adversely affects customer behavior toward online shopping [12].

Hypothesis H3: Perceived risk (PR) negatively affects the online purchase intention towards AC (OPI).

2.5. Perceived usefulness

Perceived usefulness is the degree to which a person believes that using a system would enhance his or her job performance. When people accept to purchase through an online platform instead of the traditional way, they perceive that technology is useful and brings some benefits for them. Prior research showed that Perceived usefulness is significantly determined by the intention to use information technology [13]. In the contents of online shopping perceived usefulness may refer to the using internet as a medium to purchase a product that will improve and enhance the effectiveness of the result of their purchase experience.

Hypothesis H4: Perceived usefulness (PU) positively affects the online purchase intention towards AC (OPI).

2.6. Price Sensitivity

Price sensitivity is the degree to which the price of a product affects consumers' purchasing behaviors [14]. Price sensitivity is defined as the reaction and level of effect towards the price of a certain product or service [15]. According to Desmet and Management [16], there are many different prices regarding the same products across different e-commerce websites and traditional businesses, hence price sensitivity affects the purchasing intention and consumer trust [16, 17]. In the study of Rodiger et al., consumers would constantly perceive whether a product or service is worth their value or if it is too expensive to purchase [18]. Therefore, price sensitivity affects trust in online purchase intention among consumers in which the quality or quantity of the products and services being offered by the e-commerce companies would raise their skepticism or Price sensitivity will negatively affect online purchase intention.

Hypothesis H5: Price sensibility (PS) negatively affects the online purchase intention towards AC (OPI).

Based on the above arguments, the author proposes the research model for research as follows:

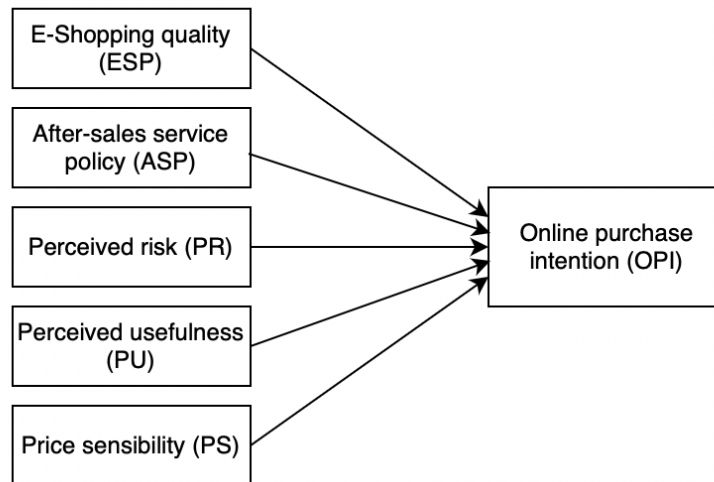


Figure 1: Proposed research model of the authors

3. METHODOLOGY

Quantitative research methods are used. Respondents are people in Vietnam aged 15 to over 55 years old in provinces and five big cities such as Can Tho, Ho Chi Minh City (HCMC), Hanoi, Phu Tho, and Da Nang from May 2021 to August 2021. Respondents were in these provinces in the Southeast region and the region with the country's highest economic growth rate.

The quantitative method in this research is Cronbach's Alpha, Correlation analysis, and multiple regression.

Table 1: Development of scales for observed variables.

No	Items	Constructs	Source
E-Shop quality			
1	ESP1	I can easily search for product information on AC (AC) in the online shop	Mohammad, Jurgens [19] Ilangovan, Guna [20]
2	ESP2	there is sufficient information on different types/models/ brands in online shop	
3	ESP3	It's easy to compare AC and price through online shopping	
4	ESP4	Online shops for AC have a full review of prior customers & fast feedback	
5	ESP5	Online information on AC is precise and updated	
6	ESP6	Available AC is updated and many stocks available in the online shop	
After-sales service Policy			
7	ASP1	Fast and convenient delivery time when purchasing AC online	Mohammad, Jurgens [19]
8	ASP2	I can book an Installation schedule based on my	

