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Level of Satisfaction Among Industrial Customers in Relation to Logistics Service Provider in Sabah

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Abstract
Purpose: To investigate the relationship between operational logistics service quality (OLSQ) and relational logistics service quality (RLSQ) towards customer satisfaction among industrial customer in Sabah.
Design/methodology/approach: The self-administrative survey and online survey questionnaire were used to collect the data for this study. List of 180 industrial customer provided by the express bus companies. Purposive sampling techniques was used in this study. The data was analyzed using SPSS 26.0 and SmartPLS 3.0.
Findings: Results support the hypothesis developed in this study confirming that service perceptions lead to customer satisfaction among industrial customer in Sabah.
Research limitations/implications: The current study is limited to east Malaysia which is Sabah where it excluded the respondent from peninsular of Malaysia. Besides, present study focusing only on land logistics transportation and excluded the air and ocean logistics transportation.
Practical implications: Those involved in logistics especially express bus managers can find new methods to make their customers satisfied and place their trust on the service provided. Not only that, as the express bus was used to send parcels within the various districts in Sabah, this present study can be used as a reference tool by the policy makers to revisit and improve the existing policies in the future.
Originality/value: For the record, this study is the first of its kind ever conducted in Sabah. It shows that OLSQ and RLSQ is an important indicator in satisfying industrial customers in the express bus sector.

Keywords: OLSQ, RLSQ, Industrial Customers, Satisfaction, Logistics service provider

Introduction

Nowadays, customer's expectation of full satisfaction with the products and services that they received have improved due to the changes in communication. This has put pressure on the service providers to raise the level of satisfaction of their customers as well as the quality of their services and products. To overcome this concern, many businesses concentrate increasingly on how to satisfy consumer needs and explore ways of lowering costs, enhancing quality and meeting their customer's ever-increasing standards (Daniela and Ovidiu, 2004). Given the fact that, logistics has been described by many businesses as a significant field for building cost and service benefits. Business logistics therefore sets the goal of achieving the highest level of customer service, securing the least possible cost, delivering high quality and being resilient in the constant changes in the market (Daniela and Ovidiu, 2004). As asserted by Daniela and Ovidiu (2004), Transport plays a significant role in the logistics activities, and

its functions occur in different logistics phase parts. Without sufficient construction of transport system, logistics cannot make full use of its advantages (Idris *et al.,* 2019). To make logistics more effective, cut operational costs and improve quality needs a good transport system in logistics activities (Daniela and Ovidiu, 2004), and ensure the parcel can arrive or reach to the customer as per requested delivery (Weli, Idris and Yaakob, 2019). In addition, the relationship of transport and logistics systems is interconnected, as logistics management requires transportation to carry out its operations. In general, there are many types of logistics such as air logistics, land logistics, freight logistics and pipeline logistics. Specifically, there are many types of main transportation mode for land logistics such as railway, road freight and bus transportation. In this study, express bus transport was used as a primary mode for land logistics by industrial customers who shipped their parcel in Sabah, especially for long-distance routes. Satisfying their customer is of the utmost importance to the express bus operators, as it will give them a clear picture on how their service can please their customers by acknowledging their needs. In addition, providing the customer with a good quality of service would allow them to thrive and maintain the marketplace (Thai, 2013; Meidutė-Kavaliauskienė, Aranskis and Litvinenko, 2014). In addition, for the business to maintain its competitive edge, they must ensure that the quality of the services they offer exceeds the expectations of customers. If the business does not really fulfil the customer's needs and expectations, they may end up turning to some other logistics service providers (LSP). Stopka, Černá and Zitrický (2016) stated that customer satisfaction is indeed very critical for LSP gaining a competitive edge which when they do not fulfil their customers' expectations, other service providers will perform that role. There are plenty of interactions during the distribution of a product between consumers and logistics providers, or when the customer uses the service itself. These interactions serve as the foundation about a perceived value for the customer. Previous scholars have reported that quality service has a direct influence on customer satisfaction and loyalty over time (Woodruff, 1997; Johnson, Herrmann and Huber, 2006). Therefore, it is important to evaluate and improve the business's level of logistics service quality (LSQ) to meet the needs and demands of customers. This is due to LSQ can help companies to differentiate not just their services, but also their consumer credibility (Vu, Grant, and Menachof, 2020). If customer needs are not well established, they may be less satisfied (Han and Xie, 2018). Next, the durability of logistics services has become a key problem since this will decide the business's success, and as consumer demand for services rises, each business must constantly reassess, adjust and enhance its logistics operations (Gotzamani, Longinidis and Vouzas, 2010).

