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Measuring Customer Satisfaction in the Parcel Service Delivery: A Pilot Study in Malaysia

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Abstract

The purpose of this paper is to examine the level of customer satisfaction in the parcel service delivery. A questionnaire survey based on the SERVQUAL model was carried out among 103 parcel service delivery users from the Cheras area, Kuala Lumpur. It was found that tangibility, reliability and assurance each has an impact on customer satisfaction; while empathy and responsiveness have no significant impact on customer satisfaction. The paper contributes to our knowledge on customer satisfaction by presenting the service qualities from a customer perspective and by deriving an effective approach to focus on the important dimensions in the SERVQUAL model in the parcel service delivery business. Implications and limitations from this study are also discussed.

Keywords: SERVQUAL model, Service, Parcel service delivery (PSD), Customer satisfaction

1. Introduction

1.1 Background of the Problem

The theme pertaining to parcel service delivery (PSD) is that it consists of carriers that transport shipments which typically small to be handled by one person (Morlok, Nitzberg, Balasubramaniam & Sand, 2000). In logistics, the PSD is part of third-party (3PL) service provider that ensures a smooth movement of goods within the supply chain (Vijayvargiva & Dev, 2010). The 3PL therefore, acts as an external supplier that performs all or part of logistics activities for a company (Coyle, Bardi & Langley, 2003). In the case of PSD, it is categorized under the standard 3PL provider (Hertz & Alfredsson, 2003).

Vijayvargia and Dey (2010) argued that the selection of the 3PL service providers would depend on service qualities provided by these service providers. Meanwhile, Bourlakis and Melewar (2011) have highlighted factors that influence customers to select their 3PL service providers. These include the operational flexibility, the ability of the 3PL service provider to cope with a vast range of physical activities, ability to maximize level of service, geographical coverage provided, and product or market specialization.

According to Cronin and Taylor (1992), improving service quality is a must for PSD providers in order to attain competitive advantage. Failure to improve service quality in the parcel delivery services would lead to competitive disadvantages for these PSD providers (Fabien, 2005) Therefore, an approach towards effective service quality is a measure for any services industries in order to gain customer satisfaction (Parasuraman, Zeithaml & Berry, 1985) including the PSD providers. The model to measure customer satisfaction towards service quality is called the SERVQUAL model (Parasuraman *et al*., 1985). In supporting the model, Lovelock and Wirtz (2004) emphasized that the need to measure service quality is to compensate customer's money, time and effort by using services provided by a company. In other words, PSD providers must have a customer oriented in order to satisfy customers.

1.2 Problem Statement and Research Question

The objective of this study is to establish an empirical investigation of contributing factors that influence the customers' perception in selecting PSD providers. Despite the growing interest in PSD providers and customer services, little empirical research has been conducted on the PSD in Malaysia (Noore Alam, 2008). This paper works toward indicating that the model of service quality from Parasuraman *et al*. (1985) leads to an understanding of customer's satisfactions and selecting PSD providers in Malaysia.

A research question was developed for this study:

What are the factors of SERVQUAL model that influence the customer satisfaction in selecting PSD providers?

This paper begins with a review of the literature on the dimensions of SERVQUAL model in relations to PSD, and PSD's customer satisfaction. Next, the research methodology, hypothesis testing and statistical findings are presented. Based on these, practical implications, limitations and conclusion are discussed.

2. Literature Review

In the service quality theory, clients will determine the quality levels of services based on their expectation towards a firm (Oliver, 1980) Hence, customers' expectations serve as the foundation on which service quality is provided. Oliver further explained that as service quality increases, satisfaction from the customer increases.

In relation to PSD, an empirical study by Park and Regan (2004) examined the impact of e-commerce on home delivery operations. Their study indicated that the logistical requirements of e-commerce goods may stimulate greater complexity in supply chain management and potentially cause higher costs in carrier fleet operations. In the 21st century, PSD providers are expected to continuously and quickly change its organization, process, people, products, facilities, information systems, performance measures, and business partners to adapt in to a continuously changing business environment (Bititci, Martinez, Albores & Mendible, 2003).

