

# Logistics Service Quality and Commitment in Third Party Logistics

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## ABSTRACT

*This paper proposes a conceptual model aimed at investigating the effects of logistics service quality and relationship quality on commitment in a third party relationship context. It examines customer perceptions of logistics services provided by third party logistics companies. The model incorporates Logistics Service Quality (LSQ) framework (Mentzer et al (2001), which is the recent scale for measuring logistics service quality developed in a single firm in the United States that was rigorously tested. It also explores the causal relationships among the dimensions that make up relationship quality that was previously considered as a global measure and by considering commitment as the critical outcome dimension.*

## Introduction

The quality of logistics service performance as a key marketing component in creating customer satisfaction (Bienstock et al. 1997; Mentzer et al. 1989; 2001) has been recognised for quite some time (Perrault and Russ, 1974). There has been an evolution of definitions and descriptions in exploiting logistics excellence to meet customer satisfaction (Coyle et

al. 1996; Mentzer et al. 1989; 2001; Mentzer, 1993; Novack et al. 1994; Perrault and Russ, 1974, Stock and Lambert, 1987) and in which service firms can create a competitive advantage (Bowersox et al, 1985; Kyj and Kyj, 1994; Mentzer et al, 2001; Mentzer and Williams, 2001; Morash et al, 1996). Consequently, several authors have recognised the importance of service quality in influencing industrial customer satisfaction (e.g. Bienstock, Mentzer & Bird, 1997; Mentzer, Flint & Hult, 2001). Although there is evidence of largely failed attempts either to integrate the SERVQUAL/SERVPERF conceptualisation into organisational marketing or to replicate its conceptual structure (Brady & Cronin, 2001), Mentzer et al (2001) have successfully produced an instrument for measuring industrial customers' perceptions of logistics service quality (LSQ) by incorporating both the technical and functional quality of the service. The development of LSQ scale was based on a single large logistics provider firm in the United States and has been rigorously tested (Mentzer et al, 1999; 2001).

However, despite its rigorous development, a weakness of the LSQ model is that it lacks input from relationship marketing, particularly relationship quality, which has shown evidence of its usefulness in industrial and channel context (e.g. Anderson and Narus, 1990; Geyskens et al, 1996; Kumar et al, 1995). In the literature, some authors refer to relationship quality as a relationship outcome composed of several dimensions such as trust and commitment (De Wulf, Odekerken-Schroder & Iacobucci, 2001; Kumar et al, 1995; Jap, 2001). This reflects the importance of relationship quality in developing strong, stable or long-term relationships. Other studies, which focus on commitment as the outcome (Andaleeb, 1996; Crosby et al, 1990; Ganesan, 1994; Geyskens et al, 1996; Morgan & Hunt, 1994; Odekerken-Schroder, Bloemer & De Wulf, 2002) also indicate the significance of relationship quality since commitment has been determined as a construct in relationship quality that represents the highest state of relationship bonding. Crosby et al (1990) recognised that effective relationship will be most critical when:

- The service is complex, customised, and delivered over a continuous stream of transactions (Berry; 1983; Levitt, 1983; Lovelock, 1983)
- The environment is dynamic and uncertain in ways that affect future needs (demand) and offerings (supply) (Zeithaml, 1981).

Although the service quality component that forms one part of the LSQ model has relevance to services marketing of relational nature (close, enduring, interdependent associations), but it is still an insufficient

condition for relationship quality (Crosby, 1989; Crosby et al, 1990). The third party logistics (TPL) industry that is the focus of the study, nowadays can be considered as reaching an initial stage of maturity, witness the substantial size of the industry that indicates a growth rate of 8 per cent a year reaching a value of £34.5 billion in 2003 (Anonymous, 1999), the emerging market segmentation and the tendency among the TPL providers to focus their activities on one of the market segments. Businesses that have these characteristics need to focus on relationship quality in order to be effective in the marketplace. Therefore, this study focuses on TPL provider relationships as perceived by their customers, who are the logistics service buyers. Another argument is that, the satisfaction dimension in LSQ process model may not necessarily leads to customer retention. A few empirical investigations indicate weak or non-existent relationship between customer satisfaction and customer retention (Anderson et al, 1994, Bitner, 1990, Richheld and Sasser, 1990). Hennig-Thurau and Klee (1997) argued that to operationalize the satisfaction-retention relationship, the service quality perception should be integrated with relationship marketing elements particularly relationship quality. Thus the commitment dimension in relationship quality is a particularly important measure of customer retention.