The main aims for this study are to investigate the relationship between OLSQ and RLSQ towards customer satisfaction among industrial customer in Sabah. The discussion and conclusion summaries the result, along with suggestions for future research.

Literature Review

Theoretical Foundation

The origins of the LSQ study can be seen in (Perreault and Russ, 1976), who proposed that logistics activities have taken into consideration consumer's time, place and form utility. Thereby, improving product value and the quality of the logistics services which plays a pivotal role in developing customer satisfaction. A number of empirical studies provide strong evidence for the correlation between LSQ enhancement and customer satisfaction improvements (Daugherty, Stank and Ellinger, 1998; Mentzer, Flint and Hult, 2001; Stank, Goldsby and Vickery, 2003; Murfield, Boone, Rutner, and Thomas, 2017; Cao, Ajjan, and Hong, 2018). Study by Bowersox, Mentzer, and Speh (2008) found significantly improved customer satisfaction as a key benefit of LSQ.

The early development of the LSQ concept started with work by Mentzer, Gomes and Krapfel (1989) that a consumer-based view of LSQ consisted not only of the physical aspects of service delivery, but also included other elements of customer service that they called "marketing customer service" (Mentzer, Flint and Kent, 1999; Mentzer *et al.*, 2001; Rafiq and Jaafar, 2007; Shaban and Salih, 2020). Mentzer, Flint and Kent (1999) and Mentzer *et al.*, (2001) sought to extend the LSQ concept in an effort to improve the awareness of how logistics service customers influence their views of LSQ and satisfaction with logistics service.

LSQ consists of nine dimensions according to Mentzer *et al.*, (2001); order quality, personal contact quality, ordering release quantities, order discrepancy handling, information quality, order accuracy, order condition, ordering procedures, and timeliness. LSQ is primarily defined by two variables in the study of Gil Saura, Servera Francés, Berenguer Contrí and Fuentes Blasco (2008); empathy and reliability. Afterward, an updated version of the LSQ was proposed by Bienstock, Royne, Sherrell and Stafford (2008) including; logistics process quality (information, discrepancy, contact, and procedures) and quality of logistics outcome (accuracy, availability, condition and timeliness). Since then, the concept of LSQ has received great interest where others have studied LSQ as a two-dimensional OLSQ and RLSQ dimensions (e.g. Daugherty *et al.*, 1998; Stank *et al.*, 1999; Stank, Goldsby, Vickery and Savitskie, 2003; Sze *et al.*, 2012; Bouzaabia, Bouzaabia and Capatina, 2013; Jang, Marlow and Mitroussi, 2013), this trend has emerged more in logistics and marketing areas by seeking various measurements and indicators from a well-known SERVQUAL model (Shaban and Salih, 2020).

