

## **The Study about Customer Behavior on Traditional Transport: A Case of Vietnam**

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**ABSTRACT:** *This study deals with an analysis of factors affecting on behaviors of traditional taxi customers in Vietnam, on the basis of a survey conducted for 412 metered taxi service users chosen through the simple random sampling. Analysis statistics are EFA and multiple regression analysis. Results of the research reveals that the consumers recognize the social influence, Technology use, Price, Ease of use and Alternatives which are five major factors influencing on traditional taxi users. In addition, results regression analysis show that 52.5% of traditional taxi using in Vietnam is explained by the above factors. The key finding from this study will help traditional taxi firms to better understand their customers. They could use these data to increase competitiveness against app-based taxi such as Grab.*

**KEYWORDS:** *Customer behavior, factors, Traditional taxi service, Vietnam*

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### **I. INTRODUCTION**

Traditional transport is a type of service providing customer including taxi, bus, and train in a physical way without applying modern technology and Internet. It is widely used in developing countries like Vietnam. However, IT is currently in process of fast development with much application in different kinds of industry including transport services, which commonly called 4.0 industries. Therefore, the definition of traditional transport is to distinguish the type of transport services using IT for finding and satisfying customer needs.

Domestic transport services in Vietnam is losing a competitive advantage in the hand of foreign transport providers because they has not applied IT in providing services yet. Specially, Vietnamese taxi service is now under the most obvious influence. Grab and Uber respectively appeared in the Vietnam market in 2014. This is a new type of service that provides online transportation through the use of location-based service (LPS) technology, GPS (Global Positioning System) and driver through mobile device. Uber and Grab's operational criteria are to make use of the available personal vehicles (cars, motorbikes) of the people in the free time to engage in passenger transport. In the short term, this service has created many changes in the market and caused much controversy. The number of Uber and Grab taxis is almost double that of traditional taxis for 3 years. There is no specific regulation in the government management of this type of service which results in unfair competition and tax losses. The big traditional transport businesses in Vietnam continuously reported losses, cut jobs and had to liquidate old car.

In fact, technology transport services have more competitive advantages in reducing costs, creating diversity and serviceability. Many customers choose to use technology instead of traditional transport services. Not only the impact of Uber or Grab, the 4.0 industry but also creates a whole lot of new changes such as intelligent Transport System (ITS). This directly affects the existence of businesses transporting services. As customers are direct using and experiencing services, the study about consumer behavior will show the most comprehensive and complete scene. Solutions to solve this concern of government and transport enterprises have also to come from the customers to be effective and sustainable. At present, there is a little research in this field. In light of this, the paper finds out factors affecting customer behavior in using traditional taxi services in order to come up recommendations to increase the competitive advantage of traditional taxi service in Vietnam.

### **II. LITERATURE REVIEW**

#### **2.1 Customer behavior**

Economists are the first researchers in consumer behavior such as Nicholas Bernoulli, John von Neumann and Oskar Morgenstern to have built up the basic theory of customer decision-making over 300 years ago [12]. Nowadays many researchers have studied and come up with different concepts about consumer behavior. Consumer behavior includes the process when an individual or group chooses to buy, use, or dispose

of the product, idea, or experience to satisfy their desires and needs [15]. Customer behavior has the dynamic interaction of factors affecting customer perception, behavior and environment which change customer's lives [14]. [2] gave customer behavior is the behaviors that consumers display in searching, purchasing, using and evaluating products and services that they expect to satisfy their needs. Therefore, customer behavior on traditional taxi service is a process to buy, use or dispose this services.

Venkatesh et al. (2003) raised the UTAUT model to explain technology acceptance which based on the synthesis and study of eight theories and models of technology adoption. This model consists of four main elements: performance expectancy, effort expectancy, social influence, and facilitating conditions in which the four main factors are independent variables that affect dependent variables as behavioral use [19]. Besides, Parasuraman et al. (1985) given that quality of service is the distance between the expectations of customers and their perceptions when used service. The SERVQUAL scale initially consisted of 10 characteristics used to evaluate service quality. By 1988, the model was reduced to five quality attributes including reliability, responsiveness, assurance, empathy, and tangibles [10]. Unlike UTAUT and Servqual, EKB model, developed by Engel, Kollat and Blackwell (1968), describes the decision-making process of consumers and the way of making decisions when choosing alternatives. The decision-making process is divided into information collection and processing. Purchasing decisions are influenced by a variety of environmental factors such as cultural norms, social class, reference group, family influence and unexpected circumstances [4].

