

The Joint Effect of the Availability of Choice and Perceived Behavioral Control on Intention to Use Taxi Service

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Abstract. People usually prefer to more choices and stronger sense of control. However, the result of this study clearly found that perceived behavioral control is much more important than availability of choice to predict intention to use. Specifically, consumers with lower level of perceived behavioral control will even exhibit lower level of behavioral intention if they possess more availability of choice than less choice. Moreover, we also found that male consumers exhibit higher behavioral intention than female when they possess higher perceived behavioral control. The roles of control and choice in service marketing are discussed.

Keywords: Availability of Choice, Perceived Behavioral Control, Behavioral Intention, Taxi Service, Gender Differences

1 Introduction

It is not known whether choice or control is more important for consumers to make a decision. With more choices, customers can have higher sense of freedom. On the contrary, with too many choices, customers can get lost and confused as well as get lesser sense of control by too many choices per se. The feeling of control, on the positive side, can enable us to make sure that customers will get what they want. However, customers sometimes prefer to risk and uncertainty as we can clearly see in the case of gambling and risky choices. There are several studies that have investigated the relationship between behavioral control [1-6], and choices on behavioral intention [7-8]. However, there is no study that has investigated the joint effect of them on behavioral intention.

Specifically, the emerging market (including Thailand) differs from perfect competitive market such that there are fewer choices for the buyers and the price is not fully determined by market mechanism [9]. With less than perfect market, the buyers tend to have less access to information as well as less negotiating power, and thus the lower sense of control. Taxi transportation in Thailand is a clear example of an emerging market where public transportation is limited and customer may have a fewer control on their choices for commuting. The objective of this study is to study the joint effect of availability of choice and perceived behavioral control on behavioral intention among taxi service customers in Thailand. Practically, to understand those relationships will help us improve overall service experience in an emerging market. Theoretically, this research will shed light on the joint effect of the availability of choice and perceived behavioral control on behavioral intention that is complex phenomenon and thus help us to understand customer decision process in service marketing better.

2 Development of Research Hypothesis

2.1 The roles of choice on behavioral intention

People usually want to have more choices so that they can get a sense of freedom. The availability of choice defined here as the perception for the number of choice people can recall when they make any decision.

However, one experimental study [8] found that too many choices lead to information overload, and information overload reduce subjective knowledge or makes people feel less knowledgeable, and finally lead to lower behavioral intention in consumer financial decision. Simply speaking, when confront with too many choices, investors feel that they possess insufficient financial product knowledge and they do not want to buy them. It also requires more heuristics such as choice elimination that make a decision making harder and less fun with more choices [7]. Too many choices may have the detrimental effect on consumer decision process that may be even worse than with fewer choices or no choice. We hypothesize that;
Hypothesis 1: The availability of choice is negatively related to behavioral intention among taxi service customers.

2.2 The role of perceived behavioral control on behavioral intention

People normally want to have a feeling of control. Perceived behavioral control defined as the extent we perceive the ease or difficulty of performing the behavior and the likelihood of behavioral achievement [1-2]. Perceived behavioral control can predict both behavioral intention and actual behavior. Several researches found the positive relationship between perceived behavioral control and behavioral intention such as condom use [3-4]), diet control [5], and exercise [6]. The sense of control may be very important when people commute such that commuters certainly want to arrive their final destination on time and safe as they have planned. We hypothesize that;
Hypothesis 2: Perceived behavioral control is positively related to behavioral intention among taxi service customers.

2.3 The joint effect of the availability of choice and perceived behavioral control on behavioral intention

It requires more heuristics when we have many choices, especially when we have low perceived behavioral control over those many choices. Too many choices with unknown outcomes for each choice can be very frustrating for any decision making and it is analogous to too many vague options to be chosen. On the contrary, too many choices with too many pieces of information for each choice can make us feel out of control due to overwhelming information overload [8]. With higher perceived behavioral control, availability of choice may not intervene our decision making such that we certainly know the expected outcome for each choice we chose and thus make our decision making not too difficult. However, if we have low perceived behavioral control, then it is easier to decide with fewer choices rather than with too many choices. Literally, it is easier for us to choose fewer choices than too many choices with an unknown outcome. The availability of choice may moderate the relationship between perceived behavioral control and behavioral intention. Hence, we hypothesize that;

Hypothesis 3: Taxi service customers with lower perceived behavioral control may have higher behavioral intention when they have lower availability of choice.

