Service Design of the Vehicle Rental for the Tourism Business in Chiang Mai by the Service Quality Analysis

Donlaya Natip*, Keerati Trakansiriwanicha, Monshicha Inthajaka & Varaphorn Duangsaeng

Tourism Development, Maejo University, Chiang Mai, 50290 Thailand

Article info

Abstract

This research aims to analyze the service quality of the vehicle rentals for the tourism business in Chiang Mai by utilizing research instruments, which are quantitative and qualitative research. The data collection tools of quantitative research are a questionnaire gathered from 400 relevant Thai tourists who visited Chiang Mai selected by nonprobability sampling and accidental sampling techniques and qualitative research implemented structured interview and focus group from 6 entrepreneurs of the rental vehicle business in Chiang Mai obtained by snowball sampling. The researcher studied service quality from 2 concepts which are the concept of customer relationship management which consists of database, electronics, action, and retention. The other concept is customer experience management which consists of tangibles, reliability, responsiveness, assurance and empathy. The results from quantitative research show that the opinion about customer relationship management of vehicle rental in Chiang Mai at the highest level of all aspects. The highest aspect is retention, followed by electronics, database, and action, respectively. The results also identify 4 new elements from the factor analysis, which are data management system, online services, strategies strengthening relationships and creating loyalty. In addition, the opinion about customer experience management of vehicles rental in Chiang Mai at the highest level. The highest aspect is empathy, followed by responsiveness, assurance, reliability, and tangibles, respectively. The results also identify 5 new elements from the factor analysis which are consistency in service, build confidence professional, understanding and paying attention to the customer, service concrete and service readiness. The results from qualitative research show that the car rental entrepreneurs attempt to understand the needs of individual customers to offer the best services for customers. Therefore, service design is the design process to help develop service and is the most convenient to use and impress the most users by developing a mobile application for car rental.

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* Corresponding Author
e-mail: n.donlaya@hotmail.com

Introduction

Tourism is an important industrial sector that can bring transformation as well as to aid a country to achieve its social, cultural and economic goals. Likewise, it can foster the growth of tourism industry in the main provinces, as well as stimulate tourism in the secondary provinces (Tangjitwattana, 2013). Especially in Chiang Mai, the main city of northern Thailand. Chiang Mai is a commercial center, a main industry and communication center. Moreover, it is also a city famous for its culture and tourism that attracts tourists all year round since the cost of living is not as high as other major cities (Chiang Mai Provincial Government Center, 2014). The above attributes of Chiang Mai contribute to an increase in investment in many service sectors, including tourism business, hotel business, food and beverage business, local goods and souvenirs business, transportation business, and entertainment business. Therefore, the transportation business becomes one of the tourism service systems. Because of the transportation, tourists can travel to their destinations and it increases convenience while traveling and encourages more tourists (Khaosaart & Suriya, 2008).

In a nutshell, transportation business can be considered as an important factor in the development of the tourism industry in Chiang Mai. The vehicle rental business is one of the businesses that has very high growth rate and is highly competitive. Because of public transport in Chiang Mai is insufficient to meet customer needs. oreover, in 2017, a public transport application business was started where users can use the app through a mobile phone under the name "Grab Taxi". Grab is a new taxi service, which is widely popular in Chiang Mai (Thansettakij Connecting Opportunity, 2016). There are different conditions for vehicle rental services that create dissatisfaction with the service and does not create loyalty to the rental vehicle organization which causes a bad experience (Reangjarupan, 2013). The results from the service design of the vehicle rental business is to focus on service quality that the customers can receive good experience which can directly lead to the loyalty and re-purchasing in the future (Pipatphokakul, 2013). Vehicle rental operators need to understand customer relationship management to manage customer relationships in order to gain confidence in the company. Customer relationship management can help a company create customer loyalty and help the company stop customers to switch to competitor and it helps the company to understand customer experience management

to service all touch points of the customers, focus on the experiences of each customer in order to create a memorable customer experience. Therefore, vehicle rental operators in Chiang Mai have to innovative services and differentiate from competitors presented to tourists both in terms of service quality, service model and improve service efficiency. Application development is a beginning of service innovation models using new technology on smart phone. Consequently, it can lead to the competitive advantage formation which allows the customers higher satisfaction . It helps the business to improve the service process to serve the customer's needs, focus on convenience and speed of service, and put effort to customer before-during-after service in order to create more efficient operation and to find new needs of customers that are rapidly changing owing to the rapid changes in service design (Thailand Creative and Design Center, 1996).