## **2.2 Factors affecting customer behavior on traditional transport**

Based on the Theory of Acceptance and Use of Technology [19], service quality [10] and decision-making process [4]; six factors effecting customer behavior on traditional transport are investigated which are price, ease of use, social influence, reliability, alternatives and technology use. These six factors are suitable for assessing customer behavior on Vietnamese taxi service.

The price represents the cost that supplier exchanged for the goods or services [7]. Similarly, prices are defined as the amount of money paid for a product, service, or total value that a consumer have to exchange to obtain the benefit of the purchase or use of the goods or services [6]. Price is an important ingredient to explain consumer behavior [13]. Managing price properly can improve the perception of the value of service and increase the customer's willingness to buy [17]. Therefore, price have a positive impact on customer behavior.

Ease of use is defined as the extent to which a person believes that using a particular system will not require effort [3]. Ease of use has been shown to have a positive relationship to consumer intent and consumer behavior [1][3][18]. During the fourth industrial revolution, traditional taxi service made certain changes on booking service and payment. This is likely to create additional demands on the consumer for certain skills or knowledge to be able to use the service. Conversely, consumers tend to be more interested in traditional taxi service if the product is easier to use.

Social influence include reference groups, family influence, status and social situation [6]. Venkatesh et al. (2003) defined the influence of social factors is the extent to which consumers perceive people important to them (family, friends) that they should use a particular technology. Social influence was proved to have the positive relationship with customer behavior [20][8][16].

Reliability is the ability to perform reliable and accurate service and reflects the commitment of the customer and the prestige of the business. Satisfaction is the level of knowledge, ability and respect of the staff to create confidence when customers feel secure in using the service [10]. The relationship between quality of service and customer satisfaction has been studied in many areas [21]. To gain advantage over competitors, customer satisfaction needs to be measured and evaluated regularly [11]. The greater the reliability is, the higher the customer's ability use the service. Therefore, reliability has positive relationship with customer behavior.

Alternative products are products that can be used (or consumed) instead of other products. For this research, traditional taxi alternatives are personal vehicles, buses, train, motorbikes, bicycles, etc. The benefits of using alternative products may prevent consumers from switching to traditional taxis. When viewed from the perspective of microeconomics, this is known as the barrier to transformation [5]. As the number of people owning personal vehicles such as motorcycles and cars is as high as in Vietnam, the cost of using personal vehicles, buses, motorbikes are significant difference. The barrier to change is clearly shown, or in other words, alternatives effect negatively on consumer behavior.

TAM has received substantial attention in the information systems literature because it focuses on system use, has reliable instruments with excellent measurement properties, is parsimonious, and is empirically sound [3]. Our research is conducted in Vietnam in the context of consumer use of mobile internet technology and the 4.0 industry revolution. Therefore, technology use has positive effect on customer behavior.

## **III. METHODOLOGY**

Based on the analysis of the factors affecting consumer behavior in different models of research as well as the traditional taxi situation in Vietnam, the research proposed six factors such as price, ease of use, social

influence, reliability, alternatives and technology use. Base on the proposed research model, this study is going to test the following hypotheses:

- H1: The price has the positive relationship with customer behavior
- H2: Ease of use has the positive relationship with customer behavior
- H3: Social influence has the positive relationship with customer behavior
- H4: Reliability has the positive relationship with customer behavior
- H5: Alternatives has the negative relationship with customer behavior
- H6: Technology use has the positive relationship with customer behavior