A concept called a "collaborative agile enterprise" emerges when PSD providers keen to stay competitive in the business (Bititci *et al*., 2003). For instance, the parcel delivery United Parcel Service (UPS)'s has created a unit called the Service Parts Logistics (SPL) (Laurie, Doz & Sheer, 2006). Through SPL, UPS has institutionalized the capabilities and skills for identifying and developing opportunities for competitive advantage.

Parasuraman *et al*. (1985) have developed a service quality model known as SERVQUAL. The model provides as an instrument for measuring service quality. There are five dimensions in the model namely tangibility, reliability, assurance, empathy and responsiveness. In a related literature, Parasuraman, Berry and Zeithaml (1991) emphasized that the dimension of reliability refers to the core aspects of the service while the other dimensions refer to the relational or process of the service provided.

Banomyong and Supatn (2011) described three areas of tangible dimension: assets, personnel and availability. Assets are referred to physical instruments and operative means (outlets location and web sites) while personnel are referred to employees who generate products and contribute to the control of logistics activities. Availability is referred to any instruments that indicated the existence of products along the transportation process.

Kersten and Koch (2010) explained the importance of reliability dimension based on promising time delivery, solving customer problems, doing right at the first time, delivering on time, and delivering damage-free goods. This dimension, therefore, describes the relationship between service and time.

Meanwhile, the dimension of assurance contains factors of credibility, security, competency and courtesy as the measurement scales (Parasuraman *et al*., 1991). In the PSD, the scope of this dimension is to assess knowledge and courtesy of employees and their ability to inspire trust and confidence towards customers (Jun, Yang & Kim, 2004). This also can relate to the responsiveness dimension where it focuses on quick response and ability to get help if the customers have a problem or question (Parasuraman *et al*., 1985).

The last dimension for service quality in the SERVQUAL is empathy. It refers to the individual service given by the PSD to its customers (Vega & Garcia, 2008). Vega and Garcia argue that customers are concerned on issues pertaining to giving individual attention, conveniences of operating hour, personal attention and understanding special needs when they choose their PSD service provider.

The success or the failure of service providers depends on how these service providers understand customer satisfaction based on their service performance (Banomyong & Supatn, 2011). In theory, customers' satisfaction is the forward-looking metric because it will affect the market share erosion to fall when it starts slipping (Kotler, 2003). Customer loyalty exists when these firms demonstrate reliability in their services toward customers (Coltman *et al*., 2008; Parasuraman *et al*., 1991).

In the of the SERVQUAL model, it also should be stressed weaknesses of the model. Buttle (1996) explains that SERVQUAL's 5 dimensions are not universals, and that the model fails to draw on established economic, statistical and psychological theory. Despite these weaknesses, the model remains a useful instrument for service-quality research for the past 20 years (Ladhari, 2009).

3. Research Framework

This paper focuses on how the dimensions of service quality (tangibility, reliability, assurance, responsiveness and empathy) affect the customers' satisfaction in using PSD providers. By examining the relationship between the five dimensions in the SERVQUAL model and customer satisfaction should contribute to extend knowledge of the relationship that exists between them. The link between the dimensions of service quality and customer satisfaction is illustrated in Figure 1.0. In this theoretical framework, service quality dimensions are independent variables and customer satisfaction is a dependent variable. The framework suggests services from PSD providers are associated with customer satisfaction.