Objectives

1. Customer relationship management In order to study the vehicle rental of entrepreneurs to improve service quality and use the information obtained to analyze service design.

2. Customer experience management In order to study the vehicle rental of entrepreneurs to improve service quality and use the information obtained to analyze service design.
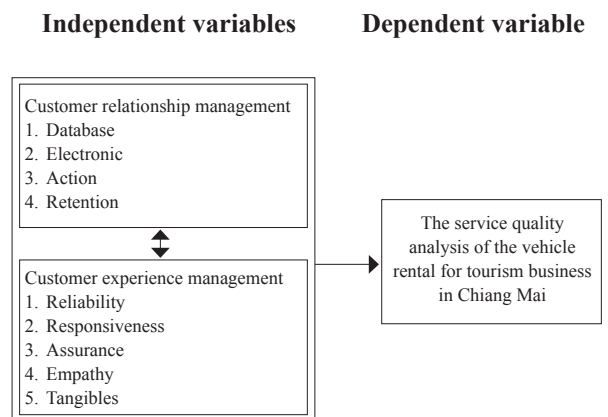
Conceptual framework

Independent variables　　　**Dependent variable**

Figure 1 Conceptual framework

Research methodology

1. Population and samples

They were classified on the basis of the research instruments as follows.

1.1 A set of questionnaires was administered to 400 Thai tourists. The Thai tourists are defined for this study as traveling to Chiang Mai, not domiciled in Chiang Mai, and use the rental vehicle business. The researchers utilized nonprobability Sampling and accidental sampling techniques to select the samples; suited the desired amount without any criteria, by using the method of calculating the size of the samples of Taro Yamane (Yamane, 1973).

1.2 A structured interview sample size was conducted with 6 entrepreneurs of the rental vehicle business in Chiang Mai obtained by snowball sampling.

2. Research instrument

A questionnaire, a structured in-depth interview and a focus group were used for data collection. The content comprised of the following:

Part 1: Personal data of the respondents (multiple choices, close-ended). This include sex, age, occupation, monthly income and domicile.

Part 2: The assessment of opinions of the respondents. The questionnaire consists of a question about the service quality from 2 concepts (1) customer relationship management which consists of 4 variables: database, electronics, action and retention and (2) customer experience management which consists of 5 variables: tangibles, reliability, responsiveness, assurance and empathy. In summary, the questionnaire used in the data collection consists of 9 variables. Each of the questions used a rating scale out of 5.

Part 3: Data related to the service quality of the rental vehicle business in Chiang Mai.

Part 4: Data about conclusion of the service quality by the entrepreneur of the rental vehicle business in Chiang Mai from focus group process. The questions were in interview form and given to the 6 entrepreneurs in the rental vehicle business in Chiang Mai.

3. Collection of data

This study is a mixed research method that consists of a quantitative research and a qualitative research (Creswell, 2013). This research aims to analyze service quality, which consists of 2 concepts about customer relationship management and customer experience management. For quantitative research, the first step was a letter that requested the cooperation in the collection of data to the rental vehicle businesses in

Chiang Mai. After getting official authorization from rental vehicle business administration, concerned executives have been requested to assist in the circulation of surveys to customers who rent the vehicles. 500 surveys have been distributed to customer and selected complete surveys of 400 surveys followed by Yamane (1973) were retrieved. Based upon the previous literature 9 elements and followed by a 5-item rating scale as it appeared in Sinjaru (2011). For qualitative research, concerned executives have been requested to assist in the circulation of surveys and invitation letter for focus group to 6 entrepreneurs of the rental vehicle businesses in Chiang Mai. Then collection of secondary data was obtained from the collection of related documents, a review of relevant literature, primary data obtained from interviews and focus group with representatives and the entrepreneur of the rental vehicle business in Chiang Mai. In addition, using questionnaires, evaluation forms, and interview forms by collecting data from the population and samples. Finally, the data collection is used for analysis, interpretation, synthesis, conclusion and research reports.

