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## Logistics Service Quality: The Case of Da Nang City

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### Abstract

Cost minimization is a key objective in managing logistics services. In this context, a growing interest in quality improvement can be observed. However, service quality is hard to quantify as it is a function of varying customer perceptions over time, of the measurement process and of the analysis of the data gathered. This study examines the logistics service quality by scales developed according to SERVQUAL instrument. A survey of 200 customers of logistics service providers (LSP) was conducted in Da Nang City. The data analysis shows that LSPs in Da Nang city need to improve Research and Development and to develop Customer Care programs.

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### 1. Introduction

According to the World Bank's Logistics Performance Index (LPI) 2014 [1], Vietnam ranked 48th among 160 countries, a progress with respect to its previous ranking. According to the Vietnam Logistics report [2], in 2011, total logistics cost reached USD 25bn in Vietnam, accounting for around 20.8% of total GDP. Moreover, the logistics sector's growth rate is expected to remain around 20-25% for the next 5 years. In addition, according to this report, domestic road and railway networks are outdated and in low quality condition, whereas shipping lines and airlines are time-consuming and have high costs. Meanwhile, global logistics companies dominate the international transportation sector, whereas local companies are very active in forwarding and warehousing

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activities. Even if the demand for other value-added logistics services is increasing, a large portion of these services is operated in-house, and outsourcing is not a common practice.

In 2013, the total logistics costs reached USD 5 bn in Da Nang City, one of the most developed regions in Vietnam. The logistics sector in Da Nang City is fragmented with 130 players but 70% providing 1PL and 2PL services. Most of logistics enterprises in Da Nang City are small and medium enterprises, and consequently the scale and capacity are limited. Furthermore, the cooperation between companies, in order to increase competitiveness, is still weak, as logistics is still understood in a segmented manner. Logistics firms in Da Nang City mostly play the role of subcontractors for foreign logistics companies, undertaking some services such as customs procedures, transport rental or warehousing. Logistics enterprises' competitiveness suffers from the poor quality facilities compared to foreign firms, from the lack of sufficient training and education in the field and from a lack of manpower.

Since 2014, all the restrictions related to logistics services (e.g. the foreign logistic providers can only operate under joint venture in which the foreign investor's participation is limited) are removed to comply with the Vietnam's commitment to becoming a member of the World Trade Organization (WTO). Implementation of WTO market access commitments poses opportunities to develop Vietnam's logistics and challenges since it is putting further pressure on local companies to improve service qualities and to be more responsive to market requirements.

According to a survey conducted in April 2009 by the Foreign Trade University in Hanoi, local LSPs have an optimistic view about the level of logistics service quality and the ability to provide global or regional coverage. However, this is a reflection of the local LSPs' perception, whereas the aim of this research is to measure customer's expectations and perceptions of logistics service quality.

This article is divided into five main sections. The first section introduces the paper and its objectives. Section 2 presents the literature review on Logistics service quality. Section 3 provides information on the methodology and the steps of the survey, whereas Section 4 presents the results of the survey. Section 5 provides recommendations regarding logistics service quality (LSQ) in Da Nang. Finally, the last section is dedicated to the main conclusions.

## 2. Logistics service quality

From the logistics provider perspective, the service quality is measured by the ability to fulfill the customers' orders. In 1997, Bienstock et al. [3] developed an instrument to measure logistics service quality (LSQ) called Physical Distribution Service Quality. Mentzer et al. [4] defined the quality in logistics service in terms of two complementary elements, i.e. marketing customer service and physical distribution service. This definition is shared by others [5-6] and is seen as an intelligent base for the integration of marketing and logistics activities. Previously, this concept was referred to as technical quality and functional quality [7], where technical quality refers to the service outcomes and functional quality refers to the process of service delivery.

Perreault [8] argued that understanding perceptions of physical distribution service from a customer's point of view, was an essential input in management decisions. They maintained that logistics activities create time, place, and form utility, thereby enhancing product value. This assertion was extended by Coyle et al. [9], Shapiro and Heskett [10] and Stock and Lambert [11].

From the customer perspective, the majority of studies measuring the quality of logistic services are based on survey studies and interviews [12]. One of the most commonly used survey instrument for evaluating service quality is the SERVQUAL model [13-15]. SERVQUAL analyses the difference between the user's expectation and perception. It identifies five gaps and five dimensions of service quality namely tangibles, reliability, responsiveness, assurance and empathy. In various customer evaluation models [16-18], it is argued that client expectations are important in formulating criteria for the assessment of performance and subsequent customer satisfaction. It is also suggested, for example by Saleh and Ryan [19] that past customer experience plays a role in the formulation of expectations.