		available time when purchasing AC online	[21]
9	ASP3	I don't purchase AC online if there is no return and money-back guarantee	
10	ASP4	I don't purchase AC online if no warranty from the brand and a complicated warranty policy than offline	
Perceived risk			
11	PR1	Overall, it is risky to shop via the Internet for AC	
12	PR2	I feel uncomfortable while giving my payment (debit, credit card, bank details, etc.) details at the time of online purchase for AC	
13	PR3	Using the internet to purchase AC would lead to a loss of privacy	Hemantkumar, Lodha [21]
14	PR4	Generally, the quality of AC purchased from the internet does not meet my expectations	
15	PR5	Missing 'touch and feel' of real product and difficult to justify product quality when purchasing AC online	
Perceived usefulness			
16	PU1	Online shopping for AC enables me to save my time	
17	PU2	Online shopping for AC makes it possible to shop at my convenience (i.e. anytime, anywhere)	Mohammad, Jurgens [19]
18	PU3	Overall, shopping on the Internet is useful	Hemantkumar, Lodha [21]
19	PU4	I purchase AC online because there is no embarrassment if I do not buy	
20	PU5	I purchase AC online because I can purchase some products that aren't available near me	
Price sensibility			
21	PS1	I expect purchasing AC online to be cheaper than offline	
22	PS2	I will search for the cheapest online retailer to purchase AC	Ilangovan, Guna [20]
23	PS3	If my previous experience with an e-retailer has been good, then I will visit this site first when I want to buy within the same product category	
Online purchase intentions			
24	OPI1	I will use the internet to purchase AC	
25	OPI2	I will not purchase AC online if I have a bad experience with the website/ product/ policy	Mohammad, Jurgens [19]
26	OPI3	Shopping online is fun, and I enjoy it	Ilangovan, Guna [20]
27	OPI4	I will consider purchasing AC through the website or EC platform	
28	OPI5	I will introduce online shopping to friends	

4. RESULTS AND DISCUSSION

4.1 Description of respondents' profile

Table 2: Demographic of participants

No	Codes	Respondents' Profile	Items	Total	Percent
1	SEX	Gender	Male	218	52.9%
			Female	194	47.1%
			Total	412	100.0%
2	AGE	Age	Under 18	2	0.5%
			18-35	343	83.3%
			36-55	62	15.0%
			Over 55	5	1.2%
			Total	412	100.0%
3	JOB	Occupation status	No job / retired	24	5.8%
			Part-time job	49	11.9%
			Full-time job	339	82.3%
			Total	412	100.0%
4	ACEXP	AC Purchase experience	No	94	22.8%
			Yes	318	77.2%
			Total	412	100.0%
5	EXP	Online shopping experience	No	84	20.4%
			Yes	328	79.6%
			Total	412	100.0%

The result revealed that there is a balance between female and male counterparts, 83.3% of respondents are currently of working age, majority of the sample was full-time working at the time of the survey. AC purchase experiences explain whether the respondents already purchased AC or not. 318 people in the sample size had experience in buying an AC, accounting for 77.2% while 22.8% of respondents (94 persons) didn't purchase. The result revealed that there is quite a huge gap between the two groups. Online shopping experience is the question to check if the respondents have experience in shopping online. The result shows that 79.6% of people had purchased online (328 respondents) and 20.4% of the total had no experience.

4.2 Reliability test: Cronbach's Alpha

Cronbach's Alpha's analysis results for a scale of factors affecting online purchase intention for AC in Vietnam are as follows:

Table 3: Results of testing the reliability of the scale

Factors	Number of observed variables	Cronbach's Alpha
ESP	6	0.863

ASP	4	0.774
PR	5	0.799
PU	5	0.784
PS	3	0.771
OPI	5	0.785

Cronbach's Alpha coefficient of all variables is higher than 0.7, so the scales are accepted, and they are suitable for performing the next analysis.