4. Data analysis

This study consists of a quantitative research and a qualitative research. First of all, for a quantitative research, in the first part of questionnaires is personal data of the respondent's descriptive statistics was employed by frequency distribution and percentage. In the second part of questionnaires is data of opinions of the respondents related to service quality descriptive statistics by mean and standard deviation. In addition, factor analysis of service quality was employed and 9 new components. Finally, for a qualitative research, analyze and summarize the interview surveys and focus group of 6 entrepreneurs of the rental vehicle businesses in Chiang Mai. Then, the assessment of opinions using service design that consists of 3 phases, which are exploration, creation and prototype.

Results

Part 1: Personal data of the respondents (Tourists)

Results of the study revealed that more than half of the respondents (65.25 %) were male. Their age range was 18-30 years (30.75 %), followed by 31-35 age range (28.75 %), 36-40 years (26.50 %) and only 14 percent were above 41 years old. Most of the respondents (35.75 %) were personal business occupation, followed by company employee (23.75 %) and only 2.5 percent were guides. Most of the respondents (23.75 %) had an

average monthly income of 25,001-30,000 baht, followed by 21.75 %, at 15,000 baht and below, and only 15.25 percent had an average monthly income range of 30,001-35,000 baht. Finally, more than half of the respondents (57.50%) had domiciled in the central region and only 4 percent had domiciled in the western region. The following section of Part 2 discusses the data about the tourist experiences of the rental vehicle business in Chiang Mai.

Part 2: Data about the service quality of the rental vehicle business in Chiang Mai.

The service quality analysis of the vehicle rental for tourism business in Chiang Mai. The research implements the 2 concepts which are the concept of: (1) customer relationship management, and (2) customer experience management as follows:

1. Customer relationship management

Table 1 The overview of the average and standard deviation of Customer Relationship Management of the vehicle rental business

Aspects	Mean	S.D.	Opinion Level
1. Retention	4.45	0.44	Highest
2. Electronics	4.39	0.48	Highest
3. Database	4.39	0.42	Highest
4. Action	4.33	0.51	Highest
Total	**4.39**	**0.37**	**Highest**

According to Table 1, the research results show that the questions regarding the customer relationship management have an average of 4.33 - 4.45. The informants gave opinion on customer relationship management in the highest level (Mean = 4.39). When considered in each aspect, it was found that the informants received the highest level of the services in all aspects. The highest service level is Retention (Mean = 4.45), following by Electronics (Mean = 4.39), Database (Mean = 4.39) and Action (Mean = 4.33) respectively.

2. Customer experience management

Table 2 The overview of the average and standard deviation of the Customer Experience Management of the vehicle rental business

Aspects	Mean	S.D.	Opinion Level
1. Empathy	4.58	0.33	Highest
2. Responsiveness	4.48	0.41	Highest
3. Assurance	4.46	0.40	Highest
4. Reliability	4.44	0.43	Highest
5. Tangibles	3.40	0.47	Moderate
Total	**4.27**	**0.28**	**Highest**

According to Table 2, The research results show that the questions in regards to the customer experience management received from the informants have an average of 3.40 - 4.58. The informants gave opinion on customer experience management of the vehicle rental business in Chiang Mai in the highest level. (Mean = 4.27) When considered in each aspect, it was found that the informants received the highest level of the services in all aspects. The highest service level is Empathy (Mean = 4.58), followed by Responsiveness (Mean = 4.48), Assurance (Mean = 4.46), and Reliability (Mean = 4.44), respectively. On the other hand, one of the aspects received a moderate service level in the customer experience management which is Tangibles (Mean = 3.40).