## 3. Methodology

Despite the criticisms against SERVQUAL, it is a useful tool for the assessment of service quality [14, 20], which can be adopted to assess the service quality in the context of logistic service providers [21-22]. SERVQUAL asks

respondents to record their expectation, E, and performance ratings, P, on items related to service quality. The expectations of customers are subject to external factors which are under the control of the service provider. The gap represents the difference between customers’ expectations and customers’ perceptions, which is referred to as the perceived service quality [23]. The perceived service quality is the degree and direction of the discrepancy between consumers’ perceptions and expectations. The bigger the gap is, the worse services are provided.

The first step involved the adoption of the service quality scale to the logistics sector. After examination of the literature concerning logistics service quality, 18 criteria were listed. To ensure that the criteria are acceptable, an in-depth interview with three salespersons working at different manufacturers and one manager in a logistics service enterprise was conducted. In the logistics sector, the sales staffs are the ones who have direct contact with the customers, and therefore have experience in understanding customers’ needs. Moreover, the manager has a general vision about customers’ insight. The in-depth interviews resulted in the addition of five more criteria. The scale was also pre-tested by 20 customers of logistics services to check understandability.

The second step included the realization of the SERVQUAL survey. Primary data was collected from 200 customers of logistics service providers in Da Nang City by an online questionnaire method. Table 1 displays the repartition of the customer and logistics companies that completed the survey. The results of the SERVQUAL survey are used to analyze the criteria of the five quality dimensions and to define the attractive attributes of logistics service quality with the purpose of finding solutions to further enhance service quality.

Table 1. Customer and logistics companies repartition

Customer companies				Logistics companies			
Type of customer companies	%	Size of business	%	Type of logistics service	%	Size of business	%
Manufacturers	25	Small	39	Freight forwarding	14	Small	2
Export-Import	74	Medium	34	Warehousing	34	Medium	52
Other	1	Large	25	Transporting	23	Large	34
		Enterprise	2	Ports	13	Enterprise	12
				Customs clearance	11		
				Other	5		

#### 4. Results

##### 4.1. Tangibles

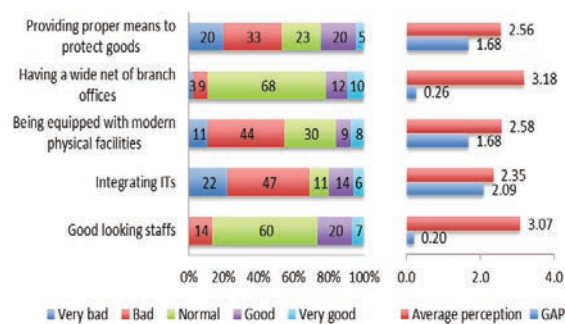


Fig. 1. Average perception of tangibles and gaps between average perception and average expectation.

The components of tangibles are measured through five variables. According to Figure 1, the proportion of giving bad scores to logistics service’s tangibles is quite high. Physical facilities of logistics companies are evaluated “Bad”

or “Very bad” by 55% of customers, whereas the percentage of positive evaluations (“Good” or Very Good”) is only 17%. Moreover, the results show that the customers have a really high expectation (equal to sum of average perception and GAP) on the development of IT, modern facilities and methods to protect goods with high average score (near 4.5). However, the current facilities that logistics companies are having is of poor quality, which resulted in the large gap. These criteria should be noted in order to improve logistics service quality.

Despite customers do not think that logistics companies in Da Nang city have many branch offices, they do not expect the number of offices to be too large. Therefore, the gap is small (0.26). The gap related to the appearance of the staffs is also small (0.20). The customers do not care about the outfit. Of all the criteria with respect to tangibles, the one with the highest expectation is the integration of ITs (a value of 4.44). When managing logistics businesses, taking into account the advantages of ITs makes it easier and more convenient for the customers to interact. Customers also appreciate to be able to track their cargo online. The second highest expectancy concerns modern facilities. The expectation of customer for this criterion is 4.26. Customers also pay attention to the methods of protecting goods. The logistics company has to provide proper packaging according to the characteristics of products to be transported. Tangible features of the service are essentially constant over time. For a current customer, the tangible expected service from a firm is close to the tangible perceived service. On this situation, the customer knows the quality ex-ante, he/she has no surprises and he does not evaluate this dimension as very important.