Defining Operational Logistics Service Quality (OLSQ) and Relational Logistics Service Quality (RLSQ)

The dimension of OLSQ and RLSQ is later on used by other scholar to examine customer satisfaction and customer loyalty (see Davis-Sramek, Mentzer and Stank, 2008; Juga, Juntunen and Grant, 2010; Bouzaabia *et al.*, 2013; Micu, Aivaz and Capatina, 2013; Tamang, 2014; Rahmat and Faisol, 2016; Huma, Ahmed, Ikram, and Khawaja, 2020). Good service providers doing their best on both elements, like for instance, they understand customers' needs and expectations and have the ability to deliver quality services in an efficient way in order to satisfy them (Schlesinger and Heskett, 1991), and work from Rahmat and Faisol (2016) in Malaysia, found the element of RLSQ to be essential in satisfying the customer and OLSQ found to be low as it relies on the level of closeness between providers and customers. Therefore, in this study, LSQ includes two dimensions. They are OLSQ and RLSQ. Scales that is used for this research is also similar to the SERVQUAL scale as reliability, and responsiveness, Assurance and Caring attempts to measure same concept as operational and relational dimensions of LSQ.

Operational parts of logistics service involve the physical aspects of the service, which often comprise of the capability of the company to deliver the requested service dependably and accurately. Based on Stank *et al.*, (1999), reliability is linked closely to the logistics service performance, as it is often associated with service dependability and accuracy. Bouzaabia *et al.*, (2013) defined OLSQ as "a company's operational delivery activities including physical features of the service and perceptions of reliability" (pg. 635), for example, the capability to deliver the requested service dependably and accurately. While for the RLSQ, it is conceptualized as "personnel contact quality which referred to the customer orientation of the company's customer service contact people" (pg. 635). This indicated how the customers classified the staff as competent, empathized with their plight, and assisted the customer overcome their problems. Based on Stank *et al.*, (2003), responsiveness, assurance and caring are related to relational logistics performance, as it includes measuring willingness to assist

and delivering services quickly. Relational performance gives enhanced insight to service providers about consumer needs and wants. The service provider should concentrate on operational means of satisfying them at the lowest possible cost to the customer upon knowing of these needs and wants. Bouzaabia *et al.*, (2013) defined RLSQ as "the company's or service provider's ability to understand customer needs and expectations" (pg. 635). This dimension focused on the perceptions of 1) assurance which is refer to "the knowledge and courtesy of employees and the ability to convey trust and confidence" (pg. 636); 2) responsiveness which is refer to "the willingness to help customers and provide prompt service" (pg. 636); and 3) caring which is refer to "the provision of considerate, individualized attention to customers" (pg. 636). Therefore, definition of OLSQ and RLSQ used was from Bouzaabia *et al.*, (2013).
Logistics studies have concluded that both operational and relational performance relative to logistics services had significant positive links to customer satisfaction and repurchase intentions (Innis and La Londe, 1994; Daugherty *et al.*, 1998).

Defining Customer Satisfaction

According to Boulding, Kalra, Staelin and Zeithaml (1993), satisfaction can also be viewed from a single transaction point of view or from an accumulative point of view. The first perspective is used by most approaches in the literature (Giese and Cote, 2000), while suggestions such as those by Fornell, Johnson, Anderson, Cha and Bryant, (1996) and Anderson, Fornell and Lehmann, (1994) regard satisfaction as a global assessment based on consumption experience over time or a collection of related experiences. In the wider sense, more recent contributions follow this last approach that supports the notion of satisfaction as "a global measurement of a set of satisfactions with specific prior experiences" (Yu and Dean, 2001 pg. 235). Satisfaction viewed from this point of view, according to Jones and Suh, (2000), will better clarify behavioural intentions.
Organizations and researchers have become very interested in customer satisfaction, as consumers are valuable assets in organizations and the priority of organizations to preserve their profitability and sustainability is by satisfy them. Customer satisfaction is a customer's overall or global judgement regarding the extent to which product or service performance matches customer's expectations (Anderson and Sullivan, 1993). Providing good quality of service and maintaining customer satisfaction is one of the greatest challenges of management in any industry including the service provider industry (Ponrahono, Bachok, Ibrahim and Osman, 2016).
Plenty definitions about customer satisfaction given by different scholars. For example, Lam and Zhang, (1999), describe customer satisfaction as a unique business transaction. Gundersen, Heide and Olsson, (1996), define customer satisfaction as a guest's opinion of a product or service after consumption which, in turn, can be calculated by evaluating the guest's performance assessment on particular attributes. Similarly, according to Wang and Shieh, (2006), customer satisfaction is defined as "the levels of service quality performances that meets users' expectations" (pg. 197). It is important to note that each customer's expectation is different. If the customer's expectations are higher than the result of the service process, then customer perceived service quality is not satisfactory (Huang, Wang and Xue, 2012). In addition, according to Morfoulaki, Tyrinopoulos and Aifadopoulou, (2010) defined satisfaction in the context of public transport as "a customer's overall experience with a service compared to his or her pre-defined expectations". Customer satisfaction is usually meant to be a result of the quality of service, which means that it is connected to the quality of the services and products that the buyer receives productively (Huma *et al.,* 2020). Furthermore, satisfaction is the consumer's sense that consumption provides outcomes against a standard of pleasure versus displeasure (Oliver, 1999). Hence, this research applied definition by Morfoulaki *et al.*, (2010).

