

**Determinants of customer loyalty in logistics outsourcing relationship
a 3pl-relationship marketing perspective**

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December 2015

DECLARATION

I hereby declare that the thesis entitled “**Determinants of Customer Loyalty in Logistics Outsourcing Relationship: A 3PL-Relationship Marketing perspective**” completed and written by me has not previously been formed as the basis for the award of any Degree or other similar title upon me of this or any other Vidyapeeth or examining body.

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PhD research is a vast amount of work that requires years of rigorous study and dedication. It is a period whereby one needs to be highly motivated and focused at all times. It's easily tempted to the many hassles of daily life as there are other more immediate needs to deal with. However, nothing good comes without hard work, perseverance, and vision to see the light at the end of the tunnel.

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(H. Sanjit Singh)

ABSTRACT

The purpose of this research is to further the understanding of customer loyalty in logistics outsourcing relationship between logistics service providers and their customers. It has been seen that the health and longevity of this outsourcing relationship to a great extent is dependent upon the loyalty equation in their relationships. It has been found that a satisfied customer exhibits positive correlation with attributes like trust, commitment and loyalty towards its service providers. Customers and ISPs who are engaged in close relationship achieve higher level of operational and financial performance. It could be suggested hereby, the existence of relationship and linkages among these attributes of satisfaction, trust, commitment and loyalty. In order to compliment these findings, this study integrates theories and empirical evidence drawn primarily from relationship marketing to develop a model of the antecedents of customer loyalty in logistics outsourcing relationships. This research also explores the impact of service satisfaction, relational satisfaction, price satisfaction and commitment on customer loyalty in logistics outsourcing relationships in Indian scenario.

This dissertation develops and empirically tests a theoretical framework that examines the determinants and consequences of loyalty within logistics outsourcing relationships in business-to-business scenario. The theoretical framework integrates previous research findings examining the concept of trust, commitment, satisfaction proactive improvement, service recovery, alternatives and loyalty from marketing, logistics, management, and psychology literature.

A survey instrument is developed, pretested, and administered to collect information from users of logistics outsourcing services. Data were collected through a web-based survey concerning the formation, maintenance, and importance of loyalty between users and providers of third-party logistics services. The theoretical model was analyzed using structural equation modeling. The results support several of the hypothesized relationships between the determinants and consequences of loyalty.

Findings from the study supports that logistics service satisfaction, price satisfaction, relational satisfaction, service recovery do influence loyalty positively. The analysis suggests that service satisfaction to be the most important antecedent having primary

influence in the formation of customer loyalty. Service satisfaction also has secondary influence on loyalty by acting as a strong driver in both relational and price aspects of the satisfaction dimensions. Price satisfaction though positively been driven by service satisfaction, was found to have less significant effect as a predictor of loyalty in this context. The present study suggests that service recovery is the second major predictor of loyalty which also drives customer loyalty indirectly through service quality. This research is not an end-point but an attempt to establish the linkages and the effect among the antecedents driving the building and retention of good buyer-seller relationship in logistics outsourcing.

Keywords: Service satisfaction, service quality, price satisfaction, relational satisfaction, customer loyalty, commitment, trust, logistics outsourcing.

Table of Contents

DECLARATION.....	i
CERTIFICATE	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT.....	iv
List of Tables	ix
List of Figures	xi
Chapter 1.	
INTRODUCTION	1
1.1. Introduction and Overview	1
1.2. Statement of the Problem	5
1.3. Purpose of the Study	6
1.4. Significance of the Research	7
Chapter 2.	
LITERATURE REVIEW	10
2.1. Customer Loyalty	10
2.1.1. Background of Customer Loyalty Research	10
2.1.2. Customer Loyalty Concepts	12
2.1.3. Effects of Customer Loyalty	15
2.1.4. Determinants of Customer Loyalty	16
2.2. Logistics	18
2.2.1. Developments in Logistics	18
2.2.2. Logistics Outsourcing	20
2.2.3. Logistics Service Providers	26
2.2.4. Logistics Outsourcing Research	31
2.3. Theoretical Framework	34
2.3.1. Relationship Marketing Theory	34
2.3.2. Social Exchange Theory	36
2.3.3. Equity Theory	41
2.3.4. Commitment Trust Theory	44
2.4. Research Model	46
2.4.1. Research needs & Research Gaps	46
2.4.2. Research Questions	48
2.4.3. Research Approach	49

Chapter 3.

MODEL DEVELOPMENT AND HYPOTHESES 51

3.1. Conceptualization of Customer Loyalty 51

3.2. Conceptualization of Customer Loyalty Determinants 53

3.2.1. Satisfaction 53

3.2.2. Proactive improvement 58

3.2.3. Service recovery 59

3.2.4. Trust 60

3.2.5. Commitment 62

3.2.6. Alternatives 63

3.3. Comprehensive model of Customer Loyalty 63

3.3.1. Research Hypotheses 63

3.3.2. Overview of Hypotheses and Proposed Model 69

Chapter 4.

RESEARCH METHODOLOGY 71

4.1. Survey Design 71

4.1.1. Research Objective 71

4.1.2. Methods for Data Analysis 71

4.1.3. Data Collection procedure 73

4.1.5. Questionnaire Design 75

4.1.6. Pretest Interviews 75

4.1.7. Data Collection 75

4.2. Sample 76

4.2.1. Sample characteristics 76

4.2.2. Representativeness of the sample – Test for sample bias. 79

4.3. Introduction to the Data Analysis Methodology 81

4.3.1. Measurement Models 81

4.3.2. Structural Models 83

4.4. Model Assessment 84

4.4.1. Reliability 84

4.4.2. Validity 85

4.4.3. First Generation Criteria 86

4.4.4. Second Generation Criteria 89

4.4.5. Overview of Goodness of Fit Criteria 94

4.5. Model Design and Modification 95

4.5.1. Measurement Models	95
4.5.2. Structural Models	96
Chapter 5.	
DATA ANALYSIS AND RESULTS	98
5.1. Operationalization and Measurement	98
5.1.1. Customer Loyalty dimensions	98
5.1.2. Customer Loyalty determinants	105
5.1.3. Discriminant Validity	114
5.2. Structural Models	116
5.2.1. Results and Findings	116
Chapter 6.	
CONCLUSION	123
6.1. Summary	123
6.2. Managerial Implications	127
6.3. Recommendations for Further Research	129
APPENDIX-A	131
APPENDIX B	134
REFERENCES	140

List of Tables

Table 2-1. Financial summary of listed logistics players in India (2011-12).....	31
Table 3-1. Overview of hypotheses for customer loyalty model	70
Table 4-1. Size of respondents.....	77
Table 4-2. Industry composition of respondents	77
Table 4-3. Test for Non-response Bias - Early Versus Late Respondents	80
Table 5-1. Indicators measuring “Repurchase”	98
Table 5-2. Adaptation of “Repurchase” (4 indicators)	99
Table 5-3. Adaptation of “Repurchase” (3 indicators)	100
Table 5-4. Indicators measuring “Additional Purchase”	100
Table 5-5. Adaptation of “Additional Purchase” (4 indicators).....	100
Table 5-6. Adaptation of “Additional Purchase” (3 indicators).....	101
Table 5-7. Indicators measuring “Referrals”	101
Table 5-8. Adaptation of “Referrals” (4 indicators).....	102
Table 5-9. Adaptation of “Referrals” (3 indicators).....	102
Table 5-10. EFA on customer Loyalty dimensions.....	103
Table 5-11. Fornell/Larcker criterion for customer loyalty.....	103
Table 5-12. Indicators measuring “Loyalty”	104
Table 5-13. Adaptation of “Customer Loyalty” (12 indicators).....	104
Table 5-14. Adaptation of “Customer Loyalty” (6 indicators).....	105
Table 5-15. Indicators measuring “Service Quality”	106
Table 5-16. Adaptation of “Service Quality” (3 indicators)	107
Table 5-17. Indicators measuring “Price Satisfaction”.....	107
Table 5-18. Adaptation of “Price Satisfaction” (3 indicators)	107
Table 5-19. Indicators measuring “Relational Satisfaction”.	108
Table 5-20. Adaptation of “Relational Satisfaction” (3 indicators).....	108
Table 5-21. Indicators measuring “Proactive Improvement”	109
Table 5-22. Adaptation of “Proactive Improvement” (5 indicators).....	109
Table 5-23. Adaptation of “Proactive Improvement” (4 indicators).....	110
Table 5-24. Indicators measuring “Service Recovery”	110
Table 5-25. Adaptation of “Service Recovery” (3 indicators).....	111
Table 5-26. Indicators measuring “Trust”	112
Table 5-27. Adaptation of “Trust” (5 indicators).....	112
Table 5-28. Indicators measuring “Commitment”	113

Table 5-29. Adaptation of “Commitment” (4 indicators)	113
Table 5-30. Indicator measuring “Alternatives”	114
Table 5-31. Fit of the 8-factor CFA	115
Table 5-32. Test for discriminant validity	115
Table 5-33. Adaptation of the 8-factor customer loyalty model	116
Table 5-34. Effects of Determinants on Customer Loyalty	117
Table 5-35. Comparison of 8 and 6-factor models	118
Table 5-36. Hypothesis-tests for linkages between determinants	120
Table 5-37. Effects of determinants on customer loyalty	121
Table 5-38. Hypothesis-tests for effects on customer loyalty	122
Table-A. Determinants of customer loyalty in empirical research	131

List of Figures

Figure 2-1. Conceptualization of Customer Loyalty	15
Figure 2-2. Logistics Development Stages	18
Figure 2-3. Motivation of Logistics Outsourcing	24
Figure 2-4. Segmentation of Indian Logistics Market, 2014	29
Figure 2-5. Service Failure Response Choices	43
Figure 2-6. Morgan and Hunt's key mediating variables model	46
Figure 2-7. Framework of Logistics Research	50
Figure 3-1. Conceptualization of Customer Loyalty used in this study	52
Figure 3-2. Determinants of Customer Loyalty	53
Figure 3-3. Direct effects of Determinants on Customer Loyalty	66
Figure 3-4. Structural Model of Determinants of Customer Loyalty	70
Figure 4-1. Importance of Logistics Outsourcing (total logistics cost)	78
Figure 4-2. Importance of Logistics Outsourcing (lead LSP cost)	78
Figure 4-3. Logistics services provided by the selected LSP	79
Figure 4-4. Measurement model with reflective indicators	82
Figure 4-5. Generic Structural Model	83
Figure 4-6. Overview of adaptation measures (Adapted from Homburg and Baumgartner 1995, p. 165).	88
Figure 4-7. Overview of Fit Criteria	94
Figure 5-1. Revised hypothesized model of Customer Loyalty	117
Figure 5-2. Validated 6-factor Customer Loyalty model	118
Figure 5-3. Relationships between Customer Loyalty Determinants	119

Chapter 1.

INTRODUCTION

1.1. Introduction and Overview

One of the most important challenges faced by organizations in today's cut throat competition is not just getting business but is on how to maintain the long term sustainability. The need, hence, to focus on winning customers' repeat patronage and maximize profit has increased manifold. This encouraged the academic researchers and practitioners to study factors responsible for customer retention, such as customer satisfaction, commitment and trust, and their relationship with customer loyalty and repeat purchases. This research is designed to study and add to the existing research that explores the drivers and antecedents of customer loyalty especially with reference to 3PL (third party logistics) outsourcing relationship existing between the customers and their logistics service providers.

Over the past few decades, third party logistics (3PL) industry has evolved into highly advanced service delivery system with the integration of latest technologies allowing real-time visibility of cargo on the move. This has enabled in creating a greater value for their shippers (customers), resulting into a higher degree of satisfaction and loyalty, thus developing more intimate and long lasting relationship between the LSPs and their customers. A survey report of 2014, "18th Annual Third Party Logistics Study," reveals that both shippers and 3PL service providers continue to view their relationships with one another as being successful (Langley et al., 2014). It had been reported that the future of logistics industry depends upon the ongoing relationships (Delaney, 2000). Indeed providers of logistics services are increasingly and continuously attempting to build more partnering and collaborative working relationships with their key customers (Lieb & Butner, 2007).

Customer loyalty has increasingly been acknowledged to be a means for achieving success in long run since it takes time, effort and money to find new customers and sustain business with them (Mittal and Lassar 1998). Obtaining a new customer is more expensive than retaining an existing one, and a firm's long lasting sustainability in a market is progressively determined by its capability to build a huge base of loyal

customer and sustain for longer duration (Kandampully 1998). Focusing on attaining customer loyalty have become equally important as achieving strategic or financial objective (Fay 1994). Building loyalty with key customers was once considered as competitive tool to win over the competition, but today it has turn out to be an essential requirement to survival (Reichheld et al., 2000).

The theories of relationship marketing is employed in the present study as it helps to identify the important drivers that causes, govern and effect important outcomes in an organization in terms of its relationships with the customers (Hennig, Thureau, Gwinner and Gremer 2002). Reports show customer satisfaction to be a major factor that leads to loyalty and continued patronage (Kabadayi & Gupta, 2003; Tellis, 1988). Further, Menon et al. (1999) found satisfaction to have a strong effect on the decision to repurchase from a vendor and to expand the buyer-seller relationship. In addition, Caruana (1999) indicated that overall satisfaction has an important effect on customer service loyalty.

Relationship marketing literature has identified satisfaction as an important variable. However, researchers argue that satisfaction in isolation might not inevitably lead to loyalty (Bejou et al., 1998; Reichheld & Aspinall, 1993). Satisfaction along with other factors like, trust and commitment, have to be taken into consideration in studying loyalty. In relationship marketing, commitment and trust were found to have a central place that lead to cooperative behaviours conducive for the success of relationship continuity (Morgan & Hunt, 1994).

Vasquez-Parraga and Alonso (2000) found commitment relationship as a precursor that leads to loyalty. In addition, according to them trust in turn acts as an antecedent leading to commitment. Empirical findings supporting these relationships, show that trust and commitment are critical variables that mediates successful relationship marketing in long-distance telephone service (Alonso, 2000), with online CD selling (Kabadayi & Gupta, 2003) and also in the tire dealer industry (Morgan & Hunt, 1994). These studies demonstrate that commitment to anyone or any organization is not possible when there is a lack of trust separating various parties. In other words, where there is no trust, there is no commitment.

The development of trust is an important factor contributing to relationship development and also that trust is viewed as important influential factor on overall satisfaction (Bejou et al., 1998). Amould et al. (2004) describe the relationship between trust and commitment and that trust and commitment based adaptations are often reciprocal. Buyers and sellers adapt to each other. Furthermore, commitment is found to boost relationship performance cross-culturally (Skarmeas et al., 2002).

From the above discussion, a linkage among satisfaction, trust, commitment, and loyalty can be established. Thus, this study proposes that satisfaction leads to trust (Chaudhuri & Ray, 2003; Kim, 2001; Alonso, 2000; Vasquez-Parraga & Alonso, 2000), trust leads to commitment (for without trust no commitment will develop) (Chaudhuri & Ray, 2003; Kim, 2001; Yilmaz & Hunt, 2001; Alonso, 2000; Vasquez-Parraga & Alonso, 2000; Morgan & Hunt, 1994), and finally, commitment leads to customer loyalty (Chaudhuri & Ray, 2003; Alonso, 2000; Vasquez-Parraga & Alonso, 2000; Pritchard et al., 1999).

In 2007, Langley et al., reported on logistics outsourcing, that the 3PL (third-party logistics) industry had become huge and will be still growing. According to this report, the challenges that the 3PL providers currently facing are regional expansion, augmentation of services to fulfil the current and future needs of customers, integration of IT (information technologies), and finally, developing relationships with customers and other business partners that will assist in furthering the expansion forward (Langley et al. 2007). This therefore puts on pressure on both the providers of logistics services and their users to understand the nature of their relationship and closely work together.

Scholars of Marketing like Gronroos, Garbarino, Dick and Basu (1994), Johnson, Oliver (1999) and Zins (2001) have done extensive work on customer loyalty. They, emphasised the importance of realising both behavioural and attitudinal loyalty in developing enduring and profitable relationships. The quest of finding the determinants which influences customer loyalty has led to the study and development of constructs like ‘satisfaction’, ‘trust’, and ‘value’ and their effect on customer loyalty. Consequently, these constructs were found to have a positive effect on attitudinal loyalty and repurchase intentions.

In long-term business relationships, customers usually adopt a serial perspective to evaluate the outcomes obtained from the inputs invested in a relationship (Ganesan, 1994). They evaluate the reciprocity of the output/input ratios along a series of customer-firm encounters. Thus in order to understand or assess the profit/benefit from business, a customer will have to be in relationship for quite some time. Robert V. Delaney (2000) stated that "relationships are what will carry the logistics industry into the future". This is the reason why, providers of logistics services are increasingly attempting to build more collaborative working relationships with their key customers (Lieb and Butner, 2007). In order to understand how these relationships are build and maintained, researchers have long been investigating the various determining factors and their linkages, for example, between customer satisfaction and loyalty behavior.

Innumeros literature on Logistics Outsourcing has admittedly, trying to capture the benefits and outcomes of the relationship-building efforts taken by the 3PLs towards the customers using their services. It has been observed that customers remaining longer in relationships with their logistics providers have been found to exhibit higher levels of 'trust' and 'commitment' (Knemeyer, Corsi, and Murphy 2003). Another aspect of relationship is service quality. Improving logistics customer service improves the relationship (Stank, Goldsby, and Vickery 1999). Thus, suppliers of services are trying to anticipate customers' expectations as closely as possible so that they may offer more desired solution to them. Therefore, by utilizing their logistics service capabilities effectively, firms can build a closer relationships with customers (Bowersox et al. 1992). However, at the time of delivering service, it's often seen that suppliers were not always being able to accurately predict customers' expectations, and customer experience do not always match with the actual service provided (Parasuraman, Zeithaml, and Berry 1985).

An increasing number of researchers had been trying to study the developmental aspects of these relationships and the connections among its antecedents like customer satisfaction, loyalty, commitment, trust, etc. These relationships over a period of time develop into partnering and collaborative behavior through a mutually beneficial business relationship. These kind of relationships takes into considerations not only financial benefits, but also relational aspects (Lambert, Knemeyer, and Gardner 2004, Rese 2006). Marketplace of today is very dynamic, vibrant and competitive, this is making

retention of relationships a big challenge. The customers are becoming smarter, better informed, and have access to many avenues and choices that too in very little time. Thus, the probability of customers switching to competitors who promise better services at lower prices is very high.

Performance of a firm is greatly affected by customer loyalty which is considered as a source of competitive advantage (Heskett et al, 1997, Rust et al 2000 and Woodruff 1997). Reichheld and Sasser, 1990, indicated that higher customer loyalty in service firms leads to increased revenue, reduced customer acquisition costs, and lower costs of serving repeat purchasers, leading to greater profitability. The degree of satisfaction that customers get from a service is a collective impact of the service attributes versus its cost. One of the important determinants of customer satisfaction is service quality. But acquiring competitive advantage by providing a service with outstanding quality in today's competitive markets is difficult since all of them are striving to gain greater market share, service quality is becoming almost indifferent. Moreover, amazing service speed can be achieved without much difference in price. Therefore, firms can, achieve a higher and positive impact on customer satisfaction by providing exceptional and high level of logistics services. Since high levels of logistics services are difficult to be copied easily, it can successfully be used as a core competency and to develop a sustainable competitive advantage. Therefore, this research intends to study the relation of these concepts and their inter linkages in the formation of loyalty.

