A STUDY OF THAI CONSUMER BEHAVIOR TOWARDS ALTERNATIVE TAXI SERVICES

BY

MR. PATOMPAT KAMTAR

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE PROGRAM IN MARKETING
(INTERNATIONAL PROGRAM)
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ENTITLED

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ABSTRACT

A study of Thai consumer behavior towards alternative taxi services is a part of contemporary topic in applied marketing which focuses on society and technology. This study aims to sum up the behavior, attitudes, and needs of the consumers towards the alternative taxi services in Thailand.

The main purpose of this study is to study Thai consumer behavior towards alternative taxi services, paralleling with determined behavior and attitudes of the consumer after alternative taxi services companies launched promotions and to identify importance factors that Thai consumer needed or required in the service.

The study was conducted through both the exploratory and descriptive researches. For exploratory research, secondary researches and in-depth interviews are method chosen. The secondary researches were used for literature reviews; whilst, the in-depth interviews were used for finding consumer insights. Online questionnaire was used to quantify and evaluate behaviors and insights of consumer for the part of descriptive research. Two hundred and seventy-two qualified respondents participate in this study.

The results from in-depth interviews were classified into two main categories: the insights and feedbacks. This information, in turn, was use to the basis of questionnaire design stage where it could be quantified at the larger scale. The descriptive and factor analysis through SPSS program was the main method chosen for this study.

In summary, the result of the study would help the alternative taxi service companies in understanding the consumers better and, in the end, able to develop a better tools and application that suit the market. Consequently, these companies would be able to improve the service in the future to gain new and retain existing customers.

Keywords: Alternative taxi services, Ride-sharing, Uber, Grab, Grabcar, Taxi, Thailand.

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CHAPTER 1
INTRODUCTION

1.1 Introduction to the study

In Thailand, taxis are one of the most popular modes of public transportation because of their convenience. Taxis are one of the most dominant modes of transportation in metropolitan areas of Thailand, such as Bangkok. Of all the approximate 120,000 registered taxis in Thailand, more than 108,000 taxis or almost 97% provide services in Bangkok (Modernine TV, 2013).

Taxis are more convenient than other types of public transportation. In addition, the cost of using taxi services in Thailand is competitive, relative to the cost of living in Thailand or the cost of using a personal car. Taxis can also be a good choice for people wishing to go to places where they are unfamiliar with the route or places where parking space is limited. Taxis are also a great choice for people who are intoxicated and unable to drive. According to the research, 93% of people in Bangkok have used taxi services (ABAC Poll, 2005).

However, passengers encounter many problems when using taxi services in Thailand. Between October 2015 and May 2016, 29,793 complaints was reported on The Department of Land Transport's Hotline 1584. The top five complaints include taxi drivers refusing to take passengers, being rude, driving in a reckless manner, refusing to turn on the meter and failing to deliver passengers to the agreed destination (Post Today, 2016). These are some of the most common problems faced by people who regularly use taxi services.

In addition to the above problems, many passengers, especially women, are concerned about the safety of using taxi services. This is because taxi-related crimes often make front-page news and occur on a regular basis. Due to this safety concern, it is normal for passengers in Thailand to notify their friends or family members of the identity of the taxis and taxi drivers when they use taxi services alone.

In recent years, Thailand has seen an exponential growth in the ownership and use of smartphones, as well as an increase in the number of mobile application users

on both iOS and Android operating systems. Many mobile applications that offer alternative taxi services, such as Uber and Grab, have been introduced. As a result, an increasing number of people in Thailand are using the mobile applications that offer alternative taxi services, rather than the traditional taxis because these mobile applications provide comfort, security and are easy to use.

The aforementioned mobile applications offer alternative taxi services through the ride-sharing concept. The concept of these applications is when passengers submit trip requests from their smartphones, the requests are sent to the nearest driver, who uses his/her own car. The car will then pick up the passengers at the location they entered on their smartphones. When the passengers reach their destinations, they can rate the service of the driver. A receipt will then be automatically sent to their emails.

Based on a research conducted by Rayle, it was found that if Uber was not available, around 8% of people would not have taken the trip, although there are other available modes of transportation (Rayle,et al., 2014).

With the population of nearly 10 million people, Bangkok is one of the most significant markets, for not only domestic investors but also foreign investors. One of the key success factors for providers of alternative taxi services is consumer satisfaction. The higher the level of consumer satisfaction, the more profit a company can earn.

This study of Thai consumer behavior towards alternative taxi services is a contemporary topic in applied marketing and relates to the theme of society and technology. This study aims to describe the characteristics, behaviors, attitudes and insights of the consumers of alternative taxi services in Thailand.

1.2 Problem Statement

This study aims to answer the following questions:

1. What are Thai consumer behaviors toward alternative taxi services and traditional taxis?
2. What effects does a company's promotions have on consumer behaviors and attitudes?
3. What are the consumers' needs for alternative taxi services?

1.3 Research objective

This study will specifically focus on ride-sharing companies, where drivers use their private cars to provide taxi services. In this case, only Uber and Grab will be studied and will be referred to as “alternative taxi services”. The following are the objectives of this study:

1. To study Thai consumer behaviors toward alternative taxi services
2. To determine the effects of promotions on consumer behaviors and attitudes
3. To identify the consumers’ needs for alternative taxi services

CHAPTER 2
REVIEW OF LITERATURE

The review of literature that is relevant to this study focuses on the benefits that Uber and Grab provide to its passengers. The articles that relates to the area of interest in this study are summarized as follows:

Uber is a transportation network company that develops a mobile application program that connects passengers with car drivers for ride-sharing services. Uber was established by Travis Kalanick and Garrett M. Camp in March 2009. Its headquarters is based in San Francisco. Uber currently has a network of more than 1 million drivers worldwide, who provide hundreds of millions of rides everyday. Uber's services are available in 311 cities and 58 countries around the world (Kalanick, 2015).

Grab is another leading transportation network company that develops ride-sharing platform. Grab has the largest fleet of vehicles in Southeast Asia, a sub-region that is home to more than 620 million people. Grab began as a taxi-hailing app in 2012. It was founded by Anthony Tan and Tan Hooi Ling. In Thailand, Grab has extended its offerings to include private car services (Grabcar), motorcycle taxi services (Grabbike) and social carpooling services (Grabhitch). Grabcar, a direct competitor of Uber, offers upfront pricing, allowing the passenger to know the total fare before making a booking (Grab, n.d.).

