EVALUATING SERVICE QUALITY OF RIDE-HAILING SERVICE IN BANGKOK

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ABSTRACT

In years, mobile phone applications have become an intrinsic part of many people's daily lives. For them, using a ride-hailing application creates a new solution for their urban transportation needs, replacing less inefficient traditional taxi services. However, ride-hailing services have only recently become available in Bangkok. Therefore, it is important to understand customer perceptions and expectations to evaluate the quality of the services offered. This research applied the original SERVQUAL scale in the context of transports service in Bangkok. The purposes of this study were to: 1) examine the service quality of ride-hailing services and 2) compare customer perceptions and expectations of ride-hailing services. A survey questionnaire was delivered to 563 respondents who had experienced Bangkok's ride-hailing services. Customer expectations and perceptions were measured using SERVQUAL instrument with 5 dimensions: including Tangibility, Reliability, Responsiveness, Assurance, and Empathy.

This study provided evidence that customer expectations were higher than their perceptions for all five service attributes. The largest gap score was responsiveness, followed in order by empathy, tangibility, reliability, and assurance. Furthermore, the mean difference comparison between the expectations and perceptions were significant in all areas of service. It can be concluded that ride-hailing providers need to immediately improve their services in every aspect in order to satisfy their target customers.

Keywords: SERVQUAL, Mobile-app taxi, Ride-hailing service, Service quality.

INTRODUCTION

Because of Bangkok's status as the capital and business center of a fast-developing south-east Asian. More and more people are migrating to the city center to work and study. Bangkok's burgeoning population is resulting ever-increasing demands on its transport infrastructure. For those concerned about convenience and privacy, taxis are often the best form of public transport. The advent of smart phones has led to many lifestyle changes and improvements, including the way taxis are used. This has led to increase the competitiveness in the taxi industry, particularly between traditional taxis and mobile-app taxis (ride-hailing).

In 2018, complaints about traditional taxis in Bangkok via customer service hotlines reached a high of 48,223 comparing to 43,804 in 2016 and 43,254 in 2017. These complaints against taxi drivers were mainly concerned with their refusal to take passengers, impolite behavior, unsafe driving and charging excess fares (Department of Land Transport, 2018). The weakness in the traditional taxi has shifted customer's demand to ride-hailing service. Ride-hailing services bring benefits and efficiencies to both drivers and passengers. Passengers can book taxis using their smartphone without having to wait at the side of the road or the risk of not being picked up by a driver. At the same time, drivers can go directly to their passengers without

needing to search for them.

There are a limited number of ride-hailing service providers in Bangkok, namely Grab, All Taxi Thai, Line taxi, and Taxi OK. The ride-hailing market value in Thailand in 2018 was approximately 21,000 million Baht (around USD 675 million) or six percent of the GDP of the transportation sector. It is expected to reach 1.2 billion Baht (around USD 3,855 million) in 2025 or 20-25 percent of the GDP of the transportation sector. Approximately 2.4 million people per month used this service in Thailand in 2018 and this is expected to increase to 11 million people per month in 2025. The drivers of ride-hailing service are also forecasted rising from 105,000 people per month in 2018 to 590,000 people per month in 2025. 82 percent of the ride-hailing passengers who plan to buy a car in the next five years stated that they would change their mind not to buy a car if the ride-hailing service could serve their requirements in terms of serviced car availability and reasonable price. Moreover, 92 percent of the ride-hailing passengers feel safer than when using other public transport services (Thammasat Business Consulting Center, 2019).

In these competitive circumstances, it is essential to develop a better understanding of customer perceptions and expectations that impact levels of satisfaction. Therefore, the main purpose of the present study was to measure the service quality of ride-hailing service in Bangkok. The specific research objectives include:

1) To assess the service quality of ride-hailing services.
2) To compare customer perceptions and expectations of ride-hailing services.

LITERATURE REVIEW

The measurement of service quality is harder than product quality due to its characteristics of being untouchable, non-congenial, and the simultaneity of production and consumption (Abari et al., 2011). Thus, service quality assessment should be considered cautiously to obtain accurate results and truly reflex the quality of the service. Parasuraman (1985); Zeithaml (1988); Berry (1994) developed Gap Model or Service Quality (SERVQUAL) to measure the service quality. Essentially, the concept of service quality is to measure the discrepancy between customer expectations and their perceptions regarding an individual service (Parasuraman et al., 1985). Customers assess the perceived service quality by determining whether there is any gap between their perception (P) and expectations (E), the so-called 'P-E' framework (Parasuraman et al., 1988).