Part 3: Data related to service quality of the rental vehicle business in Chiang Mai.

The factor analysis was conducted as follows: Pearson's Product Moment Correlation Coefficient, Kaiser-Meyer-Oklin Measure of Sampling Adequacy: KMO, Communality: h2, Total Variance Explained, and Rotated Component Matrixa using Orthogonal Rotation by way of Varimax method to analyze the component identifiers. In which the researcher analyzed each element and discovered the survey results of service quality of the vehicle rental for tourism business in Chiang Mai. These factors were employed in order to analyze the indicators of each component, the results are as follows:

The factor analysis of the vehicle rental for tourism business in Chiang Mai. This research implemented 2 concepts which are the concepts of : (1) customer relationship management, and (2) customer experience management as follows:

Customer relationship management

1. The result of Pearson's Product Moment Correlation Coefficient

It was found that the coefficients of correlation were statistically related in significance at the level of 0.01 and 0.05, and in total of 120. This revealed that the variables were in relation, and thus could be categorized in the same component.

2. The result of Kaiser-Meyer-Oklin Measure of Sampling Adequacy: KMO

Table 3 KMO and Bartlett's Test of the customer relationship management.

Kaiser-Meyer-Olkin Measure	0.859	
Bartlett's Test of Sphericity	Approx. Chi-Square	2671.022
	df	120
	Sig.	0.000

According to Table 3, it reveals that Bartlett's Test of Sphericity is equal to 2671.022 in which p<0.01. The correlation matrix of the indicators was different from

unit matrix in statistical significance, thus, this set of data is suitable for future confirmatory factor analysis. It also conformed to Kaiser-Meyer-Olkin Measure of Sampling Adequacy; the analyzed result is equal to 0.859 which means the samples are highly suitable.

3. The result of Communality: h2

The study found that the result of communality was from 0.463 to 0.786. Therefore, this could explain the result of the variation of the variables, and also each message could be measured in terms of communality components.

4. Total Variance Explained

It was found that the % of variance of the 1st component was equal to $5.951/16 \times 100 = 37.196\%$ which means the 1st component could be used to explain all of the 37.196 % of the variance. While the % of variance of the 2nd component was equal to $1.745/16 \times 100 = 10.905\%$; this means that the 2nd components could be used to explain all of the 10.905% of the variance. When all 4 components are combined, they could explain the variance of all 16 questions by 62.422%, and this number is enough to be a representative of the components considering its Eigenvalue that is more than 1.

5. Rotated Component Matrixa

The components are categorized into 4 components, and the value indicator was between 0.495 -0.821. The 4 components are as follows: (1) data management system; (2) online services; (3) strategies strengthening relationships and (4) creating loyalty.

Customer experience management

1. The result of Pearson's Product Moment Correlation Coefficient

The study found that the coefficients of correlation were statistically related in significance at the level of 0.01 and 0.05, and in total of 300. This reveals that the variables are in relation, and thus could be categorized in the same component.

2. The result of Kaiser-Meyer-Oklin Measure of Sampling Adequacy: KMO

Table 3 KMO and Bartlett's Test of the customer experience management.

Kaiser-Meyer-Olkin Measure	0.823	
Bartlett's Test of Sphericity	Approx. Chi-Square	3442.293
	df	300
	Sig.	0.000

According to Table 3, it reveals that Bartlett's Test of Sphericity is equal to 3442.293 in which p<0.01. The correlation matrix of the indicators was different from

unit matrix in statistical significance, thus, this set of data is suitable for future confirmatory factor analysis. It also conforms to Kaiser-Meyer-Olkin Measure of Sampling Adequacy; the analyzed result is equal to 0.823 which means the samples are highly suitable.