1.2. Statement of the Problem

As has been discussed in the preceding discussions, that there has been tremendous advancement in the field of logistics and supply chain management with the advent of ongoing innovation and adoption of new technologies and processes, and with these kind of support and accessibility of capabilities, almost every service provider in logistics world should be able to provide good and satisfactory services to its clients. Today, since there exist a tremendous number of national and multinational logistics companies, it has becomes very necessary for an LSP to understand not only how it can develop its customers' base but more importantly how to maintain and retain them for a longer duration. Retention of customers is possible when they become loyal towards the services of the LSP. In order to develop and maintain customer loyalty, the first important thing that an LSP requires, is to understand and identify the determining factors underlying

customer loyalty especially in Indian scenario as hardly any work has been recorded on customer loyalty in Indian logistics industry environment. Secondly, once the determinants had been identified, their effects on customer loyalty need to be testified and the degree of effects estimated. Moreover, the relationships and interdependencies between the determinants also have to be captured in order to understand the sequence of linkages which finally leads to customer loyalty. The third objective is to analyze, whether the identified determinants has similar impact on customer loyalty in India as compared to its counterpart in the west e.g., US.

1.3. Purpose of the Study

Efforts to investigate how loyalty develops have led to a plethora of research and an expansive body of literature on the determinants of loyalty (Pritchard et al 1999). According to one study by Sheffi (1990), an important driver of logistics outsourcing is ‘the need to develop and sustain competitive advantage,’ which can be achieved through concentrating on core competencies and re-engineering. Another study by Cooper (1993), proposed ongoing globalization as an important driver that companies are facing nowadays. Zhu, Lean, and Ying (2002), also mentioned in their study that LSPs play an important role in facilitating global trade. Going global necessitated companies for outsourcing logistics activities, and moreover, to increasingly concentrate on consolidating the number of LSPs used by them globally. And so, it’s not enough for the LSPs to formulate and develop competencies and strategies for sustainable growth, they also needed to develop competencies to manage intercultural encounters (Huang, Rayner, and Zhuang 2003). Little study is available on this front and LSPs’ customers have extreme diversities not only across nations but even within a country in terms of relationships between LSPs and their users (Knemeyer and Murphy 2005). Therefore, it has become so essential for management of logistics-service providing companies to devise strategies for developing customer loyalty which takes care of both cultural and other relationship features.

The purpose and goal of the present study hence is to find out determinants of customers’ loyalty towards their Logistics Service Providers by unambiguously examining different factors responsible for relationships characteristics. Apparently, the study encompasses both logistics and marketing interfaces and hence it is not only meant to contribute to research in logistics, but also in marketing, customer loyalty, and cultural

studies. Since this research will deal with concept of customer loyalty from logistics outsourcing relationship perspective, it is also imperative to explore and comprehend the mechanisms underlying loyalty. In this regard, this study will identify the factors that can induce customer loyalty in such relationships and then, interdependencies among these factors will be proposed and determined.

A customer loyalty model will be designed to provide revealing insights into the composition of customer loyalty that will aid as the base for further analyses. This study will examine different relationship variables and driving factors that influence customer loyalty. Subsequently, the relationship and linkages among these variables will be established and their probable mediating roles on the customer loyalty model will be assessed.

Thus the objectives of this study are:

1. To identify the determinants of customer loyalty in logistics outsourcing relationships in India.
2. To develop a loyalty model constituting the identified determinants and estimate the interdependencies and linkages between/among them.
3. To examine the differences between the effects of determinants on loyalty in India and the west.

1.4. Significance of the Research

Over the last few decades literature on relationship marketing has been overwhelmed with the studies on developing and continuing long-term relationships with customers. According to Mattila 2001, building a healthy and lasting relationships with customers, leads to customer retention in the long-term. Extending this concept to supply chain research will help organizations benefit from long-term relationships (Ganesan 1994). Besides, strong supply chain relationships can create barriers to competition and hence can be used by LSPs for gaining competitive advantage (Day 2000). Bowersox and Daugherty (1995), has shown that literature on supply chain research mostly, focusses around collaborative relationships with key trading partners, and an interesting subsequent finding of strategic importance to firms is attaining customer loyalty.

“Customer loyalty is ever more acknowledged as the best route to long-term success because finding new customers and doing business with them takes time, effort and money” (Mittal and Lassar 1998). Kandampully (1998) also acknowledged that an organization’s long-term success depends upon its ability to expand and sustain a large and loyal customer base. It is more profitable in doing business with repeat customer since obtaining a new customer call for a higher cost. Thus, it is no more surprising to see companies nowadays are placing equal priorities on ways to achieve customer loyalty parallel to achieving any other financial or strategic objective. In the past, building loyalty with select customers was just one weapon to use against competition, but today it has become essential to survival.

Products and services have become more commoditized, and companies can no longer maintain a loyal customer base or create sustainable advantages for themselves by only having a variety of tangible products or services. For this reason, only firms that are able to create and manage a complex relationships with customers by differentiating themselves will succeed in winning over customer loyalty. This will come with mixing goods and service in distinctive ways so as to provide higher support level, convenience and reliability (Fuller et al, 1993). One effective tool for building closer relationships with customers is to exploit a firm’s logistics capabilities to gain and maintain customer loyalty (Bowersox et al. 1992). In today’s dynamically competitive markets, suppliers try to find ways to retain strategically important business customers, through positive customer loyalty impacts by providing outstanding logistics services.

A major purpose of relationship marketing theory is to identify the important drivers that influence and determines the desired outcomes that firms gets from the relationship with their customers. Relationship marketing theory also helps researchers to establish a better understanding of the ways these drivers cause and affect the outcomes (Hennig, Thureau et al 2002). For that reason, understanding in what manner logistics services effect loyalty could help significantly in examining and predicting supply chain relationship outcomes.

Understanding how or why a customer develops a sense of loyalty has been a critical issue that management are facing. Studying the psychology of customers behind the development of loyalty will be one of novel way to address this issue. Thus, the purpose of this dissertation will be to determine the antecedents of loyalty phenomenon and also to examine the role of logistics services in forming customer loyalty. Another issue that managers faces is making decision about logistics services as standard logistics services

does not fit all customers' needs, and in all situations. Some customers may require one level of service while others might require a totally different level to remain loyal. Firms should have the capability to tailor make their logistics service offers to meet the needs of different customer groups. Above all, the quality of these tailor-made services matters a lot in influencing the loyalty in these different groups of customers.

Chapter 2.

LITERATURE REVIEW

The preceding chapter have briefly discussed about the goals of the present research. This chapter will describe the fundamental concepts of customer loyalty and provide the base for going ahead with the research. The chapter will introduce the above mentioned concepts from innumerable literature that exists in the areas of logistics, marketing and customer loyalty, and only the issues most relevant with this study will be taken into account. The chapter will then identify research gaps from the review of literature from the afore-mentioned areas, and subsequently, a set of research questions will be deduced to propel this study ahead.

2.1. Customer Loyalty

An in-depth understanding of customer loyalty is the primary requirement before beginning this research. For this, available literature on customer loyalty and its development will be investigated and analyzed from relationship marketing framework. Relevant concepts of customer loyalty will be extracted from the literature review. Further, out of these concepts, an appropriate definition of customer loyalty will be derived to be used in this study and then both antecedents and consequences of customer loyalty will be introduced.

2.1.1. Background of Customer Loyalty Research

From the early 1990s, customer loyalty research has multiplied its importance and existence in both relationship marketing and business literature. Business literature, attribute this development to changing and competitive market conditions (Pritchard, Havitz, and Howard, 1999). The shift from sellers' to buyers' market coupled with growing amount of globalization have compelled many industry to encounter fresh challenges from time to time. Firms are confronting these challenges in two phases. Firstly, firms strived to meet the challenges by achieving cost reductions and concentrating on internal ameliorations fixating on their organizational structures and internal processes. Secondly, it was followed by focusing on external, where firms concentrated their care to the customers, attempting to win incipient ones and retain over subsisting ones.

Loyal customers according to Caruana (2000) are the bedrock of any business, and cost-wise it's more efficient to retain them than acquiring new customers which is much more expensive (Stone, Woodcock, and Wilson, 1996). In markets facing high competition and low growth-rates, retaining the existing customers is the best way to retain market shares (Fornell, 1992; Fournier and Yao, 1997). Loyal customer can be leveraged as a competitive advantage over the competition. According to Aaker (1996), loyal customer base possess as a barrier to entry for the new comers, it also works as a barricade against damaging price war, enables to retain price premium and opportunity to buy adequate time to respond to innovations in competition. Authors such as Baldinger and Robinson (1997) also tried to correlate customer loyalty to gain market share and helps in building brand volume. Additionally, loyalty is a necessary ingredient to any critical analysis of fruitful marketing strategy and a basis of forecasting future market share.

Research in marketing shows two patterns in the evolution of customer loyalty. Initially 'individual transactions' were central to marketing research, later on focus shifted to analyzing 'relationships'. Until the 1990s the center of most marketing research was on traditional marketing concept of marketing mix (4Ps)¹, (Grönroos 1994, p. 347). This approach focuses on transactional aspect but didn't address the relational of marketing. Andersen (2001, p. 167) emphasized that the center of study in marketing is examining the relationships and not merely the transactions happening between sellers and buyers of any goods or services. In this regard, Morgan and Hunt (1994), gave an all-inclusive definition of relationship marketing by resembling and extending relationship marketing to all marketing activities engaged in creating, developing, and maintaining successful exchanges in business relationships. Therefore, relationship marketing can be considered in facilitating a background conducive to study customer loyalty for the research in hand.

In late 1980s, the works of Grönroos and Gummesson in 'Nordic School of Services', steered in a major transformation in the development of relationship marketing with respect to the conception, maintenance, and extension of buyer and seller relationships. As a result of the focus on relationships, customer loyalty gained importance within marketing research. Customer loyalty research got most popular cognition in the past 2

¹ The '4 Ps' are product, price, placement, and promotion.

decades. The following four streams have been identified here, concomitant to the work of Wallenburg (2004, pp. 10-11):

- (1) Examining relationships of customer loyalty. This considers those relationship marketing aspects that deal with the creation and development of relationships, i.e. the actual buying process, and of works determined to define customer loyalty and to measure it.
- (2) Examining the effect of customer loyalty, especially the link between customer loyalty and business success.
- (3) Examining determinants of customer loyalty. In addition to identifying determinants, effort is taken to explaining how they influence each other and impact on customer loyalty.
- (4) Examining customer loyalty management. This area of study analyzes how different measures can increase customer loyalty and how these measures can be combined to shape an efficient customer loyalty management.

Before determining which of the above stream will fit into the present study, different customer loyalty concepts needs to be examined and understood.

2.1.2. Customer Loyalty concepts

Literature Review shows that the concept of loyalty is multifaceted and lack clarity in its true sense. In one view, customer loyalty deals with relationships between suppliers and their customers and on the other deals with loyalty aspects, such as brand loyalty, which refer to a more abstract attachment towards a brand.

In the supplier-focused perspective, customer loyalty is considered as means and measures that intends to improve relationships with customers. This perspective portrays supplier at the center stage whereas customer is treated as a factor which is being affected by customer loyalty. But this theory lacks robustness as it tends to ignore the underlying fact that supplier may put in their best effort in order to develop loyalty with a customer but it's ultimately the customer's choice to be loyal with one or any of the suppliers. Here it becomes apparent that this approach contains certain conceptual

deficit. Therefore, a customer-focused perspective has to be added to evaluate the accomplishment of customer loyalty management.

In the customer-focused perspective, customer loyalty is conceptualized taking into account of customers' complex characteristics. These characteristics can be assumed either directly from the customers' observable actions/behaviors or can be accounted from their attitudes and intentions. Diller (1995) identified a third perspective which is a synthesis of the former two approaches, the relationship-focused perspective'. It directly examines the relationship between suppliers and customers. In due course, even within the relationship-based perspective, customers decide whether to extend, continue, or maintain a relationship with a supplier.

Among the three mentioned approaches supplier-focused perspective stands out distinctly. But then, distinguishing the customer and the relationship-focused perspective, however, is difficult, because both focus on the customer. The customer-focused perspective serves as the basis of current research on customer loyalty. As this approach dominates the study, details of the customer-focused perspective are given below.

Considering the customer-focused perspective, two different approaches, the behavioristic and the neo-behavioristic have been used; behaviorism accounts for observable behavior, whereas neo-behaviorism accounts for customers' attitudes and intentions. The two approaches will be explained in the following sections.

2.1.2.1. Behavioristic Customer Loyalty concepts

Behavioristic concepts of customer loyalty have been the center of attention in early marketing research and focuses on customers' observable behavior, for example, purchasing behavior. Customer loyalty is established, when customers consistently chooses their supplier or brand. "Hard-core" loyalty, is realized when one product alternative is exclusively repurchased and of "reinforcing" loyalty, when customers switch among brands but repeat-purchase one or more alternatives to a significant extent (Yim and Kannan,1999, p. 76). Neal (1999, p. 21) stated customer loyalty as "the proportion of times a purchaser chooses the same product or service in a specific category compared to the total number of purchases made by the purchaser in that

category”. Attaching customer loyalty to purchasing behavior solely, will be inadequate as there can be a multitude of factors affecting purchasing behavior, such as product availability, special deals, promotional discounts etc. (Cunningham 1956, pp. 121-128).

There is a major deficit of behavioristic approach though, it does not explain the drivers behind purchasing behavior. Another disadvantage of behavioristic customer loyalty concepts is that loyalty is only expressed through purchases, information on customers’ actual loyalty status in between purchases is not captured. This approach does not touch upon repeated interactions after the purchases with the customers, it does not necessitate involvement by the customer. Firms can therefore neither draw conclusions about relative changes of purchasing behaviors, nor evaluate their comparative market position. The assessment of attitudes about their post purchase behavior and intentions to repurchase is not factored in this approach.

2.1.2.2. Neo-behavioristic Customer Loyalty concepts

Neo-behavioristic customer loyalty concepts start where behavioristic approach stops, by examining the causes of loyalty. Four decades ago, Day postulated that “loyalty should be evaluated with both attitudinal and behavioral criteria” (Day 1969, p. 30), because otherwise accidental repeat-purchases, merely resulting from situational exigencies, would be attributed as indicators of loyalty.

Taking attitude as a causal factor is a bit problematic because there has been no general agreement whether attitudes are a composition of customer loyalty or just an antecedent of it. Authors have conflicting on this, e.g. Dick and Basu (1994), put forward that only positive attitude can lead to ‘true’ customer loyalty. Transaction cost theory, provides the concept of asset specificity and affirms that relationship-specific investments build economic switching barriers and therefore enhances customer loyalty (e.g. Williamson 1985, p. 2 and Williamson 1990, p. 142). Dick and Basu (1994), however proclaims that repeat purchase of goods or services due to economic constraints would not qualify as loyalty as positive attitudes are not involved. In order to address the issue, defining positive attitude is avoided and concepts of intentions and observable behavior are being assumed to be the constituting elements of customer loyalty.

2.1.2.3. Dimensions of Customer Loyalty

The multi-dimensionality of customer loyalty will be discussed in this section. According to Meyer and Oevermann (1995), purchasing (including repeat purchases of the same goods or services and additional purchases of different goods or services) and referrals are the constituents of customer loyalty. Purchasing is thoroughly established in customer loyalty research, and referrals (or word-of-mouth WOM marketing), are regarded as the highest manifestation of positive attitude towards a supplier. Both aspects also fit into the neo-behavioristic school of thought.

This multi-dimensional conceptualization, is represented in Figure 2-1

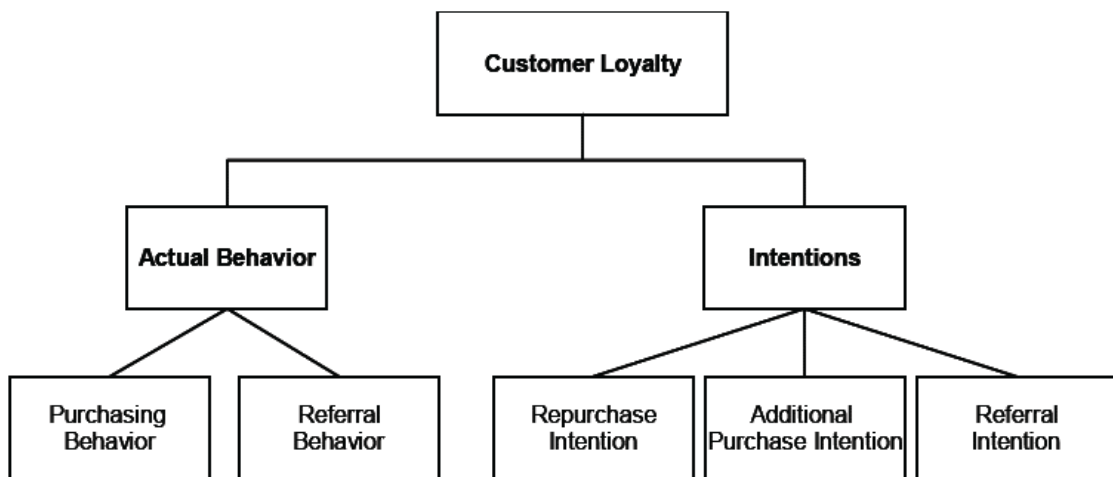


Figure 2-1. Conceptualization of customer loyalty²

Analyses of research on both customer loyalty and logistics service show that most works include either behavior or intentions but not both. The current research will entail both aspects of loyalty so that broader spectrum of loyalty is captured.

2.1.3. Effects of Customer Loyalty

Customer loyalty research will only get justified if it has substantial impact on firms' success by creating loyal customers. Reviews of literature shows the following three effects that customer loyalty induces (Reichheld, Markey, and Hopton 2000, p. 135):

² Referred from Meyer and Oevermann 1995, p. 1342.

- (1) “Revenues and market share grow as the best customers are swept into the company’s book of business, building repeat sales and referrals.
- (2) Costs shrink as the expense of acquiring and serving new customer and replacing old ones declines.
- (3) Employee retention increases because job pride and job satisfaction increase, in turn creating a loop that reinforces customer retention through familiarity and better service to the customers. Increased productivity results from increasing employee tenure.”

Literature reviews indicate customer loyalty to have a positive influence on success. Retaining customers is found to be far less costly than acquiring new ones (Knemeyer, Corsi, and Murphy 2003, p. 84). According to Neal (1999, p. 21), “loyal customers consume fewer marketing and sales resources, buy more, and buy more often from the organization that has gained the customer’s loyalty.” Gupta, Lehmann, and Stuart (2004, p. 17) also affirms that retention rate has a “significantly larger impact on customer and firm value than does the discount rate or cost of capital.”

One of the significant empirical study conducted by Kalwani and Narayandas (1995) on the effects of customer loyalty shows that companies with higher customer loyalty exhibit higher revenues, higher returns on investment, and a higher profitability of innovations. It is reasonable to argue that customer loyalty has effects both on costs and on revenues. Therefore, customer loyalty can be presumed to have a positive impact on success as long as its utility doesn’t outweighs its cost (Wallenburg 2004, p. 27).

2.1.4. Determinants of Customer Loyalty

In order to understand the determinants and their precise effects on customer loyalty, a thorough review of literature on the work of researchers on this topic is undertaken. Overview of analyses of these works can be structured in three dimensions (Fassnacht and Daus 2004, p. 5-7):

- (1) Company-related determinants: these refer to the various aspects of the supplier itself and of the goods or services offered which induces loyalty of the customers. Quality of goods and services offered will influence loyalty. In order to evaluate the price-performance ratio, customers will pay attention to prices, so prices definitely have a role

in influencing loyalty. Further, customer loyalty will also be influenced by the reputation a company has and kind of customer loyalty programs it offers

(2) Relationship-related determinants: they play a substantial role in long-term relationships between the suppliers and customers. Pertinent factors are such as relationship quality, previous experiences, and trust that arises out of the interaction between supplier and customer. Commitment is another considerable factor which provides evidence of emotional closeness and moral or normative feelings of obligation in relationships. Dependence can lead to economic, psychological and social switching barriers.