4.2. Reliability

Reliability is measured by seven criteria, in which there are three that assess the performance of salesperson (service time available, keeping promises and keeping transaction records) and the remainder concerns the basic performance activity of the logistics. Figure 2 shows positive results on reliability, since more than 50% agree that the current service is good. The good performance also shortens the gap between perception and expectation. The importance of the seven criteria is highly appreciated by the customers. The three most important ones are providing fast service (4.55), provide services within the agreed time frame (4.4) and fulfill services without problems or damage (4.51). Even though the current condition of service is relatively good, those three criteria have the biggest gaps, implying that customers expect even higher performances. Fulfilling services free of damage is the most noticeable one. Therefore, it is strongly recommended for the logistics companies to focus especially on bridging this gap as much as possible.

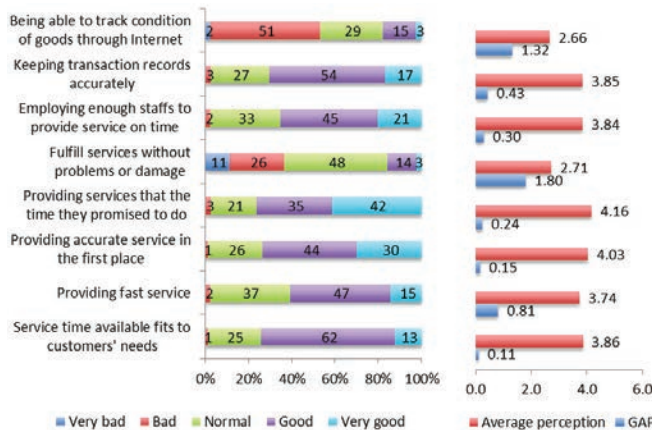


Fig. 2. Average perception of reliability criteria and gaps between average perception and average expectation.

4.3. Responsiveness

Responsiveness is measured by four criteria that indicate how the sales staffs communicate with the customers. The results (see Figure 3) show that the current service is “Not very good”, whereas the expectation is high. This result could be expected to some extent, given the fact that the success of a deal depends strongly on the sales staffs. If the salesperson cannot convince the customers that their services are much better than competitors, or make the customers trust in the company, then the deal can be off easily. The criterion “Solving problem as soon as possible”, has the highest expectation (4.5) and has the biggest gap. Therefore, the logistics companies need to provide solutions and develop policies to solve all problems in the fasted way to satisfy customers.

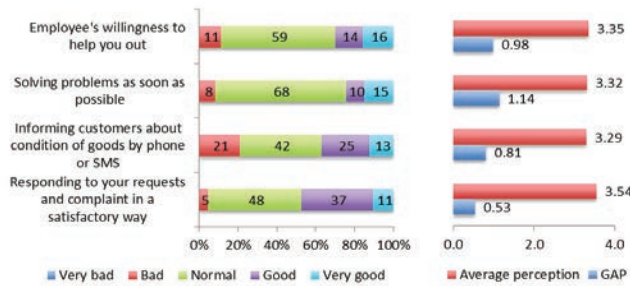


Fig. 3. Average perception of responsiveness criteria and gaps between average perception and average expectation.

#### 4.4 Assurance

Assurance is measured by the ability of staffs to work with customers in terms of expertise required of a salesperson. From Figure 4, one can conclude that the most important element is having good knowledge about logistics and the ability to convey the information so that the customers can understand it well. The criterion “Staff communicates with you in a proper manner”, has the highest expectation (4.38), whereas “employing staff expert for their positions” has the biggest gap (1.83). Therefore, employers need to review their recruitment procedure and invest in training their staff.

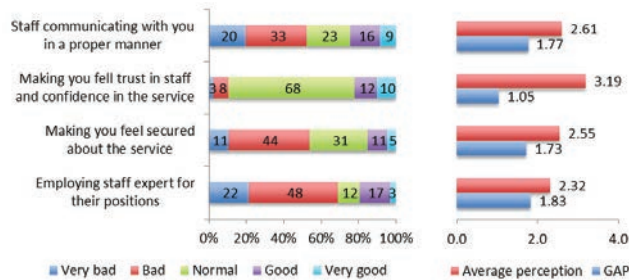


Fig. 4. Average assurance of responsiveness criteria and gaps between average perception and average expectation.

#### 4.5 Empathy

Empathy variables measure how sales staff members care about customers’ personal needs (Figure 5). The results show that the logistics enterprises in Da Nang City do not provide satisfying service to customers in term of sympathy. About 69% of customers think that the staffs are not patient enough and do not have a high level of tolerance, whereas this element is expected to be “Good”. Besides, promotions are not esteemed as sufficiently attractive, whereas the average expectation of this criterion is noticeably high (4.5/5). By providing special promotions, the enterprises can maintain a firm relationship with their customers: customers will be less likely to switch to another logistics company.