4.2 Correlation analysis

To examine the correlation between factors before performing multiple linear regression analysis, especially the correlation between the dependent variable and the independent variables. The results of the correlation analysis are presented in the below table

Table 4. Correlation between concepts in the research model

		OPI	PU	PS	ESP	PR	ASP
OPI	Pearson Correlation	1	.749**	-.655**	.558**	-.261**	.490**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
**. Correlation is significant at the 0.01 level (2-tailed).							

From the table, it is found that the significant correlation is under 0.05, 4 factors (PU, ESP, and ASP) which have correlation coefficients greater than 0.3 and less than 0.6 are positively correlated with the dependent variable OPI. The largest correlation was obtained for PU (74.9%) followed by ESP (55.8%) and ASP (49%). Factor PS is negatively correlated with OPI (65.5%). However, the Pearson correlation of Variable PR is only (-.261) which is less than 0.3, it is still included in the mode to analyze the next step with negative relations. Therefore, these variables can be included in the model to explain the "Online Purchase intention".

4.3. Regression analysis

All independent variables in the regression model were adjusted by the simultaneous input method based on the selecting criteria that the chosen variables' significance level must be lower than 0.05. The more standardized the partial regression coefficients of the actor are the greater that factor influence on the choice of wedding venue. If they have the same sign, the degree of influence will be the same way and vice versa.

The results of multiple regression analysis are presented in Table 5.

Table 5. Results of regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.353	0.208		6.516	0.000		
	PU	0.424	0.04	0.434	10.63	0.000	0.491	2.035
	PS	-0.207	0.035	-0.225	-5.831	0.000	0.549	1.823
	ESP	0.087	0.038	0.092	2.288	0.023	0.509	1.964
	PR	-.068	0.026	-0.078	-2.598	0.01	0.899	1.113
	ASP	0.056	0.031	0.064	1.806	0.072	0.66	1.514
a. Dependent Variable: OPI – Online purchase intentions b. Independent Variables: PU- Perceive usefulness, PS-Price sensibility, PR- Perceived Risk, ASP-After sales service policy, ESP-S-shop quality								

According to Table 5, statistical results show that the standardized regression coefficients of the regression equation are different from 0 and Sig. <0.05. It demonstrates that the following independent variables (PU, PS, ESP, and PR) influence online purchase intention. The remaining factor ASP has sig. of .072 which is greater than 5%, so it has no impact on online purchase intention towards AC.

After satisfying the testing conditions, the multivariate regression equation has an unstandardized beta coefficient as follows:

$$\text{OPI} = 1.353 + 0.424 \cdot \text{PU} - 0.207 \cdot \text{PS} + 0.087 \cdot \text{ESP} - 0.068 \cdot \text{PR}$$

The regression equation indicates that Online Purchase Intention toward AC is positively affected by 3 factors which are arranged in order of increasing importance as follows: Perceived usefulness (PU) and E-shopping Quality (ESP) and negatively influenced by Price sensitivity (PS), Perceived risk (PR).

The adjusted R squared coefficient is the conformity measure used for multiple linear regression analysis because it does not depend on the magnification deviation of the R2 coefficient. The results of multiple regression showed that the adjusted R2 was 0.663, meaning that the involved independent variables explained 66.3% of the variation in Online purchase intention.

Table 6. Evaluating the conformity of the regression model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.817a	.668	.663	.36942	1.915

a. Predictors: (Constant), ASP, PR, PS, ESP, PU
b. Dependent Variable: OPI

The F test used in the Analysis of Variance (ANOVA) table measures the hypothesis of the suitability of the overall linear regression model, The F value is 135.8 with the significance level being $0.000 < 0.05$. Therefore, the linear regression model is suitable and usable.