Five dimensions involved in the SERVQUAL method (Zeithaml, Parasuraman, Berry & Berry, 1990) are defined as follows:

1. Tangibility refers to physical appearances including facilities, equipment, communication materials, service place, service persons, and service environment.
2. Reliability is the ability to deliver the services precisely as promised. Also, the service needs to be consistent, respects commitments, as well as keeping promises to customers.
3. Responsiveness measures the availability and willingness to provide the services promptly. The clients should access the service smoothly and conveniently. Moreover, it covers the ability to solve problems and handle customer complaints effectively.
4. Assurance is the element of creating the credibility and trust for customers. The service provider should show excellent technical skills, professional services, attitude courtesy, and good communication skills to ensure customers receive the best service.
5. Empathy is related to the caring, consideration and best preparation for an individual customer.

The SERVQUAL model has been widely used to measure service quality in a variety of

service industries, particularly in transport services, because it is easy and flexible to use. Lin, Lee & Jen (2008) referenced SERVQUAL model to assess the effect of behavioral intention in relation to service quality in intercity bus services. Khuong & Dai (2016) adopted SERVQUAL dimensions to investigate the factors affecting customer satisfaction and customer loyalty to increase the profits for a local taxi company in Vietnam. They found that reliability, responsiveness, price, and satisfaction directly influenced customer loyalty. Khongman & Wongbangpo (2017) employed the SERVQUAL model to assess the service quality and satisfaction of GrabTaxi of generation X customers in Bangkok. The research revealed that the perception and satisfaction of the service were at high levels. Moreover, the reliability influenced the satisfaction the most, while the responsiveness influenced the satisfaction the least. Azudin et al. (2018) adopted SERVQUAL model to examine service quality level of Uber drivers in Malaysia. They concluded that reliability and responsiveness were the most significant factors for determining overall perceived service quality, even though they were not the most highly ranked among the five dimensions. Bismo et al. (2018) applied the SERVQUAL model to examine the effect of service quality and customer satisfaction on customer loyalty of the Grab car service in Jakarta. The results revealed that service quality had a positive impact on customer satisfaction but not the customer loyalty. Hamenda (2018) modified SERVQUAL indicators as RATER, which is also five attributes including reliability, assurance, tangible, empathy, and responsiveness, to measure the dimension of service quality in an integrated model of service quality, price fairness, and ethical practice for customer satisfaction in Indonesia's ride-hailing platform. They found that service quality had significant relationship with both customer perceptions and customer satisfaction.

The findings of SERVQUAL analysis in transportation services were diverse. This study aimed to assess the service quality of ride-hailing service in Bangkok by employing the SERVQUAL framework to measure service quality Figure 1.

Research framework

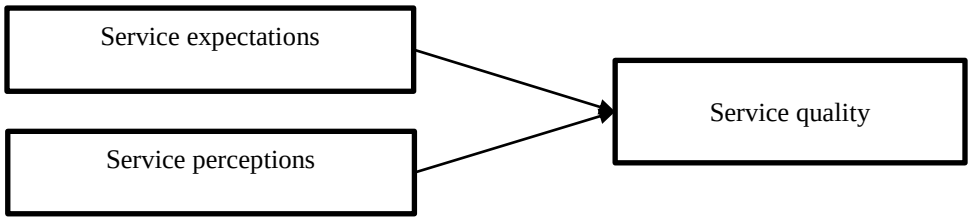

FIGURE 1
Research framework

This research employed a quantitative approach, including a two-stage process. Firstly, a pilot study of 30 passengers of ride-hailing services was conducted to pretest the questionnaire items. Subsequently, a field study was performed with respondents who had used ride-hailing services in Bangkok.

Questionnaire

The questionnaire comprised two parts: 1) the collection of respondents' personal information, including socio-demographic and travel behavior, accounting for six questions; 2)

contained 20 statements about ride-hailing services' expectations and perceptions based on the five features of the SERVQUAL framework. Respondent's opinions were examined using a five-point Likert scale, where 1 represented strongly disagrees and 5 represented strongly agree. The reliability of the questionnaire was shown by Cronbach's alpha, which is considered reliable if the number is more than 0.600 (Sarjono & Julianita, 2011). Since the questionnaire's Cronbach's alpha was 0.966, this indicated that the questionnaire was reliable.