Based on the research conducted by DI-MARKETING (2016), Grabtaxi is the most well known brand of alternative taxi service provider in Thailand, claiming 67% of the market share. In Thailand, the top 4 alternative taxi service providers are Grabtaxi (67%), Grabbike (13%), UberX (9%) and Grabcar (9%). The research conducted by DI_MARKETING also found that 79% of the respondents use Grab or Uber services at least once per month, and more than half responded that they normally spend $7.5 – $10 per ride. Although some passengers are unhappy with services of Grab and Uber due to reasons such as careless drivers, complicated booking processes and concerns over the security of personal information, 43% of the respondents still use Grab or Uber services because of the frequent promotions.

With over 60,000 drivers who are part of the network, 3 million application downloads and over 500,000 monthly active users, Grab is not an ordinary start-up company in Southeast Asia. The key success factors of this company is not only its ability to provide and maintain high quality services (in order to spread positive word of mouth), but also the significant marketing efforts Grab has invested in, to encourage passengers to use its service. Grab also takes full responsibility for any problem that arises. Moreover, Grab also takes great care of their drivers, who make businesses happen every day (Su, 2015).

Alternative taxi services are provided through mobile-based transportation applications. According to one research finding, not only those who have downloaded the applications onto their smartphones have used alternative taxi service, those who have not downloaded the applications onto their smartphones have also used these services as well. People prefer alternative taxi services to traditional taxis, because of the convenience, safety, better service and fair pricing. Convenience is the top priority for those using transportation services (Dalupiri, Ducusin, & Ramos, 2015).

In Thailand, people use taxis at an average of three to five times a week. However, the taxi market is unable to meet consumers' expectation. From the research conducted by Ackaradejruangsri (2015), Thai passengers cited promptness, certainty, safety and comfort of rides to be the most influencing factors behind their decision in choosing the mode of transportation.

According to Charoen (2015), the success of Grabtaxi comes from the perceived ease of use of the application, perceived usefulness among customers through the features provided and perceived quality and safety of using the services. Furthermore, Grabtaxi also provides many payment options for the passengers. Nonetheless, Grabtaxi is facing many problems, including technical problems and promotional problems. Many customers have reported system failure and location service failure in the application. In terms of promotional problems, many customers only use Grabtaxi when a free ride or a discount is offered.

The knowledge from the literature reviews can be used as a guideline for collecting further data for both qualitative and quantitative research. From the literature reviews, the following conclusions can be drawn for alternative taxi services. There are main two alternative taxi service providers in Thailand, Uber and

Grab. Grab provides a higher variety of services and also has a bigger market share than Uber. However, specifically for personal car services, Grabcar from Grab and UberX from Uber have an equal market share in Thailand.

A majority of people uses alternative taxi services at least once per month. The reasons people use the service often are because of the convenience (including the ease of using the application), safety, better service and fair pricing. However, the platform also poses technical problems, including system failure and location service failure in the application. Moreover, another main problem is related to the promotion of the company. Since alternative taxi service providers continues to launch different promotions, many customers would wait and only use the services when a free ride or a discount is offered.

CHAPTER 3
RESEARCH METHODOLOGY

Both exploratory research and descriptive research was conducted as part of the study, in order to meet all of the research objectives. Exploratory research was conducted, followed by descriptive research. The respondents in this study are people who have used alternative taxi services in Thailand during the past month.

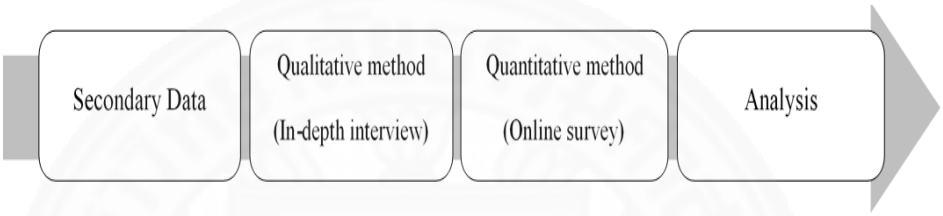

Figure 3.1: Research Processes

3.1 Exploratory Research Methodology

3.1.1 Secondary Research

3.1.1.1Objective

Secondary research was conducted to obtain primary information on alternative taxi services in Thailand and the global market.

3.1.1.2 Activity

Online published journals and articles were gathered as sources of secondary research. The key research topic was alternative taxi services from the perspectives of the consumers, both in Thailand and the global market. The findings from secondary research can be found in the introduction and literature review sections of this report.

3.1.2 In-Depth Interview

3.1.2.1 Objective

In-depth interviews were conducted for the purpose of i) exploring Thai consumer behavior toward alternative taxi services, ii) determining the effects of

promotion on consumer behavior and iii) identifying factors that Thai consumers look for in alternative taxi services. The findings from the in-depth interviews were then used to design the questionnaire.

3.1.2.2 Activity

In-depth interviews were conducted between 14th-18th November 2016 and 1st-2nd December 2016. The target respondents for the in-depth interviews are people who live in Bangkok and its vicinity, that have used alternative taxi services in Thailand during the past month. A total of 15 people were interviewed. Out of 15 interviewees, 8 are male, aged between 24 – 29 and 7 are female, aged between 22 – 28.

3.2 Descriptive Research Methodology

Once the data from the qualitative research has been gathered, quantitative research was conducted in a form of a questionnaire. The responses from the questionnaire were then used to quantify and evaluate the behaviors, attitudes and needs of consumers. The online questionnaire was created using Google Form. Convenience sampling method was employed, by sending links to the questionnaire to the respondents. The target sample size for the survey is 250 respondents. The target respondents for the questionnaire are people who live in Bangkok and its vicinity, that have used alternative taxi services in Thailand during the past month.

3.3 Identification of key research variables

The key variables of this study are as follows;

1. Independent variables include reason of use, promotions and demographic characteristics, such as gender, age, income and etc.
2. Dependent variables include behaviors, attitudes and needs of consumers.

Table 3.1: Research variables in quantitative analysis

Variables	**Research Variables**
Independent	Reason of use, Promotions and Demographic characteristics, such as gender, age, income and etc.
Dependent	Behaviors, Attitudes and Needs of consumers

3.4 Sampling procedure

Both qualitative and quantitative researches employed convenience sampling method, in order to gather sufficient data within a limited timeframe.

3.4.1 Sample size

- The sample size for the in-depth interviews was 15 people, aged between 22 – 29 years old. The data collection period was November and December 2016.
- The sample size for the questionnaires was 272 people, aged 18 years old or higher. The data collection period was January – February 2017.

