DEVELOPING LOGISTICS SERVICE QUALITY FRAMEWORK: MALAYSIAN PERSPECTIVE

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ABSTRACT
Purpose: The main objective of the study is to explore the logistics service quality elements that affect the Malaysian manufacturers' satisfaction level. Focus was given in assessing manufacturers view on outbound logistics service as it is the highest 3PL service used in Malaysia.

Design/methodology/approach: The research adopted qualitative approach in gathering and analysing the information from eight selected Malaysia manufacturers. In depth interview with the relevant personnel were being conducted and transcribed verbatim. Constant comparative analysis technique of data analysis was employed in analysing the data.

Findings: The study reveals that that all eight companies used 3PL services and there are four factors which are aligned with preceding LSQ empirical studies namely product condition, product delivery accuracy, quality of key contact personnel and timeliness. Subsequently, 3PL responsiveness and flexibility is an additional factor discovered in the analysis which is originally not previous LSQ studies.

Originality/value: This study provides insights on the different elements of logistics service quality from the view of 3PL users in Malaysia. This information is vital for researcher to understand the applicability of original LSQ elements and the possible element not considered in preceding studies.

Keywords: Logistics, Third Party Logistics, Malaysia, Logistics Service Quality, Manufacturers

Paper type: Conceptual paper

Introduction

In Malaysia, there are vast expansion and growth of the logistics industry (Sohal, and Millen, 1999; Frost and Sullivan, 2011). Frost and Sullivan (2011) expected that Malaysia's logistics industry to grow 10.3 % valued at RM129.93 billion by 2012. This anticipation is driven by the forecast of increase in the Malaysian trade and their foreign investments. In addition, the Malaysian government support towards the development of the logistics sector is also expected to be the main contributor to the growth (Frost and Sullivan 2011). One of the growing logistics units is 3PL services, it is a booming trend among businesses (Sohail and Sohal , 2003; Salleh , 2007; Ali, Mohamad and Jaafar, 2008). Freight forwarding transportation and warehousing services are actively outsourced, these services were claimed to be the main sources of revenue in the Malaysian logistics industry (Frost and Sullivan, 2011). Among common reasons of why businesses opted for outsourcing include gaining efficient inventory control, improvising information management and to maintain logistics service quality (Halldorsson and Larsen, 2004; Bhatnagar, Sohal, and Millen, 1999).

Logistics Service Quality

Starting from the mid 1990's, logistics capability has evolved from the traditional contribution in supporting marketing function, cost reduction and now has exalted to the capability to support or produce quality (Innis and La Londe, 1994). The quality in logistics may further enhance greater satisfaction and loyalty (Mentzer, Flint and Kent, 1999; Saura, Francés, Contrí, and Blasco, 2008). Service quality (SERVQUAL) theory was mainly established as a means to measure the difference between what a person's expectation on a service and the perception that he/she may express after experiencing the service (Parasuraman, Zeithaml, and Berry, 1988). Almost every paper examining service quality has referred to the most popular theory developed by Parasuraman *et al*., (1985). The initial scale of SERVQUAL was developed through qualitative methods, which included focus group interviews. The model was later tested and refined through a quantitative survey. Parasuraman *et al*., (1985) gathered the service quality information through various industries from retail consumers of appliance repair or maintenance, retail banking, long distance telephone service, securities brokers to credit card services.

Bienstock, Mentzer and Bird (1997) are among the early scholars that have integrated SERVQUAL concepts with logistics function. Bienstock *et al*., (1997) developed a model known as physical distribution service quality (PDSQ). The construct of PDSQ is a valid reliable scale gathered from the perception of purchasing managers assessing the service quality of in-house logistics providers (Mentzer *et al*., 1999). The PDSQ model was developed by using similar qualitative and quantitative methods conducted by Parasuraman *et al*., (1985). The PDSQ theory consists of three variables that are timeliness, availability and condition (Stank, Goldsby and Vickery, 2003). Later, Mentzer *et al*., (1999) expanded the PDSQ model further into logistics context by considering the need of combining both the technical and functional qualities of the logistics service. Technical quality is expressed as the service that is technically acceptable and leads to concrete results (Mentzer, Flint and Hult, 2001). On the other hand, functional quality includes the way the customer is treated during the service provision process (Mentzer *et al*., 2001). There are nine original variables, namely personnel contact quality, order release quantities, information quality, ordering procedures, order accuracy, order condition, order quality, order discrepancy handling, and timeliness (Mentzer, *et al*., 2001).