After designing questionnaire, the research conducted survey by interviewing directly 20 customers who used to use traditional taxis. The feedback were on the use of unclear words, how to place and sort the questions. Specifically, the preliminary survey consists of two parts (personal Information and Factors Affecting Consumers). Therefore, the final questionnaire has changed into three parts (personal information at the end of survey, the general questionnaire to clarify the subjects to elicit information from the participants, and the factors). In addition, the survey subjects are not clear about the concept of alternatives so suggestion about substitute products such as personal vehicles, bus, train. Moreover, as the different means of substitution, the respondents also had different opinions, so the replacement product explained was the service that the survey respondents preferred the most. In addition, other questions are easy to understand and do not contribute to the removal or supplementation of other key questions. The content of the survey consists of three parts: (1) general questions, (2) surveys of factors affecting consumer behavior, (3) personal information; with 42 questions. The main questions included 35 quantitative questions, 4 respondent questionnaires, 3 additional questions. The questions focused on the factors that affect the traditional use of taxis in Vietnam. Respondents were asked to rate their opinion using a 5-point Likert scale ranging from 1=strongly disagree, 2=Disagree, 3=No comment, 4=Agree and 5=strongly agree.

During the official data collection, a random sampling technique was used. The research distributed 700 surveys to ensure the representative sample. The survey was sent via Internet (400) and direct way (300). In result, 225 respondents were received via the Google Forms support tool and 219 print survey (187 valid). The final result was 412 respondents. The response rate is 58.85%. Data was collected by the coded questionnaires and took place over 90 days. The data was recorded firstly in Excel program from 187 printed answers and 225 online answers from automatic excel in Google document. SPSS 20.0 was conducted secondly for analyzing Cronbach' Alpha, EFA and multivariate multiple regression to test hypothesis.

#### IV. FINDINGS

The results gave that out of 412 respondents 260(63.5%) were female and 152(36.5%) were male customers. In terms of age group, 300(72.8%) respondents had the age group of 18-25, followed by 48 (11.6%) to age from 26-30, 22(5.3%) were under 18 and from 31 to 40, 14 (3.3%) were 41-55 and only 7(1.7%) respondents above 55. Respondents were mainly in the 18-25 and 25- 30 age group whom had high demand for traditional taxi services. In terms of education background, university accounted for 346(84%) respondents, high school was at 36 (8.7%) and only 5 (1.3%) under high school. With the majority of respondents were university education, the review and evaluation of service quality might be more strict than other consumers. For Income, 223 (54.1%) were 4-10 million VND, 129 (31.3%) were 10-20 million VND, 46 (11.2%) were under 4 million VND and only 7 (1.7%) were above 20 million VND.

Using the Cronbach' Alpha coefficient to measure the reliability of factors effecting customer behavior on traditional taxi service with 7 constructs and 35 observed variables, the Cronbach 'Alpha values of DD (Ease of use), GC (Price), TC (Reliability), IT (Technology use), XH (Social influence), TT (Alternatives) and HV (Customer behavior) were 0.743, 0.718, 0.813, 0.821, 0.781, 0.742 and 0.817 respectively (>0.7). The Corrected items (Total Correlation coefficient) of 35 observed variables were higher than 0.3. It can be concluded that there are 35 good reliability variables from 7 constructs.

By conducting an EFA with the principal component method, the model had not reached convergence value at first time even though KMO was high at 0.889 and sig was 0.000, initial eigenvalues was 1.065 and cumulative was 58.747%. Continuously removing the inappropriate variables from the model (DD5, GC4, GC5, TC5, TC6 and XH1), the model was conducted. The results got convergence factor at six group components (TC, IT, XH, TT, DD and GC) with KMO and Bartlett's Test were high (0.864>0.5) and sig was 0.000. In the extraction sums of squared loadings, the percentage of cumulative was 60.210% and the total of initial eigenvalues was 1.040. After conducting the Reliability Scale and EFA scaling, six factors are identified and explained (TC included GC6, TC1, TC2, TC3, TC4; IT included IT1, IT2, IT3, IT4, IT5; XH concluded XH2, XH3, XH4, XH5; TT concluded TT1, TT2, TT3, TT4; DD concluded DD1, DD2, DD3, DD4; GC concluded GC1, GC2, GC3).

Apply regression analysis to the model, multivariate regression analysis was conducted with six factor-verified correlation coefficients (TC, IT, XH, TT, DD, GC) and dependent variable (HV) using the method

Enter. The first regression results (Table 1) had a big P-value (sig=0.144>0.05) at TC. TC was not suitable with this model, so that TC variable was deleted from the regression equation.