3. The result of Communality: h2

The study found the result of communality at 0.357 to 0.789. Therefore, this could explain the result of the variation of the variables, and also each message could be measured in terms of communality components.

4. Total Variance Explained

The study found that the % of variance of the 1st component is equal to $6.404/25 \times 100 = 25.617\%$ which means the 1st component could be used to explain all of the 25.617% of the variance. While the % of variance of the 2nd component is equal to $2.464/25 \times 100 = 9.855\%$; this means that the 2nd components could be used to explain all of the 9.855% of the variance. When all 5 components are combined, they could explain the variance of all 25 questions by 52.185%, in the social sciences, where information is often less precise, it is not uncommon to consider a solution (Hair, Black, Babin, & Anderson, 2014) and this number is enough to be a representative of the components considering its Eigenvalue that is more than 1.

5. Rotated Component Matrixa

The components are categorized into 5 components, and the value indicator is between 0.494- 0.856. The 5 components are as follows: (1) consistency in service; (2) build confidence profession; (3) understanding and paying attention to customer (4) service concrete; (5) service readiness.

Part 4: The conclusion of the service quality by the entrepreneur of the rental vehicle business in Chiang Mai.

The researcher compared all the questions involving the service quality of the rental vehicle business in Chiang Mai containing 9 components. The results of the interview and focus group are as follows:

1. Data management system

The data management system allows the vehicle rental business to acknowledge the needs of customers. The business is able to give the advice, and recommendation correctly which can create good relationship and enhance the possibility of re-purchasing in the future. Non-collecting customer information in depth is a bad customer relationship management because it does not create service loyalty to the customer which should keep a customer database to obtain exhaustive

information. And the accurate database management in the operation of the system can enable users to the ultimate utilization, as well as help support the service to be more efficient, facilitate both service providers and users, and boost the amount of service usage.

2. Online services

The vehicle rental business in Chiang Mai mainly uses mobile application which applied the modern technology to the business in order to facilitate various aspects, such as checking information more efficiently regarding the business public relations. As Danthamrongkun & Udon (2006) noted that choosing the right technology and system is important to facilitate the success of the customer relationship management. Supported by the research of Rowley (1994), findings that technology recalls the customers to use the service again.

3. Strategies strengthening relationships

The strategies strengthening relationships is a method of building good relationships with customers to keep customers with the business as long as possible, and create customers loyalty which is consistent with the research of Danthamrongkul & Udon (2006). It was discovered that setting action can maintain customers and create loyalty effectively. Allied with the research of Petprasom & Donkaew (2010), noting that adapting action in the customer relationship management for relationship building brings the most direct impact on customer experience management.

4. Creating loyalty

Creating loyalty can boost the frequency on purchasing products or services. It can engage more marketing interaction and lead to a closer relationship, which is coherent with what Danthamrongkun & Udon (2006) mentioned in their research. They claimed that the consideration of service users and pay attention to every element is important for providing good service. That is why the informants gave the same opinions on every aspect. Similar to Limpanavech (2004) who found that customer relations management is the process of creating loyalty to the business towards products and services,

5. Consistency in service

In term of consistency in service of the vehicle rental business in Chiang Mai, the users value the importance of payment security, and the integrity of the organization as the core. It is in line with the concepts of Zeithami, Parasuraman, & Berry (1990), They found that the customers gain confident in the services when they gain good service from service provider. Danthamrongkun & Udon (2006) also found that the success of customer experience management comes from putting effort in customer experiences management, consistency, creating a unique experience, create the truly desired and valuable experience to the customers, good cooperation from all business units to make all parts work well together, and having good experiences among the staff to create the highest efficiency in providing services to the customers.

6. Build confidence professional

In term of assurance of the vehicle rental business in Chiang Mai, customers value this aspect at a high level which means the customers trust in the service received. That is why they evaluate this aspect in a positive direction by the staff smiling, good reception, knowledge and ability to provide advice to service recipients and the ability to provide professional rental vehicle information. Employees are punctual when picking up and delivering rental vehicles and focus on the personnel. In accordance with Zeithaml Parasuraman & Berry (1990), findings that building trust, and honesty in providing services will allow the customers to evaluate the highest service quality.