3.4.2 Survey acquisition and recruiting plan

- For the in-depth interviews, all respondents were recruited using the researcher's personal contacts. All respondents had to pass a series of screening questions to be identified as "target respondents"
- For the surveys, the questionnaire was distributed to the respondents through online channels. The online questionnaire was created using Google Form and then distributed to respondents that meet the criteria of being target respondents, using the researcher's personal contacts in universities, families and work places.

3.5 Data Collection

3.5.1 Secondary research

Secondary research: Secondary data on Uber, Grab and traditional taxis was collected from published journals and articles from different countries. The information was collected to gain a better understanding of the similarities and/or differences in the factors that could impact the consumers in each country, focusing only on the information from the perspective of the consumers.

3.5.2 In-depth interviews

In-depth interviews: In-depth interviews were conducted to gain a better understanding of the hidden behaviors, attitudes and needs of the respondents. Convenience sampling method was employed and the in-depth interviews were carried out through face-to-face interviews. A total of 13 in-depth interview sessions with 15 respondents were conducted between 14-18 November and 1-2 December 2016.

3.5.3 Surveys

The online questionnaire was distributed to respondents through online channels. The questionnaire was distributed to respondents using the researcher's personal contacts, as well as through social network channels. The target sample size for the survey is 250 respondents. The target respondents for the survey are identified as people who live in Bangkok and its vicinity, that have used alternative taxi services in Thailand during the past month. The length of time each respondent required to finish the questionnaire is approximately 5 minutes. The questionnaire was divided into 4 parts, as follows:

Part 1: Screening Questions

Part 2: General Consumer Behavior

Part 3: Consumer Attitude

Part 4: Demographic

3.6 Data Analysis

The analysis plan of this study is as follows:

3.6.1 Qualitative data analysis

In-depth interviews: The results can be separated to two main categories, as follows;

1. Insight: This includes consumer behaviors and attitudes toward alternative taxi services as compared to traditional taxis (Objective 1), consumer behaviors and attitudes towards promotions (Objective 2) and consumer expectations toward alternative taxi services (Objective 3).
2. Feedback: This includes service complaints/problems and improvements or suggestions to the company (Objective 3).

3.6.2 Quantitative data analysis

The data gathering was analyzed using Statistical Package for the Social Science Program (SPSS). As for the data analysis, the researcher focused on the following;

1. Descriptive analysis: Used to generate and analyze results such as frequency, percentage, mean, and standard deviation of data.
2. Factor analysis: Used to group similar variables into dimensions.
3. Cluster analysis: Used to group similar people into segments.
4. One-way ANOVA and Pearson Chi-Square: Used to compare the results among different segments.

CHAPTER 4
RESULTS AND DISCUSSION

4.1 Data analysis

This study used both in-depth interviews and surveys to collect qualitative and quantitative data. The results from the in-depth interviews were then used to identify key attributes for the use of alternative taxi service. These could be separated into two main categories, which are insight and feedback. The results from the in-depth interviews were then used to design the questionnaire. The main functions of SPSS that were used to analyze the data obtained from the questionnaire include descriptive analysis, factor analysis, cluster analysis, one-way ANOVA and Pearson Chi-Square.

4.2 Results from exploratory research

4.2.1 In-depth interview result

The in-depth interviews were conducted on 14th-18th November 2016. The objective was to study Thai consumer behavior, to determine the effects of promotion towards consumer behavior and to identify factors that Thai consumers look for in alternative taxi services, before designing the questionnaire. Out of 15 interviewees, 8 interviewees (i.e., 3 males and 5 females) have used alternative taxi services within the past month.

The results from in-depth interviews are:

<u>Insights</u>

1. Interviewees are aware of only two alternative taxi service providers; Uber and Grab.
2. On average, 27% of the interviewees used alternative taxi services only once or less than once per month, while 53% of the interviewees used alternative taxi services 2 – 5 times per month and 20% of the interviewees used alternative taxi services more than 5 times per month.

3. All interviewees are more satisfied with the overall services (such as car quality, politeness of drivers, lower fares and etc.) of alternative taxi services, compared to traditional taxis.
4. All interviewees think that the mobile applications and the services are easy to use.
5. When the interviewees were asked to identify 3 factors they view as the most important, the results are as follows:
    1. Promotion 80%
    2. Car quality/cleanliness 53%
    3. Convenience and ease 47%
    4. Safety 40%
    5. Price (cheap/know the cost of ride upfront) 40%
    6. Politeness of driver 20%
    7. Others 20%
6. All interviewees have used the promotions and 80% responded that they would only use the service if the company launches a promotional campaign (such as a free ride or discount). When the interviewees were asked about the promotions they have used or remembered using, the consumers appear to only remember the price discounts campaigns (of between 50-150 baht).
7. 73% of the interviewees view that alternative taxi services are cheaper than traditional taxis, while 20% of the interviewees view that alternative taxi services are more expensive than traditional taxis and 7% of the interviewees view that they cost roughly the same.
8. 47% of the interviewees view that the mobile applications are reliable and also provide information before and during the ride. The interviewees also pointed out that Grabcar offers upfront pricing, while Uber only provides fare estimates.
9. Five of the seven female interviewees would always use alternative taxi services, instead of traditional taxis, because it is safer.
10. When the interviewees were asked to provide 3 wordings they associate with alternative taxi services, the top 5 wordings that were provided from the in-depth interviews are as follows:

1. Ride-sharing
2. Convenience/Ease
3. Application
4. Safety
5. Promotion

Feedbacks

1. 67% of the interviewees view that the estimate arrival time shown on the application interface is unreliable, while 20% view that the map on the mobile application is sometimes inaccurate. They believe that they would be more satisfied if companies can make these more accurate.
2. 47% of the interviewees view that the number of cars that are part of the network are not enough, while 33% of the interviewees responded that they prefer to use traditional taxis because they have to wait longer for alternative taxi services because there are not enough cars.
3. 40% of interviewees responded that it appears that the drivers often do not use the map on the mobile application. This is because the passengers usually provide a specific pinned location on the mobile interface, but the drivers still do not know where the passengers are waiting.
4. 40% of the interviewees responded that they face technical problems when using the mobile applications.

4.3 Results from descriptive research: survey

4.3.1 Summary of respondent profile

The data collected from the online survey was analyzed using Statistic Package for Social Sciences (SPSS). From a total of 272 respondents, 65% are female, 74% are between 18-30 years old, 53% has a master's degree as their highest education level, 35% has a personal income of less than 25,000 baht per month and 58% owns a car.

Approximately 74% of the respondents are Uber or Grabcar fans (i.e., those who mainly use Uber or Grabcar when using alternative taxi services), 5% of the respondents are Non Uber or Grabcar fans (i.e., those who do not mainly use Uber or

Grabcar when using alternative taxi services) and 21% were non-users (i.e., those who did not use alternative taxi services during the past month) *(See table 4.1)*.