**Table 1: Coefficients of first running multivariate regression**

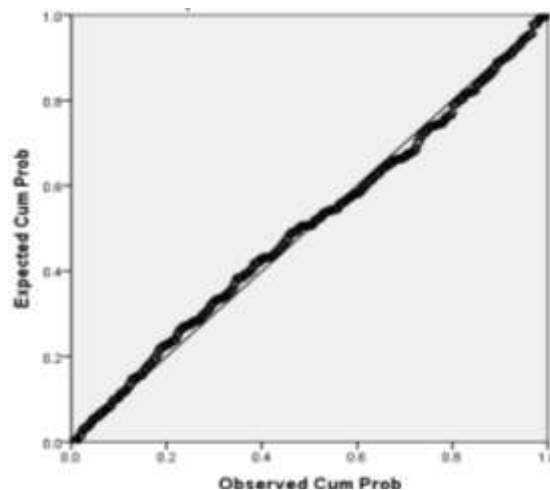
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.358	.173		2.068	.039
	TC	.064	.043	.068	1.464	.144
	IT	.262	.049	.240	5.384	.000
	XH	.283	.044	.277	6.460	.000
	TT	-.092	.038	-.088	-2.430	.016
	DD	.194	.039	.200	4.967	.000
	GC	.202	.040	.212	5.038	.000

The regression model was conducted again with the five remaining variables (Table 2). After the second regression analysis, all five variables (Technology use, Social influence, Alternatives, Ease of use, Price) are good explanatory variables for the dependent variable (Customer behavior) change.

**Table 2: Coefficients of the second running multivariate regression**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.387	.172		2.247	.025
	IT	.282	.047	.258	5.990	.000
	XH	.311	.040	.304	7.821	.000
	TT	-.104	.037	-.099	-2.795	.005
	DD	.200	.039	.205	5.114	.000
	GC	.213	.039	.224	5.440	.000

The adjusted R2 coefficient is 0.525 which means that in 100% of the variation of the dependent variable, customer behavior is 52.5%. The variation is due to the independent variables IT, XH, TT, DD, GC. Rationale means that the co-occurring variables explain 52.5% of the dependent variable, the rest is due to random errors or factors outside the impact model. Thus, the model that gives the explanation can explain well the dependent variable. In addition, the statistical value F is a hypothesis test for the suitability of the overall linear regression model with the hypothesis that all regression coefficients are zero. 0.000 < 0.05 indicates that the model used is appropriate. Based on the P-P plot below shows that the observation points are not scattered far from the expected line, we can conclude that the standard distribution hypothesis is not violated. Thus, it can be concluded that the model is linear.



From all the above tests the paper come to the conclusion that the regression model chosen is suitable. The model is:  $HV = 0.387 + 0.258IT + 0.304XH - 0.099TT + 0.205DD + 0.224GC$ . Therefore, customer behavior on traditional taxi service in Vietnam is influenced by five factors such as Technology use, Social influence, Alternatives, Ease of use and Price. Social influence is the factor affect biggest on customer behavior than other four factors (0.304), followed by Technology use (0.258), Price (0.224), Ease of use (0.205) and Alternatives has least impact (-0.099).

## **V. IMPLICATION**

Based on the results of regression analysis to assess the influence of factors on the dependent variable, Social influence has the biggest impact on customer behavior while Alternatives has least impact. Therefore, the recommendations of this research is that Vietnamese taxi enterprises may pay much attention to social influence and other factors to improve quality service to gain advantage over their foreign competitors like Grap taxi.

Firstly, Social influence include the influence of advertising campaigns, family and friend, social networks, and images of themselves on the decision to use a traditional taxi service. First and foremost, traditional taxi companies should invest in visual communication, promote their brand more and at the same time enter the market research, find out the wishes of customers to be able to create campaigns. Effective advertising such as: painting on empty walls to enhance brand identity; Organizing photo shoots when using the taxi service to enhance the image for customers of taxi service, giving customers the feeling of comfort, beautiful image and still contribute to the country's economy; Run relevant programs such as jogging to raise funds for students and at the same time enter into the psychology of Vietnamese customers to use Vietnamese goods and show how the taxi sector has contributed to the country. Communication through social networks more, using KOLs to spread the brand image through advertising campaigns. At the same time, the taxi company should also create community promotion programs.