(3) Customer-related determinants: these are mainly influenced by customers' characteristics. The involvement of customers, specific needs or requirements of product or services etc. also influences customer loyalty to a great extent.

In addition to the above three dimensions, a very important and widely researched factor is the link between satisfaction and loyalty. Besides, most of the determinants discussed also influences satisfaction and thus there arises a need to place it in a distant category.

The table given in 'Appendix-A' towards the end of this thesis, shows the multitude of relevant factors determining customer loyalty. Table-A provides an overview of empirical studies examining the determinants of customer loyalty, which is based on a meta-analysis conducted by Fassnacht and Daus (2004). Satisfaction - loyalty link is observed to get the greatest attention in those works and the loyalty effects of product and service quality are another important topic. Next determinants where considerable researches were carried out are studies dealing with customer loyalty programs, trust, expectations, and utility. Areas where very little attention were given are psychological and social barriers to switching, socio-demographic customer attributes, involvement, importance of products for customers, and customers' behavioral patterns. From this analysis, two conclusion can be driven: First, it exhibits that there is a lack of general agreement on fixing the determinants to be included in customer loyalty models. Secondly, very limited numbers of determinants were examined in most of the works and a holistic approach to the explanation of customer loyalty is hardly addressed (Ranaweera and Neely 2003, p. 230).

2.2. Logistics

The preceding section have presented the necessary fundamentals of customer loyalty, this section will elaborate on logistics which is the reference point of the research project. The section will present different views on logistics and lay down the foundation for the understanding of logistics contained in this study. As relationships between logistics service providers and their customers are to be studied, mentioning the logistics outsourcing in detail will be a value addition.

2.2.1. Developments in Logistics

There are different developmental stages of maturity in logistics. And, there are huge numbers of researches on models of stage of logistics development, these are varied and different without a common string. Since the overview provided by Fassnacht and Daus 2004 only covers articles published until 2003, Table-A was extended to include English-language articles published in 2004 and 2005 in the journals selected by Fassnacht and Daus 2004.

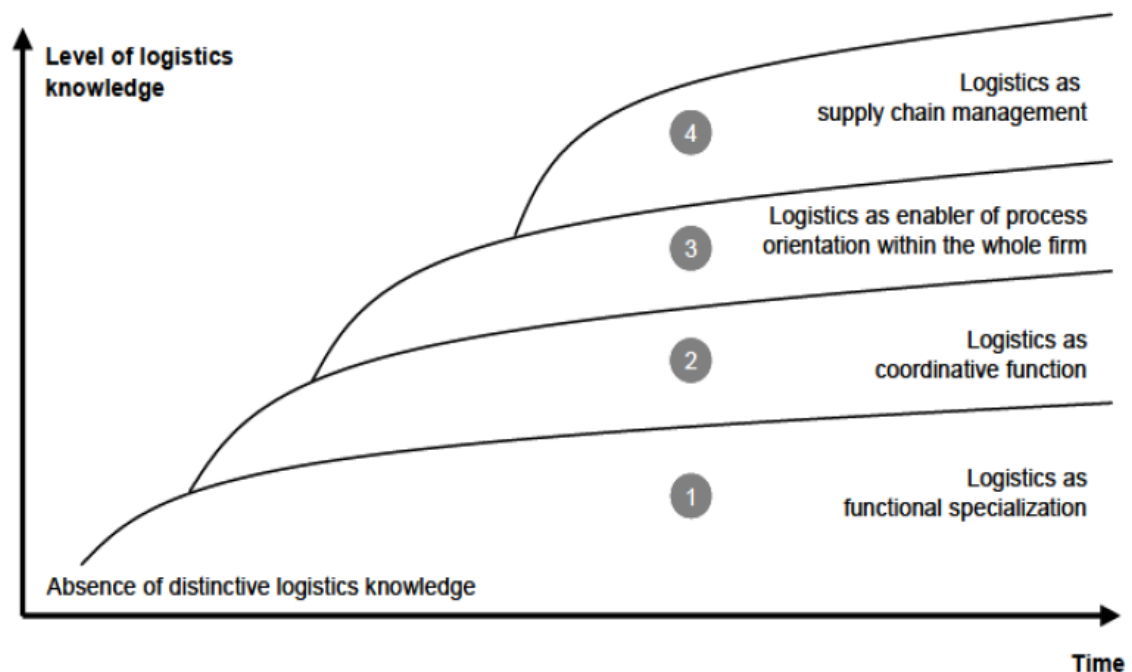


Figure 2-2. Logistics development stages³

³ Adapted from Weber 2002, pp. 9-10.

Bowersox and Daugherty (1987) and Klaus (1999) proposed a three stages model and Cavinato (1999) a five stages model. For the present study, four stages model will be examined referring from the work of Weber (2002). These stages are determined by the level of logistics knowledge present in a firm and development of this knowledge takes place from a lower to higher order of maturity as shown in Figure 2-2.

In the first stage, logistics is treated as a separate specialized service function that provides transportation, storage and material handling services required for an efficient flow of materials. This stage of logistics maturity was first observed in the 1950s when markets changed from suppliers' to buyers' markets which pushed the suppliers to improve its material flow (Weber 2002, p. 7).

The second stage of logistics maturity was initiated by circumstantial changes in the economic environment - the oil crisis in the early 1970s followed by inflation and stagnation of the economy made companies to strive ways to create competitive advantages (Ballou 2003, pp. 1- 30). Further, advances in technology, communication and networks also boosted the second stage of maturity (Bowersox, Closs, and Helferich 1986, p. 14). This resulted in firms getting efficiency through improving the coordination of materials flows from inbound logistics starting from procurement to outbound streams ending in distribution. Coordination helped in achieving integration of different functions, cost and performance benefits, lot-sizes and just-in-time supply (Weber 2002, p. 11)

The third stage of logistics maturity was compelled by further changes of the market environment – increasing intensity of competition, over-capacities, a world-wide convergence of product quality brought by globalization, shortened product-life- cycles, and a heightened focus on customer demands. Focus on differentiation and cost leadership alone had been rendered insufficient by excessive competition. There arose the need of creating a process-oriented intra company value chain that reduces complexity and rigidity in organizational structure and systems, this led to evolution of logistics from a mere functional concept to a management concept (Wallenburg 2004). Bowersox and Daugherty (1987, p. 47) put it, from operational to strategic orientation.

The fourth and the last maturity stage of logistics development is again driven by market dynamics. Companies realized that optimization potentials within the

organization had exhausted, the focus of managing, integrating and coordinating complex cross-functions shifted from intra organization to inter organization phenomenon bracing the upstream and downstream partners in the supply chain (Bolumole 2001, p. 88). In this regard, the view of logistics as a management concept from the third maturity stage is extended over company boundaries to a broader sense of supply chain management (SCM).

This four-stage model of logistics development was proposed by Weber and Kummer (1998) and later refined by Weber (2002) and then by Wallenburg (2004). The model argues that if a company wanted to remain ahead of the competitor, it has to attain the forth maturity stage of logistics development. But obtaining this stage would call for huge amount of logistics capabilities and financial investment not only within but also beyond the company to manage the entire supply chain. And besides every company has its own limitation and constraints in terms resources and capabilities to build core advantage. Here comes the importance of outsourcing into the picture, the afore mentioned logistics capabilities can be outsourced to a third party or supplier of such services who had the capability and competency to do so. The next section will elaborate on outsourcing aspect of logistic services.

2.2.2. Logistics Outsourcing

When a company thinks of organizing and managing its logistics activities, it go for one of the three options - company can provide the function in-house by developing its own capabilities, secondly it can set up own logistics subsidiaries or by buying logistics firm/firms and finally, it can outsource or buy logistics services from a logistics service provider (Razzaque and Cheng 1998, p. 89). The upcoming section will delve into the last option as outsourcing relationships are at the core of the research at hand.

2.2.2.1. Definitions and extent of Logistics Outsourcing

The term ‘logistics outsourcing’, ‘contract logistics’, and ‘third-party logistics’ are found to have been used synonymously in several logistics literature also noted by Knemeyer and Murphy (2004, p. 35).

Lieb, Millen, and van Wassenhove (1993, p. 35) have a very broad approach, according to them outsourcing companies “engage an outside company to perform some

or all logistics activities of the firm. The service offered may be narrow in scope (for example, limited to transportation services only), or broad, encompassing the entire supply chain.” Whereas, Bradley (1994a, p. 56A3) defines logistics outsourcing more narrowly as a relationship in which the service provider offers “at least two services bundled with a single point of accountability using information systems integral to the logistics process”. Lambert, Emmelhainz, and Gardner (1999, p. 165) defines logistics outsourcing broadly by stating that it is “the use of a third-party provider for all or part of an organization’s logistics operations”. Africk and Calkins (1994, p. 49) defined logistics outsourcing from a relational perspective “as the outsourcing of all or part of a company’s logistics function. In contrast to basic services, contract logistics offers are more complex, encompassing a broader number of functions, characterized by longer-term, more mutually beneficial relationships.” this definition seems to be the most suitable with respect to the study of customer loyalty in hand, in the context of relationships between logistics service providers and their customers.

The work of Lieb and Miller (2002, p. 7) in 2000, revealed that, Fortune 500 companies surveyed in 1999 and 2000 spent 19% of their annual logistics operating budgets on logistics outsourcing, and forecast to spend 31% three years later. According to Langley et al. (2005, p. 12), logistics outsourcing expenditures, as a fraction of total logistics expenditures stands at over 40% and are expected to grow further.

2.2.2.2. Drivers of Logistics Outsourcing

As the importance of logistics out-sourcing is rising in business operations, more research are carried out on identifying its drivers. The main reasons of outsourcing logistics functions to third parties are the need to develop competitive advantage by focusing on its market offerings and to develop strategic value by focusing on core businesses and re-engineering decisions (Hill 1994, pp. 28-30, Lieb 1992, p. 29, and Sheffi 1990). However because of globalizing, gaining competitive advantage has become more and more difficult. Globalization has been regarded as the most important driver of logistics outsourcing (McCabe, 1990; Whybark, 1990; Bovet, 1991; Cooper, 1993; Fawcett, Birou and Taylor 1993; Trunick, 1989; Foster and Muller 1990; Sheffi, 1990, Byrne, 1993, Rao, Young, and Novick, 1993; and Sum and Teo, 1999). Another driver of the logistics outsourcing is just-in-time (JIT) and the emergence of new technologies.

Reviews of numerous relevant literatures reveal other important reasons to outsource. For example, financial considerations, i.e. the reduction of logistics costs, the variabilization of fixed cost, and the reduction of capital employed, are the most important reasons to outsource, while performance-related like speed of delivery, lower damage ratio, timely delivery etc., also matters. Several researchers observed cost reduction, service improvements and efficiency, and focus on core competencies as the primary reasons for outsourcing logistics functions (Boyson et al 1999, Maloni and Carter 2005). In order to reach these objectives, logistics outsourcing can be witnessed at different levels, both in terms of range of logistics activities to be outsourced and degree of integration between the 3PL and the buyer of the service.

Many factors may impact the role that 3PL providers play on customer operations and strategies. Bolumole (2001), for example, identified four factors that determine the supply chain role of 3PL providers:

- 1) the competitive strategic orientation of the outsourcing organization that can impact a firm's logistics strategy;
- 2) the focal firm's perception of the 3PL role on its logistics strategy;
- 3) the nature of the 3PL-customer relationship (adversarial versus collaborative), and;
- 4) the extent to which logistics functions are outsourced.

Rabinovich et al (1999) in their survey found that firms commonly club transactional and physical functions of their inventory and customer service areas, in order to achieve economies of scale (efficiency) and improve customer service levels without committing substantial amounts of financial resources.

Regarding the process of outsourcing, Sink and Langley, Jr (1997), developed a framework to guide industrial buyers with regard to the purchasing process of third-party logistics services. It is given in five steps:

1. to identify need to outsource logistics,
2. to develop feasible alternatives,
3. to evaluate and select the supplier,
4. to implement the service, and
5. to assess the ongoing service.

Maltz and Ellram (1997) proposed an analytical framework for the logistics outsourcing decision based on the concept of “total cost of relationship”, to incorporate non-price considerations into the make or buy decision. Bask (2001) proposed that customers purchase those logistics service that matches their supply chain strategies. She is of the opinion that if a firm has a full speculation supply chain strategy⁴, it will be better off purchasing routine logistics services since it requires less coordination with a 3PL and, if a firms employ manufacturing postponement⁵, which is operationally more challenging, should purchase customized logistics services.

Knemeyer et al (2003), on a survey of logistics managers across the U.S. compiled from a trade magazine subscriber list, found that more developed partnerships in terms of operational and strategic integration display higher levels of relationship marketing elements which are commitment, investment, dependence, communication, attachment, reciprocity and outcomes like retention, referrals and recovery. The afore-mentioned elements will be incorporated in the current study as these are more related to the research on hand.

In order to provide further understandings into why businesses actually do employ logistics outsourcing projects, the incentive to outsource was included in the survey that forms the empirical foundation of this study. Respondents of the study were asked to indicate the major reasons for outsourcing some or most parts of their logistics activities on a Likert-scale of 1 (not applicable) to 7 (fully applicable). Multiple indications (11) were employed. The average results for the eleven factors included in the survey are displayed in Figure 2-3 and are mostly in line with the results obtained by Engelbrecht (2004, pp. 241-243) from his study in 2002. The present data supports the previous finding that financial considerations, i.e. the reduction of logistics costs and the reduction of capital employed, are the most important reasons to outsource, while performance-related motives like improvement in the ability to deliver play a subordinate role though it closely follows the financial considerations.

⁴ In a full speculation strategy, manufacturing is centralized, goods are produced to inventory, and finished products are stocked close to customers.

⁵ In a manufacturing postponement strategy, final manufacturing operations occur after the customer's order is placed. Early stages of manufacturing are centralized, and final manufacturing operations occur in locations close to the customer.

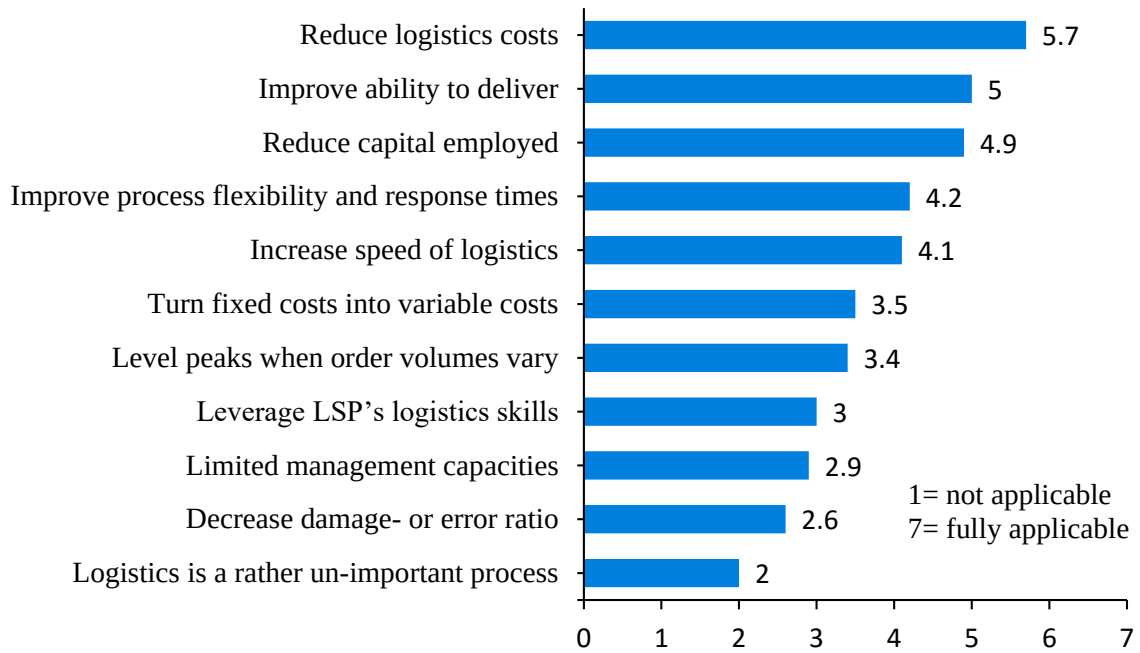


Figure 2-3. Motivation of logistics outsourcing

Thus, this shows why companies actually engage in logistics outsourcing. The next sections will point out merits and demerits associated with logistics outsourcing.

2.2.2.3. Merits and Demerits of Logistics Outsourcing

Companies outsourcing logistics functions, enjoy various advantages but at the same they also have to face various associated demerits. Two main advantages of logistics outsourcing are – cost reductions and performance improvements (Skjoett-Larsen 2000, p. 112), this has been among the outsourcing motivations as shown in Figure 2-3 above. Cost reduction potentials of logistics outsourcing has been agreed upon by most of the authors (e.g. Lieb 1992, p. 29, Candler 1994, p. 46, Panayides 2004, p. 1). Cost reduction can be achieved in the following areas:

- Reducing capital investments on facilities, equipments, and information technology (e.g. Foster and Muller 1990, Goldberg 1990, Sheffi 1990, Trunick 1992, Fantasia 1993, Richardson 1992, Richardson 1995, Lacity, Willcocks, and Feeny 1995).
- Reducing manpower requirement (Foster and Muller 1990, Richardson 1992, Richardson 1995), in countries like Germany where markets are symbolized with high wages and/or restrictive labor laws.

LSPs get the benefit of cost reductions which they can pass on to their customers, which is facilitated by specialized advantages as:

- they had developed logistics as their core competency and hence, more efficiency and lower production costs (Bretzke 1993, p. 38);
- they had developed economies of scale and scope (Schäfer-Kunz and Tewald 1998, p. 30-36);
- they can spread out peaks in demand (e.g., seasonal fluctuation of volumes) by diversifying their customer portfolio (Deepen 2003, p. 130).

Outsourcing enable companies to uncover and remove inefficiencies that were not visible when the logistics functions were performed in-house (Wallenburg 2004, pp. 46-47). Similarly, Bradley (1994b) and Richardson (1993) revealed that fixed costs can be converted to variable costs. On the other hand, Heskett (1977, p. 85) said, “Management cannot measure the importance of logistics in terms of cost alone.” Moreover, by outsourcing logistics, companies can utilize expertise, technology, and infrastructure of LSPs and increase their performance (Browne and Allen 2001, pp. 259-260). Additionally, companies can take advantage of optimized asset use, higher quality, increased flexibility and better service (La Londe and Maltz 1992, p. 3), as well as faster transit times, improved on-time delivery and less damage (Richardson 1990, Richardson 1995). The surplus flexibility also makes companies more responsive to changes in manufacturing, distribution and marketing (Browne and Allen 2001, pp. 259-260, Wallenburg 2004, p. 47). Besides, the core competency accrued as a result of logistics outsourcing, can reduce the complication of companies’ business processes (Wallenburg 2004, p. 47) and help companies focus their efforts on creating sustainable competitive advantage.

Meanwhile, outsourcing logistics functions also has its demerits as deliberated by many authors. Most of the authors attributed the chief reason to the loss of control over efficiency, quality and service, and price that eventually lead to dependency (e.g. Wentworth 2003, pp. 57-58, Lynch, Imada, and Bookbinder 1994, p. 103). According to McIvor (2000), many potential benefits from logistics outsourcing are often undermined, due to focus on short-term cost reductions. Moreover, there are associated transactional risks with logistics outsourcing like opportunism, information impactedness, small numbers bargaining and bounded rationality.