Table 4.1: Summary of respondent profile (n = 272)

Respondents' Profile		**Uber or Grabcar fan *(n = 201)***		**Non Uber or Grabcar fan *(n = 13)***		**Non-user *(n = 58)***	
		n	**%**	**n**	**%**	**n**	**%**
Gender	Male	66	33%	5	61%	24	41%
	Female	135	67%	8	39%	34	59%
Ages	18-30 years old	153	75%	6	46%	41	71%
	31-40 years old	40	20%	7	54%	12	21%
	41-50 years old	5	3%	0	0%	5	8%
	More than 50 years old	3	2%	0	0%	0	0%
Education	Bachelor's degree	102	51%	6	46%	20	35%
	Master's degree	99	49%	7	54%	38	65%
Personal income	Less than 25,000 baht	66	33%	9	69%	19	33%
	25,000 – 35,000 baht	58	29%	4	31%	12	21%
	35,001 – 45,000 baht	21	10%	0	0%	5	9%
	45,001 – 65,000 baht	26	13%	0	0%	14	25%
	65,001 – 85,000 baht	6	3%	0	0%	2	3%
	85,001 – 100,000 baht	8	4%	0	0%	2	3%
	100,001 – 150,000 baht	12	6%	0	0%	2	3%
	More than 150,000 baht	4	2%	0	0%	2	3%

4.3.2 Factor analysis on reasons to use alternative taxi services

The factor analysis was used to classify the 15 reasons why respondents who were Uber or Grabcar fans (n = 201) use alternative taxi services into 4 factors, in order to explain 52% of original factors. The Kaiser-Meyer-Olkin score is 0.694 and it is significantly different using Bartlett's Test of Sphericity. Table 4.2 shows the reasons why respondents use alternative taxi service for each factor. The first factor is "Quality", which represents 4 original factors, with factor loadings ranging from 0.47 to 0.83. The second factor is "Price", which represents 3 original factors, with factor loadings ranging from 0.59 to 0.78. The third factor is "Reliability", which represents 3 original factors, with factor loadings ranging from 0.49 to 0.74. The last factor is

"Convenience", which represents 5 original factors, with factor loadings ranging from 0.31 to 0.76.

Table 4.2: Results of Factor Analysis of factors for using alternative taxi service

Factor	Factor to use	Factor Loading
Quality	Friendliness and politeness of driver	0.829
	Car cleanliness	0.657
	Safety	0.543
	Ease of payment	0.474
Price	Free or discount promotion	0.781
	Upfront pricing / fare estimates	0.758
	Reasonable price	0.588
Reliability	No other public transportation option	0.739
	Could track an item that left in a vehicle	0.652
	Certainty in getting a ride	0.492
Convenience	Availability in every area	0.756
	Short waiting time	0.625
	Ease in finding a ride	0.533
	Do not need to park	0.412
	Could pre-book a time for pick up	0.311

4.3.3 Segmentation

Based on the above 4 factors from the factor analysis, 201 respondents who were Uber or Grabcar fans were further divided by Two-Step Cluster method, using Schwarz's Bayesian Criterion (BIC) into 5 homogenous segments, as follows:

(1) Unexpected users (n = 49, 24% of total respondents)

This group of people does not value quality, price, reliability or convenience, when compared to other groups.

(2) Taxi substitute users (n = 19, 10% of total respondents)

This group of people values reliability, but not convenience, when compared to other groups.

(3) Convenience seekers (n = 40, 20% of total respondents)

This group of people values convenience, but not quality, when compared to other groups.

(4) Price sensitive users (n = 46, 23% of total respondents)

This group of people only values the price factor, but not quality, reliability or convenience, when compared to other groups.

(5) Service Quality seekers (n = 47, 23% of total respondents)

This group of people values service quality, but not other factors.

Figure 4.3: Results of Cluster analysis based on factors of reasons to use alternative taxi service by using Two-Step Cluster method

For all 4 factors, a one-way ANOVA was conducted to compare the 5 groups. It was found that there is a significant difference between the groups at 95% confident interval (p-value < 0.05) *(See table 4.4)*.

Table 4.4: Results of One-way ANOVA for factors of reasons to use alternative taxi service between Five Clusters

Factors		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Quality	Between Groups	154.781	4	38.695	88.039	0.000
	Within Groups	86.147	196	0.44		
	Total	240.927	200			
Price	Between Groups	99.488	4	24.872	46.917	0.000
	Within Groups	103.906	196	0.53		
	Total	203.395	200			

Factors		Sum of Squares	df	Mean Square	F	Sig.
Reliable	Between Groups	109.204	4	27.301	41.028	0.000
	Within Groups	130.422	196	0.665		
	Total	239.627	200			
Convenience	Between Groups	171.944	4	42.986	106.769	0.000
	Within Groups	78.911	196	0.403		
	Total	250.855	200			

4.3.4 Segmentation Profile

The 201 respondents were divided into 5 different segments, namely Unexpected users (n = 49), Taxi substitute users (n = 19), Convenience seekers (n = 40), Price sensitive users (n = 46) and Service Quality seekers (n = 47).

Each segment was analyzed in terms of demographic characteristics, including gender, age range, education level, monthly income, car ownership and main choice of transportation. Demographic characteristics between each segment are significantly different, as the Pearson Chi-square tests scores are significant at 95% confident interval (p-value < 0.05).

For all segments, a majority of the respondents are female. However, convenience seekers segment has the highest percentage of males, making up 43% of the segment. For all segments, more than 50% of the respondents are aged between 18 - 30 years old. A majority of Unexpected users, Taxi substitute user and Service Quality seeker segments have master's degree education, while most of Convenience seekers and Price sensitive users segments have bachelor's degree education. A majority of Taxi substitute users segment has less than 25,000 baht of monthly income, and is the only group where most of the respondents do not own a private car *(See table 4.5)*.