5. CONCLUSION

5.1. Conclusion

After conducting the qualitative and quantitative study, the results show that 2 factors including Price sensitivity (PS) and Perceived risk (PR) harm the Online purchase intention of customers for AC. Besides that, Perceived usefulness (PU), E-shopping quality (ESP), and a new factor that regrouped after the EFA test positively affect consumer online shopping intention towards AC.

Perceived usefulness is the most influencing factor means consumers put high evaluations on the convenience of using the internet for purchasing AC. The convenience includes time-saving, effortless, and purchasing products that are unavailable nearby. This implies that an online retailer and online platform developers should focus more on user experience and should try to make their websites more user-friendly and bring more benefits to encourage online shopping.

The second influence factor is price sensitivity, in the negative direction. It means that consumers intend to research cheap prices when purchasing through online channels. That is one of the main factors that motivates consumers to go online.

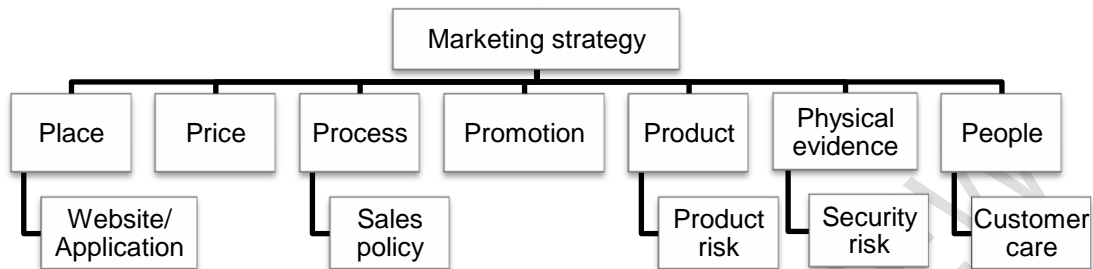
The third important factor is the Sales policy which groups by booked installation schedule, delivery policy, and review on the website and updated available stock. These are almost focused on the benefits for consumers who bring convenience after purchasing.

The last two factors After-sales service policy and Perceived risks seem to have a low impact on online purchase intention. After-sales service policy includes warranty policy, return policy, and money-back guarantee which are considered important factors from the beginning but have low results. Perceived risk is generally evaluated as the key factor in online purchase intention, but the actual result is different. Product risk and security risk have a negative and weak correlation to online purchase intention for AC.

5.2. Recommendation

After conducting the research, there is a significant impact of several factors on Online purchase intention that retailers and AC sellers must pay attention to improve. Perceived usefulness, Price sensitivity, and Sales policy are the three most influential factors in AC online purchase intention. Other factors which are E-shopping quality and Perceived risk

also affect consumer intention for online shopping and must be considered to increase sales. From this result, the author has raised some suggestions aligned with the 7Ps for improvement.



Firstly, Place is the term referring to “where” distributing or accessing products and services. In this case, it is the e-commerce shop or website that sells AC products. The best way to determine the perfect place to sell the product is by really knowing the audience; their wants, needs, and requirements. As research result, customers intend to purchase online with the most important reason of convenience. They can save their time, save their effort, and especially buy the products that aren't available nearby. They also consider e-shopping quality, which is the user experience during shopping. To improve the user experience, retailers should focus on sizing systems to fit the accessing demand, and optimizing the capacity of applications or websites. The product information and product availability should be updated, so consumers can get precise information for consideration. Website or application appearance is also should be invested. The color, information arrangement, and website functions should be carefully checked and updated to bring the best shopping experience to the end-user.