Therefore, decision for outsourcing logistics functions should be considered after a thorough accounting of the associated risks and benefits (Razzaque and Cheng 1998, p. 96). The following section will throw light upon the nature and general classification of LSPs.

2.2.3. Logistics Service Providers

According to Bhatnagar, Sohal, and Millen (1999, p. 569), if a company engages an outside service provider to perform some or all of its logistics activities, this outside provider is termed a logistics service provider. In the beginning, These LSPs were originally offering only a very narrow spectrum of services, mainly consisting of transportation or warehousing services. In order to face the changing demands from their customers, as mentioned in the preceding sections, LSPs have started to offer integrated service portfolios that include a multitude of different services. According to Wallenburg (2004, pp. 50-51), five types of LSPs can currently be categorized: carriers, couriers & express & parcel/postal (CEP), freight forwarders, third-party LSPs (3PLs), and fourth-party LSPs (4PLs), which will be briefly described below.

Carriers are firms that own assets for providing of one or two logistics services such as transportation. These assets are usually utilized to provide either road, sea, air, or rail transportation. In some cases, however, carriers own several of the aforementioned transportation assets.

CEP providers are also transportation providers, but they don't carry in bulk but in smaller units to any destination, including time-critical shipments. Unlike carriers, CEP providers send parcels or mail utilizes their networks, employing different transportation vehicles and along with material handling at hubs. In this way, they can virtually supply or deliver door-to-door services anywhere in the world, without relying on any third parties. Carriers and brokers are sometimes employed to reduce capital intensity. Operation and management of highly complex distribution networks are the core competencies of CEP providers.

Freight forwarders are intermediaries or brokers between suppliers and buyers of transportation services. Sometimes, brokers provide some additional services, such as transportation planning and management, information systems etc. In some cases, brokers might have their own transportation assets often with limited fleets.

Consolidation and coordination of demand for transportation services are the core competencies of brokers.

3PLs or contract LSPs⁶ offer logistics solutions to their customers that often include management capacities. These solutions generally include several bundle of services, such as transportation, warehousing and pick/pack operations on a longer-term contractual basis. Many a times, 3PLs provide even more customized services that integrate into their customers' value chains, such as fleet management, order handling, complaints management, call centers, or assembly services.

A latest addition to the list of different types of LSPs is the 4PLs. Currently, there is no established definition of the 4PL, yet number of authors dealing in logistics describes 4PLs as suppliers of complete logistics systems, without carrying out the service operations by themselves. They rather sub-contract all operations to other LSPs and confine themselves to the management and consultancy of logistics systems. Thus, they do not require to have their own logistical assets and are intermediaries between businesses and asset-based LSPs.

With regard to the research at hand, 3PLs form the point of reference for logistics outsourcing in this study. Muller (1993) has identified four different types of 3PLs:

- (1) asset-based 3PLs use their own assets (e.g. trucks and warehouses) to provide dedicated logistics services;
- (2) management-based 3PLs offer logistics management through information systems or consulting;
- (3) integrated 3PLs use their own assets to provide logistics services, and also subcontract to other vendors when necessary; and
- (4) administration-based 3PLs mainly offer administrative management (e.g. freight payment, paper works, clearances etc).

2.2.3.1. An overview of the 3PL industry

Over the past few decades, the 3PL industry has grown tremendously (Berglund et al 1999). It is estimated that the U.S. 3PL/outsourced logistics market has grown from

⁶ These terms can be used synonymously, (Knemeyer and Murphy 2004, p. 35).

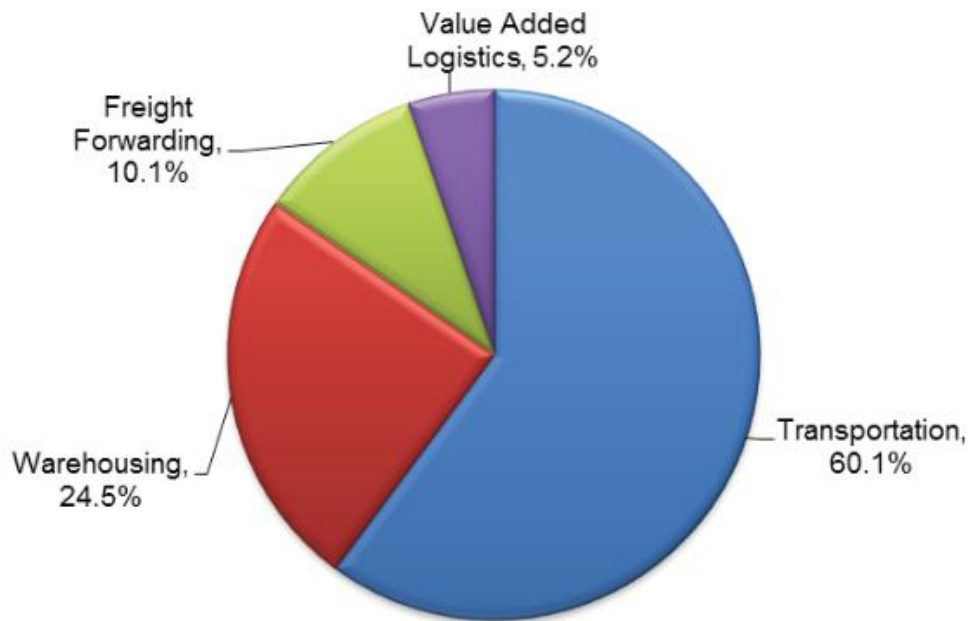
approximately US\$ 31 billion in revenues in 1996 to US\$ 85 billion in 2004 and to \$ 176.2 billion in 2013 (Capgemini et al. 2015). This trend is reflected by the increasing number of firms outsourcing logistics services today. The results of annual surveys of large U.S. manufacturers conducted by Lieb and colleagues (1999, 2003, 2005) show that the percentage of firms using 3PL services has grown from approximately 65% in 2003 to 80% in 2004. In addition, according to Armstrong & Associates (2013), 86% of domestic Fortune 500 companies in North America use 3PLs for logistics and supply chain functions. This finding was also consistent with the findings of the annual surveys conducted by Langley Jr. with industry partners (e.g., Capgemini et al. 2003, 2004, 2005). Along with its growth, the 3PL industry has also underwent fundamental changes. More competitors entered the market, the depth and extension of new and additional services provided by 3PLs increased, customer desires for one-stop shopping evolved. Other than the traditional services of transportation, warehousing, inbound and outbound services, other frequently outsourced service offerings are freight forwarding, customs clearance, and customs brokerage. Besides these, more complex services that are being outsourced are order fulfillment, order processing, customer service, information technology (IT), and also strategic outsourcing services like consulting, procurement of logistics, and 4PL services⁷ (Capgemini et al. 2005). Above these, other challenges are pressures for reducing prices, providing multiple services, and expanding geographical coverage eventually compelling 3PL providers to engage in mergers, acquisitions, and/or strategic alliances (Foster 1999, Lieb 2003). As a result, 3PLs face the challenges of working closely with their partners to gain long term advantage and sustainability. Developing long term relationship by building customer loyalty will be one of the novel way to attain this business goal. Thus, this dynamic and challenging environment faced by the 3PL industry, lets ample research opportunities in the fields of logistics and supply chain management.

2.2.3.2. 3PL industry in India

According to Frost & Sullivan (2015), the Indian logistics market in 2014, recorded revenues of about US \$104.10 billion, witnessing a growth of about 4.9 percent over the previous year. Out of this revenue 3PL accounted for US \$18.6 billion. About 60 percent

⁷ 4PL can be defined as an integrator that combines its own resources with other organizations' resources in order to design, build, and run comprehensive supply chain solutions

of the market revenues were accounted by transportation alone. The Indian logistics market is projected a consistent growth of around 6-7 percent every year during the



Source: Frost & Sullivan Research

period 2014-2020 and reach revenues of about US \$150-\$160 billion by 2020.

Figure 2-4. Segmentation of Indian Logistics Market, 2014

A study conducted by ASSOCHAM in 2009, revealed that about 55 per cent of Indian companies outsourced logistic services as compared to about 10-15 per cent in 1999. As per the industry estimates, the increasing trend of outsourcing is expected to result in the growth of third-party logistics market at a CAGR of about 22 per cent, during 2012-16.

Entry of global 3PL players: Global 3PL companies found the Indian logistics market attractive. Therefore, several global 3PL firms have entered India by the way of mergers with or acquisitions of Indian logistics companies and joint venture agreements in order to tap the growing traffic of goods to and from India. For example:

- In 2004, DHL acquired 68 per cent stake in Blue Dart Express Limited for US\$ 147.04 million.
- In 2006, TNT acquired Mumbai-based Speedage Express Cargo Service for about US\$ 40 million.

- In 2012, GATI signed a joint venture agreement with Kintesu World Express, a Japan-based air and ocean freight services provider. GATI holds 70 per cent stake and Kintesu invested US\$ 53.54- million for 30 per cent stake in the venture.
- In 2013, FedEx Express acquired Mumbai-based integrated logistics service provider AFL.
- In December 2010, Indian Equity Partners acquired a minority stake in Gwalior based Swastik Roadlines Private Limited, a food cargo supply chain service provider and took over the domestic road operations of TNT Express in India in December 2011.
- In April 2011, Warburg Pincus invested US\$ 100 million in Chennai-based Continental Warehousing Corporation Limited, a subsidiary of the NDR Group.
- Some of the other deals include a US\$ 10 million investment by Ashmore Alchemy Investment Advisors in Siesta Logistics Corporation and Blackstone's investment of US\$ 75 million in Allcargo Logistics.

Increasing number of multi-modal LSPs: Recently, there has been increasing demand of multi-modal transport services by the end user, as it helps in reduction of overall transportation costs and time of cargo movement and delivery. It also reduces documentation requirements. Several Indian logistics companies have also formed partnerships with other global and local LSPs to provide multi-modal logistics services. For example, Container Corporation of India has around 12 strategic joint ventures with companies including Maersk, TCI, Halcon, DPI, ARM, Gateway Rail and Allcargo.

2.2.3.2.1. Competitive Landscape

The Indian logistics Industry is highly fragmented. The top10 listed players have only about 2 per cent share in the overall market⁸. The top three companies in terms of sales turnover are Container Corporation of India, Transport Corporation of India and Blue Dart Express.

⁸ CONNECT, Magazine, April-June 2011

Table 2-1. Financial summary of listed logistics players in India (2011-12)⁹

Name	Services	Sales US\$ million	Sales growth on y-o-y basis (%)	Operating profit US\$ million	Net profit US\$ million	Net profit margin (%)
Container Corporation of India	Container haulage and container freight stations (CFS)	812.19	6.1	204.75	175.58	21.6
Allcargo Logistics#	Multi-modal transport operator (MTO) and CFS	215.89	-	61.80	36.81	17.1
Gateway Distriparks	Container haulage and CFS	45.20	23.5	25.19	16.40	36.3
Aegis Logistics	Logistics services to the oil, gas and chemical industries	56.70	9.8	12.47	8.21	14.5
Transport Corporation of India	Road freight and express logistics	365.59	4.0	28.91	10.37	2.8
Arshiya International	Container rail	118.53	30.8	25.73	9.50	8.0
GATI*	Express logistics	139.49	-22.5	13.19	14.40	10.3
Blue Dart Express*	Express logistics	298.40	29.8	35.72	24.56	8.2
Shreyas Shipping and Logistics	Container shipping	33.54	32.2	3.43	1.08	3.2
SICAL Logistics	MTO, bulk and container cargo	100.22	-6.8	9.40	2.66	2.7
Source: Company annual reports; company websites; IMaCS Analysis #15 months starting January 2011 to March 2012; *Figures for GATI and Blue Dart Express are for the 12-month period from July 2011 to June 2012 and January 2010 to December 2011, respectively						

2.2.4. Logistics Outsourcing Research

Most of the academic 3PL literature has been exploratory in nature because of the given fact that empirical work in the 3PL industry is faced by many challenges. To begin with, estimating the size of the industry is very difficult since governmental statistics lots of the time are not available and industry does not share data freely for strategic reasons. Besides, many LSPs are large MNCs that often do not break out data on subsidiaries (Berglund et al 1999). Confusion regarding terminology poses yet another

⁹ India Brand Equity Foundation (“IBEF”) engaged ICRA Management Consulting Services Limited (IMaCS) to prepare this report and the same has been prepared by IMaCS in consultation with IBEF

problem. Many transportation companies call themselves logistics companies, or even supply chain partners (Berglund et al 1999, Skjoett-Larsen 2000).

2.2.4.1. The current and future state of the industry.

Many researches are found to have carried out on depicting the current practices and trends in logistics outsourcing from both the 3PL and the customer perspectives (eg. Lieb et al 1999, 2003, 2005 and Langley 2003, 2004, 2005). The findings of these literature were remarkable and revealed various factors and determinants potentially influencing the current and future relationship between the LSPs and their customers.

Today, users of logistics services wanted to have advanced services, such as technology innovation (Capgemini et al 2015). Researchers predict that the 3PL companies that have better IT capabilities or have evolved from information technology and consulting areas may be more likely to have greater competitive advantage due to their skills in integration and optimization of supply chain activities (Berglund et al 1999).

2.2.4.2. Success factors and Barriers.

Factors determining success in logistics relationships relate to prior understanding, developing and monitoring performance metrics on the expectations from that relationship (Boyson et al 1999, van Laarhoven et al 2000). In a survey of logistics managers across the U.S., Boyson et al (1999) emphasized the importance on contract agreements and the need of deploying expert managers to audit and monitor 3PLs. Sink et al (1996) also highlighted the importance of understanding the various interests and expectations of the logistics users in contracting logistics so as to device an efficient and effective marketing strategy for U.S. third party logistics market. Developing and monitoring performance metrics are indeed very important. Van Hoek (2001) found empirical support from his study that performance measurement contributes to the expansion of third party logistics alliances by inducing additional purchases.

Leahy et al (1995) found that customer orientation and dependability are the most important determinants of successful logistics outsourcing relationships. According to Murphy and Poist (2000), willingness to collaborate and communicate with the 3PL has been cited as a key element for relationship success. This reinforced that effective and

ongoing communication is key for anticipating customer needs and delivering solutions to problems that arises during services.

Lewis and Talalayevsky (2000), highlighted that global competition and the rapid evolution of IT have contributed to the growing trend of outsourcing of logistics services among major firms in the U.S. information technology including hardware, databases, software, and other devices that support any information systems, example, mobile technology, has allowed users of logistics services to focus on their core competencies (e.g., manufacturing, marketing, etc.). Using case studies with three logistics providers, Researches by van Hoek (2002) and Sauvage (2003), have demonstrated that technology impacts operational relations in the supply chain and helps 3PLs improve their operations efficiencies by offering “time compression” (i.e., shorter product life cycle times, shorter order cycle times, etc.).

2.2.4.3. Dynamics of Logistics Relationships.

The work of Hertz and Alfredsson (2003) showed that 3PLs are influenced by customers’ customers in the development of their business. Van Hoek (2001) found that performance measurement contributes to the expansion of third party logistics partnerships. Study by Moore (1998), indicated that 3PL customers who perceive 3PLs to be trustworthy were committed to maintaining the ongoing relationships, thus decreasing the risk of opportunism and defection. Knemeyer and Murphy (2004) adopted relationship marketing as a theoretical basis to find linkages between relationship marketing and the perceived performance of 3PL arrangements.

Adapting the structure-conduct-performance paradigm, Sinkovics and Roath (2004), found that internal capabilities (operational flexibility and cooperation) mediate the relationship between competitor and customer strategic orientation and customer market performance. According to them, relationship orientation (such as trust, bonding, communication, shared values, empathy and reciprocity), had a positive effect on key organizational capabilities (such as organizational learning and innovation), thereby endorsing an enhancement in supply chain effectiveness and performance. Moreover, Stank et al (2003), exhibited a positive impact of relational performance between a 3PL and its customers on the customer’s market share.

The above discussion is attempted to provide a fair idea about the need for outsourcing logistics services and the significance of maintaining healthy and successful logistics outsourcing relationship. Bringing these perspectives and applying them to the 3PL literature is, therefore, one of the main objectives of this dissertation.

2.3. Theoretical Framework

The fundamental theoretical construct for this study will be defined in the course of this chapter. In the beginning of this chapters, theories used for conceptualizing a comprehensive explanatory model of customer loyalty will be presented. Relational Marketing Theory, social exchange theory, commitment trust theory, and equity theory will be deliberated in order to assess potential customer loyalty determinants. According to Wallenburg (2004), socio-economic factors have the greatest power for explaining customer loyalty. An important finding from his study suggests that customer loyalty is not achieved merely by the obligation to remain with a certain LSP, but rather from the desire to do so. In regard to the literature review on customer loyalty determinants research demonstrated in earlier chapter 2.1.4, this study will exclusively focus on factors originating from relationship marketing theory, social exchange theory, commitment trust theory, and equity theory.

2.3.1. Relationship Marketing Theory

Berry (1983) introduced the term relationship marketing (RM) as attracting, maintaining, and enhancing customer relationships. Further, Morgan and Hunt (1994) defined it as all the marketing activities that is required to establish, develop, and maintain successful relational exchanges. Relationship marketing has been an area of interest for many marketing researchers and has extensively been discussed in the marketing literature (Kumara, Bohling and Laddac 2003). In relationship marketing concepts, loyalty is found to occupy a center stage as customer retention over life time is the key to sustaining enhanced profitability by lowering the cost of acquiring new customers (McIlroy and Barnett 2000; Hart 1999). RM theory began to emerge when there was a shift from transactional view of market exchange to continuous and on-going relational view.

In marketing discipline, the four traditional areas that have contributed most to understanding RM are business-to-business marketing, marketing channels, services marketing, and database and direct marketing (Möller and Halinen 2000). According to Webster 1992, RM includes a firm's relationships within the firm, with its customers, suppliers, other stakeholders, and sometimes even the competitor. Constructs studied within RM include dependence (Dwyer, Schurr and Oh 1987), trust and commitment, communication, cooperation, (Morgan and Hunt 1994), and equity (Evans and Laskins 1994). Other determinants of RM include understanding customer expectations, building service partnerships, total quality management, and effective RM leads to larger number of satisfied customers, increased customer loyalty, and also a perception on the part of a firm's customers of better quality products, services and thus increased profits on the part of the seller (Evans and Laskins 1994).

2.3.1.1. Relationship Marketing defined

Morgan and Hunt (1994) defined relationship marketing as: "Relationship marketing refers to all marketing activities directed towards establishing, developing, and maintaining successful relationship exchanges" (p. 22). Harker (1999) identified as many as seven conceptual categories and 26 definitions of relationship marketing. He deduced the following definition: "An organization engaged in proactively creating, developing and maintaining committed, interactive and profitable exchanges with selected customers/partners over time is engaged in relationship marketing"(Harker 1999, p. 16). The word "partners" here, signify that the objectives of relationship marketing are to build, maintain, and when necessary, terminate relationships not only with customers, but with stakeholders as well; i.e., suppliers, partners, and even competitors (Rao and Perry 2002).

Morgan and Hunt (1994) tried to distinguish between a transactional exchange and a relational exchange, in an attempt to explain relationship marketing. According to them, a discrete transaction involves a single, short time exchange, and has a sharp beginning and ending, a relational exchange, on the other hand, encompasses multiple exchanges and usually involves both economic and social implications and bondings (Rao and Perry 2002).