Relationship between OLSQ, RLSQ and Customer Satisfaction

The relationship between service quality and customer satisfaction has always been somewhat confused and argued, particularly when it comes to measuring the LSQ. This is due to the view from previous research that the standard of service dimension in each industry may vary with the LSQ dimension (Stank *et al.*, 2003).

The significance of LSQ has been widely recognized as a strategic core factor (Mentzer *et al.*, 2001; Mentzer, Myers and Cheung, 2004; Rafiq and Jaafar, 2007; Richey, Daugherty and Roath, 2007; Law, 2016; Huma *et al.*, 2020) due to its obvious impact on customer and their satisfaction. Esper, Fugate and Davis-Sramek, (2007) suggest that by differentiating the logistics service offered, the quest for competitive advantage will occur, which would affect customer satisfaction.

Study by Bouzaabia *et al.*, (2013) in Tunisian sample found that RLSQ was the most significance indicator for satisfaction, and OLSQ was the most significance indicator for loyalty. Meanwhile, RLSQ was the most significance indicator of both satisfaction and loyalty in the Romanian study. Similarly, research conducted by Micu *et al.*, (2013) in Romania also but in various industries which is the Retail e-commerce sector, found that RLSQ was the most significance indicator of satisfaction and loyalty. In addition, food industry study in the United State had found that the primary drivers of customer satisfaction were both operational and relational capabilities (Zhao and Stank, 2003). Although there is a lack of research in the bus industry, Daugherty *et al.*, (1998) concluded that operational logistics elements that linked to product condition, delivery speed, product availability and delivery reliability were proven to have a greater impact on customer satisfaction as well as relational elements like responsiveness and communications.

In relation to this, study done in Malaysia found that the bus industry has a clear correlation between reliability and customer satisfaction (Mohd Rohani, Wijeyesekera and Abdul Karim, 2013). The ties between operational and relational performance and customer satisfaction are confirmed by empirical studies in logistics (Innis and La Londe, 1994; Daugherty *et al.*, 1998). Both operational and relational performance relative to logistics service have been found to had a positive effect on customer satisfaction in logistics literature (Innis and La Londe, 1994; Daugherty *et al.*, 1998). The notion that LSQ improvements can increase customer satisfaction is strongly supported by a significant number of findings (Innis and La Londe, 1994; Leuthesser and Kohli, 1995; Daugherty *et al.*, 1998). The value of LSQ and its effect on customer satisfaction was recognised by Gil Saura *et al.*, (2008). A variety of empirical research followed to supports his findings to assess the beneficial impact of LSQ on customer satisfaction (Innis and La Londe, 1994; Daugherty *et al.*, 1998; Stank *et al.*, 1999; Mentzer *et al.*, 2001).

Stank *et al.*, (2003) found that a positive relationship with satisfaction is demonstrated by relational performance. Also, Mentzer *et al.*, (2001) confirms the presence of a direct relation between personal contact quality and customer satisfaction. Although the findings are contradict, there is an indication that satisfaction is affected by OLSQ.