Secondly, Price sensitivity also plays a key role in consumer online purchase intention. Searching for lower prices to save costs is one of the main reasons that motivate consumers to go online. Consumer intends to search for the lowest price shop as compensation for risk for online purchases. Therefore, the price should be competitive compared with offline stores. As qualitative research results, if the price is around 15% lower than in offline stores, consumers are willing to take risks and order online. Retailers should recheck all the costs that can be saved by online businesses and give better prices to consumers. Retailers also should regularly check and compare the price of products with competitors to offer better

deals. Promotion by season and occasion should be applied to increase the online purchase demand. Currently, AC is considered a seasonal product that mainly sells in the summer, most brands and retailers offer the same deals at this time such as free installation materials, 1 free time cleaning service, etc. It's almost the same with offline stores, so the demand for online sales is low. Therefore, Retailers should consider changing the promotion way. The first option is creating AC Online Week which offers the best price within one week when purchasing through the website. Promotions can be discounts, free maintenance, free installation, extended warranty period, or discounts when purchasing 2 or 3 ACs. The second option is following E-commerce promotion time such as end-season sales, holiday sales, and occasional sales. During these sales periods, consumers are willing to pay money and go online for searching better deals, so that the demand will be higher, and sales can be increased.

Together with price benefits, Sales policy is also important that retailers should take into account when improving online purchase intention. This sales policy can be understood as a sales process. AC is a special product that is big in size and heavy, so delivery and installation are fundamental concerns when purchasing AC online. Therefore, Retailers should create a sales support policy that is interesting to consumers. The normal thought of consumers when buying any product is fast receiving at a convenient time. To satisfy this request, retailers can develop the website with the function of choosing delivery and installation time, then consumers can select a suitable time for them. Free delivery and free installation are also important to get the consumer's intention.

The fourth part of marketing strategy is about promotion which refers to advertising, marketing, and sales techniques. To make noise about online sales, public communication is essential. Vietnam is a fast booming internet with a huge number of internet and social network users; therefore, digital marketing is a suitable method in this case. Retailers can make noise on social network accounts such as Facebook, and YouTube about sales programs. Livestream with mini-games is also one of the ways to improve internet sales that lots of brands applied. Short comedy clip with links to websites or sales programs is also the new way that is popular currently.

The next consideration from consumers that retailers should consider when expanding internet sales is Perceived risk including Product risk and Security risk. People feel unsafe when purchasing AC online because they are not sure about product quality and personal security. Therefore, the retailer should immediately solve this issue to get consumers to trust and increase sales. Firstly, regarding Products, consumers cannot see, "touch, and feel" the actual product when go online, so they are worried about the received product quality, whether the look will be the same as the picture, whether it's a brand product or fake one,

whether product will be operation well. Retailers should provide full product information on a website with actual pictures, allow prior buyers to post on review, provide fast feedback to end-users when they are checking, and provide origin and brand warranty support. The second risk is about personal information, especially address and phone number. Retailers should invest in system security to improve the trust of customers. Offering consumer accounts with security checks every log-in time, OTP code, and others can support building customer trust, and then increase online purchase intention. The last risk is about payment, especially for consumers who use Visa/Master card for their payment. Once again, investing in system security is a must-taken action.

The last suggestion is about People, which refers to Customer care staff, Delivery and Installation staff. Retailers should have regular training for staff to improve their interaction skills with customers.

5.3. Limitation

During the implementation of this project, a few limitations may arise and need to be paid attention in advance to provide appropriate solutions.

The first limitation is the qualitative research handling. The research that co-operated with Nielsen covered the whole aspects of consumers' awareness and perception of AC and communication campaigns, not focusing only on online purchases. Therefore, the findings weren't strong and deep enough. The study was also carried out mainly in some big cities like Hanoi, HCMC, Da Nang, and Can Tho, with the standard of Panasonic market segment, which means this market will not be fully panoramic, which means this is quite narrow and not representative of the national market. The consumers' perceptions and behavior are different by region and economic situation.

The second limitation is the sample size for quantitative research. Due to time limitations, the research only took 412 respondents, and most of them have come to the shop that displayed ACs, which means the result mainly shows the online purchase intention of the persons who have purchase demand. The survey was also done mainly in Hanoi and HCMC based on the number of modern channel shops. It limited the prediction about market demand for online purchases and the intention of the total market in general. From the above limitations, another research for the countryside should be considered to have a bigger cover of Vietnam.

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