Given the widespread attention of academics as well as practitioners have given to relationships among the channel members, the relationships between the third party and channel members are largely neglected. Recently, with the emergence of supply chain collaboration, the relationships between the third party and the channel members are also critically important since they can be seen as supportive supply chain members that provide resources, knowledge, utilities or assets for the primary members of the supply chain (Bask, 2001). It is argued that such collaborative arrangements provide a more effective means of satisfying customer requirements. As such, it requires a high level of co-operation among organisations in the supply chain network (Christopher, 1997; Mentzer et al, 2001). Furthermore, whilst the previous research considers relationship quality as a global measure, there exists a lack of research on the causal relationships among the dimensions that make up relationship quality in an industrial setting.

Consequently, the importance of LSQ calls for a replication and extension study in a different context. This is due to the fact that some scientists hold replication in high regard. (Hubbard and Armstrong, 1994). According to Hubbard and Vetter (1996), the principle of replicability is widely acknowledged to the touchstone of the scientific method (Kane,

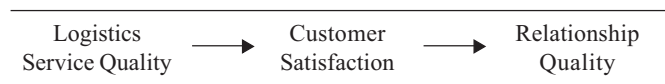
1984), the hallmark of science (Blaug, 1992), the most important criterion of genuine scientific knowledge (Rosenthal and Rosnow, 1984) and the supreme court of science (Collins, 1985). Other things being equal, replication protects against uncritical assimilation of specious empirical results into the literature. Replication with extensions serves to determine the scope and limits of empirical findings by seeing if they can be generalised to other populations, context, time periods, geographical areas, and so on (Hubbard and Vetter, 1996).

With this in mind, this study replicates Logistics Service Quality (LSQ) framework in a larger context of third party logistics providers in the UK and incorporates relationship quality that highlights commitment as the critical outcome dimension.

## Theoretical Background

Figure 1 visualises the main elements in the model. The relationships among the elements that have been developed conceptually by Christopher (1997) as he determines the sequential events of logistics capability, customer service, relationship quality, and customer retention as the key drivers of long-term profitability.

Figure 1: Main Elements in the Model



*Logistics Service Quality (LSQ)* is conceptualised as a process of nine interrelated constructs from the perspective of customer that has been tested across a number of customer segments (construction, electronics, fuels, industrial supplies, medical supplies, textiles and general) (see Figure 2). There are two major components of LSQ. One major component of the broader concept of LSQ is the Physical Distribution Service Quality (PDSQ) (Bienstock et al, 1997) which consists of timeliness, availability and order condition that are viewed as the critical aspects of the customers' perception of LSQ. Other components were developed in line with traditional service quality research in marketing, that are based on the notion that logistics services involve people who often take orders and deliver products and procedures for placing orders and handling discrepancies. Therefore, on the basis of service quality

literature, interactions customers have with these people and procedures that should affect their perceptions of overall logistics services were considered as the other component of the LSQ.

Several authors consider *relationship quality* as an overall assessment of the strength of a relationship (De Wulf et al, 2001; Garbarino & Johnson, 1999; Smith, 1998). Stock (1997) recognises that theories in relationship marketing were not applied in the logistics literature between 1980 and 1996. Although the concept of relationship marketing and logistics partnership is overlapping, there do not appear to be many interactions between marketing and logistics researchers exploring this topic. Thus, based on past research in channel relationships (De Wulf et al, 2001; Kumar et al, 1995), relationship quality is seen as encompassing conflict, relationship satisfaction, trust and commitment. It is conceptualised that better-quality relationships can only be achieved through a lower level of conflict and greater relationship satisfaction, trust and commitment. Commitment, that is generally accepted as one dimension in relationship quality (Hennig-Thurau and Klee, 1997; Hennig-Thurau et al, 2001; De Wulf et al, 2001; Kumar et al, 1995; Hausman, 2001) has been treated as an outcome of a relationship (e.g. Andaleeb, 1996; Ganesan, 1994; Geyskens et al, 1996). Mohr and Nevin (1990) stated that commitment is highly desirable 'qualitative outcome'. Dwyer et al (1987) highlighted that relationship commitment represents the highest stage in relationship bonding.

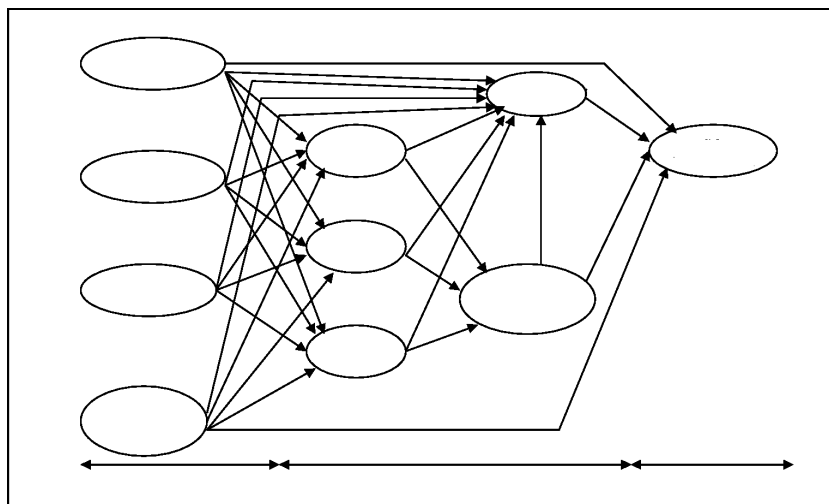


Figure 2: Hypothesised Model of LSQ as a Process

Adapted from Mentzer (2001)