Sample and Data Collection

The questionnaires were mainly distributed in public places, including bus stops, shopping malls, offices, and universities, with the random sampling method. In total, 563 respondents completed answering the questionnaire.

RESULTS

The data obtained from the questionnaire survey were analyzed with both descriptive and interference statistics (pared sample t-test). The descriptive statistics of respondent's demographic and travel characteristics are shown in Table 1. More than half of them (57.90%) were female, with 42.10% male. The main age group was between 15-25 years old (61.30%), which was considered as the age group of target users of ride-hailing services. Most of the respondents were unemployed or students (49.60%), with the personal monthly income was below 15,000 Baht (57.90%). The majority of the participants used ride-hailing for study, work or business purposes (47.10%). The travel time was concentrated in the morning between 5-10 a.m. (37.30%). The largest group of participants (44.80%) travel between 1-10 kilometers.

Table 2 shows the average and standard deviation of the service quality attributes. The expectation scores of all service quality attributes were rated above 4, while the perception scores were between 3.70 and 3.99. In the tangibility dimension, "a new car" and "the availability of safety equipment" were rated highest, while "the availability of safety equipment" was also given the highest perception score. The highest expectation score in the reliability attribute was "feel safe during the ride", while the highest perception score was "show driver's information clearly". In the responsiveness attribute, the highest score for both expectation and perception were "ride-hailing service providers delivering their service promptly". The highest expectation and perception rate in the assurance dimension was "feel safe with the transaction". In relation to empathy, "drivers are friendly" were rated the highest in both expectation and perception.

Gap analysis was performed to identify the service quality. Gap analysis can calculate from perception scores minus expectation scores (P-E). A positive difference between expectations and perceptions shows the strength, while a negative difference explains the weakness of the service quality attributes (Parasuraman et al., 1985). As seen in Table 3, gap scores of all attributes were negative showing that customer perceptions were below expectations. In terms of service attributes, the highest negative rate was empathy, followed in order by responsiveness, tangibility, reliability, and assurance. When considered by item, the top 10 service items with large quality gaps were Ride-hailing service providers handle complaints effectively, Service covers all area, Sufficient serviced-cars, Feel safe during the ride, Comfort and cleanness seat, Arrive at the destination on time, Reasonable and affordable charges, Drivers dress properly, Drivers are helpful, Drivers are versed with the routes, Provide various payment methods, Drivers drive safely, and Drivers are friendly, respectively. These findings indicated a

failure in ride-hailing service in Bangkok at all levels, currently.

Table 1
PERSONAL INFORMATION OF THE RESPONDENTS

Personal Information	Frequency	Percentage
Gender		
Male	237	42.10
Female	326	57.90
Age		
15 - 25 years old	345	61.30
26 – 35 years old	122	21.70
36 - 45 years old	54	9.50
More than 45 years old	42	7.50
Employment		
Full time	165	29.30
Freelance / Part Time	119	21.10
Unemployed / Student	279	49.60
Income		
Less than 15,000 Baht	326	57.90
15,000 – 30,000 Baht	151	26.80
30,001 – 45,000 Baht	54	9.60
More than 45,000 Baht	32	5.70
Travel purpose		
Study / Work / Business purposes	265	47.10
Relaxation	94	16.70
Shopping	132	23.40
Visit friends or relatives	41	7.30
Visit doctor	31	5.50
Travel time		
5.00 – 10.00 am.	210	37.30
10.01 am. – 3.00 pm.	149	26.50
3.01 pm. – 8.00 pm.	146	25.90
After 8 pm.	58	10.30
Travel distance		
1 – 10 km.	252	44.80
11 - 20 km.	207	36.80
21 – 30 km.	79	14.00
More than 30 km.	25	4.40
Total observations	**563**	**100.00**

Table 2
MEAN AND STANDARD DEVIATIONS OF SERVICE QUALITY ATTRIBUTES

Attribute	Expectation		Perception	
	$\bar{x}$	S.D.	$\bar{x}$	S.D.
Tangibility	4.34	0.70	3.85	0.70
A new car	4.37	0.79	3.89	0.85
Provide safety equipment	4.37	0.84	3.98	0.90
Comfort and cleanliness of seat	4.29	0.86	3.73	0.88
Drivers dress properly	4.32	0.82	3.80	0.88
Reliability	4.33	0.75	3.86	0.73