The fundamental basis underlying the relationship marketing concept is, therefore, to build and nurture lasting and mutually beneficial relationships Hewett and Bearden (2001).

2.3.1.2. Theoretical foundations of Relationship Marketing

Among the numerous researches done on relationship marketing, majority of the works were on examining the effect of various characteristics of exchange relationships (e.g., trust, dependence) on outcomes (e.g., retention, referrals) that represent desired behaviors on the part of partners in the exchange (Hewett and Bearden 2001). Still other studies, concentrate on identifying the antecedents of relational behavior, such as trust (e.g., Morgan and Hunt 1994) and long-term orientation (e.g., Ganesan 1994). Furthermore, many researchers in marketing have developed models which are meant to explain the development of relationships between exchange partners (e.g., Dwyer, Schurr and Oh 1987). These models are usually based on processes of developmental stages of relational exchanges through exchange interactions over time.

Literature on RM as described above, have been drawn from a variety of other theories like interorganizational theory (Harker 1999, van de Ven 1992, Reve and Stern 1979), transaction-cost economics, resource dependency theory, and industrial network theory (Larson 1992, Johanson and Mattson 1987). One of the earliest approaches is social exchange theory (SET) which is been adopted as the theoretical basis for this dissertation. The next subsection will give a brief narration of social exchange theory and provides a literature review on the development of relationships.

2.3.2. Social Exchange Theory

2.3.2.1. Basic concept

Social exchange theory endeavors to explain the relational interdependence, or relational contract, that develops over time through the interactions of the exchange partners (Lambe, Wittmann, and Spekman 2001, p. 3). This concept can be traced way back in the work of the Greek philosopher Aristotle, *Nicomachean Ethics* (Aristotle 1999, 1162a34-1163a24) where he discussed and distinguished social exchange from economic exchange. Later, works on the concept of social exchange were carried

forward by sociologists such as Homans (1958), Blau (1960, 1964, 1968), and Emerson (1962), and social psychologists such as Thibaut and Kelley (1959).

Lambe, Wittmann, and Spekman (2001, p. 6) summarize the following four foundational premises of social exchange theory, as detailed below.

- “Exchange interactions result in economic and/or social outcomes,
- these outcomes are compared over time to other exchange alternatives to determine dependence on the exchange relationship,
- positive outcomes over times increase firms’ trust of their trading partner(s) and their commitment to the exchange relationship, and
- positive exchange interactions over time produce relational exchange norms that govern the exchange relationship.”

Social exchange theory hence includes both economic and social outcomes when evaluating the value of relationships. This value referred here is in terms of assessment of both utilities and costs of a relationship, and parties to the relationship will choose to sustain a relationship as long as the cost-utility-ratio is satisfactory. The composition of utilities and costs varies from individual to individual, and are always evaluated jointly either from a social or economic aspects (Homans 1958, Thibaut and Kelley 1959, and Blau 1964).

This cost-utility-ratio is considered as actual benefit (B) realized in a relationship. The degree of benefit from a relationship can be assessed by comparing it to some standard. Thibaut and Kelley (1959) in order to conceptualize this comparison established a comparison level (CL) and a comparison level of alternatives (CL_{alt}). CL corresponds to the maximum potential benefit that an individual expects to obtain from a relationship, based upon present and past experience with similar relationships. The more the actual benefit (B), i.e. the cost-utility-ratio achieved in the relationship, exceeds CL, the higher is the satisfaction with the relationship. On the other hand, relationship satisfaction solely, is not sufficient for determining on whether to continue a relationship or not. That's why, B is also compared to CL_{alt}, i.e. “the overall benefit available from the best possible alternative exchange relationship.” (Lambe, Wittmann, and Spekman 2001, p. 9). Firms who receive outcomes that meet or exceed their expectations (i.e.,

CL), and are equal to or superior to outcomes available from alternatives (i.e., CL_{alt}) are likely to remain in the relationship (Thibaut and Kelly 1959). Alternatively, a relationship may be continued despite of relationship dissatisfaction, if there are no other superior alternatives.

When assessing the value of a relationship, parties will not only reflect on current and past costs and utilities, but also potential future benefits. And firms may give up present benefits for benefits in the future. Here, comes into sight, an important factor in social exchange theory i.e., trust, which results from multiple and beneficial interactions over time (Blau 1964). Giving up of current benefits for future benefits as mentioned before will only happen if the trading partner is trusted (Homans 1958). In addition, another important aspect of social exchange theory is commitment, which is nurtured by trust. This reciprocal relationship between commitment and trust is based on the principle of generalized reciprocity, because “commitment entails vulnerability and firms will seek only trustworthy partners”. (Morgan and Hunt 1994, p. 24)

Social exchange theory's also affirms that relationships are not only governed by contracts, but also by norms, which develop as a result of repeated interaction (Thibaut and Kelley 1959) and “agreeing to the manner in which interactions happen, can increase the efficiency of relationships because the degree of uncertainty may be reduced.” (Lambe, Wittmann, and Spekman 2001, p. 12). Just as trust, norms are also followed in expectation of potential rewards.

Though very useful conceptually, social exchange theory is mostly criticized for its lack of empirical foundation. Ideally, factors such as trust and commitment should be able to substitute contractual governance structures (Griesinger 1990, p. 488), but this cannot be confirmed empirically (Rindfleisch and Heide 1997, p. 50). According to Moorman, Zaltman, and Deshpandé (1992, p. 323), dependence and vulnerability characteristics of close relationships may in due course lead to the perception that one party takes advantage of the other, causing the need for formal governance structures that can work as safety nets.

2.3.2.2. Confirmation/Disconfirmation Paradigm

Generally, it's seen that individuals make performance judgments with a reference to a standard which has been established. This observation is better described in

discrepancy theory, but is more commonly called disconfirmation in the marketing field (Oliver 1997). A large number of researches in marketing were conducted on how customers make judgments about products and services. This vast research done on confirmation/disconfirmation has been used in this study as the theoretical basis for understanding customer satisfaction. According to Oliver (1997), the ordinary interpretation of disconfirmation is typically negative, but it can actually have a positive, negative, or zero interpretations. Negative disconfirmation happens when performance is below standard, positive disconfirmation happens when performance is above the standard, and zero disconfirmation (or just “confirmation”) happens when performance is equal to standards. Only when the product is used and its performance obvious, the consumer will be in a position to compare actual performance with expectations, needs, or other standards, resulting in expectation-performance discrepancy. This leads to confirmation or disconfirmation.

According to Woodruff, Cadotte and Jenkins 1983, a type of comparison process result to the confirmation/disconfirmation paradigm. Out of the different types of comparison standards explored, the most common is a predictive expectation which is derived from the expectancy disconfirmation theory (Fournier and Mick 1999). Confirmation occurs when the perceived actual performance matches with the expected performance (Woodruff, Cadotte and Jenkins 1983). Further, expectancy disconfirmation theory has been used empirically, in prediction of satisfaction (Oliver, 1997). Thus, evidences show confirmation/disconfirmation to be a direct antecedent to satisfaction. This theory is an important finding in addressing the issue of maximizing customer satisfaction, firms have begun to set prior expectations of the customers and then provide a product or service to exceed those expectations.

2.3.2.3. Expectations

According to Oliver (1997), expectations are anticipations or predictions of future events, or the customer-defined probabilities of an occurrence of either positive or negative events when engaging in some behavior (Oliver 1981). Expectations indicate to a frame of reference about how one makes a comparative judgment (Oliver 1980). Outcomes which are lower than expected are evaluated below this reference point, whereas those better than expected are rated above the reference point, and satisfaction is the additive combination of the expectation level and the resulting disconfirmation

(Oliver 1980). Additionally, Helson (1959) holds that expectations are formed from 1) the product itself, 2) the context, and 3) individual characteristics.

Several authors have struggled with alternate standards of expectations, in terms of either as predictions or ideals (Prakash 1984, Swan and Trawick 1980). According to Miller (1977), there are four levels of expectations which are derived from what the customer thinks is appropriate - 1) ideal or wished-for, 2) expected or predicted, 3) minimum tolerable or lowest acceptable level, and 4) deserved. Tse and Walton (1988) proposed multiple standards, including predicted and ideal expectations. By and large, it can be assumed that the expected level will fall between the ideal and minimally tolerable. Amidst the various contending comparison standards of expectations as propounded by various researchers, in reference to the present study, the focus will be attributed to the customers' perceptions of the performance of the product/service as compared to both their desires and expectations (Spreng, MacKenzie and Olshavsky 1996). In addition, expectation will be viewed from social equity theory perspective, where consumers evaluate the benefit received from a brand in relation to its cost, based on price and effort (Swan and Mercer 1981).

2.3.2.4. Explanatory power regarding Customer Loyalty

In the context of the current study and above discussion reveals that both customer loyalty and the relationships between LSPs and their customers are not only characterized by economic, but also by social considerations. In this regard, social exchange theory can be applied to shed light on these factors.

There are significant number of literature available on relational success factor based on social exchange theory as given by Lambe, Wittmann, and Spekman (2001, p. 16-19). Reconsidering the work of Thibaut and Kelley (1959) on CL/CL_{alt} paradigm, shows the facets of loyalty creation. Loyalty is implied when there is a long lasting and highly satisfied relationship between the LSPs and their customers. And according to SET, high satisfaction stemming from the comparison between CL and the actual benefit attained in the relationship, makes relationship more likely to continue, as satisfied parties are less likely to forego their relationship (Anderson and Narus 1984, p. 70). Since the ultimate loyalty decision i.e., the decision to remain in relationship is made by comparing actual benefit B with CL_{alt}, market alternatives poses as an important aspect

in deciding the comparison level. Furthermore, trust and commitment increase the perception of achieved benefits, in expectation of future benefits, even by overseeing the present benefits and therefore increase the likelihood of relationship continuation. Additionally, LSPs can exhibit their commitment to the relationship by autonomously and continuously improving their service. Both the consciousness of high satisfaction and the actual performance improvements can foster the buyer's perception of gained benefit and future prospects. Therefore drawing out from Social exchange theory, the following five factors expected to influence customer loyalty are derived and would be further utilized in the study ahead: satisfaction, alternatives, trust, commitment, and proactive improvement.

2.3.3. Equity Theory

2.3.3.1. Basic concepts

Equity theory is an extension of social exchange theory with an addition of fairness factor. Originally referred to as “theory of inequity,” Adams (1963, 1965) introduced this theory to explain wage inequities. The underlying concept of equity theory is that each of the party to the relationship compares its input-output-ratio to that of the other party. As in the case of social exchange theory, social as well as economic factors are considered in the evaluation of fairness. If the ratio is found balanced, the perception of fair treatment is achieved. And if the ratio is unbalanced one or both the over-benefited and the under-benefited parties feels unfairly treated (Austin and Walster 1975, p. 475), which may lead to disequilibrium in emotional and behavioral aspects.

According to Wallenburg (2004, p. 80), in order to reestablish fairness, the parties can either change their inputs, adjust their expectations, influence the other party or terminate the relationship. Lambe, Wittmann, and Spekman (2001) proposed in line with social exchange theory that the input-output-ratios of the involved parties do not have to be in balance at any point of time, but rather the parties must trust each other and outcomes should be split equitably in the long-run

2.3.3.2. Service Failure and Service Recovery

According to Parasuraman, Berry & Zeithaml, (1991); Singh, (1991), overall satisfaction in a service failure situation is determined by two factors: 1) the outcome of

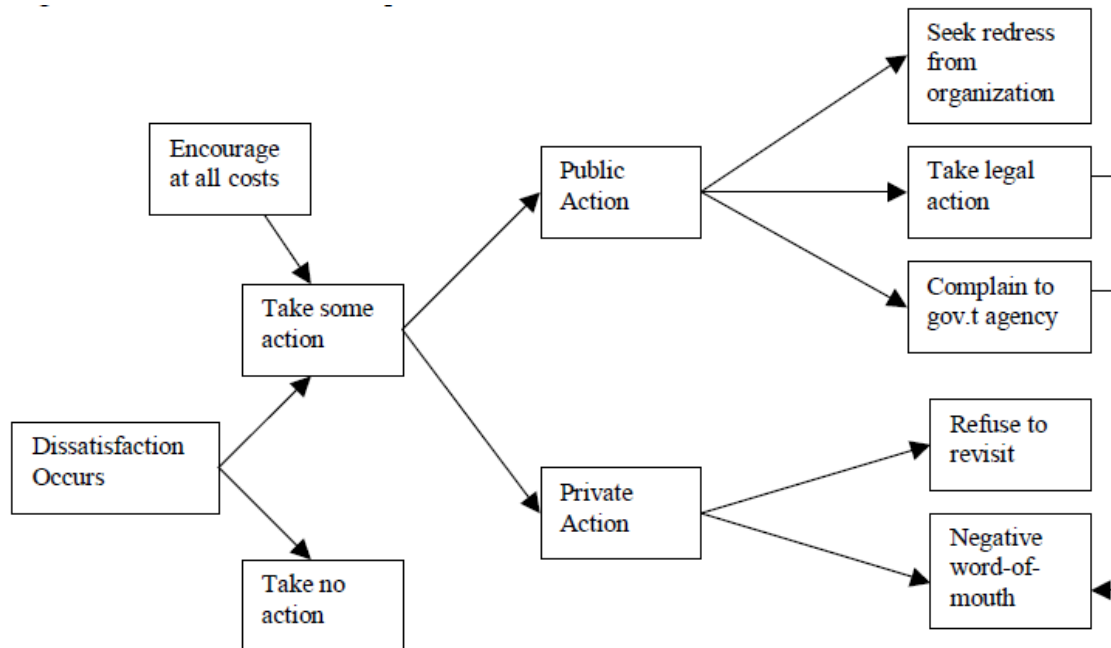
the original service encounter based on specific service attributes, and 2) attributes associated with the service recovery process. Although service organizations strive to offer quality service and get things right the first time, service industry including LSPs, is a high human contact industry and thus, failures are inevitable, (Mattila and Patterson 2004). Reichheld stated in 1996, that the most effective way to build a financially successful company was to focus on retaining current customers rather than running continuously after new customers. Organisations have now realized that retention happens through maintaining a healthy long-term relationships which is grounded in the delivery of excellent service, which in turn is built on value and complemented by an effective service recovery system when things do go wrong.

Customers generally select their service partners/providers based on service quality, and getting things right is the best approach to service quality. But unfortunately, mistakes are inherent to the features of the service industry (Ruyter & Wetzels, 2000). Therefore, effective service recovery is a key ingredient to gaining an advantage over the competition.

In the event of a service failure, customers are presented with numerous opportunities as shown by Service Failure Response Choice model of Lovelock, 2001 (Figure 2-5). Customers have a choice whether to report the failure to the organization or leave dissatisfied. Some of the avenues a customer could explore after a service failure could be quite devastating to a service organization, e.g., in both the cases of going public or private as shown in the figure. Lovelock (2001) suggested that, at all costs, the organization should encourage the customer to complain.

In 1995, Keaveney found that a leading cause of customer switching behavior in service organizations is attributed to service failures and failed service recoveries. But unfortunately, it's found that a large majority of customers choose not to complain, thus, leaving the organization with intentions never to return and practice negative word-of-mouth advertising. Blodgett, Wakefield and Barnes (1995), confirms that 77% of all non-complainers engaged in negative word of mouth, whereas only 48% of complainants engaged in negative word of mouth. This means that over 50% of the customers who complain are typically dissatisfied with the service organization's recovery efforts (Hart, Heskett and Sasser 2000). Thus, research has shown that customers who complain to the service organization are less likely to participate in negative word of mouth as compared

to those that do not complain. Halstead and Page (1993) found that the most important success factor to service recovery is to cultivate an environment where customers are



Source: (Lovelock, 2001).

encouraged to complain. There is a serious need for service organizations to recognize that every customer's problem is an opportunity to prove their commitment to service (Hart, Heskett & Sasser, 2000).

Figure 2-5. Service Failure Response Choices

2.3.3.3. Service Recovery defined

In 1988, Gronroos proposed that a service recovery was an organization's response to poor quality service. Johnson (1995) enhanced that definition by stating that a service organization must take some form of action and the action must be effectively carried out to reduce the damage in the relationship and to transfer the customer from dissatisfied to a satisfied state. In 2000, McCollough, Berry and Yadav recognized that a successful recovery was an action that returned a customer to a satisfied state with the service provider and the quality of the action could either destroy or enhance the customer's loyalty and future behavioral intention.

According to Mattila and Pattersons (2004) service recovery is a process which involved actions taken by a service provider to respond to a situation where a failure occurred in the organization's core or supplementary offerings. One of the most widely

accepted definitions of service recovery is given by Zemke and Bell (1990) which is defined as “a thought-out process for returning aggravated customers to a state of satisfaction with the firm after a service or product has failed to live up to the customer’s expectations.” (p. 43). Boshoff’s (1999) acknowledged Zemke and Bell’s (1990) definition but additionally, extended that an effective service recovery process was one that was proactive in nature and not reactive. The researcher emphasized that a formal process for evaluating the effectiveness of the service recovery process was vital for a service organization’s success.

2.3.3.4. Explanatory power regarding Customer Loyalty

Equity theory posits a fair distribution of inputs and outputs between the parties, and that an inequitable distributions may lead to relationship termination (Huppertz, Arenson, and Evans 1978, p. 250). Equity theory is one of the few economic theories, which explicitly encompasses inter-firm relationships, and does not focus on a single firm only. Equity theory is therefore deemed appropriate for conceptualizing fairness as a determinant of customer loyalty. For the present study, fairness has been adapted to service recovery which is a constituent of fairness. Service recovery related literature attributes the social exchange theory and the equity theory for providing the theoretical framework for studies exploring customer’s evaluation of service recovery efforts (Adams, 1965; Ok, Back, & Sharklin, 2005).

Furthermore, in logistics and supply chain, it’s observed that firms can only cooperate successfully if both risks and benefits of the relationship are fairly divided (e.g. Wallenburg 2004, p. 81). Thus including equity theory and the concept of service recovery in order to infuse fairness into this customer loyalty study in the logistics context is therefore appropriate and will add value to the comprehensive customer loyalty model.

2.3.4. Commitment Trust Theory

2.3.4.1. Basic concepts

Commitment trust theory was first introduced by Morgan and Hunt (1994) in their article on success relationship marketing. They observed that commitment and trust serve as key mediating variables between five antecedents (relationship benefits, shared values, relationship termination costs and opportunistic behavior) and five outcomes

(cooperation, acquiescence, propensity to leave, functional conflict, and decision-making uncertainty). Morgan and Hunt's theory on commitment and trust is again based on the fundamental ideas of social exchange theory.

Morgan and Hunt (1994) emphasized on commitment and trust as key out of many contextual factors that determine the success or failure of relationship marketing efforts, as they can form norms of relational governance. Per se, commitment and trust encourage cooperative behavior preserving relationship investments, ameliorate the risk of choosing attractive short-term alternatives against long-term gains with existing exchange partners, making high-risk actions seem more attractive. Hence in the presence of commitment and trust exchange partners are not apprehensive to behave opportunistically. "Thus, when both commitment and trust are present, they produce results that encourage efficiency, productivity, and effective- ness." (Morgan and Hunt 1994, p. 22).

The above mentioned antecedents and consequences are incorporated into a causal model (Figure 2-6), which also exhibits a positive relationship between trust and commitment. This is in line with social exchange theory, in which trust in due course of time is assumed to cultivate commitment.