*Commitment* has recently emerged in the marketing channels literature as a critically important element for channel survival (e.g. Anderson & Weitz, 1992; Morgan & Hunt, 1994; Geyskens et al, 1996). In fact, it is commonly accepted as one dimension in relationship quality (e.g. Hennig-Thurau & Klee, 1997; De Wulf et al, 2001; Kumar et al, 1995a) since it represents a long-term orientation toward the channel relationship. Organisational researchers have noted that there are many types of commitment, each of which may affect relationships in different ways (Allen & Meyer, 1991) because they are driven by a different set of factors (Kim & Frazier, 1997). Most empirical studies support the view that commitment should be treated as a multi-dimensional construct (e.g. Gundlach, Achrol & Mentzer, 1995; Kumar et al, 1994; Geyskens et al, 1996). The different types of commitment that have been identified in the literature are affective commitment, calculative/instrumental commitment, continuance/long-term commitment (e.g. Gundlach et al, 1995), behavioural commitment (Kim & Frazier, 1997), and moral/normative/organisational commitment (Kumar et al, 1994). This study concentrates on psychological (affective commitment) and the economic aspects (calculative commitment) of relationship. Consistent with past research, the model employs affective and calculative commitment as they appear most frequently and seem to be most relevant for inter-organisational relationships (Geyskens et al, 1996; Mathieu & Zajac, 1990) and marketing channel studies. Since research in third party relationships is lacking, therefore, most concepts are borrowed from channel relationship literature, which is considered the most similar to TPL relationship. Therefore, *affective commitment* refers to an enduring desire to continue and maintain a relationship. Gundlach et al (1995) emphasise that affective commitment has the attitudinal component that shares the common domains of meaning with other prominent behavioural constructs, such as motivation, identification, loyalty, involvement, and behavioural intention. In such situations, affective commitment is deemed to be an important variable because it is generally accepted that behaviour acts as an end variable in most relationship marketing models. *Calculative commitment* refers to the customer's intention and willingness to make sacrifices to develop and continue a stable relationship. Bendapudi and Berry (1997) suggest that constraints (motivation for calculative commitment) would only determine the stability of the relationship whereas dedication (motivation

for affective commitment) determines the quality of relationship. Affective commitment reflects a positive motivation and calculative commitment implies a negative motivation to long-term commitment. Consequently, in line with channel relationship studies (Geyskens et al, 1996; Kumar et al, 1994), high affective commitment will demonstrate higher intention and desire to stay as well as greater performance and a willingness to invest in the relationship, whereas calculative commitment will lead to a negative impact on customers' desire to stay and invest in the relationships. However, "the behavioural intention conceptualisation of attitudinal (affective) commitment complements the instrumental (calculative) component and at the same time foreshadows the third component, long-term commitment" (Gundlach et al, 1995, p.80).

*Satisfaction* in the LSQ framework reflects satisfaction with the core service and satisfaction with the organisation. Mentzer et al (2001) recognised that previous researchers have neglected the customer perception aspects of logistics services, which led to a loss in satisfaction. *Relationship satisfaction* however focuses on the positive affective state resulting from the appraisal of all aspects of a firm's working relationship with the TPL provider firm as well as its personnel over time. It also represents the cumulative effect of a relationship that reflects the customers' good or bad experience in relationships compared with satisfaction that is specific to each transaction (e.g. De Wulf et al, 2001). *Trust* is defined as the customer's perceived credibility and benevolence of a target of trust. Generally, trust is viewed as an essential ingredient for successful relationships (e.g. Garbarino & Johnson, 1999; Morgan & Hunt, 1994). It is because the high levels of trust characteristics of relational exchange enable parties to focus on the long-term benefits of the relationships, ultimately enhancing competitiveness and reducing transaction costs (Doney & Cannon, 1997; Ganesan, 1994). *Conflict* refers to the overall level of disagreement in the third party-customer relationship. As such, conflict is determined by frequency, intensity, and duration of disagreements (Anderson & Narus, 1990). In logistics, conflict was found to be a more important predictor of logistics alliance success than trust because the buyer's commitment to a logistics alliance is significantly influenced by negative outcomes associated with conflict as compared to positive outcome associated with trust (Moore, 1998).