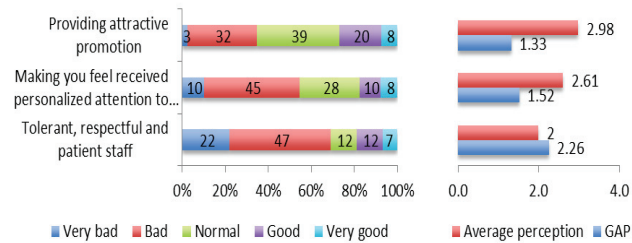


Fig. 5. Average assurance of empathy element's criteria and gaps between average perception and average expectation.

## 5. Recommendations regarding LSQ in Da Nang (2015-2020)

### 5.1. Recommendations for the logistics service providers

A first set of solutions that need to be developed are solutions that improve the customer relation in the sales cycle. A first solution (“guided solutioning”) is a set of questions, which helps the sales staff to systematically ask questions to identify the customers' needs, before the salesperson proposes a particular solution. This enables the sales representatives to spend time on a smaller number of opportunities.

The next solution is to increase logistics knowledge, ensuring that a combination of the technical knowledge about the services provided is achieved, with the objective of reducing the necessity of involving other staff members in the procedures. Moreover, if the sales representatives can exhibit detailed information about the logistic solutions, it will be easier to convince the customers and correspondingly customers will have more confidence in the service.

Thirdly, document automation enables the optimisation of information communication. If the sales representative can use IT do automatically generate and transfer all the bidding documents required, error rates and process times decrease.

Fourthly, the logistic services providers should include sales policies in their IT framework. When policies such as minimum acceptable prices or minimum acceptable margins are defined, the IT framework triggers a work flow to a sales manager to approve it. The tool will guide salespersons into the acceptable price and margin range so that the sales manager will not have to be involved. This enables considerable timing savings from both the sales manager and customer perspective.

Besides, a Customer Care program should be developed. For each customer an account should be created when he/she uses a logistics service. The LSP should record client details in a Customer Relationship Management (CRM) database. Besides, the company needs to encourage ideas, suggestions and observations from all staff and establish an anonymous staff suggestion box. Review recruitment practices to ensure the company employs the right front-line staff.

In terms of research and development, the main area of innovation is based on the development and roll-out of information and communication technologies (ICT), which have the capacity to impact organizational structure, firm strategy, operational procedures and buyer-supplier relationships. In this regard, efforts towards ICT-enabled innovation should be promoted. After all, the implementation of new ICT and complementary investments can lead to innovations, and innovative firms are more likely to grow. Policy makers should envisage the creation of lead programs in fields of excellence such as logistics and transport. Developing standards for e-business, facilitating the process of interoperability: Standards allow reducing transaction cost and increasing competitiveness and interoperability. Policy measures may include active dialogue with industry on challenges in formation of value networks and potential barriers.

### 5.2. Recommendations to the government and industry associations

The government should consider using financial incentives to promote the logistics development. The government's leadership in Da Nang should provide subsidies for critical logistics infrastructure development. These subsidies should not come with conditions that interfere with business operations. Investment in logistics parks

should come from the private sector, and foreign investments should be encouraged. A special fund for inland waterway transport infrastructure development should be set up. Bonds, fees, and special central government allocations are possible source of funding. Since logistics enterprises should be the main driver of logistics industry development, government should create incentives, such as tax relief and funding assistance, to support the logistics industry, based on actual needs.

Industry associations should encourage collaboration among members on the basis of each business advantage (facilities, equipment, information systems ...) and to perform full service.

## 6. Conclusion

To provide high-quality services, LSPs must first understand customers' needs and expectations. In this study, the service quality scale of logistics providers in Da Nang City is conceptualized by five dimensions: tangibles, reliability, responsiveness, assurance and empathy. The empirical results show that the expected values of customers are considerably different from the perceived values, indicating that customers are not satisfied with the service quality of logistics providers. Besides, this study also finds that LSQ is a process, where customers' perceptions begin to form and develop from the order placement to service completion, and they may place difference emphasis on the service quality. Therefore, LSPs should pay more attention to the weakness such as the shipping link, claims and freight. Furthermore, they need to improve R&D and develop Customer Care programs. In addition, the government also needs to have many positive policies to create favorable conditions for logistics services.

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