2.4 The moderating effect of gender on the relationship between perceived behavioral control and behavioral intention

Previous meta-analyses [3-4] found the varying correlations between perceived behavioral control and behavioral intention, especially condom use behavior among male and female [10-13]. Gender differences may moderate on the relationship between perceived behavioral control and behavioral intention. Female may concern with safety more than men for their own choice of public transportation, especially when they have to commute alone. If both male and female have lower perceived behavioral control, their behavioral intention should be the same. However, it is safer for male to commute alone than female, and thus male tends to have higher behavioral intention than female when both of them have higher perceived behavioral control. We thus hypothesize that;

Hypothesis 4: Female taxi service customers may have lower behavioral intention than male when they have higher perceived behavioral control.

3 Research Methods

3.1 Sample

Taxi service customers in Bangkok were recruited into this study through several website with self-reported questionnaire. Only customers who regularly use taxi service more than two times per weeks are included in this current study. The final sample in this study includes 495 peoples (male = 200 & female = 295).

3.2 Measurement

Three scales administered to samples are described as follows;

The perceived behavioral control (PBC) was measured with four items adapted from the theory of planned behavior [1-2]. Cronbach's alpha coefficient is .81.

The availability of choice (AVC) defined as the availability of the other mode of transportation, was self-constructed with five items rating scale. Cronbach's alpha coefficient is .82.

The behavioral intention (BI) was measured with four items adapted from the theory of planned behavior [1]. Cronbach's alpha coefficient is .93.

Cronbach's alpha coefficients show satisfactory internal consistency reliability. Exploratory factor analyses (using Maximum likelihood estimation with Varimax rotation) of availability of choice, perceived behavioral control, and behavioral intention measures yield single factor for each scale as shown in Table 1.

Table 1. Exploratory factor analysis results for three scales used in this current study.

			Factor loading
PBC	1	I expect that I will use taxi service nearly	.78
	2	I can plan by myself to use taxi service	.71
	3	I confident that I will use taxi service	.77
	4	I can choose taxi driver that I want to use	.61
AVC	1	I have a choice to choose another public transportation besides taxi such as public bus or public van	.78
	2	I have a choice to use subway or sky-train rather than taxi	.96
	3	I have a choice to choose another non-public transportation besides taxi such as bike or motor-bike	.61
	4	I can drive rather than taxi	.44
	5	I have another choice to transport besides taxi	.72
INT	1	I intend to use taxi in a future	.89
	2	I am going to use taxi meter again,	.83
	3	I want to use taxi again, and	.89
	4	I desire to use taxi meter in the future	.94

3.3 Analytics Strategies

The moderator variable affects direction and/or level of the relationship between an independent and a dependent variable [14]. There are several statistical methods used to test for moderating effect and one of the most widely used methods is hierarchical regression analysis. The moderating effect can be represented as a multiplicative (product/interaction) term and if the product term or interaction effect is statistically significant then two-ways interaction plot is usually used to probe and explain how moderator variables actually moderate the relationship between independent and dependent variable. Predictors are entered sequentially in hierarchical regression analysis. For example, control variables are entered in block 1, independent variables and moderator variables are entered in block 2, and the product terms are entered in block 3. We can evaluate the goodness of fit of the model for each block and we can test for model fit difference using ΔR^2 . If ΔR^2 between models with/without block 3 is statistically significant, then the moderating effect is statistically significant. Hence, the moderator effect is found as we have hypothesized.

We use the mean-centering for perceived behavioral control and availability of choice to alleviate multicollinearity problem among predictors in hierarchical linear regression analysis [15-16]. We coded male as zero as reference category for gender. Descriptive statistics are shown in Table 1. The main and interaction effects were entered into Block 1 and 2, respectively. $PBC \times AVC$, $PBC \times Gender$, and both $PBC \times AVC$ and $PBC \times Gender$ were entered in block 2 of model 1, 2, and 3, respectively.

4 Results

A simple correlation between availability of choice and behavioral intention is positive ($r = .21, p < .001$). However, the standardized regression coefficient of availability of choice predicting behavioral intention in model 3 is negative ($B = -0.09$; $se(B) = 0.03$; $\beta = -0.11$) as hypothesized in Hypothesis 1 after the effect of perceived behavioral control have been controlled. This finding clearly shows that the availability of choice actually has the negative relationship with behavioral intention. It is harder for customers to make a decision to buy or to use services with too many choices.