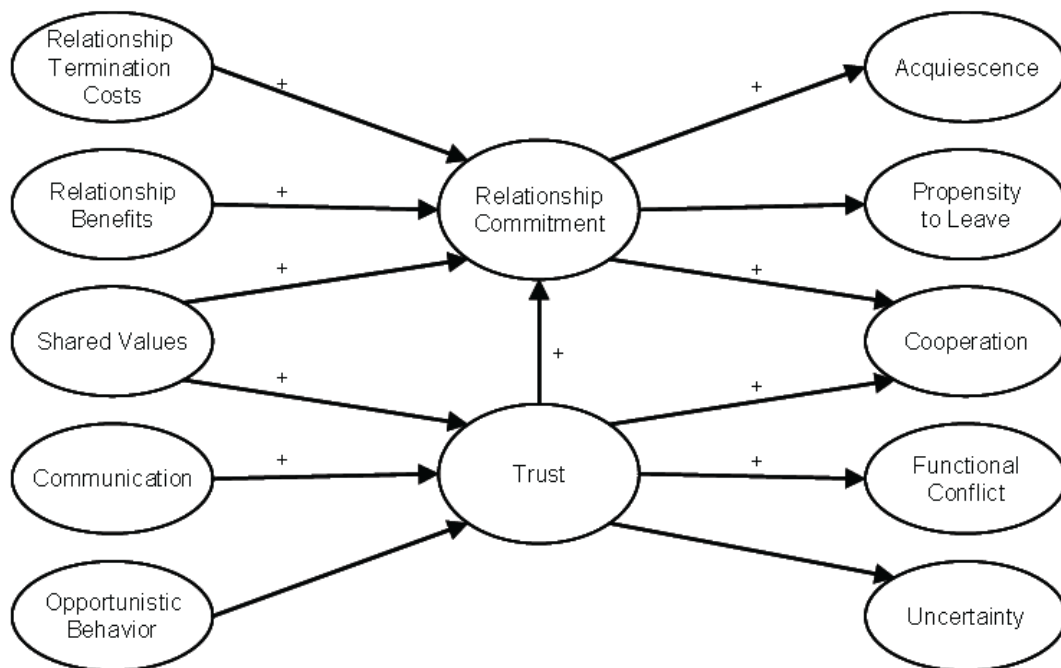


Figure 2-6. Morgan and Hunt's key mediating variables model¹⁰

2.3.4.2. Explanatory power regarding Customer Loyalty

There are literature on marketing and relationships that recognizes the significance of commitment and trust in the success of relationships (Morris, Barnes, and Lynch 1999, p. S660). Morgan and Hunt's comprehensive model contributes a lot to the body of existing relationship research and has proven that the two factor they have proposed is relevant and found to nurture successful relationships.

2.4. Research Model

Building on the knowledge on customer loyalty and logistics elaborated in the preceding sections, this section will first deduce the research needs, and subsequently will arrive at the research questions for guiding this dissertation.

2.4.1. Research needs & Research Gaps

The theoretical discussion on relevant literature of customer loyalty and logistics as given above, provides a fundamental basis for the study in hand aimed at establishing the relationships and linkages among various factors of relationship marketing, logistics and customer loyalty and how all these finally, helps in the formation of customer loyalty. However, existing body of research is not sufficient and distinct enough to understand and explain accurately some of the phenomena that can be observed in these complex relationships. The gaps found in the research via review of literature, therefore, present opportunities for further study.

From the discussion in the previous section 2.1.4, in the field of customer loyalty determinants (Table-A) and by analysis those works in detail, following deficits have been identified:

- Customer loyalty in most of the cases is measured uni-dimensionally, not considering its constituent dimension of repeat purchase, additional purchase, and referrals. Hence the differences between these dimensions and the impacts their determinants on them individually have not been captured adequately.

¹⁰ Morgan and Hunt 1994, p. 22.

- Most of the studies examined few number of determinants of customer loyalty and a few studies had more than five. The reasons behind might be to avoid the complexity in analysis of these multifaceted dimensions. However, this procedure may produce misleading insights as interdependencies between and among the determinants might exist, and because identified relationships may result not only from direct but also from indirect effects or they can be attributed to factors outside the model. Therefore, a broader approach deems necessary.
- Another probable problem visible is that majority of works on customer loyalty has been generalized in the buyer-seller relationship context within consumer goods or industrial equipment sectors. Whether the findings of these works are applicable to a buyer-seller relationship in the industrial services context, such as that between LSPs and their customers, is highly disputable.

Generally, in logistics research, two main drawbacks can be seen:

- Though originating from business, logistics has developed into an independent research discipline in itself, where much attention has been observed being paid to third party logistics in general, while “relatively little emphasis has been given to the provider perspective” (Lieb and Randall 1999, p. 28).
- Secondly, Logistics research oftentimes are found to employ more of conceptual or qualitative empirical approaches and even if quantitative empirical studies are undertaken, lack of theoretical rigor in those works has been observed (Mentzer and Kahn 1995, Garver and Mentzer 1999).

Combining the two research disciplines and looking at customer loyalty research in the logistics field, and also measuring the deficits as mentioned above, a comprehensive approach can be designed to analyze customer loyalty for logistics service providers by tackling the following four research questions (Wallenburg 2004):

- (1) What are the major determinants of customer loyalty in terms of repurchase, additional purchase, and referrals?
- (2) How can these determinants be integrated into a comprehensive model and what interdependencies exist among them?
- (3) How substantially can the effects on repurchase, additional purchase, and referrals

justify the multi-dimensional analysis of customer loyalty?

(4) What is the role of customer satisfaction in building customer loyalty?

Wallenburg addressed these questions following a pluralistic approach¹¹. He first conceptualized 14 factor determinants influencing customer loyalty (Wallenburg 2004, pp. 89-121). Then, he conducted a survey in Germany and the data was then analyzed with structural equation modeling to obtain a causal model of customer loyalty and its determinants.

Out of 14 factors, Wallenburg eliminated seven factors and ended up with a model consisting of seven factors (alternatives, proactive improvement, fairness, price satisfaction, service quality, relational satisfaction, and commitment), contributing 82.8% of repurchases, 31.2% of additional purchases, and 56.0% of referrals. He also found that the three dimensions of customer loyalty are discriminant justifying detailed analysis (Wallenburg 2004, pp. 205-245). While Wallenburg's work is ground - breaking in customer loyalty research in the logistics field, there are several questions that remain unanswered.

2.4.2. Research Questions

In the previous section several research deficits in areas of logistics and customer loyalty became evident. This section will be focused in addressing these deficits, by developing a set of research questions, which will help in casting more light on formation of customer loyalty and on the constructs underlying the relationships between LSPs and their customers. Building on the existing, comprehensive research of Wallenburg (2004), two topics were chosen that promise exceptionally interesting insights.

As mentioned above the adoption of determinants and operationalization of constructs have been equated with Wallenburg's (2004) findings. Therefore, the first two research questions (RQ) to be resolved in this research is developed corresponding to Wallenburg's first two questions:

¹¹ He based his conceptualization on the following theories: transaction cost theory, exit-voice-theory, social exchange theory, equity theory, risk theory, learning theory, dissonance theory, and commitment-trust-theory (see Wallenburg 2004, pp. 63-83).

RQ1: What are the determinants of customer loyalty in Logistics Outsourcing Relationships?

RQ2: How can the identified factors be incorporated into a comprehensive model of customer loyalty and what are the interdependencies?

And a third question will examine the universality of the two questions.

RQ3: Do the effects of determinants on customer loyalty differ significantly in India as compared to the west?

2.4.3. Research approach

The framework of logistics research approach employed in this study is based on the proposal of Mentzer and Kahn (1995, pp. 233-240) and is illustrated in Figure 2-7. The first thing to be considered before the starting the research project was idea generation. Then, an extensive literature review was conducted to develop a “historical perspective of the research area” and to “frame a research schema” (Mentzer and Kahn 1995, p. 233). The vigorous literature review attests a substantive justification for the research project, and consequently resulting in the preparation of research questions. Both literature review and substantive justification are illustrated in sections 1 to 3 of chapter 2 of this study. Next, the theoretical framework of the research project is given in chapter 2.4. Based on the theory, constructs in the form of determinants of customer loyalty are derived in chapters 3.1 and 3.2. This is followed by hypotheses formulation in chapter 3.3. Then, the applicable methodology is presented in chapter 4, and constructs’ measures are operationalized in chapter 5.1. The analysis of the data gathered is included in Chapter 5.2 where the hypotheses tests using measurement and structural models are discussed. The dissertation concludes by providing a summary, critically discussing results and finally indicating potentials for future research in chapter 6.

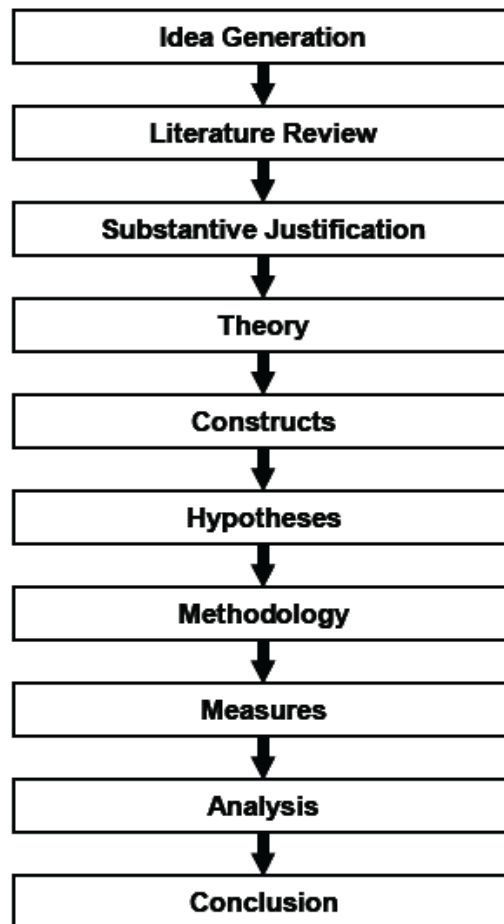


Figure 2-7. Framework of logistics research¹²

¹² Adapted from Mentzer and Kahn 1995, p. 234.

Chapter 3.

MODEL DEVELOPMENT AND HYPOTHESES

In order to understand in greater detail the model proposed in this dissertation, this chapter provides an overview of the various areas related to the research question, as well as a theoretical background for the hypotheses development, devising a comprehensive explanatory model of customer loyalty. For this purpose, first the beginning section of this chapter will conceptualize customer loyalty and its determinants, while the subsequent section will illustrate on derivation of hypotheses on the relationships between these conceptualized constructs, resulting in a comprehensive model of customer loyalty. Then, will be followed by the section that will conceptualize various important relationship characteristics and develop hypotheses on their effects on the linkages between customer loyalty and its determinants.

3.1. Conceptualization of Customer Loyalty

The narration of behavioristic and neo-behavioristic customer loyalty concepts in chapter 2.1.2, demonstrate that behavioristic concepts refer only to observable behavior whereas neo-behavioristic concepts, refer not only to observable behavior but also attitudes and intentions, in this manner reaching to the roots of customer loyalty. Customer loyalty conceptualization also takes account of multi-dimensionality, comprising repeat purchases, additional purchases and referrals.

According to Wallenburg (2004, pp. 16-17), behavioristic concepts does not correspond with service loyalty context since there were problems with validity of behavioristic loyalty measurement. Unlike consumer goods, buyers of logistical services don't take frequent purchase decisions, but purchase on contract basis for relatively longer periods of time often for more one year. This contractual relationships between LSPs and their customers hinders the observation of behavioristic loyalty. And subsequently, switches from one provider to another usually take place after termination of contracts. Thus the retention during the current relationships between LSPs and their customers cannot be attributed to customer loyalty as it is the consequence of contracts. This is the reason for employing neo-behavioristic concept in this study, which centers on attitudes, intentions, and observable behavior. However as was shown in chapter

2.1.2.2, attitudes are exempted from the study in hand. Intentions are therefore considered ideal for the assessment of customer loyalty, intentions would therefore have to be assessed and aligned to actual behavior. Because of contractual commitments between LSPs and their customers, assessments are to be conducted at two different points in time: first assessment determines intentions in existing relationships, and second assessment at a later time, where actual behavior is identified and compared to the previously assessment intentions (Wallenburg 2004, pp. 23-24). But practically conducting these assessments seems impossible because due to long interval, sometimes years together, between first and second assessments, the respondents of the first assessment would have left the firm or might be shifted to different positions and also the firm's competitive environment would have changed in between assessments. This constrains the comparison of intentions and actual behavior. Hence, the actual purchasing behavior is not considered for assessment in this study. As in the case of most literature on customer loyalty in long-term relationships, the present study on customer loyalty will also be conceptualized taking intentions only (Bloemer and de Ruyter 1999, Stank, Goldsby, and Vickery 1999, Caruana 2000, Sirdeshmukh, Singh, and Sabol 2002, Stank et al. 2003, Wallenburg 2004, Knemeyer and Murphy 2005)

In place of purchasing behavior, we can use referrals as a constituent of customer loyalty in this study. Besides, referrals can be made at any time, irrespective of contract duration. Since relationships between LSPs and their buyers are typically considered to have a high degree of stability, referral intentions do not have to be surveyed, because they are not expected to differ from actual referral behavior.

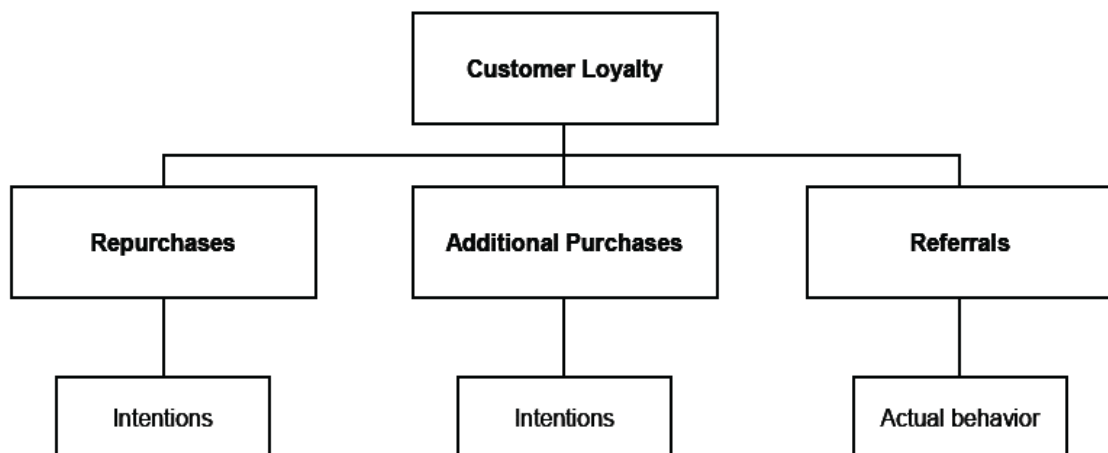


Figure 3-1. Conceptualization of customer loyalty used in this study

Therefore, the conceptualization of customer loyalty is summarized in Figure 3-1 in line with Wallenburg (2004, pp. 59-61). Repurchases of the same service from the same LSP, and additional purchases of services beyond the services currently given by an LSP are assessed by surveying intentions, while referrals of the LSP by its customers are captured by surveying actual referral behavior.

3.2. Conceptualization of Customer Loyalty Determinants

Conceptualization of determinants of customer loyalty, as proposed in chapters 2.3.2.4., 2.3.3.4., and 2.3.4.2., i.e., ‘satisfaction’, ‘proactive improvement’, ‘trust’, ‘service recovery’, ‘commitment’ and ‘alternatives’ will be deliberated in the following sections. Figure 3-2 represents an overview of the determinants.



Figure 3-2. Determinants of customer loyalty

3.2.1. Satisfaction

Customer satisfaction is a widely studied construct and researchers have defined it in different ways (Besterfield, 1994; Barsky, 1995; Kanji and Moura, 2002; Fecikova, 2004). Homburg et al. (2006), has recognized that satisfaction judgements are

significantly predicted by cognition (Oliver, 1980; Bearden and Teel, 1983; LaBarbera and Mazursky, 1983; Oliver and DeSarbo, 1988) and affect (Westbrook, 1987; Westbrook and Oliver, 1991; Mano and Oliver, 1993). Studies on cognition has mainly been conducted related to expectations/disconfirmation paradigm (confirmation/disconfirmation paradigm) – which states that expectations originate from the customer’s beliefs about the level of performance that a product/service would provide (Oliver, 1980). Researchers generally agree that satisfaction is a “post-choice evaluative judgment” (Westbrook and Oliver 1991, p, 84). “If perceived performance exceeds a consumer’s expectations (a positive disconfirmation), then the consumer is satisfied. But if perceived performance falls short of expectations (a negative disconfirmation), then the consumer is dissatisfied” (Spreng, MacKenzie, and Olshavsky 1996, p. 15).

Researchers have noticed that there exist a distinction in customer satisfaction with references to tangible products and service experiences. Oftentimes, satisfaction is defined from a transactional perspective as in consumer goods purchases. Whereas in business-to-business service context like in the case of LSPs and their customers, satisfaction is not treated as a result of individual transaction but a series of transactions over time involving long-term cooperation. Such relationships facilitate the formation of relational governance structures and, as postulated by social exchange theory, immediate benefits may be foregone for future benefits. If any partner to the exchange is confident that the entirety of transactions is beneficial, momentary dissatisfaction may subside in the overall judgment (Homburg, Giering, and Menon 2003, p. 40).

On the other hand, there are other studies that have recognized the effect experienced during the acquisition and consumption of the product or service (Homburg et al., 2006). Others researchers, recognized customer satisfaction that is conceptualized as facet (attribute specific) or as overall (aggregate); and whether it is viewed as transaction-specific (encounter satisfaction) or as cumulative (satisfaction over time) (Hoest and Knie-Andersen, 2004).

In order to examine satisfaction in the relationships between LSPs and their customers, a global measure of satisfaction will be too general, instead different dimensions of satisfaction have to be considered in order to be able to identify individual aspects constituting satisfaction (Wallenburg 2004, p. 264). Therefore in this study, three

dimensions of satisfaction, conceptually similar to the logistics performance dimensions proposed by Stank et al. (2003, pp. 28- 29), will be conceptualized. These three dimensions of satisfaction: service quality, price, and relational performance, are presented below.

3.2.1.1. Service quality

According to Stank, Goldsby, and Vickery (1999), logistics service quality consists of two broad dimensions: operational performance and relational performance. Operational performance is related to delivery characteristics that take into accounts the service aspects of form, place, and time utilities. On the other hand, relational performance, accounts those activities that enhance service firms' closeness to customers, understand customers' needs and expectations and develop processes to fulfill those needs. Both these factors were observed to influence customer satisfaction which, in turn, influences customer loyalty in the fast-food distribution business (Stank, Goldsby, and Vickery 1999). In the context of 3PL services, research conducted by Stank et al, (2003) distinguished cost performance from operational performance and shown this construct as a distinct determinant of customer satisfaction.

On account of research on customer satisfaction based on service performance, many researcher like, Bitner 1990, Babakus and Boller 1992, Boulding et al. 1993, Taylor and Baker 1994, Zeithaml, Berry, and Parasuraman 1996, Sirohi, McLaughlin, and Wittink 1998, van Dyke, Prybutok, and Kappelmann 1999, have agreed that satisfaction with service performance develops as a result of positive disconfirmation, i.e. when the achieved service level exceeds expectations.

With regard to the present study, service quality is defined as the cognitive and affective evaluation of all experiences made by a customer with the services provided by an LSP (Wallenburg 2004, p. 98). Here, service quality as perceived by the customer is considered rather than the absolute and objective service level adopted by the LSP for assessing service satisfaction. In short, service quality is assessed according to the disconfirmation paradigm (Brady and Cronin 2001, p. 35).