Feel safe during the ride	4.38	0.83	3.81	0.87
Show driver's information clearly	4.37	0.84	3.96	0.92
Arrive at the destination on time	4.30	0.89	3.75	0.88
Stable system and application	4.30	0.90	3.91	0.93
Responsiveness	4.32	0.73	3.79	0.72
Ride-hailing service providers deliver their service promptly	4.40	0.77	3.99	0.84
Provide various payment methods	4.29	0.90	3.78	1.00
Sufficient number of serviced-cars	4.29	0.92	3.70	0.98
Service covers all area	4.34	0.92	3.70	0.96
Reasonable and affordable charges	4.31	0.90	3.77	0.91
Assurance	4.33	0.76	3.86	0.76
Drivers are versed with the routes	4.31	0.91	3.79	0.97
Drivers drive safely	4.34	0.87	3.84	0.89
Drivers are courteous	4.31	0.89	3.85	0.92
Feel safe with the transaction	4.38	0.84	3.97	0.90
Empathy	4.34	0.76	3.78	0.74
Drivers are friendly	4.40	0.84	3.90	0.87
Drivers are helpful	4.36	0.90	3.83	0.91
Ride-hailing service providers handle complaints effectively	4.27	0.92	3.62	0.98

Table 3
GAP ANALYSIS BETWEEN CUSTOMER'S PERCEPTION (P) AND EXPECTATION (E)

Attribute	Perception $\bar{x}$	Expectation $\bar{x}$	Gap scores (P-E)	Rank
Tangibility	**3.85**	**4.34**	**-0.49**	**(3)**
A new car	3.89	4.37	-0.48	
Provide safety equipment	3.98	4.37	-0.39	
Comfort and cleanliness of seat	3.74	4.30	-0.56	(5)
Drivers dress properly	3.80	4.33	-0.53	(7)
Reliability	**3.86**	**4.34**	**-0.48**	**(4)**
Feel safe during the ride	3.81	4.38	-0.57	(4)
Show driver's information clearly	3.96	4.37	-0.41	
Arrive at the destination on time	3.75	4.30	-0.55	(6)
Stable system and application	3.91	4.30	-0.39	
Responsiveness	**3.79**	**4.33**	**-0.54**	**(2)**
Ride-hailing service providers deliver their service promptly	3.99	4.40	-0.41	
Provide various payment methods	3.78	4.29	-0.51	(9)
Sufficient number of serviced-cars	3.70	4.29	-0.59	(3)
Service covers all area	3.70	4.34	-0.64	(2)
Reasonable and affordable charges	3.77	4.32	-0.55	(6)
Assurance	**3.86**	**4.34**	**-0.48**	**(4)**
Drivers are versed with the routes	3.79	4.31	-0.52	(8)
Drivers drive safely	3.84	4.34	-0.50	(10)
Drivers are courteous	3.85	4.31	-0.46	
Feel safe with the transaction	3.97	4.38	-0.41	
Empathy	**3.78**	**4.34**	**-0.56**	**(1)**
Drivers are friendly	3.90	4.40	-0.50	(10)
Drivers are helpful	3.83	4.36	-0.53	(7)
Ride-hailing service providers handle complaints effectively	3.62	4.27	-0.65	(1)

The results were further investigated through paired sample t-test for scale dimension, to identify whether the ride-hailing service expectations and perceptions were statistically significant. The results in Table 4 indicate that all of the attributes and items were significantly

different between perception and expectation of the service.