Perceived behavioral control positively correlates with behavioral intention as hypothesized in Hypothesis 2 ($B = 1.02$; $se(B) = 0.06$; $\beta = 0.93$).

An interaction effect between perceived behavioral control and availability of choice in Model 1 is statistically significant ($\Delta R^2 = 0.02$; $F_{(1, 495)} = 13.07$; $p < 0.001$) as hypothesized in Hypothesis 3. Moreover, an interaction effect between availability of choice and gender in Model 2 is statistically significant ($\Delta R^2 = 0.02$; $F_{(1, 495)} = 8.23$; $p < 0.001$) as hypothesized in Hypothesis 4.

Table 2. Descriptive statistics and intercorrelations among variables

Variables	M	SD	1	2	3	4	5	6
1 PBC	0.00	2.78	.81					
2 AVC	0.00	3.66	.52	.82				
3 PBC $\times$ AVC	5.32	19.75	-.55	-.59	-			
4 PBC $\times$ Gender	0.02	1.95	.70	.23	-.23	-		
5 AVC $\times$ Gender	0.17	2.48	.25	.68	-.26	.35	-	
6 BI	0.00	3.06	.60	.21	-.17	.38	.07	.93

Table 3. Hierarchical regression analysis results

Block	Variables	Model 1			Model 2			Model 3		
		<i>B</i>	<i>se(B)</i>	β	<i>B</i>	<i>se(B)</i>	β	<i>B</i>	<i>se(B)</i>	β
1	(Constant)	0.27	0.17		0.41	0.17		0.24	0.17	
	Gender	-0.67	0.22	-0.11*	-0.70	0.22	-0.11*	-0.66	0.21	-0.10*
	PBC	0.84	0.05	0.76*	0.87	0.06	0.79*	1.02	0.06	0.93*
	AVC	-0.09	0.03	-0.10*	-0.14	0.03	-0.17*	-0.09	0.03	-0.11*
2	PBC $\times$ AVC	0.03	0.01	0.16*				0.03	0.01	0.21*
	PBC $\times$ Gender				-0.22	0.08	-0.14*	-0.31	0.08	-0.19*
	R^2_{Block1}		0.41			0.41			0.41	
	R^2_{Block2}		0.43			0.43			0.45	
	ΔR^2		0.02*			0.02*			0.04*	
	R^2_{Model}		0.43			0.43			0.45	
	<i>F</i> ; (<i>df</i> 1, <i>df</i> 2)		13.07*; (1, 495)			8.23*; (1, 495)			14.85* (2, 494)	

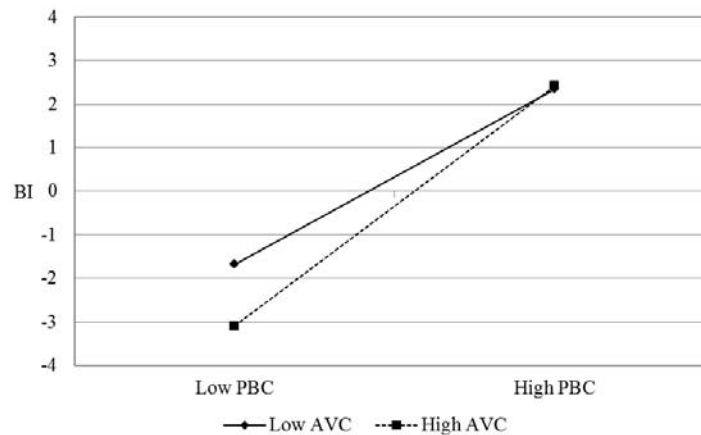


Fig. 1. Interaction Effect between PBC $\times$ AVC on BI

The interaction plots of the effect between perceived behavioral control and availability of choice is shown in Figure 1, where we can clearly see that people with higher level of perceived behavioral control have higher behavioral intention regardless of their availability of choice. However, customers with lower perceived behavioral control have even lower behavioral intention if they have higher availability of choice. This interaction plot clearly shows that too many choices can be even worse if customers do not possess the

sense of control. Thus, the availability of choice moderates the relationship between perceived behavioral control and behavioral intention among taxi service customers.