Table 4.5: Frequency, Percentage, and Results of Pearson Chi-square for Demographic of Five Clusters

Demographic		Unexpected users		Taxi substitute user		Convenience seeker		Price sensitive user		Service Quality seeker		χ^2	p-value
		n	%	n	%	n	%	n	%	n	%		
Gender	Female	33	67%	19	100%	23	58%	29	63%	31	66%	11.369	0.023
	Male	16	33%	0	0%	17	43%	17	37%	16	34%		
Age	18-30 years	31	63%	19	100%	32	80%	38	83%	33	70%	35.105	0.000
	31-40 years	18	37%	0	0%	5	13%	5	11%	12	26%		
	41-50 years	0	0%	0	0%	3	8%	0	0%	2	4%		
	more than 50 years	0	0%	0	0%	0	0%	3	7%	0	0%		
Education	Bachelor	15	31%	7	37%	29	73%	30	65%	21	45%	21.536	0.000
	Master	34	69%	12	63%	11	28%	16	35%	26	55%		
Income	Less than 25,000	11	22%	16	84%	6	15%	16	35%	17	36%	82.501	0.000
	25,000-35,000	22	45%	2	11%	14	35%	14	30%	6	13%		
	35,001-45,000	4	8%	0	0%	5	13%	10	22%	2	4%		
	45,001-65,000	4	8%	0	0%	4	10%	6	13%	12	26%		
	65,001-85,000	4	8%	0	0%	2	5%	0	0%	0	0%		
	85,001-100,000	2	4%	0	0%	4	10%	0	0%	2	4%		
	100,001-150,000	0	0%	1	5%	5	13%	0	0%	6	13%		
	More than 150,000	2	4%	0	0%	0	0%	0	0%	2	4%		
Car own	Yes	35	71%	1	5%	25	63%	24	52%	29	62%	26.218	0.000
	No	14	29%	18	95%	15	38%	22	48%	18	38%		

Demographic		Unexpected users		Taxi substitute user		Convenience seeker		Price sensitive user		Service Quality seeker		χ^2	p-value
		n	%	n	%	n	%	n	%	n	%		
Transportation	BTS	9	18%	1	5%	6	15%	16	35%	8	17%	113.516	0.000
	MRT	2	4%	10	53%	2	5%	5	11%	2	4%		
	Private Car	27	55%	0	0%	19	48%	12	26%	24	51%		
	Taxi	3	6%	0	0%	4	10%	0	0%	2	4%		
	Uber or Grab	2	4%	8	42%	0	0%	5	11%	4	9%		
	Bus	4	8%	0	0%	3	8%	6	13%	2	4%		
	Motorbike	0	0%	0	0%	2	5%	2	4%	2	4%		
	Van	2	4%	0	0%	2	5%	0	0%	2	4%		
	Walk	0	0%	0	0%	2	5%	0	0%	0	0%		

4.3.5 Alternative taxi services using behavior

From the Pearson Chi-square tests, p-value of frequency of services used per week and average pay for the services per week are at 0.000 which is significantly different with 95% confident interval (p-value < 0.05).

On average, most of Unexpected users, Convenience seekers and Service quality seekers segments use alternative taxi services less than 3 times per week. While 42% of Taxi substitute users segment uses the service more than 15 times per week.

On average, a majority of all groups pay less than 300 baht per week for the services. However, 42% of Taxi substitute users segment pays more than 1,000 baht per week for the services *(See table 4.6)*.

Table 4.6: Frequency, Percentage, and Result of Pearson Chi-square on Frequency and Payment

Using Behavior		Unexpected users		Taxi substitute user		Convenience seeker		Price sensitive user		Service Quality seeker		χ^2	p-value
		n	%	n	%	n	%	n	%	n	%		
Frequency	Less than3	34	69%	6	32%	28	70%	17	37%	24	51%	87.939	0.000
	3-5 times	6	12%	3	16%	8	20%	19	41%	11	23%		
	6-10times	7	14%	2	11%	4	10%	8	17%	12	26%		
	11-15times	0	0%	0	0%	0	0%	2	4%	0	0%		
	More than 15	2	4%	8	42%	0	0%	0	0%	0	0%		
Payment	Less than 300 baht	35	71%	11	58%	19	48%	24	52%	31	66%	46.576	0.000
	300-500 baht	7	14%	0	0%	12	30%	15	33%	4	9%		
	501-1,000 bah0t	5	10%	0	0%	4	10%	3	7%	10	21%		
	More than 1,000 baht	2	4%	8	42%	5	13%	4	9%	2	4%		

4.3.6 The effects of promotion towards using behavior

From the Pearson Chi-square tests, p-value of frequency of service used when there are no free rides or discount promotions are at 0.000, which is significantly different with 95% confident interval (p-value < 0.05).

A majority of Price sensitive users segment (65%) uses the services less if there are no promotions on offer. However, Taxi substitute users segment has the highest percentage of services use, even if there is no promotion on offer when compared to other groups, followed by Service quality seekers segment *(See table 4.7)*.

Table 4.7: Frequency, Percentage, and Result of Pearson Chi-square on Promotion

	Unexpected users		Taxi substitute user		Convenience seeker		Price sensitive user		Service Quality seeker		χ^2	p-value
	n	%	n	%	n	%	n	%	n	%		
Not sure	12	25%	2	11%	3	8%	7	15%	6	13%	45.401	0.000
Use less	16	33%	3	16%	12	30%	30	65%	7	15%		
Use same	18	37%	14	74%	23	58%	9	20%	30	64%		
Use more	3	6%	0	0%	2	5%	0	0%	4	9%		

4.3.7 Important factor for using the service

To understand the attributes that are important to each segment when using alternative taxi services, respondents were asked to identify the attributes that are important to them when using alternative taxi services. According to survey, each segment revealed the same main important attributes, which include Safety, Certainty in getting a ride and Ease in finding a ride.

1) **Unexpected users** view that Safety is the most important factor for using alternative taxi services, with a mean value of 4.59; followed by Certainty in getting a ride and Ease in finding a ride, with mean values of 4.57 and 4.37, respectively.

2) **Taxi substitute users** view that Certainty in getting a ride is the most important factor for using alternative taxi services, with a mean value of 5; followed by Ease in finding a ride and Safety with mean values of 4.89 and 4.79, respectively.

3) **Convenience seekers** view that Certainty in getting a ride is the most important factor for using alternative taxi services, with a mean value of 4.35; followed by Ease in finding a ride and Safety, with mean values of 4.30 and 4.28, respectively.

4) **Price sensitive users** view that Safety is the most important factor for using alternative taxi services, with a mean value of 4.41; followed by Ease in finding a ride and Certainty in getting a ride, with mean values of 4.33 and 4.26, respectively.

5) **Service Quality seekers** view that Certainty in getting a ride is the most important factor for using alternative taxi services, with a mean value of 4.45; followed by Safety and Ease in finding a ride, both with a mean value of 4.36.

From ANOVA analysis, there is no evidence to suggest that these 5 segments rated Short wait time, Ease in finding a ride, Availability in every area and Safety differently from each other, since the p-value is more than 0.05.