Hence, from the above argument regarding different dimensions of LSQ, following hypothesis may be formed:

H1: There is a significant relationship between OLSQ and customer satisfaction
H2: There is a significant relationship between RLSQ and customer satisfaction

Research Framework and Hypothesis Development

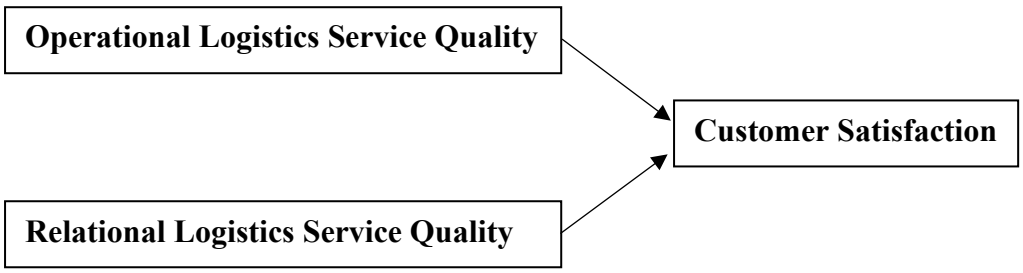

Figure 1: Research Framework

Method

In this study, LSQ factors affecting customer satisfaction among industrial customer who used express bus as a courier service in Sabah were defined by a quantitative approach. The self-administrative and online survey questionnaire were used and the respondent in this study was the industrial customers who used express bus as their courier services.

Six major districts were selected, namely Kota Kinabalu, Sandakan, Lahad Datu, Semporna, Tawau and Keningau, as this study was carried out in Sabah. Regarding the geographical area of Sabah, most of the company chooses express bus to send its goods from one district to another district (Salam, 2019), especially within the named main district. In addition, the express bus is one of the major long-distance transportation in Sabah. These six districts, as named can be considered as representatives for the general population of Sabah as they cover the northern, southern, eastern and central regions of Sabah.

The unit of analysis for this research was industrial customer of express bus company in Sabah. This study has applied purposive sampling. The express bus company provided a list of 180 industrial customers. The respondents were contacted individually. Upon having been contacted, all 180 of them agreed to review the questionnaire before deciding to become involved. Out of 180 respondents, 122 completed surveys were collected and usable representing a response rate of 67.78% (122 out of 180 contacts).

This study has used the Five Points Likert scaling methods. The questionnaire was prepared in English and later converted backwards into Bahasa Malaysia in order to make the respondents respond easily and reduce bias and error. OLSQ and RLSQ measurements were adapted from (Stank *et al.*, 1999) and Mentzer *et al.,* (2001). Meanwhile, measurements for customer satisfaction were adapted from (Stank *et al.*, 1999). The data collected in this study were analyzed using the Statistical Package for the Social Sciences version 26.0 (SPSS 26.0) and Smart Partial Least Squares 3.0 (SmartPLS 3.0).

Findings

Measurement model results

Loadings with values at least 0.70 are acceptable (Hair, Hult, Ringle and Sarstedt, 2016). Referring to Table 1, the measurement items were remained because the loadings were above the value as per recommended by Hair *et al.,* (2016). Moreover, to test the convergent validity and internal consistency reliability, the average variance extracted (AVE) and Composite Reliability (CR) were introduced. Results indicate that more than 0.50 of the AVEs and 0.70 of the CRs of all constructs imply adequate convergent validity and reliability (Fornell and Larcker, 1981; Gefen, Straub and Boudreau, 2000). In addition, by comparing the square root

of AVE for each construct to their correlations with all other constructs in the model, discriminant validity was further evaluated (Table 2). The square root of AVEs exceeds the inter-construct correlations in all situations, confirming the validity of discriminants (Fornell and Larcker, 1981).