Table 4
COMPARISON BETWEEN SERVICE EXPECTATIONS AND PERCEPTIONS

Attribute	Expectations $\bar{x}$	Perceptions $\bar{x}$	t	P
Tangibility	**4.34**	**3.85**	**16.488**	**0.000***
A new car	4.37	3.89	12.589	0.000*
Provide safety equipment	4.37	3.98	10.16	0.000*
Comfort and cleanliness of seat	4.3	3.74	13.354	0.000*
Drivers dress properly	4.33	3.8	13.747	0.000*
Reliability	**4.34**	**3.86**	**16.134**	**0.000***
Feel safe during the ride	4.38	3.81	14.304	0.000*
Show driver's information clearly	4.37	3.96	10.836	0.000*
Arrive at the destination on time	4.3	3.75	14.366	0.000*
Stable system and application	4.3	3.91	10.161	0.000*
Responsiveness	**4.33**	**3.79**	**18.738**	**0.000***
Ride-hailing service providers deliver their service promptly	4.4	3.99	11.298	0.000*
Provide various payment methods	4.29	3.78	11.674	0.000*
Sufficient number of serviced-cars	4.29	3.7	13.61	0.000*
Service covers all area	4.34	3.7	15.349	0.000*
Reasonable and affordable charges	4.32	3.77	13.337	0.000*
Assurance	**4.34**	**3.86**	**15.798**	**0.000***
Drivers are versed with the routes	4.31	3.79	12.129	0.000*
Drivers drive safely	4.34	3.84	12.616	0.000*
Drivers are courteous	4.31	3.85	11.263	0.000*
Feel safe with the transaction	4.38	3.97	11.245	0.000*
Empathy	**4.34**	**3.78**	**19.466**	**0.000***
Drivers are friendly	4.4	3.9	14.016	0.000*
Drivers are helpful	4.36	3.83	13.636	0.000*
Ride-hailing service providers handle complaints effectively	4.27	3.62	15.354	0.000*

* Significant difference at $p<0.05$

DISCUSSION

Analysis of the results focusing on three aspects: customer expectation and perception of the ride-hailing service, gap analysis and mean comparison between customer expectation and perception of the ride-hailing service. The first part showed the levels of customer expectations and perceptions of the ride-hailing service in Bangkok. The score of customer perceptions was lower than the expectations in all attributes. For expectations, Tangibility and Empathy were rated equally highly, while Responsiveness scored the lowest. The reasons may be because there are many public transportation services, including large numbers of traditional taxis, which are available throughout Bangkok. Passengers can call a local taxi immediately without having to wait or open a mobile application. Thus, they may not expect the responsiveness from ride-hailing but do expect tangibility such as new, clean and safe vehicles. The results were consistent with the study of Khuong & Dai (2016) which revealed that comfort had a positive significant effect on customer satisfaction for taxis in Vietnam. Furthermore, the empathy in terms of friendliness and helpfulness of the drivers and efficiency in complaint handling will make the ride-hailing service stand out, unlike traditional taxis.

In terms of perceptions, Reliability and Assurance gained the highest score equally. The results comply with the business model of ride-hailing that provides reliability by using the

Global Positioning System (GPS) to track the drivers precisely. The system also shows in advance that an estimate of the distance from the original point to the destination, as well as the fare can be estimated. As a result, this system could solve the problems of traditional taxis, such as the unreliability of the drivers, passenger refusal and overpriced fares. However, Empathy had the lowest rate and the item with the lowest score was "*Ride-hailing service providers handle complaints effectively*". The results were consistent with Khongman & Wongbangpo (2017) that found the responsiveness from the call centre had the lowest score. This finding highlighted ride-hailing providers' lack of empathy and ability to deal with customer problems. It differs from the study of Uber service quality in Malaysia by Azudin et al. (2018), which found Tangibility and Assurance had the lowest rate of service quality.

The results from gap analysis, measuring the service quality using the difference between perceptions and expectations, showed the negative values for all attributes. It can imply that ride-hailing service providers in Bangkok are now falling in delivery of their service. The largest gap was the empathy dimension in the item of ride-hailing service providers handle complaints effectively. When testing mean difference between customer's expectation and perception, it can be concluded that all of the service attributes were significantly different.

CONCLUSIONS

In the early stage of ride-hailing service operations, the quality of the service is needed to measured. This study applied the SERVQUAL scale to assess the service quality of the ride-hailing service in Bangkok. The results provided critical implications for both academics and practitioners. The findings showed that the customers' perceptions of ride-hailing service were lower than the expectations in all attributes. Moreover, t- test analysis confirmed that there were significant differences between customer expectations and perceptions in every item and attribute. In the operational aspects, the suggestions for the ride-hailing service operators are as follows: (1) Customer perceptions of ride-hailing services in Bangkok were lowest in the empathy dimension in terms of handling complaints effectively. Service providers need to be made aware of this point. In order to maintain service quality, customers' problems should be dealt with quickly. Also, the service providers should estimate the timing for solving the problems and inform the status of the complaints to the customers; (2) the highest expectations of ride-hailing services in Bangkok were in relation to Tangibility and Empathy. Therefore, the service should be distinguished by vehicle condition and cleanliness, together with the drivers in terms of clean dress, politeness, friendliness and helpfulness. These will add the value to the service.

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