Table 4.8: Mean Values, Standard Deviation, and Results of One-way ANOVA of Attributes that important for alternative taxi services of Five segments

Important Attribute	**Unexpected users**		**Taxi substitute user**		**Convenience seeker**		**Price sensitive user**		**Service Quality seeker**		**F**	**p-value**
	$\bar{x}$	**Std. Dev.**	$\bar{x}$	**Std. Dev.**	$\bar{x}$	**Std. Dev.**	$\bar{x}$	**Std. Dev.**	$\bar{x}$	**Std. Dev.**		
Reasonable price	3.7	1.0	3.2	1.1	3.2	1.1	4.1	0.8	3.6	0.8	6.955	0.000
Friendliness and politeness of driver	4.1	0.9	4.3	0.5	3.8	0.7	3.7	0.8	4.0	0.8	2.489	0.045
Short wait time	4.1	0.9	4.3	0.7	4.1	0.8	4.1	0.9	4.0	0.8	0.553	0.697
Certainty in getting a ride	4.6	0.9	5.0	0.0	4.4	0.7	4.3	0.7	4.5	0.7	4.077	0.003
Ease in finding a ride	4.4	0.9	4.9	0.3	4.3	0.9	4.3	0.8	4.4	0.7	2.096	0.083
Availability in every area	4.1	1.1	4.4	0.7	4.2	1.0	4.1	0.9	3.9	0.9	0.780	0.539
Get an estimate fare before use services	3.9	1.2	2.6	1.2	3.5	1.0	4.1	0.7	3.4	0.9	9.710	0.000
Free or discount promotion	4.0	1.2	4.8	0.6	3.2	1.5	4.2	0.7	3.0	1.1	13.710	0.000
Car cleanliness	3.8	1.1	4.3	0.7	3.3	1.0	3.5	0.8	3.7	0.7	5.073	0.001
Safety	4.6	0.9	4.8	0.6	4.3	1.1	4.4	0.7	4.4	0.8	1.632	0.168
Ease of payment	3.8	1.2	3.5	0.6	3.0	1.0	3.1	0.7	3.4	0.8	5.828	0.000
Could booking time to pick up	3.5	1.3	2.6	0.8	3.2	1.2	3.5	0.8	3.3	1.1	2.929	0.022

4.3.8 Service improvement

Based on the survey conducted, it was found that the main improvements all groups want to see urgently from alternative taxi providers are an increased number of vehicles available, followed by an expansion of the service area. It appears that Taxi substitute users segment would like to see improvements in other areas as well, such as 90% of them would like to see more promotions being offered and ease in contacting the call center, while 84% of them would like to see an increased accuracy in the estimate arrival time.

From the Pearson Chi-square tests, there is no evidence to suggest that these 5 segments rate Cancel trip from driver, Manner of driver and More safety differently from each other, since the p-value is more than 0.005.

Table 4.9: Frequency, Percentage, and Result of Pearson Chi-square on Service improvement

Service Improvement	Unexpected users		Taxi substitute user		Convenience seeker		Price sensitive user		Service Quality seeker		χ^2	p-value
	n	%	n	%	n	%	n	%	n	%		
Cancel trip from driver	14	29%	2	11%	11	28%	8	17%	8	17%	4.695	0.320
More variety type of payment	1	2%	8	42%	2	5%	3	7%	4	9%	29.595	0.000
More quality/cleaner	10	20%	0	0%	13	33%	7	15%	6	13%	11.217	0.024
More vehicle available	26	53%	19	100%	25	63%	20	44%	31	66%	19.710	0.001
More area of service covered	24	49%	19	100%	18	45%	21	46%	27	57%	19.513	0.001
Driver do not know the route	11	22%	4	21%	17	43%	17	37%	23	49%	9.932	0.042
Discount price	10	20%	11	58%	9	23%	13	28%	17	36%	11.206	0.024
Manner of driver	5	10%	0	0%	2	5%	5	11%	10	21%	8.96	0.062
More promotion	21	43%	17	90%	15	38%	26	57%	15	32%	21.523	0.000
More accurate estimate arrival time	10	20%	16	84%	11	28%	11	24%	17	36%	28.788	0.000
Easier using application	3	6%	8	42%	3	8%	7	15%	9	19%	16.445	0.002
More safety	12	25%	6	32%	12	30%	7	15%	10	21%	3.552	0.470
Easier to contact call center	6	12%	17	90%	8	20%	13	28%	20	43%	43.09	0.000

4.3.9 Reasons for Non Uber or Grabcar fan not using Uber or Grabcar most

Based on the survey, the reasons that Non Uber or Grabcar fans do not use Uber or Grabcar as their main choice of alternative taxis include the service is not available in their area (46%), followed by the service appears to be expensive (39%) and because it is difficult to find a ride (39%) *(See table 4.10)*.

Table 4.10: Frequency, Percentage of reasons for Non Uber or Grabcar fan not using Uber or Grabcar most

Reasons for Non Uber or Grabcar fan	n	%
Never heard of service	0	0%
It seems expensive	5	39%
Long waiting time	3	23%
No need to use	4	31%
Difficult to find a ride	5	39%
Service not provided in my area	6	46%
Do not know how to use mobile application	0	0%
Do not want to ride with a stranger	2	15%
Do not feel safe	2	15%

4.3.10 Reason for Nonuser never used alternative taxi services

Based on the survey, the reasons that Non-users do not use alternative taxi services include they do not require the service (66%), followed by they do not know how to use the mobile application (24%) *(See table 4.11)*.

Table 4.11: Frequency, Percentage of reason for Nonuser never used alternative taxi services

Reason for Nonuser	n	%
Never heard of service	0	0%
It seems expensive	11	18%
Long waiting time	6	10%
No need to use	41	66%
Difficult to find a ride	2	3%
Service not provided in my area	4	7%
Do not know how to use mobile application	15	24%
Do not want to ride with a stranger	2	3%
Do not feel safe	7	11%

CHAPTER 5
SUMMARY AND CONCLUSIONS

5.1 Conclusions

5.1.1 Total respondent profile

Of all 272 survey respondents, more than half of them are female, aged between 18-30 years old and owns a car. Approximately 74% of the respondents are Uber or Grabcar fans, 5% are Non Uber or Grabcar fans and 21% are Non-users.

The factor analysis was used to classify the reasons why respondents who were Uber or Grabcar fans use alternative taxi services into 4 factors; quality, price, reliable and convenience. Based on these 4 factors from the factor analysis, the respondents were further divided by Two-Step Cluster method into 5 homogenous groups; Unexpected users, Taxi substitute users, Convenience seekers, Price sensitive users and Service quality seekers.