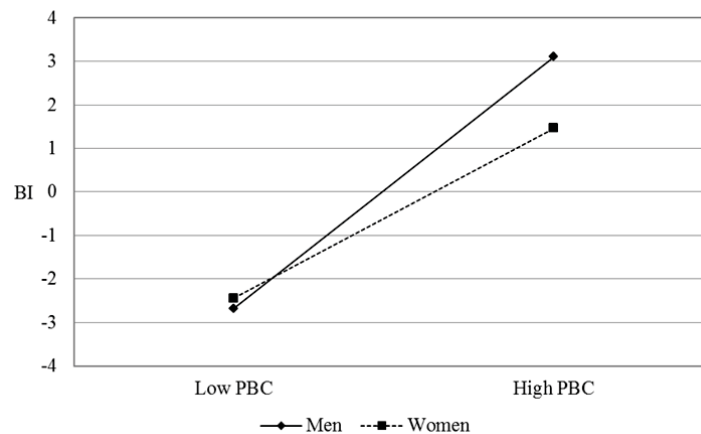


Fig. 2. Interaction Effect between PBC × Gender on BI

In Figure 2, customers with higher level of perceived behavioral control tend to have higher behavioral intention. Moreover, male customers with higher level of perceived behavioral control also have even higher level of behavioral intention than female. There is a gender difference for behavioral intention among customer with low level of perceived behavioral control. With the strong sense of control, male taxi customers tend to exhibit even higher level of behavioral intention than female. Therefore, gender moderates the relationship between perceived behavioral control and behavioral intention.

5 Discussion

The effect of perceived behavioral control on behavioral intention may be more important than the availability of choice. It is not important how many choices we have but how well we feel controlled over those choices. Too many choices results in lower behavioral intention when we have lower perceived behavioral control. Male samples with higher perceived behavioral control also show higher behavioral intention than female since male can commute alone easier than female due to safety reason. Service providers should focus more on improving customers' sense of control and eradicating too many choices to boost up behavioral intention.

The present research aimed to understand the joint effects on behavioral intention. The joint effects between perceived behavioral control and availability of choice on behavioral intention had shown in Figure 1 and perceived behavioral control and gender on behavioral intention had shown in Figure 2. The higher level of perceived behavioral control leads to the higher level of behavioral intention according to the theory of planned behavioral [1-2] and previous research [3-6]. Availability of choice has a negative impact of customer behavioral intention in our current study especially when customers have lower level of perceived behavioral control. Some previous research has found the too many choices can decrease level of subjective knowledge [8] or too many choices can even be a demotivating factor [7]. When customers have high level of perceived behavioral control, the availability of choice does not matter at all. On the contrary, too many choices can make behavioral intention even lower when customers do not possess sufficient perceived behavioral control.

We found the gender difference on the relationship between perceived behavioral control and behavioral intention such that men with high level of perceived behavioral control have higher behavioral intention than female with same high level of perceived behavioral control. This finding in our current study is consistent with several previous researches [10-13] that have found the varying correlations between perceived behavioral control and intention to use condom among male and female. For taxi service, female probably concerns on safety more than male. It also tends to be safer for male to use taxi service alone rather than female. As such, male taxi customers exhibit higher level of behavioral intention when they possess the same high level of perceived behavioral control (as female). It is found that fear and negative emotion lead to lower behavioral intention as well as poor coping [17-18]. It is possible that female taxi service customers may have higher level of fear and negative emotion while they use taxi service along. Future research should probe the effect of fear and negative emotion on behavioral intention, especially among female customer so that we can truly understand why gender moderates the relationship between perceived behavioral control and behavioral intention.

We have found that the effect of perceived behavioral control is evident and therefore service provider should design their own service to boost up their customers' perceived behavioral control. Besides, providing too many choices for customers can be even detrimental. Service providers should be certain that their customers have sufficient level of feeling control before providing more choices. There are several strategies to increase customer's level of perceived behavioral control such as 1) providing female taxi drivers for female taxi customers, 2) developing taxi reservation systems on mobile application where customer can choose their own routes and driver, 3) allowing customer to check driver history and complain online directly, 4) offering a training program for drivers such that they can deliver a good service and make customer feel comfortable.

The joint effect of the availability of choice and perceived behavioral control on behavioral intention should be investigated in another setting to ensure external validity of this current research finding. Health care service is one vivid example where customers tend to have lower level of perceived behavioral control (since customers tends to have very limited medical knowledge) and many availability of choice.

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