Structural results

There are two structural relationship in this study, which consist of two direct relationships. The results are shown in Table 3. The results suggested that all direct relationship is supported (H1 and H2). Based on the analysis, it shown that H1 (β=0.310, t=2.535, p<0.01) and H2 (β=0.310, t=2.535, p<0.01) directly influenced the customer satisfaction. Hence, hypotheses H1 and H2 are supported (Table 3)

Table 1: Measurement Model Evaluation

Construct	**Measurement Items**	**Factor Loadings**	**AVE**	**CR**
Customer Satisfaction	CS1	0.734	0.682	0.915
	CS2	0.877		
	CS3	0.831		
	CS4	0.830		
	CS5	0.851		
OLSQ	OLSQ1	0.815	0.670	0.910
	OLSQ2	0.829		
	OLSQ3	0.864		
	OLSQ4	0.814		
	OLSQ5	0.766		
RLSQ	RLSQ1	0.713	0.570	0.914
	RLSQ3	0.772		
	RLSQ4	0.737		
	RLSQ5	0.830		
	RLSQ6	0.731		
	RLSQ7	0.762		
	RLSQ8	0.757		
	RLSQ9	0.733		

Note: CR, Composite Reliability; AVE, Average Variance Extracted

Table 2: Discriminant Validity Coefficient

	Customer Satisfaction	**OLSQ**	**RLSQ**
Customer Satisfaction	**0.826**		
OLSQ	0.687	**0.818**	
RLSQ	0.770	0.739	**0.755**

Note: Diagonal terms (bold) are square roots of the AVE.

Table 3: Structural Relationship

Hypothesis	Relationship	Std. Beta (β)	Std. Error (SE)	t-value*	Decision
H1	OLSQ -> Customer Satisfaction	0.260	0.111	2.347**	Supported
H2	RLSQ -> Customer Satisfaction	0.578	0.088	6.569**	Supported

Note: t-values > 1.65* (p<0.05); t-values > 2.33** (p<0.01)

Discussion

The findings in this study showed H1 and H2 were supported, which demonstrated there is a significant relationship between OLSQ and RLSQ with customer satisfaction among industrial customer in Sabah. The outcome of this analysis was similar with previous studies (Stank *et al.*, 1999; Zhao and Stank, 2003; Davis-Sramek *et al.*, 2008; Davis-Sramek, Droge, Mentzer and Myers, 2009; Bouzaabia *et al.*, 2013; Micu *et al.*, 2013; Tamang, 2014; Rahmat and Faisol, 2016) with respect to the relationship between OLSQ and RLSQ with customer satisfaction.

Simply put, it can be concluded that customers look at the efficiency of the express bus, where when the express bus is able to deliver the services reliably and accurately as planned, they satisfy and become loyal. As this study was conducted in Sabah, it can be interpreted that the express bus is among the quick and accurate delivery in Sabah in terms of reliability. Logistics have been identified by several companies as an important field for build costs and service benefits. By realizing the performance of the express bus, industry customers in Sabah will be able to reduce their costs, resulting in satisfaction, and will bring them continuing to use the express bus as their choice of courier services in Sabah.

On the other side, the explanation for the significant outcome is that the industrial customer sees this dimension as a must to be given to its customers by express bus. In other words, express bus should respond to any problems faced by the customer, caring and assuring them. In addition, express bus is one of the courier services that customers opted to use in Sabah for long-distance transport because compared to other modes of logistics transport, it is cost-effective and fast. It can therefore be concluded that the factors that affect customer satisfaction among industrial customers in Sabah are OLSQ and RLSQ.

Conclusion

This study concentrated only in Sabah and excluding the respondent from Peninsular Malaysia. For future study, it could assess it by including Peninsular Malaysia. Furthermore, this study focuses solely on land transportation which future research should include other mode of transportation. This study contributed to the industry and those are involved with the logistics company to solve the problem of satisfying customers towards the services as well as this paper might prove useful for policy maker in their efforts to revisit and strengthen the existing policies.

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