To summarize their profiles, Convenience seekers segment has the highest percentage of males, making up 43% of the segment. A majority of Unexpected users, Taxi substitute users and Service Quality seekers segments have master's degree education, while most of Convenience seekers and Price sensitive users segments have bachelor's degrees. A majority of Taxi substitute users segment has less than 25,000 baht of monthly income, and is the only group where most of respondents do not own a private car.

5.1.2 Alternative taxi services using behavior

On average, most of Unexpected users, Convenience seekers and Service quality seekers segments use alternative taxi services less than 3 times per week. While almost half of Taxi substitute users segment are heavy users because they use alternative taxi services more than 15 times per week.

On average, a majority of all groups pay less than 300 baht per week for the services. However, 42% of Taxi substitute users segment pays more than 1,000 baht per week for the services.

For respondents who do not mainly use Uber or Grabcar when using alternative taxi services (i.e., Non Uber or Grabcar fans), the reason that they are Non Uber or Grabcar fans is because they cannot access the services as the service is not available in their area.

While for those who are non-users, the main reason they do not use alternative taxi service, is because they do not require the service.

5.1.3 The effects of promotion towards using behavior

It was found that a majority of Price sensitive users segment (65%) would repeat using the service less if there is no promotions on offer. However, Taxi substitute users segment has the highest percentage of a repeat service use, even if there are no promotions on offer when compared to other groups, followed by Service quality seekers segment.

5.1.4 The important factors for service using

According to survey, each segment revealed the same main important attributes for using alternative taxi services. Safety, Certainty in getting a ride and Ease in finding a ride are the top three important attributes that all segments value.

As for service improvement, respondents in all segments would like to see an increased number of vehicles available, followed by an expansion of the service area.

5.2 Limitation of the study

This study contains some limitations. Due to the time and resource constraints, convenience sampling method had been used in this study. Therefore, there could be selection bias and sampling errors. Moreover, the sample size may not represent the entire population.

REFERENCES

ABAC poll research center, (2005),*Publication people thinking about the safety of taking taxi and public mass transport and opinion of safety of taxi driver*. Assumption University, Thailnd.

Ackaradejruangsri, P. (2015), *Insights on GrabTaxi: An Alternative Ride Service in Thailand*. Asian Institute of Management, Philippines.

Charoen, D. (2015), *GRABTAXI: A TAXI REVOLUTION IN THAILAND*. International Conference, London, United Kingdom

Dalupiri, R.M., Ducusin, K.G., Ramos, R.R. (2015), *Who Would Benefit From GrabTaxi Or Uber? Who Would Be Hurt?*.University of Santo Tomas.

DI-Marketing, (2016),*Sharing Economy Service Usage In Thailand*. Retrieved from http://www.di-onlinesurvey.com/en/2016/11/04/sharing-economy-service-usage-in-thailand/

Grab, (n.d.), Retrieved from https://www.grab.com/th/en/about/

Kalanick , T. (2015), *Five Years and 311 Cities Later*. Retrieved from https://newsroom.uber.com/five-years-and-311-cities-later/

Modernine TV, (2013), Retrieved from http://www.mcot.net/site/content?id=51027f59150ba0ef22000086#.VEXYkb4eTao

Post Today, (2016), *สายด่วน1584ร้องเรียนแท็กซี่"ถึงเวลาต้องพึ่งยาแรง"*.Retrieved from http://www.posttoday.com/analysis/report/437226

Rayle, L, Shaheen, S, Chan, N, Dai, D &Cervero, R (2014), *App-Based, On-Demand Ride Services: Comparing Taxi and Ridesourcing Trips and User Characteristics in San Francisco*, University of California: Berkeley.

Su, S. (2015), *7 Lessons on Marketplace Growth from Southeast Asia's Biggest (and Friendliest) Startup*. Retrieved from http://500.co/grabtaxi-marketplace-growth-hacks/

APPENDICES

APPENDIX A
IN-DEPTH INTERVIEW QUESTIONS GUIDE

Screening question

1. Have you been using any alternative taxi services from application in Bangkok or vicinity area during the past 1 month?

The questions guide for in-depth interview

1. Which alternative taxi services application (either taxi or private car) you know?
2. Which alternative taxi services application (either taxi or private car) you ever used?
3. What is the reasons for the service from previous question as the most?
4. On average, how often do you use and how money do you spend for alternative taxi services in one month?
5. What are important factor for using alternative taxi services?
6. What do you think that alternative taxi services in Thailand should be improved?
7. What the free or discount promotion affect your service using?
8. How satisfied were you with alternative taxi service?

Demographic questions

1. How old are you?
2. Do you have your own private car?
3. What is your main transportation?

APPENDIX B
ONLINE QUESTIONNAIRE

Part 1: Screening Questions

1) Have you been using any alternative taxi services from application in Bangkok or vicinity area during the past 1 month? (either taxi or private car)

[ ] Yes

[ ] No (skip to question14)

2) Which alternative taxi services application (either taxi or private car) you know?

[ ] Uber

[ ] Grab

[ ] Easy Taxi

[ ] All Thai Taxi

[ ] Smart Taxi

3) Which alternative taxi services application you ever used?

[ ] Uber

[ ] Grab (Grabtaxi or Grabcar)

[ ] Easy Taxi

[ ] All Thai Taxi

[ ] Smart Taxi

4) What is your most used alternative taxi services application?

[ ] Uber

[ ] Grabcar (exclude Grabtaxi)

[ ] Other, not Uber and Grabcar (skip to question15)

Part 2: General Consumer Behavior

5) What is the reasons for the service from previous question as the most?

[ ] Reasonable price

[ ] Friendliness and politeness of driver

[ ] Short waiting time

[ ] Certainty in getting a ride

[ ] Ease in finding a ride

[ ] Availability in every area

[ ] Upfront pricing / fare estimates

[ ] Free or discount promotion

[ ] Car cleanliness

[ ] No other public transportation option

[ ] Safety

[ ] Ease of payment

[ ] Could pre-book a time for pick up

[ ] Could track an item that left in a vehicle

[ ] Do not need to park

[ ] Other, please specify

6) On average, how often do you use alternative taxi services in one week?

[ ] Less than 3 times

[ ] Between 3 – 5 times

[ ] Between 6 - 10 times

[ ] Between 11 - 15 times

[ ] More than 15 times

7) On average, how much do you spend for alternative taxi service per week?

[ ] Less than 300 baht

[ ] 300-500 baht

[ ] 501-1,000 baht

[ ] More than 1,000 baht

8) If there is no promotion, your service using will change or not?