3.2.1.2. Price satisfaction

In marketing literature, price is indicated among the most important factors leading to customer satisfaction, because consumers usually evaluates the value of a product or service by the price they pay for acquiring it (Zeithaml, 1988; Fornell, 1992; Anderson and Sullivan, 1993; Anderson et al., 1994; Cronin et al., 2000 and Virvilaite 2008). In terms of the relationship of price to satisfaction, Zeithaml and Bitner (1996) indicated that the extent of satisfaction was subject to the factors of service quality, product quality, price, situation, and personal factors. However, price has not been fully investigated in earlier empirical studies (Bei and Chiao, 2001; Consuegra, Molina and Esteban (2007).

Zeithaml (1988) indicated that, price is something that has to be sacrificed to obtain some kinds of products or services from consumers' cognitive conception. Usually, the lower the perceived price, the lower is the perceived sacrifice. Over and above, a sense of price fairness should be derived in the transaction. If customers perceived a firm's practices as unfair or higher, negative consumer responses are likely to result (Wirtz and Kimes, 2007). Immediate attitudinal and affective responses include, heightened price consciousness, lower purchase intentions (Campbell, 1999a, b), dissatisfaction (Oliver and Swan, 1989) and focus on the monetary sacrifice of a purchase (Xia et al.,2004). Based on this, Consuegra, Molina and Esteban (2007) had formed an integrated model of price, satisfaction and loyalty.

Varki and Colgate (2001) pointed out that price is an important driver of customers' perceptions of value, which in turn influence satisfaction. Nevertheless, Wallenburg (2004, p. 99), argued that there are various facets of price or cost in logistics outsourcing which impact satisfaction. Some of these circumstances are as given:

- Logistics outsourcing decisions are not made by one person alone, although the decision is made by a manager the proposal for decision would have been drafted by a subordinate in the hierarchy. In this case, the subordinate has to justify the proposal which most of the times is emphasized on cost or price aspects.
- It is harder to quantify service performance than cost or price to obtain a service. Per se, monetary measures are generally the most important criteria in corporate decision making.

- Additional service performance sometimes, does not create additional utility for the customer. Here, for a given level of service performance, satisfaction will be greater when the price is lower.
- Usually, contractual relationships between LSPs and their customers are long-term, initially a customer might be satisfied with level of service of an LSP at a given price. But, dissatisfaction may arise later, when found that alternative LSPs offer comparable services at lower prices. Such dissatisfaction is not created by the quality of service, but by its price.

Thus, it can be inferred from the above discussions that price has an influential effect on the creation of satisfaction in the industrial service context. Price satisfaction in this study is in accordance with the conceptualization provided by Wallenburg (2004, p. 99), which is based on the disconfirmation paradigm and can be defined as the affective and cognitive evaluation of all experiences received by a customer with the prices presented by an LSP for the contracted logistical services.

3.2.1.3. Relational satisfaction

A number of research studies have provided significant evidences on how relationship marketing affects behavioural loyalty which in turn affects customer retention (Bolton, et al., 2000; De Wulf et al., 2001; Verhoef, 2003). Loyal relationships have reported increasing profitability for a firm over time (Reichheld, 2001; Mishra & Li, 2008). Sin and colleagues (2005) found that effective relationship marketing drives a significant impact on the firms' performance. Successful relationship marketing efforts improve customer loyalty and firm performance through stronger relational bonds (e.g., De Wulf, Odekerken-Schröder, and Iacobucci, 2001; Sirdeshmukh, Singh, and Sabol, 2002). Empirical Study done by Stank, Goldsby, and Vickery (1999) indicate strong evidence of linkage between relational performance and satisfaction.

Relational satisfaction is incorporated in this study to complement service quality and price satisfaction to get a comprehensive aspects of satisfaction. Again following the conceptualization of Wallenburg (2004, p. 100), relational satisfaction can be defined as the affective and cognitive evaluation of all experiences received by a customer while interacting within the relationship with an LSP.

3.2.2. Proactive improvement

LSPs have to continuously cope up with new developments and challenges coming up due to changing market dynamics and increasing pressure on service requirements. They have to keep on improving their operational efficiencies and effectiveness in order to remain much ahead in competition, and also to meet the expectations of their customers, i.e., to pass on these efficiencies in the form of cost reduction and profit maximization. Therefore, in order develop the ability to improve, LSPs have to be willing to embrace innovative and incorporate their innovative capabilities in developing and maintaining a profitable relationship with the customer. These contemplations are central for inclusion of the concept of proactive improvement (Engelbrecht, 2004 and Wallenburg, 2004) in the present study.

The importance of continuous improvements in long-term relationships have been observed in the works of numerous researchers in general (e.g. Narayandas and Rangan 2004, p. 74) and as well as in logistics outsourcing relationships (e.g. Boyson et al. 1999, p. 95) context. But, the concept of proactive improvement has not been studied widely, so far has only been studied by Engelbrecht (2004) and Wallenburg (2004).

For this reason, very limited references were found on how to conceptualize proactive improvement. One probable reason behind this might be attributable to the relevance of proactive improvement only in long-term relationships despite its appeal in marketing researches. Another reason yet, might be that in the past, majority of the marketing literature focuses on consumer goods and retailing and less on services.

Proactive improvement can be conceptualized within the framework of social exchange theory with two major effects. Firstly, proactive improvement will lead to enhancement in performance, as logistics systems are continuously being improved. Referring back to the CL/CL_{alt} concept described in chapter 2.4.2, customer will realize higher benefits (in the form of better performance) from an LSP that exhibits proactive improvement. This will make the LSP to get a comparative advantage when the customer compares the achieved benefit to CL_{alt} .

Secondly, proactive improvement produces a positive signaling effect. An LSP displaying proactive improvement in its logistics systems, generates confidence with the

customer. This leads to building of commitment and trust, establishing relational governance norms. Subsequently, customers might be willing to forego present benefits for future benefits, when the LSP demonstrates proactive improvement. In addition, the positive signaling effect in itself should nurture a customer's inclination to continue a relationship with an LSP (Lemon, White, and Winer 2002, p. 12-13).

Two studies on proactive improvement can be cited here. In a study on customer loyalty, Wallenburg (2004) validated that proactive improvement has significant effects on service quality, additional purchases, and referrals. In another study that examined success factors of logistics outsourcing, Engelbrecht (2004) found proactive improvement to significantly increase goal achievement in logistics outsourcing projects.

With regard to the current study, proactive improvement is thus defined as a customer's affective and cognitive estimation of an LSP's efforts to proactively improve logistics systems.

3.2.3. Service recovery

Service recovery was defined as “the actions of a service provider to mitigate or repair the damage to a customer that results from the provider's failure to deliver a service as is designed” (Johnston & Hewa, 1997, p. 467). Lewis, Barbara R (1996) incorporated customer satisfaction into the definition, asserting that service recovery is a thought-out, planned, process of returning aggrieved/dissatisfied customers to a state of satisfaction with a company/service. Service recovery is not the same as complaint management in its approach to service failures and how the company reacts to it. Complaint management is based on customer complaints, which, in turn, may be triggered by service failures (Stauss, Bernd, and Wolfgang Seidel, 2005). However, since most dissatisfied customers are reluctant to complain, (Singh, Jagdip, 1990) service recovery attempts to solve problems at the service encounter before customers complain or before they leave the service encounter dissatisfied. Both complaint management and service recovery are considered as customer retention strategies (Halstead, Diane, Edward A Morash, and John Ozment, 1996).

Literature on service recovery suggests that a good recovery has a positive impact on satisfaction, recommendation intention, word-of-mouth, loyalty, image, and trust.

(Maxham, James G. III., 2001, Spreng, Richard A., Gilbert D. Harrell, and Robert D. Mackoy 1995, Smith, Amy K., Ruth N. Bolton, and Janet Wagner, 1999, Tax, Stephen S., Stephen W. Brown, and Murali Chandrashekar, 1998). Some even argue that a good recovery can increase satisfaction to a higher level than if nothing had gone wrong in the first place, which is referred to as the service recovery paradox (Hart, Christopher W. L., James L. Heskett, and W. Earl Jr. Sasser, 1990; McCollough, Michael A., and Sundar G. Bharadwaj, 1992)

3.2.4. Trust

Trust plays a vital role in any relationship. It is essential in all interorganizational relationships and enables companies “to focus on the long-term benefits of the relationship” (Doney and Cannon 1997, p. 35). In general, trust is defined as the belief of one partner in the reliability and integrity of the other exchange partner (Amould et al., 2004) and dependability (Brashear et al., 2003; Kumar, 1996). Without the presence of trust, long term relationship would not have been possible. According to Kumar (1996), business partners that trust each other will harvest greater profits. In addition, developing trust help firms reduce transaction costs, and help employees develop more creative solutions, to adapt quickly to marketplace changes, to meet consumers’ needs (Kumar, 1996).

Moorman, Zaltman, and Deshpandé (1992, p. 315), define trust “as a willingness to rely on an exchange partner in whom one has confidence.” This shows the behavioral intention of a party to take risks in the relationship that would not had been the case if a partner was not trusted (Morgan and Hunt 1994, p. 23). moreover both belief and behavioral intention components must be present for existence of trust (Moorman, Deshpandé, and Zaltman 1993, p. 82) and even risk is an indispensable condition for trust to exist” (Molm, Takahashi, and Petersen 2000, p. 1422). According to Moorman, Deshpandé, and Zaltman (1993, p. 82), vulnerability is yet another necessary condition, without which, “outcomes are inconsequential for the trustor”.

Ganesan (1994, p. 3) postulated two distinct components of trust i.e. credibility and benevolence, credibility “is based on the extent to which the retailer believes that the vendor has the required expertise to perform the job effectively and reliably”, while benevolence “is based on the extent to which the retailer believes that the vendor has

intentions and motives beneficial to the retailer when new conditions arise, conditions for which a commitment was not made.” This explains the dual characteristics of trust – firstly, trust is considered as a result of credible and benevolent behavior of the supplier, and secondly, in the presence of trust, that behavior is expected to remain credible and benevolent in the future. Thus, credibility and benevolence are antecedents and consequences of trust at the same time.

Many firms build collaborative relationships with buyers and suppliers in order to meet competition more amenable. Competition is more fierce in professional services in comparison to product based companies, as they “face considerable uncertainty due to service characteristics such as intangibility, complexity, and long-term horizon of delivery,” Crutchfield (2001, p. 19). Trust can offset the probabilities of negative outcomes from potential service failure and thus reduces the perceived risk (Lane and Bachmann 1996, p. 390). Owing to trust, customers feel safe and secure in the relationship and in turn, commit themselves to the continuation of the relationship (Liljander and Strandvik 1995, Doney, Cannon, and Mullen 1998).

Further, according to Ganesan (1994, p. 3), trust “reduces the perception of risk associated with opportunistic behaviors of the vendor, it increases the confidence of the retailer that short-term inequities will be resolved over a long period, and it reduces the transaction costs in an exchange relationship.” Hence, in the long-term, trust and the associated risk reduction will strengthen the bonding of buyers to their suppliers, (Crutchfield 2001, p. 20).

Now having discussed the various facets of trust, it’s important to clarify the notion of trust from a customer’s perspective. For trust to exist, one has to trust the other, i.e., the trustors have to trust the trustees. Here, it’s obvious that the trustors are the individual customers. However, Trustees, can be both suppliers’ organizations and individuals within suppliers’ organizations (Doney and Cannon 1997). Individuals of an organization can be trusted, since they are the point of interaction with the customers, alternatively, organizations as a whole can also be trusted (Sako 2000, Sydow 2000). For example, a logistics service provider can be trusted to reliably deliver a shipment on time, additionally, a specific delivery person for that location can be trusted for the same.

In regard to this study, a customer's trust in an individual, i.e. personal trust, and trust in an organization as a whole, i.e. organizational trust will be employed.

3.2.5. Commitment

Commitment is seen as an essential ingredient for a successful long-term relationship (Dwyer et al., 1987; Morgan & Hunt, 1994). Commitment has been defined as "an enduring desire to maintain a valued relationship" (Moorman et al., 1992) or "a tendency to resist change" (Pritchard et al., 1999). Dwyer, Schurr, and Oh (1987, p. 19) Anderson and Weitz (1992) asserts that committed partners are willing to make relationship specific investments, because they are confident about the long-term potential of the relationship.

Furthermore, several researchers have investigated the role of commitment in buyer-seller relationships (e.g. Anderson, Hakansson, and Johanson 1994, Gundlach, Achrol, and Mentzer 1995, Hocutt 1998, Moore 1998, Rodriguez and Wilson 2002, Wong and Sohal 2002, Knemeyer, Corsi, and Murphy 2003, Wallenburg 2004). Majority of researchers are found to have employed a uni-dimensional approach to commitment. Conversely, some researchers have criticized this approach saying that affective and cognitive commitment should be regarded as two distinct dimensions (Meyer and Allen 1984, and McGee and Ford 1987). Allen and Meyer (1990) even postulated normative commitment as a third dimension. At the core of their proposition lies the assumption that firms either remain in relationships because they want to or because they are obligated to. Although empirical studies on multi-dimensional approach to commitment have been observed recently, this study in order to accomplish parsimony will employ uni-dimensional approach focussing on the affective component of commitment, that is, the psychological attachment, of one exchange partner to the other based on loyalty and affiliation, (Verhoef 2003, p. 31). Wallenburg (2004) also showed a significant effect of affective commitment on customer loyalty in relationships between LSPs and their customers, but was not able to validate effects of normative and cognitive commitment. In line with Wallenburg (2004, pp. 110-112) commitment here is defined as a customer's affective evaluation of its psychological attachment to an LSP.

3.2.6. Alternatives

Social exchange theory described in chapter 2.3.2 has demonstrated the importance of alternatives to the existing provider, since they can be used as a comparison standard (CL_{alt}) to determine if a relationship should be stopped or continued. Similarly, switching to another provider because of non-existence of customer loyalty, is only possible, in the existence of alternative providers. Looking at the importance of alternatives associated with customer loyalty, several researchers have included them in their models. Some researchers like Keaveney 1995, studied alternatives as a subordinate role to switching behavior). Others like Sriram and Mummalaneni 1990, Ping 1993, Bolton, Kannan, and Bramlett 2000, included alternatives in their studies but not as a part of the comprehensive model of determinants of customer loyalty. Still others like Wallenburg (2004) found alternatives as an important determining factor of customer loyalty. Hence, alternatives is also being incorporated in this study and can be defined as a customer's cognitive and affective assessment of the availability of adequate alternative LSPs in the market.

3.3. Comprehensive model of Customer Loyalty

In this section, a comprehensive model of customer loyalty will be developed based upon the conceptualizations of customer loyalty and its determinants illustrated in the preceding section and especially on the customer loyalty model conceptualized by Wallenburg (2004). In this model, a set of hypotheses is proposed, stating all expected effects of determinants on loyalty, as well as interdependencies between the determinants.

3.3.1. Research Hypotheses

3.3.1.1. The effects of the determinants on Customer Loyalty

Literature review on the eight determinants which have been designated for the present study led to the proposal that all of them have a profound effect in shaping and influencing the formation of loyalty among the customers of the logistics service providers. These effects of each of the select determinants of customer loyalty is discussed in the following section:

3.3.1.1.1. Effect of “Service Quality”

Literature on satisfaction has demonstrated that overall satisfaction is imperative for customer loyalty (Innis and La Londe 1994, p. 2, Sureshchandar, Rajendran, and Anantharaman 2002, p. 364). Service quality is one of the three constituents of satisfaction conceptualized in this study (chapter 3.2.1.1.). According to social exchange theory, benefit leads to customer’s perception of satisfaction which depend both on cost and performance aspects. The performance aspects here are represented by service quality. Moreover, as shown in ‘Appendix-A’, several authors have already examined the relationship between service quality and customer loyalty.

3.3.1.1.2. Effect of “Price Satisfaction”

Discussions in earlier sections shows that satisfaction leads to customer loyalty and also that satisfaction consist of cost and performance components. And, since cost of outsourcing service is strongly influenced by the price paid for it, price satisfaction is inferred to increase customer loyalty. Wallenburg (2004, pp. 100-102) conceptualized the effect of price satisfaction on loyalty and found its support to some extent.

3.3.1.1.3. Effect of “Relational Satisfaction”

Social exchange theory establishes that satisfaction is created not only through ‘economic’ aspects of service quality and price satisfaction, but also as a result of social aspects. If the quality of the relationship exceeds the initially expected level, it will lead to higher satisfaction, which in turn will lead to higher loyalty (Wallenburg 2004, pp. 103-104). The work of De Wulf, Odekerken-Schröder, and Iacobucci (2001)

3.3.1.1.4. Effect of “Proactive Improvement”

If an LSP displays proactive improvement efforts, this can be expected to have two positive effects. Proactive improvement efforts results in service improvements which causes service quality to increase. In addition, proactive improvement indicates that the LSP will continue to proactively pursue performance enhancements even in the future. Thus, the direct effect of proactive improvement, leads to an increased attractiveness of the LSP when comparing B with CL/CL_{alt} , hence fostering relationship beneficialness (Wallenburg 2004, pp. 216-217), on the other hand the longer-term signaling effect

assures that the LSP will uphold a comparative advantage over alternative LSPs (Wallenburg 2004, pp. 102-103).

3.3.1.1.5. Effect of Service Recovery

Successful service recovery can enhance customers' perceptions of the quality of service and the organization, which in turn will lead to positive WOM communication, enhance customer satisfaction, and build customer relationships and customer loyalty (Michel et al., 2009).

3.3.1.1.6. Effect of "Trust"

Trust is another central aspect of the commitment trust theory. Morgan and Hunt (1994) proposed an indirect effect through commitment as a mediating variable. In contrast, several authors (e.g. Shem- well, Cronin, and Bullard 1993, Garbarino and Johnson 1999, Chaudhuri and Holbrook 2001, Sirdeshmukh, Singh, and Sabol 2002, Wallenburg 2004) contend for a direct influence of trust on loyalty. As trust is a risk reducing element, remaining with an LSP who is trustworthy appears to be more rational than switching to an unknown alternative LSP.

3.3.1.1.7. Effect of "Commitment"

Commitment is central to any buyer-seller relationship according to the commitment trust theory. In fact, commitment positively influences repurchase (Morgan and Hunt 1994, Too, Souchon, and Thirkell, 2001). Wallenburg (2004, p. 237) validates strong influences also on additional purchases and referrals.

3.3.1.1.8. Effect of "Alternatives"

The availability of alternative LSPs that can offer satisfactory performance will have a negative effect on customer loyalty (Sriram and Mummalaneni 1990). Besides, switching from the current LSP to another LSP is y possible if the presence of adequate alternatives (Wallenburg 2004, pp. 116-117).