Secondly, Vietnamese taxi enterprises should focus on applying internet technology in different activities like marketing campaign, taxi booking, payment making, and customer's need seeking. In Vietnam, the traditional taxi system is still not flexible, the way to pay is still limited (mostly paid in cash, only certain car companies have paid services in the form of such as bank cards). Taxi operators must continuously receive calls, coordinated through an intermediary step, so when contacting, calling and long time, so the development of an application to Calling a car for drivers and customers who can communicate directly is essential. The use of this application should be the basis for using taxis, replacing most of the dial-up for the time being, the majority of the population already have smartphones and have internet connection. The application acts as an intermediary between the customer and the driver, giving the customer the exact trip cost, distance traveled, driver information, vehicle arrival time and driving time. The exact pickup location of the customer. In addition, use GPS in the car so that businesses track the cancellation rate, the difference between areas, time to have a reasonable orientation. The large data processing in the current technology era 4.0 is not too difficult. At the same time through the application, the company will also be able to develop promotions, customer care, loyal customers to build customer databases, help to set long-term strategic orientation. Long, effective customer lifecycle management. Next, the companies need to integrate more modern payment methods and easier to use such as electronic wallet, recharge and payment directly from the account, loyalty card.

Thirdly, traditional taxi firms have appropriate pricing strategies such as the relative discount of traditional taxi services by offering discounts on service charges, regular promotions; discounted with non-peak hours, discounted with round-trip. Moreover, these firms may set other discount programs such as multiple customers can go car sharing; or increase the value customers receive by increasing service quality. Besides, Vietnamese taxi companies may invest new vehicles with various types of vehicles with different rates to meet the specific needs of each customer, invest in processing system Complaints and customer service. At the same time, the traditional taxi companies also have to pay attention to the rates of service. The rates set should match the average income of the target customers, giving them more opportunities and opportunities to consider using traditional taxi services. For each region, different pricing strategies need to be different. The long-term fluctuation of prices is also an important factor, the tariff of the taxi service should be less volatile in the long run and only adjust service prices when there are reasonable factors (for example when there are government regulations, petrol prices).

Finally, the recommend to the alternative product is to differentiate, compete on price, and select markets. In order to attract and retain customers, traditional taxi firms need to have the basic characteristics of a particular type of shipping service, and also to differentiate the product from one another. Traditional taxi service users need to have good speed, good usability, reasonable pricing, and a courteous, polite driver. Taxi firms should launch promotions to entice customers, create regular customer caring programs, create loyalty customer accounts, and set reasonable and concurrent discount rates. It also offers the convenience, preferential for customers to use intimate, long-term customers through the rating system of intimacy. Another way is to hit the market niche, such as using taxi services to transport your own specialties, or create programs dedicated to each specific customer: monthly tickets. By doing so, taxi firms can reduce the negative impact caused by alternative products.

## **VI. CONCLUSION**

The research contributes to helping local transport businesses increase their competitiveness, fairness and equality; assure the employment of laborers operating in the field of traditional taxi business; create motivation for enterprises and individuals wishing to develop and join the industry. For state management

agencies, when traditional taxis pay attention to factors effecting on customer behavior, they can compete with foreign firms to ensure reasonable state budget revenues, avoid tax losses. For consumers, as more businesses compete in the industry, consumers have more options, the value received when using the traditional taxi service is also higher. From there, this may contribute to the overall development of society.

In addition to the contribution, research has inevitably been limited. First of all, the sample size of 412 accounts for only a small fraction of the traditional taxi users in Vietnam, so the overall likelihood is not high. In particular, the respondents are mainly young people with low income. Some answering survey were based on sentiment, so they did not give their true opinions. This may lead to inaccurate results. Second, the study looked at six groups of effects on traditional taxi behavior. There are no other factors to consider when in fact, the behavior of consumers is more complex. In addition, the development of scales for factors aggregated from different sources or proposed by the research team is not uniform. Last, solutions based on research results are qualitative, have not yet evaluated the obstacles when implementing solutions in practice. The solutions offered are also incomplete and potentially not optimal.

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