[ ] Use less

[ ] Use same

[ ] Use more

[ ] Not sure

Part 3: Consumer Attitude

9) According to these statements, please rate how importance each factor is to you when using alternative taxi services. (Rating will rank from 1 to 5, 1= "Not important" and 5 = "most important")

Item	Not Important ----------				Most Important
Reasonable price	1	2	3	4	5
Friendliness and politeness of driver	1	2	3	4	5
Short waiting time	1	2	3	4	5
Certainty in getting a ride	1	2	3	4	5
Ease in finding a ride	1	2	3	4	5
Availability in every area	1	2	3	4	5
Upfront pricing / fare estimates	1	2	3	4	5
Free or discount promotion	1	2	3	4	5
Car cleanliness	1	2	3	4	5
Safety	1	2	3	4	5
Ease of payment	1	2	3	4	5
Could pre-book a time for pick up	1	2	3	4	5

10) What do you think that alternative taxi services in Thailand should be improved?

[ ] Cancel trip from driver

[ ] More variety type of payment

[ ] More quality/cleaner

[ ] More vehicle available

[ ] More area of service covered

[ ] Driver do not know the route

[ ] Discount price

[ ] Manner of driver

[ ] More promotion

[ ] More accurate estimate arrival time

[ ] Easier using application

[ ] More safety

[ ] Easier to contact call center

[ ] Other, please specify

Part 3.1: Consumer Attitude *(for Nonuser)*

11) Why you never been used alternative taxi services before?

[ ] Never heard of service

[ ] It seems expensive

[ ] Long waiting time

[ ] No need to use

[ ] Difficult to find a ride

[ ] Service not provided in my area

[ ] Do not know how to use mobile application

[ ] Do not want to ride with a stranger

[ ] Do not feel safe

[ ] Other, please specify

Part 3.2: Consumer Attitude *(for Non Uber or Grabcar fan)*

12) Why Uber and Grabcar is not you main choice?

[ ] Never heard of service

[ ] It seems expensive

[ ] Long waiting time

[ ] No need to use

[ ] Difficult to find a ride

[ ] Service not provided in my area

[ ] Do not know how to use mobile application

[ ] Do not want to ride with a stranger

[ ] Do not feel safe

[ ] Other, please specify

Part 4: Demographic

13) Gender

[ ] Male

[ ] Female

14) Age

[ ] Lower than 18 years old

[ ] 18-30 years old

[ ] 31-40 years old

[ ] 41-50 years old

[ ] 51-60 years old

[ ] More than 60 years old

15) Highest education level

[ ] Primary school or lower

[ ] Lower secondary school

[ ] Upper secondary school

[ ] Vocational school

[ ] Bachelor's degree

[ ] Master's degree

[ ] Higher than Master's degree

16) Personal monthly Income

[ ] Lower than 25,000 baht

[ ] 25,001 – 35,000 baht

[ ] 35,001 – 45,000 baht

[ ] 45,001 – 65,000 baht

[ ] 65,001 – 85,000 baht

[ ] 85,001– 100,000 baht

[ ] 100,001 - 150,000 baht

[ ] More than 150,000 baht

17) Do you have your own car?

[ ] Yes, I have

[ ] No, I don't have

18) Which are your main transportation?

[ ] Private Car

[ ] Private Motorcycle

[ ] BTS

[ ] MRT

[ ] Bus

[ ] Walk

[ ] Bicycle

[ ] Public Motorcycle

[ ] Taxi

[ ] Alternative taxi services e.g. Uber or Grab

[ ] Boat

[ ] Other, please specify

APPENDIX C
RESULT OF KMO AND BARTLETT'S TEST FOR FACTOR ANALYSIS

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.694
Bartlett's Test of Sphericity	Approx. Chi-Square	869.525
	df	105
	Sig.	0

APPENDIX D

RESULT OF PAIRWISE T-TEST ON DEMOGRAPHIC OF FIVE CLUSTERS

Demographic		Unexpected users	Taxi substitute user	Convenience seeker	Price sensitive user	Service Quality seeker
		(A)	(B)	(C)	(D)	(E)
Gender	Female					
	Male					
Age	18-30 years					
	31-40 years	D				
	41-50 years					
	more than 50					
Education	Bachelor			A	A	
	Master	C D				
Income	Less than 25,000		A C D E			
	25,000-35,000					
	35,001-45,000					
	45,001-65,000					
	65,001-85,000					
	85,001-100,000					
	100,001-150,000			A		A
	More than 150,000					
Car own	Yes		A C D E			
	No	B		B	B	B
Transport	BTS					

ation	MRT		A C D E			
	Private Car	D				
	Taxi					
	Uber or Grab		A D E		A	
	Bus					
	Motorbike					
	Van					
	Walk					

*If two values are significantly different, the cell corresponding to the larger value displays a key identifying the column of the smaller value.

APPENDIX E

RESULT OF PAIRWISE T-TEST ON FREQUENCY AND PAYMENT

Using Behavior		Unexpected users	Taxi substitute user	Convenience seeker	Price sensitive user	Service Quality seeker
		(A)	(B)	(C)	(D)	(E)
Frequency	Less than3	B D		D		
	3-5 times				A	
	6-10times					
	11-15times					
	More than 15		A			
Payment	Less than 300					
	300-500baht				E	
	501-1,000baht					
	More than 1,000		A D E			

*If two values are significantly different, the cell corresponding to the larger value displays a key identifying the column of the smaller value.

APPENDIX F

RESULT OF PAIRWISE T-TEST ON PROMOTION

	Unexpected users	Taxi substitute user	Convenience seeker	Price sensitive user	Service Quality seeker
	(A)	(B)	(C)	(D)	(E)
Not sure					
Use less				A B C E	
Use same		D	D		D
Use more					

*If two values are significantly different, the cell corresponding to the larger value displays a key identifying the column of the smaller value.

APPENDIX G

RESULT OF PAIRWISE T-TEST ON SERVICE IMPROVEMENT

Service improvement	Unexpected users	Taxi substitute user	Convenience seeker	Price sensitive user	Service Quality seeker
	(A)	(B)	(C)	(D)	(E)
Cancel trip from driver					
More variety type of payment		A C D E			
More quality/cleaner					
More vehicle available					
More area of service covered					
Driver do not know the route					
Discount price		A			
Manner of driver					
More promotion		A C E			
More accurate estimate arrival time		A C D E			
Easier using application		A C			
More safety					
Easier to contact call center		A C D E			A

*If two values are significantly different, the cell corresponding to the larger value displays a key identifying the column of the smaller value.

BIOGRAPHY

Name	Mr. Patompat Kamtar
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