## **Model Development and Propositions**

As illustrated earlier, LSQ, which ties in the broader service quality literature consists of technical and functional quality is hypothesised to have strong effects on satisfaction with core service, the organisation as well as relationships with the key contact personnel and the organisation as a whole (Crosby & Stephens, 1987). The model proposes direct effects of LSQ on satisfaction and relationship satisfaction.

***P1: Positive perceptions of logistics service quality positively affect satisfaction.***

***P2: Positive perceptions of logistics service quality positively affect relationship satisfaction.***

A number of studies show the indirect effects of service quality on behavioural intentions through satisfaction (e.g. Olsen, 2002; Brady & Robertson, 2001). Hennig-Thurau and Klee (1997) suggested that satisfaction and customer retention is mediated by the relationship quality construct. Although this link has been established conceptually (e.g. Storbacka, Strandvik & Gronroos, 1994; Christopher, 1997), there are few attempts to empirically measure the relationship. De Wulf et al (2001) suggested that research should be directed to examine the value of existing instruments such as SERVQUAL measures and their effect on the relationship outcomes (relationship quality). It can be argued that customer satisfaction with service quality may have some effects on relationship quality due to the interaction elements in service quality. Thus:

***P3: A higher level of satisfaction with logistics service quality leads to a higher level of trust***

***P4: A higher level of satisfaction with logistics service quality leads to a higher level of calculative commitment.***

Several authors hypothesise a positive flow from relationship satisfaction to trust (Bendapudi & Berry, 1997; Crosby et al, 1990; Tax, Brown & Chandrashekar 1998). However, only a few authors found strong empirical support for the path of relationship satisfaction to trust (Ganesan, 1994; Selnes, 1998). Geyskens (1998) in a meta-analysis study revealed that relationship satisfaction significantly influences trust. Dwyer, Schurr and Oh (1987) suggested that satisfaction and trust be built during subsequent phases of relationship development, supporting a sequential satisfaction-trust relationship. In TPL-customer relationship context, when the customers are satisfied with the working relationships with the TPL



personnel and the firm as a whole, trust of the TPL provider firm will be built over time. Thus:

***P5: A higher level of relationship satisfaction leads to a higher level of trust.***

Based on past research (e.g. Frazier, 1983, Geyskens et al, 1996, Kim & Frazier, 1997), it is predicted that the greater the trust, the less conflict the firm encounters because conflict can elicit the customer's frustration and negative feelings about the TPL provider. When the conflict is high, there will be a subsequent damage to a customer's trust and the TPL provider firm that lessen the customer sense of unity with the TPL provider. In addition to this, most authors support an inverse association between conflict and relationship satisfaction (e.g. Anderson & Narus, 1990; Frazier, 1983; Gaski, 1984). It is because disagreements tend to block achievement of the firm's goals, eliciting frustration, and thereby cause feelings of unpleasantness about the relationship (Anderson & Narus, 1990). As a result, the following propositions are posited:

***P6: A higher level of conflict leads to a lower level of trust.***

***P7: A higher level of conflict leads to a lower level of relationship satisfaction.***

Most studies in channel relationships show strong empirical evidence for a positive path from trust to commitment (Kim & Frazier, 1997; Ganesan, 1994; Morgan & Hunt, 1994), which support the conceptual studies on this relationship (Bendapudi & Berry, 1997; Dwyer et al, 1987; Moorman, Rohit & Gerald, 1993). Although these refer to global 'commitment', their operationalisation reflects primarily affective commitment (Geyskens et al, 1996). On the other hand, channel relationship studies confirm a negative relationship between trust and calculative commitment due to the fact that when trust is low, decisions on whether to maintain the relationship are more likely to be based on a calculation of immediate benefits versus costs (Geyskens et al, 1996; Kumar et al, 1994). In TPL-customer relationships, customers who intend to continue the relationship are more likely to be motivated to do so because they cannot easily replace their TPL providers and obtain the same resources and outcomes outside its current relationship. It is predicted that trust will have a stronger effect on affective commitment than on calculative commitment (Geyskens et al, 1996; Kumar et al, 1994). Calculative commitment, on the other hand will have a stronger effect from satisfaction due to high satisfaction that serve as a force

that makes termination of the relationship more costly (Stanley & Markman, 1992). Consistent with the channel relationship literature, it is proposed that in third party relationship:

***P8: A higher level of trust leads to a higher level of affective commitment.***

***P9: A higher level of trust leads to a lower level of calculative commitment.***

## **Summary**

This paper develops a conceptual model that takes into consideration the service quality, relationship quality and commitment as perceived by customers by applying relationship-marketing theory to Logistics Service Quality framework. This model will be revised and extended into a more comprehensive research model through a qualitative study before it is tested empirically. Findings from the study will provide more evidence for the causal relationships among the constructs, which will indicate the strength of service quality and relationship quality on commitment. Furthermore, the model will expand the applicability and generalisability of LSQ framework in a different context.

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