In addition, Mentzer *et al*., (1999) has studied the logistics service quality (LSQ) instrument from the view of the customer instead of the providers. Whereby, the developed LSQ measurement was tested in the United States largest military logistics providers (Defence logistics America, DLA). DLA users were the sample of the study which assessed the service quality delivered by DLA. The aim is to understand the different segments of value logistics service quality across the industry. Rafiq and Jaafar (2007) tested and validated the LSQ instrument by surveying the users of third party logistics in the United Kingdom as a sample. They have made minor modification on the original constructs. Instead of assessing in-house logistics service, Rafiq and Jaafar (2007) assessed companies which used various types of the 3PL services (inbound, outbound, external 3PL providers) and different logistics providers. The results provided an overview of the level of the third party logistics service quality and its impact on the customer satisfaction. Nevertheless, as of 2012, the publication related assessment of logistics industry in Malaysia by using SERVQUAL or any other logistics service quality research related is still limited except for the work of Sohail *et al*., (2004), Zakaria *et al*., (2010), Ho *et al*., (2012) and Nassiry *et al*., (2012) (refer to table 1) which studied the general perspective of logistics service quality impact on satisfaction level and the state of quality program in logistics department among manufacturers.

Author/ Title	Sample	Constructs
Sohail, Sohal and Millen (2004) The State of Quality in Logistics: Evidence from an Emerging Southeast Asian Nation	Malaysian Manufacturers	Quality practices in logistics function, organization of the quality program, improvement measurement, quality in logistics function
Nassiry, Ghorban, and Nasiri, (2012) Supply Chain Management and Service Quality in Malaysian Hotel Industry	Hotel industry	Strategic Purchasing, Communication, Suppliers' Relationship, Service Quality
Ho, Teik, Tiffany, Kok, and Teh, (2012) Logistics Service Quality among Courier Services in Malaysia	Courier Services-Users	Timeliness, Condition/ Accuracy of Order, Information Quality, Availability / Quality of Contact Personnel
Zakaria, Zailani and Fernando (2010) Moderating role of logistics information technology on the logistics relationships and logistics service quality	Logistics Companies in Penang	Trust, satisfaction, bonding, communication, commitment, logistics information technology, logistics service quality

Table 1: Logistics Service Quality Studies in Malaysia

Research Methodology

This study employed a qualitative method. Exploratory study was carried out since there are limited related researches and publications that have been conducted in Malaysia pertaining to Logistics Service Quality assessment among manufacturers towards their 3PL providers. In depth semi structured interviews was conducted. Questions were focused on identifying problems that manufacturers usually faced in dealing with 3PL in their physical distribution activities. Total of 20

manufacturers were randomly selected from the 2011 Federation of Malaysian Manufacturers Directory listings but only 8 agreed to participate. All interviews were being audio recorded and transcribed verbatim. After Interviewing with 8 companies researchers reach a saturation point where there are no new information. Thus, decided 8 companies are sufficient for further qualitative analysis. List of interviewed manufacturers is presented in table 2. To conceal the identity of identified companies, alphabets were used to represent the respective companies.

Manufacturer	Position	Industry	Type of Companies	Length of Experience
A	Logistics Manager	Electric and Electronic – Semiconductor	Manufacturer	8 Years
B	Logistics Executive	Electric and Electronic – Camera, Printer	Manufacturer	3 Years
C	Logistics Manager	Electric and Electronic – Hard Disk	Manufacturer	7 Years
D	Logistics Manager	Food	Manufacturer	20 years
E	Logistics Manager	Dairy Product	Manufacturer	4 Years
F	Production Planner/ Logistics Manager	Beverages	Manufacturer	15 years
G	Logistics Assistant Manager	Herbs Product	Manufacturer	6 years
H	Sales Assistant	Electric Electronic	Manufacturer	5 years

Table 2: Background of Informants

Findings

Interview were analysed to identify the similarities and differences of the satisfaction level with the 3PL services or what are the attributes that they may perceive as contributing to excellent service. From the randomly selected manufacturers, all 8 manufacturers are users of 3PL services, most of them are using 3PL for their outbound or physical distribution services. Based on the analysis, five main factors were identified. These factors were believed to affect customer satisfaction in their experience of using 3PL outbound service in Malaysia. The factors identified are product condition, product delivery accuracy, quality of key contact personnel, responsiveness and timeliness.

Product Delivery Accuracy

The first factor is product delivery accuracy; it refers to how closely 3PL task executions match with manufacturer's instruction (Fleish and Tellkamp, 2005). This includes 3PL to ensure that product quantity, lot numbers, orders, date and time is tallied with documents given (Mentzer *et al.*, 2001). Accuracy of product handled is vital, this include ensuring the information and physical form of the right product, the right quantity, right location and the right documentation (Stock and Lambert, 2001; Mentzer, Flint, and Hult, 2001). From the interview, there all manufacturers are concerned with the inconsistent information accuracy of 3PL services. It is resulting from the 3PL operator, which fails to ensure that product shipped matched with the delivery instruction and document given at every task. Logistics manager of Manufacturer 'A' stated that*: " There are some cases where our end customer complaint that they receives wrong product…Although we (manufacturer) have checked the invoices and delivery order, sometimes 3PL operators might took the wrong product or quantity and send it to the customer… As it involves our end customer it has give a bad impression to our company. The inaccuracies also happen during warehousing where product kept in inventory does not tally with the record, this is due to the mistake done by 3PL personnel where they failed to check properly the quantity of the product".*