7. Understanding and paying attention to customer

The informants have an opinion on understanding and paying attention to customer. Showing that the friendliness, care, and understanding of the need of customers have exceeded expectations. This is in line with Samuejai (2006), found that service quality is the basic expectation that businesses must meet. The service providers should be willing to provide services, be friendly with customers, and also pay attention to customers. The customers often expect that they will receive the least that they expect. If the service does not meet their expectations, they will seek another relevant business.

8. Service concrete

The tangibles of the vehicle rental business in Chiang Mai is at a moderate level. It shows that the service user pays attention to the service touch point and have high expectations at the first touch point that they meet with the employees. Therefore, the service provider must provide customer service with customer in mind. It corresponds to the research of Limmanon (2007). He found that creating a positive experience for customers at every touch point that can be received by the five senses, namely seeing, tasting, smelling, hearing

and touching. In every process that the customer contacted the organization from start to finish, is the heart to create good feelings among each in order to keep short-term and long-term customers. Every experience that customers received from each touch point will accumulate into a holistic experience about the service.

9. Service readiness

Service readiness of the vehicle rental business in Chiang Mai is when the customers are well taken care of by the right and efficient assistance of staff. Customers are extremely satisfied beyond their expectations resulting in the loyalty and good word of mouth to the business. This is consistent with Serirat & Laksitanont (1996) which discovered that service quality is one of the most important points in creating a difference in the service business and maintaining superior service levels by offering the service quality that the customers expect. Customers will be satisfied if they get what they want, where they want and how they want.

Discussion

The end result implies that the existence of service design favorably affects to create quality tourism experiences, helps organizations understand services from a tourism perspective, to service improvement and designing new services. The results obtained from the service design are service standard to deliver services to tourists until they create continual customer loyalty for the vehicle rental tourism business. In addition, a formal and informal connection with tourism and fit perfectly with business and the task perfectly action through service quality. The results can be concluded that the services quality have a direct relationship with confirm or disconfirm expectation. The vehicle rental tourism business operators must take the quality management seriously in order to meet the customers' expectations and to differentiate the business from competitors. Therefore, service design is essential to improving service quality to respond to the customers need through the systematic work of employees. Moreover, the vehicle rental for tourism application is a new service and designed for the primary purpose of responding to the needs of customers, focusing on the customer. It is also designed to encounter the operations of the business to be able to respond to the customers' needs promptly and most effectively.

The vehicle rental tourism business in Chiang Mai has a very high growth rate and is highly competitive especially for local business. Chiang Mai has many tourists due to the increasing number of low-cost airlines and as a result a higher demand for rental vehicles for tourism. Therefore, the vehicle rental tourism business in Chiang Mai has to set service standard for each tourist by service quality to manage customer relationship management and customer experience management. It is important to organize the work system of employees in accordance with the tourist experience. The entrepreneur of the rental vehicle business in Chiang Mai should improve the quality of tangibles to be more efficient, such as GPS (navigation), payment technology such as a swipe card, welcome message label or the name tag of the customer when traveling to pick up the rental vehicle, paying with QR Code and the place to deliver the rental vehicle that is more secure in order to create a good experience and maximize customer satisfaction. In addition, the entrepreneur of the rental vehicle business in Chiang Mai should understand the business, service and customer needs to manage the rental vehicle business that has quality that relates with the needs of the customers. Moreover, the rental vehicle business has provided the potential to compete with competitors efficiently. Finally, service design in the ever-changing tourism sector has new technologies to make operations more fluid and efficient. Creating a service innovation model by using new technologies on smart phone can respond to the new needs of tourists who are changing rapidly from the exposure to new types of services and designed to suit the operation that can respond to the needs of customers quickly and most effectively.

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