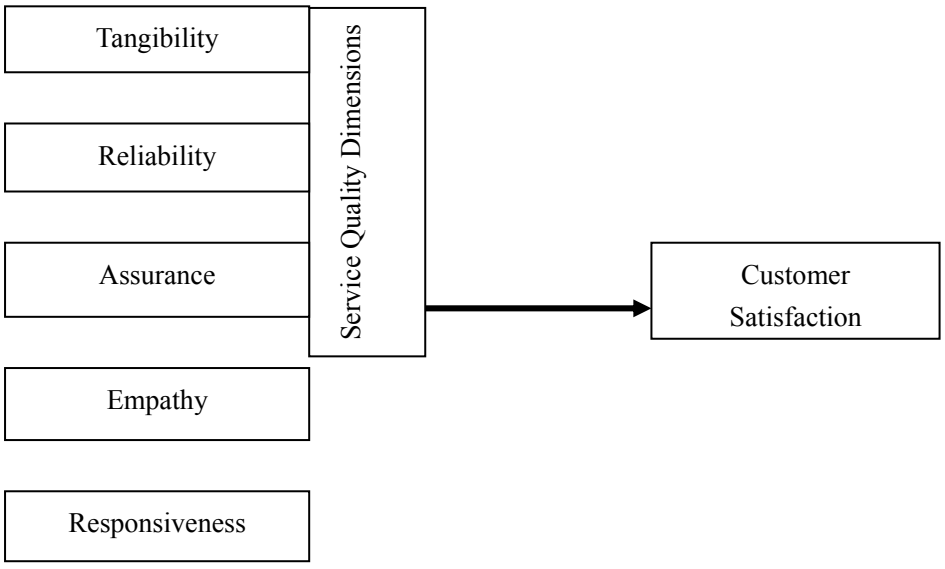

Figure 1. The Research Framework

The following hypotheses are proposed:

H1: PSD providers' tangibility is associated with customer satisfaction.

H2: PSD providers' reliability is associated with customer satisfaction.

H3: PSD providers' assurance is associated with customer satisfaction.

H4: PSD providers' empathy is associated with customer satisfaction.

H5: PSD providers' responsiveness is associated with customer satisfaction

4. Methodology

In this section we discuss sample and data collection procedures in the study as well as the statistical tests applied to test the hypothesis.

4.1 Sampling Procedure

The target population of this study is people who have experience in using the PSD. The survey was conducted between May and June 2011. As this is a pilot study, a non-probability sampling was used. Out of the 110 self-administered questionnaires distributed to the public within the Cheras area in Kuala Lumpur, 103 usable questionnaires were returned, yielding a response rate of 93.6 percent.

There were 67 (65 percent) male and 36 (35 percent) female respondents. Out of this group of respondents, the majority of them were aged between 20 – 30 years old (88.3 percent). 53 (51.5 percent) of respondents used PSD on yearly basis. The remaining 33 (32 percent), 12 (11.7 percent) and 5 (4.9 percent) of the respondents used PSD on monthly, weekly and daily basis respectively.

4.2 Variable Measurements

4.2.1 Independent Variables: Service Quality Dimensions

This measure was based on 22 items which attribute to the five dimensions of the SERVQUAL model developed by Parasuraman *et al*. (1985; 1991) with appropriate changes to make the items more relevant to the present study. Responses to these items were made on a five-point Likert format which ranged from 1 = "strongly disagree" to 7 = "strongly agree".

4.2.2 Dependent Variable: Customer Satisfaction

Zeithaml, Berry and Parasuraman (1993) define customer satisfaction as a gap between expected service and perceived service provided by a firm towards its customer. This was operationalised by a three-item scale from the SERVQUAL model. Each item requires the respondents to indicate their perceptions on a seven-point Likert format from 1 = "strongly disagree" to 7 = "strongly agree".

4.3 Analysis of Data

The Statistical Package for Social Science (SPSS) Version 17 was used for the questionnaire data analysis. Demographical characteristics captured through questions with respect to

gender, age group and experience of using PSD.

5. Results of the Survey

5.1 Reliability Analysis

The reliability of the questionnaire was tested according to Cronbach's Alpha measurements (Table 1.0). The reliability of each dimension of service quality and customer satisfaction was as follows: tangibility (81 percent); reliability (86 percent); assurance (86 percent); empathy (85 percent); responsiveness (83 percent) and customer satisfaction (80 percent). Thus, all the reliability values are adequately meeting the standards for further research (Nunnally, 1967). Table 1.0 also indicates the values of means and standard deviations for all the variables.

Table 1. Reliability of Service Quality Dimensions and Service Satisfaction (n = 103)

Variable	Number of Items	Cronbach's Alpha	Mean	SD
Tangibility	4	.81	4.93	0.92
Reliability	5	.86	5.48	1.04
Assurance	4	.86	5.21	1.03
Empathy	5	.85	4.99	1.04
Responsiveness	4	.83	5.07	1.06
Customer Satisfaction	3	.80	5.38	0.98

In relations to means and standard deviations, Table 1.0 indicates that respondents perceived reliability (M = 5.48, SD = 1.04) to be the most dominant variable, followed by customer satisfaction (M = 5.38, SD = 0.98), assurance (M = 5.21, SD = 1.03), responsiveness (M = 5.07, SD = 1.06), tangibility (M = 4.93, SD = 0.92) and empathy (M = 4.99, SD = 1.04) which were all rated as "somewhat agree".