Product Condition

According to Bienstock *et al.*, (1997), product condition refers to the 3PL ability in ensuring customer's product that they deliver is not damaged along the process of physical distribution. This includes along the basic logistics activities such as warehousing and transportation. If there are any occurrence of damage to product, customers cannot use the product and must engage in correction procedures from the source of damage. This is similar with the exploratory interviews, whereby all manufacturers have pointed out about ensuring product in a good condition as a basic service quality and some manufacturers also complained about damaged product caused by 3PL during the physical distribution process (i.e.: during loading, unloading, product sorting, delivery and etc). As stressed out by a logistics manager of manufacturer 'C': *"Sometimes our logistics agents are lousy, they caused*

damage to our product during delivery to end customer. Because of that our end customer complained to us. Damages occur will waste a lot of our time and money to rectify those damages. Furthermore, it gives a bad impression about our company product care, while the problem is actually caused by the logistics agent".

Product condition does not only refer to physically visually damaged products like dented product, scratch, broken parts. It also includes ensuring the intangible forms of product or cargo is well taken care. For instance dairies and food products required to be stored in a refrigerated below certain temperature. Whereby, failure to ensure the storage within required temperature may lead to damage of product. Manufacturer E, F and H share the same view that among the reason they choose their current 3PL is because they ability to ensure less than 5% of damage occurrence, this is as a result of the 3PL having a well trained personnel and material handling equipment.

Quality of Key Contact Personnel
According to Mentzer *et al*., (2001) the quality of key contact personnel refers to the customer orientation of the supplier's logistics contact people. Specifically, customers care about whether customer service personnel are knowledgeable, empathize with their situation, and help them resolve their problems (Bitner, Booms, and Mohr, 1994).

Along the process of physical distribution, the key contact personnel from the 3PL are responsible in providing reliable updated information (Mentzer et al., 2001). Key contact personnel are intermediate which communicate information between supply chain members. Manufacturers B, C E, F and G gave similar comments about the quality of their 3PL key contact personnel, for example, the key contact personnel service of 3PL service are not well equipped with the knowledge of manufacturer's product, lacking in skill to manage each task efficiently, giving unreliable information, late feedback, and sometimes having an inconsistent attendance in the state of urgency. This has cause trouble to manufacturers, because due to the incompetent key personnel there will be problems related to update of shipment status or to inform about any special instruction (i.e.: changes of location, product arrangement, etc).

This is supported by Manufacturers C statement: *" Personnel in charge with our shipment is very important, when assign a 3PL we expect whoever responding to our calls, have to have the information about our shipment from A to Z, sometimes they pass to this fellow, to that fellow, end up at finance department which knows nothing. We don't care about their internal communication but the person in charge must available all time, must know everything. As far as dealing with current 3PL there are sometimes when the person in charge are not around there are always backup which know what happen which for us this is very good, unlike our previous 3PL, when the person in charge nobody knows what happened to our shipment."*

Responsiveness
In manufacturing industries, there are various levels of situations might occur. There is time where everything operating smoothly according to plan and schedule. On the other hand, there are situation where end customer of manufacturer suddenly require an urgent shipment. The willingness of 3PL providers in supporting the sudden changes requested by manufacturers is responsiveness. This is adapted from view of Parasuraman *et al*., (1988), where "responsiveness is the willingness to help customers and provide a prompt service". Similar to Zhang, Vonderembse, and Lim, (2005) views where the ability of a firm to feedback quickly and efficiently to changing customer needs in both inbound and outbound delivery support is termed as logistics flexibility. In Mentzer *et al.,* (2001) LSQ study, there are no responsiveness variables being associated.

Therefore, it is important to consider responsiveness as variables in this study. 3PL must be prepared at all time in any situation, as most manufacturer runs in 24 hours, they must have enough capacity and backups to support manufacturers. For example, if the manufacturer's end customer requests for an urgent delivery, 3PL must support this activities to avoid end customer complaint (Zhang, Vonderembse, and Lim, 2005). Logistics executive of Manufacturer 'H' stressed that: *"We must prepare our operation 24 hours in case of urgent shipment requested by customer, but our 3PL sometimes does not prepare to support us, as manufacturer we expect that 3PL to consider themselves as part of our team, but sadly in the urgent time they are inconsistent in delivering their service".* This view is shared with manufacturer F where he agreed that it is a convenient to manufacturers to have supportive 3PL providers which do not give excuses when there are sudden

hike up in sale or sudden requirement. Manufacturer F stated that *"Our 3PL are excellent, we are not worried if there are sudden increases of shipment, because they always prepared to support our physical distribution activities. If not I would surely have looked for other 3PL providers for long time ago (laughing)..."*

Timeliness

The most important asset of company is time (Stock and Lambert, 2001). Timeliness refers to the ability of 3PL to complete their task within a frame of time agreed between 3PL and the manufacturers. Mentzer *et al.,* (1999) stated that generally when product is unavailable, time delivery can be affected by transportation time, as well as back order time. Process must be executed fast, smooth and efficiently with the right procedure (Stock and Lambert, 2001; Bienstock, Mentzer, and Bird, 1997; Mentzer *et al*., 1999). There are problems reported by the manufacturers related to poor timing. For instance, late deliveries were derived from to the problematic 3PL warehouse operators or drivers, where some of them were reported as unable to plan and execute work in timely manners, coming in late, wasting time on unrelated to job matters). In condition where the manufacturers do not cause the cause of poor timeliness, 3PL must ensure that the job or delivery task to be completed in timely manner. Logistics executive of Manufacturer 'B' stated that: *"There are a lot of cases where the driver are coming in late...as we pay our 3PL we expect that all task to complete on time without any excuses, however they failed to justify with any acceptable reason"*. Manufacturer C indicate that *"Punctuality is very important, our receiving area sometimes were cramped because this 3PL who came too early, and some of them are late, while we need them to be in sequence of their delivery location, they cannot simply come whenever they want. They must come accordingly so that the loading bays are not crowded.*

Discussion

Findings and results in this study present a number of issues worthy of discussion. Firstly, all five variables do aligned with preceding studies by Mentzer *et al.,* (2001) but with slight difference in terms of focus which is on outbound logistics activities. Responsiveness is originally not included in the Mentzer's (2001) LSQ study, which was mentioned by interviewed manufacturer on how they value 3PL to have responsiveness as their service quality. Secondly, in Malaysian context this study provides insight to further understand about the perception of Malaysia study. Based on the exploratory, further analysis to validate the construct quantitatively is recommended. Figure 1 is the proposed conceptual framework of the outbound logistics service quality from the view of Malaysian manufacturers.

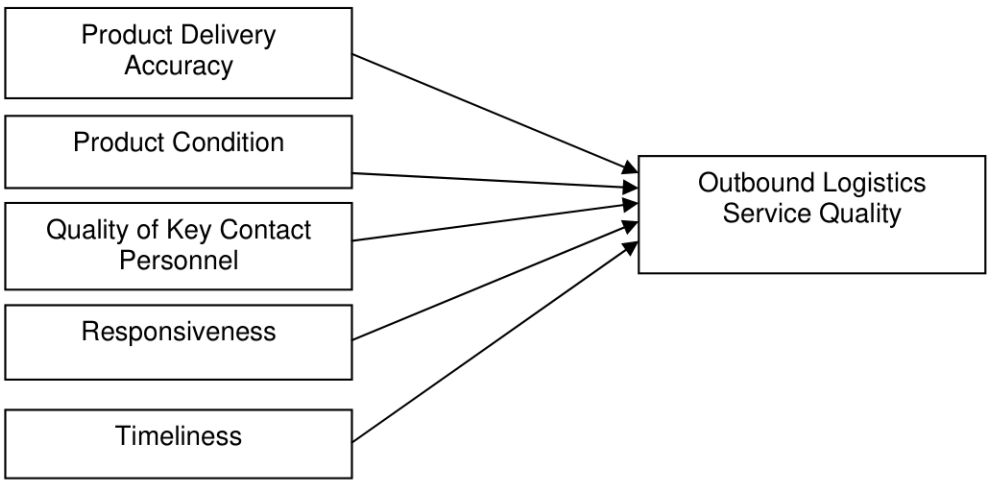

Figure 1: Outbound Logistics Service Quality Framework

Conclusion
Theoretically, the framework proposed was derived from exploratory interviews with Malaysian manufacturers. There are slight different in terms of the terminologies used and it is also different from the original LSQ instrument. Out of nine original LSQ constructs, five other original construct were not included namely information quality, ordering procedures, order discrepancy handling, order release quantities and order quality. None of the construct was identified in the interviews. Among of the reasons is probably derived from the fact that the elements are in the context of inbound logistics activities. This findings share the view of Rafiq and Jaafar (2007) where a focus assessment on either inbound or outbound logistics activities is recommended. Thus it can be concluded that there are difference in term of how manufacturers perceive logistics service quality based on the flow of the logistics activities. This study provides guidance for further investigation towards developing valid and reliable instruments to measure outbound logistics service quality.

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