5.2 Simple Regression Analysis

A simple regression analysis was conducted to examine the relative impact of service quality dimensions on customer satisfaction. As indicated in Table 2.0, the SERVQUAL model dimensions were significantly accounted for .73 (i.e. R Square) of the variance in dependent variable (customer satisfaction). The F statistics yielded for 52.56 in customer satisfaction at the 95 percent confidence level. The results of regression analysis supported hypotheses H1, H2 and H3 but not hypotheses H4 and H5. HI, H2 and H3 posited a positive causal relationship (H1: $\beta = .14$, $t = 2.01$ $p = .047$; H2: $\beta = .28$, $t = 3.98$, $p < .001$; H3: $\beta = .45$, $t = 4.99$, $p < .001$).

Table 2. Results of Regression Analysis of the Service Quality Dimensions and Customer Satisfaction

	Sum of Squares	df	Mean Square	F	Sig.
Regression	152.86	5	30.57	52.56	.000*
Residual	56.42	97	.58		
Total	209.28	102			
R Square = .73; Adjusted R Square = .72					
Independent Variables	Standardized Coefficients	t	Sig.		
Tangibility	.14	2.01	.047*		
Reliability	.28	3.98	.000*		
Assurance	.45	4.99	.000*		
Empathy	.10	1.39	.169		
Responsiveness	.05	0.56	.575		

* significance at p = .05 level (2-tailed)

6. Discussion

The results of this study revealed that tangibility, reliability and assurance from the SERVQUAL model were significant to customers' satisfaction. In relation to tangibility dimension, studies from Nor Khalidah (2004) and Keillor, Hult and Kandemir (2004) indicated that factors such as appearance of personnel, physical facilities, modern looking equipment and materials associated with service are visually appealing are the important to services providers for ensuring customer satisfaction.

As for the reliability dimension, the results indicated that customers are satisfy when the PSD providers are able to ship items within promised time, show interest in solving problems, parcel carriers get thing right at first time and parcel carriers provide service within time they promise, they would gain customer loyalty and satisfaction (Notteboom & Rodrigue, 2008). In addition to that, an order fulfillment can be measured for customer satisfaction when the order time and when the items received by customers are within the acceptable cycle time (Rushton, Croucher & Baker, 2006).

Employees' performance plays an important role in determining customer satisfaction by demonstrating assurance (Parasuraman *et al*., 1991). This statement is supported by Jun *et al*. (2004) which explained that employees who perform their job based on knowledge and courtesy would contribute customers' confidence. In the PSD industry, the behaviour of personnel in parcel carrier, feel safe dealing with carriers, ability of personnel to answer your questions and courteous performance made by personnel would attribute to assurance dimension (Han, Chou & Liang, 2003).

In this study, empathy and responsiveness dimensions indicated non-significant results. The findings are contrast with the previous studies where empathy and responsiveness did indicate significant impact on customer satisfaction in logistics services (for examples Mentzer, Flint & Holt, 2001; Stank, Goldsby, Vickery & Savitskie, 2003). Further study should be performed in order to examine these non-significant results for empathy and

responsiveness dimensions.

7. Limitations and Future Research

There are some limitations that must be considered in future research. Firstly, a major limitation of this study is the small sample size (n = 103). Therefore, the power of the test is weaker. When a study has a lower sample size, the likelihood of encountering Type-I and Type-II errors occurring is higher (Schultz & Grimes, 2005). If the study has a higher sample size, it allows increasing the significance level of the findings. Large sample size is expected to represent the characteristics of the population studied. As this study is only a pilot, further research with appropriate sample size and sampling technique should be performed in future.

Finally, data were collected at the single point in time, which does not allow for changes in perceptions over time. It is suggested a longitudinal study needs to be conducted for future research.

8. Conclusion

In conclusion, this study reports on exploratory investigation of the relationship between dimensions in the SERVQUAL model and customer satisfaction in PSD industry. This study endeavours to make both theoretical and practical contribution to the literature, and it also provides several implications for future research.

The findings enhance our understanding of the customer satisfaction in using PSD. This study has also provided us with better understanding of the dominant dimensions in the SERVQUAL model that influence customer satisfaction in PSD industry.

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