From the above discussions on the effects of each of the determining factors of loyalty, the following hypothesis can be deduced:

H1: Loyalty of a customer towards its LSP is effected:

- **directly and positively by (a) Service Quality (b) Price Satisfaction (c) relational satisfaction (d) proactive improvement (e) service recovery (f) trust (g) commitment; and directly but negatively by (h) alternatives**

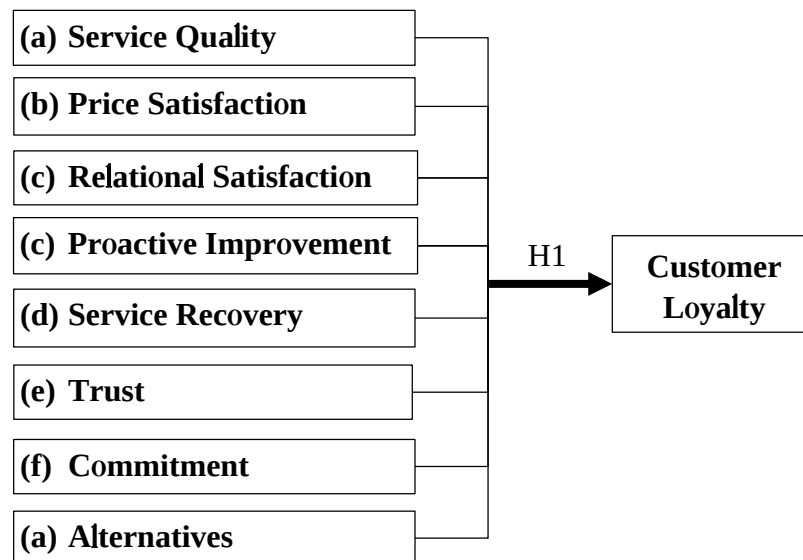


Figure 3-3. Direct effects of Determinants on Customer Loyalty

3.3.1.2. Interdependencies between the Determinants

3.3.1.2.1. The Effects of “Service Satisfaction”

Trust is built on the belief that the other party is trustworthy benevolent. Therefore, in long-term relationships, trust of one party increases if the other party demonstrates activities, that pledge trustworthy. Such an activity which would assure trustworthiness is provision of satisfactory service quality, both at organization and individual level. The following hypothesis is stated in line with the proposal by Wallenburg (2004):

Commitment is seen as an essential ingredient for a successful long-term relationship (Dwyer et al., 1987; Morgan & Hunt, 1994). Commitment has been defined as "an enduring desire to maintain a valued relationship" (Moorman et al., 1992) or "a tendency to resist change" (Pritchard et al., 1999). According to service marketing literatures, service quality, perceived value, and satisfaction are considered as antecedents of

commitment (Grönroos, 1990; Hocutt, 1998; Shemwell et al., 1998). Wallenburg (2004) also showed a positive effect of service quality on commitment. Thus, the following hypothesis is deduced.

Service quality has also been found to have positive effects on the other two dimensions of satisfaction: price satisfaction and relational satisfaction. According to the disconfirmation paradigm, satisfaction is achieved if initial expectations from the service are positively disconfirmed. Price satisfaction is augmented if either price is lower or if service quality is higher than initially expected. Therefore, with higher service quality, there should be greater satisfaction with price, which is expressed in the following hypothesis:

A high extent of service quality provided by an LSP to the customer can reduce the level of friction or disagreements in their relationship (Anderson and Narus 1990, p. 56). Wallenburg (2004, p. 235) found this linkage to be strong and highly significant, hence it can be hypothesized that **‘Service Quality’ has a positive effect on ‘Trust’, ‘Commitment’, ‘Price Satisfaction’ and ‘Relational Satisfaction’.**

3.3.1.2.2. The effects of “Relational Satisfaction”

The development of trust in a relationship is affected by uncertainty about the other party’s intentions and behavior. Healthy working and consistent relationship leads to high relational satisfaction, limiting behavioral uncertainty and thus increase trust (Wallenburg 2004, pp. 219-220). Hence, the following hypothesis can be formulated:

Relational satisfaction is reported to enhance commitment, because a valued relationship does not only require good service quality, but also satisfaction with the way parties work together (Wallenburg 2004, pp. 220-221). Subsequently, the a hypothesis can be stated that **‘Relational Satisfaction’ has a direct and positive effect on ‘Trust’ and ‘Commitment.’**

3.3.1.2.3. The effects of “Proactive Improvement”

Proactive improvement efforts results in service improvements which causes service quality to increase. Consequently, a hypotheses can be formulated as **‘Proactive**

Improvement’ has a direct and positive effect on ‘Service Quality’ and ‘Service Recovery.’

3.3.1.2.4. The effects of “Service Recovery”

Customer satisfaction plays a crucial role as it determines the quality in the service setting. Therefore, it is important to detect customer dissatisfaction through a systematic complaint handling or recovery system. According to Michel (2008), service failure isn't necessarily a disaster for an organization. If the service recovery as an action taken in response to that particular failure is handled well, then customer satisfaction, trust, commitment and loyalty can increase simultaneously.

Perceived service quality concerns a customer's judgement about an organization's overall service excellence or superiority (Parasuraman, Zeithaml, and Berry 1988) and should be directly affected by both service failure and recovery. Researchers has found out that customer who faced service flaw and being dealt with quickly and properly are more satisfied than customers who have felt flawless service all the time (Mattila and Cranage, 2005). Service recovery brings a learning experience to organization on services that should be improved and also provide a better service quality. Thus the following hypothesis can be proposed that **‘Service Recovery’ has a direct positive effect on ‘Trust’, ‘Commitment’ and ‘Service Quality’.**

3.3.1.2.5. The effects of “Trust”

Organizational and personal trust cannot be separate entities. In fact, organizational trust is found to be influenced by personal trust (Wallenburg 2004, p. 220). In logistics outsourcing relationships, the way in which customers trust their LSPs’ organizations is highly influenced by interactions with the individuals posing as point of contacts at the LSP (Doney and Cannon 1997). This is reflected in the following hypothesis:

Commitment trust theory also signals a positive influence of trust on commitment as validated by Morgan and Hunt (1994). Other researchers also agree about this link (e.g. Wetzels, de Ruyter, and van Birgelen 1998, Sharma and Patterson 1999, Too, Souchon, and Thirkell 2001), hence, a hypotheses can be formulated that **‘Trust’ has a direct and positive effect on ‘Commitment’.**

3.3.1.2.6. The effects of “Alternatives”

Alternatives have been shown earlier to be central to social exchange theory as they are used as a comparison level to the existing relationship. The evaluation of satisfaction and proactive improvement is done on the basis of comparisons with the offerings of alternative LSPs. Consequently, judgments on satisfaction and proactive improvement will be inferior if adequate alternatives exist. Therefore, alternatives are hypothesized to have a direct negative effect on service quality, price satisfaction, relational satisfaction and proactive improvement (Wallenburg 2004):

Now these Interdependencies between the determinants can be finally summarized as follows:

H2: In Logistics Outsourcing relationships, Service Quality, Price Satisfaction, Relational Satisfaction, Proactive Improvement, Service Recovery, Trust, Commitment and Alternatives have interdependent effects on each other such that:

- Service quality has a positive effect on (a) Trust (b) Commitment (c) Price Satisfaction (d) Relational Satisfaction
- Relational satisfaction has a direct and positive effect on (e) Trust (f) Commitment.
- Proactive improvement has a direct and positive effect on (g) Service Quality (h) Service Recovery.
- Service recovery has a direct positive effect on (i) Trust (j) Commitment (k) Service Quality
- Trust has a direct and positive effect on (l) Commitment.
- Alternatives have a direct negative effect on (m) Service Quality (n) Price Satisfaction (o) Relational Satisfaction (p) Proactive Improvement.

3.3.2. Overview of Hypotheses and Proposed Model

Table 3-1 provides an overview of the hypotheses formulated in the preceding section. Graphically, these hypotheses lead to the structural model depicted in Figure 3-4 (effects on customer loyalty are not included for reasons of clarity). This model will be empirically scrutinized in the following chapters.

Table 3-1. Overview of hypotheses for customer loyalty model

Effects of \ Effects on	Customer Loyalty	Service Quality	Price Satisfaction	Relational Satisfaction	Proactive Improvement	Service Recovery	Trust	Commitment
Service Quality	H1 _a		H2 _c	H2 _d			H2 _a	H2 _b
Price Satisfaction	H1 _b							
Relational Satisfaction	H1 _c						H2 _e	H2 _f
Proactive Improvement	H1 _d	H2 _g				H2 _h		
Service Recovery	H1 _e	H2 _k					H2 _i	H2 _j
Trust	H1 _f							H2 _l
Commitment	H1 _g							
Alternatives	H1 _h	H2 _m	H2 _n	H2 _o	H2 _p			

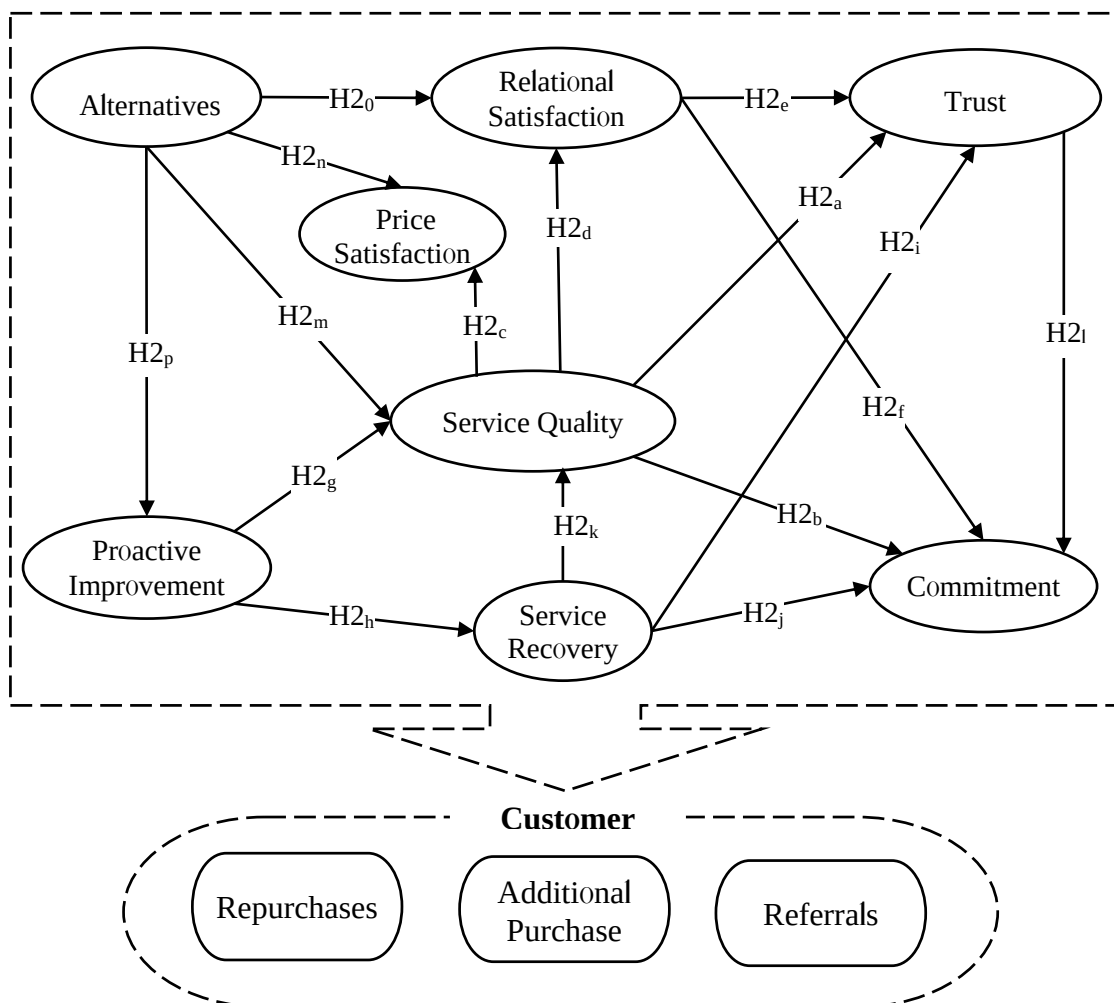


Figure 3-4. Structural model of determinants of customer loyalty

Chapter 4.

RESEARCH METHODOLOGY

This chapter will explain the research methodology adopted in order to address the research questions and for testing the hypotheses developed in the preceding chapter of this dissertation. It will be started with a discussion of the research design, sampling frame, data collection method, then will be followed by an introduction to the data analysis methodology employed for assessing the hypothesized models. A reliability and validity analysis for the constructs will then be conducted. Subsequently, a detailed description of all steps used in the data analysis, including the treatment of possible non-response bias and assessment of measurement and structural models will be presented in this chapter.

4.1. Survey Design

This study utilizes a non-experimental design, testing a cross-sectional model through a survey instrument, which is a standard procedure in the marketing literature. In order to design data collection of the study, the research object, the appropriate data collection procedure, and targeted respondents will be identified, followed by questionnaire design and data collection.

4.1.1. Research Objective

The objective of this research is to provide answers to the research questions put forward in chapter 2.4.2 which are derived from the purpose of the study described in chapter 1.3. Thus relationships between suppliers and buyers of logistics services in India are at the core of this research. Since companies and business units often differ significantly in their use of LSPs, only those companies and business units are considered that actually contracted logistics services from LSPs.

4.1.2. Methods for Data Analysis

Selecting an appropriate data gathering approach depends upon the goals of the research as well as the employed methods for data analysis. The hypothesized model of customer loyalty developed in chapter 3.3 comprises of complicated relationships between factors that cannot be measured directly, since they symbolizes theoretical constructs. The first

step is to employ a method that can find out possibility of fitting together relationships between several constructs.

Since, theoretical constructs (i.e. latent variables) cannot be measured directly, they have to be measured through empirically observable indicators representing the latent variables. Measurement errors always occur when measuring latent variables, therefore utmost care has to be taken while analyzing to avoid false conclusion (Homburg 1989, p. 20). Hence, the second criterion is that the method employed has to take into account measurement errors.

The model of customer loyalty might exhibit several interdependencies between the potential determinants of customer loyalty (exogenous variables) as well as effects of these on the dependent variables i.e., the three dimensions of customer loyalty. Hence, the third criterion is that the method employed should be able to evaluate interdependencies between exogenous variables. Furthermore, the fourth criterion is that the employed method should be able to assess the model's goodness-of-fit of all hypothesized relationships of the model.

Regression analyses are generally employed for the analysis of cause and effect relationships by employing multivariate methods (Backhaus, Baumeister, and Mühlfeld 2003, Gujarati 2003, pp. 15-333, and Wallenburg 2004, pp. 124-125). However, traditional regression analysis does not fulfill the prerequisite criteria. The regression analysis can only estimate observable variables. That's why, all indicators relating to theoretical constructs would have to be aggregated before undergoing regression analysis (e.g. through factor analysis), this will lead to the exclusion of measurement errors. Moreover, interdependencies between exogenous variables cannot be assessed, because regression analysis requires the independence of regressors, hence, simultaneous evaluation of all hypotheses is not possible. Thus, regression analysis cannot be used for the present research.

For this purpose, structural equation modeling (SEM) is employed to analyze the theoretical model, as suggested by Wallenburg and Weber (2005, pp. 172-173), that SEM is the standard procedure for the analysis of cause and effect relationships between theoretical constructs. In addition to combining elements from regression analysis and factor analysis, SEM explicitly considers measurement errors, analyses relationships

between exogenous variables, and simultaneously also evaluates all hypotheses. Thus, SEM satisfies all required criteria and is appropriate for analyzing the comprehensive model of customer loyalty.

4.1.3. Data Collection procedure

The purpose of drawing sample from the population is to arrive at a universal conclusions, so that “research findings can be generalized to the broader population.” (Mentzer and Flint 1997, p. 211). A large sample size helps in achieving high external validity of this generalization. According to Lambert and Harrington (1990, p. 5), survey method is generally used for obtaining large sample sizes in industrial survey settings. Among various survey methods, written surveys are found to have several advantages over other survey methods, e.g. interviews or case studies. The reason behind is that written surveys are relatively easy to conduct, comparatively inexpensive, and yield high numbers of cases. Another reason is respondents are less biased by the interviewer, as it would be the case of interview or case studies method. Mentzer and Kahn (1995, p. 242) find that over 50% of articles published in the *Journal of Business Logistics* between 1978 and 1993 used written surveys. In spite of the advantages, there are some negative aspects of written surveys, major deficits are declining response rates (Baruch 1999), questionnaire length (Yammarino, Skinner, and Childers 1991), and the lack of control (Mentzer and Kahn 1995). For the present study, written surveys are the most viable form for achieving the research goal.

There are two possible ways to conduct the survey – a mail survey or a web-based survey. According to comparative study conducted by Griffis, Goldsby, and Cooper (2003) between these two survey procedures, web-based surveys, in which sample members are contacted via e-mail over the internet, are clearly preferable when large samples are contacted. The response rates in web-based surveys are slightly higher, costs are lower for large sample sizes, and quality is comparable to mail surveys (Grant, Teller, and Teller 2005, p. 152). Since the present research aims at covering a large sample-size, a web-based survey procedure is deemed appropriate.

4.1.4. Respondents

Research on business relationships can be conducted using both centralized and decentralized survey configurations (Zimmer 2000, p. 130). Centralized surveys are

focused on one company and its relationships to other companies. With respect to the present research, a single customer could be surveyed to find out its relationships to different LSPs, or a single LSP could be surveyed to find out its relationships to different customers. This approach, however, is not suitable for the present study. Moreover, if only one customer or LSP were asked about its relationships, a very small sample size would be attained, hence, generalizations would hardly be possible (Wallenburg 2003, p. 83).

Decentralized surveys on the other hand, include relationships between a multitude of customers and LSPs. In case of the current study, numerous customers could be surveyed regarding their relationships to the respective LSPs. Hence, for the present research, the decentralized configuration is most suitable, and besides a large sample size can be attained and generalization can be achieved.

Apart from the above mentioned unilateral survey configurations, dyadic surveys can also be conducted, which involves surveying both relationship parties, i.e. customers and their LSPs, with regard to the relationships they share. However, the current research is focused on the buyers of logistics services, because assessing their intentions on the determinants of customer loyalty is relevant to the goal of the study (Wallenburg 2004, p. 127). A dyadic survey may be used in order to gain some additional insights and specific requirement, but the negative side is that it would also complicate data collection and endanger sample design. For this reason, a unilateral decentralized survey configuration is designated, in which customers are surveyed about the relationships with their LSPs. Moreover, customers are asked to stick only to only one LSP with whom they share most important relationship. This focus has the advantage of having control on questionnaire length and in ensuring the necessary focus on relevant issue to the respondents.

Suitable respondents in customers' organizations have to be identified in order to derive more relevant and appropriate answers and to avoid major discrepant responses among multiple respondents (Kumar, Stern, and Anderson 1993, p. 1636). That's why, the managers or the persons-in-charge, responsible for logistics in the customer's company or in the business unit level are selected as key respondents. Besides, logistics managers are supposed to possess the necessary information about required for evaluating the relationship with their most important LSP which are ultimately relevant

to customer loyalty. Therefore they are considered as key respondents for the present study.

4.1.5. Questionnaire Design

Questionnaire was development based on the conceptualization of customer loyalty, its determinants and relationship among them, as described in chapter 3. To achieve objectivity and interpersonal comparability and to avoid subjectivity, open questions were avoided. Survey questions were devised to get responses from the respondents in terms of their level of agreement with each statement on a seven-point Likert-scale.

At the very beginning of questionnaire, the participants were explicitly instructed to select their most important focal LSP and to answer all considering this LSP in mind. The survey questionnaire starts with general questions about the respondents' firms' logistics and outsourcing activities, then followed by questions about the relationship with the selected LSP. The next part focusses on questions about the respondents' current situation and also with respect to its own customers, competitors, and corporate success. The questionnaire closes with questions about the particulars of the respondent and its company or business unit. A seven-point Likert-scale is a balanced rating scale with seven possible answer values, of which the middle one is neutral.

4.1.6. Pretest Interviews

After questionnaire design, pretest interviews were conducted to identify potential shortcomings of the survey instrument. Subsequently, 10 interviews were conducted with professional experts, five interviews with logistics professionals, and another five interviews with other logistics professors/researchers were conducted. As a result, minor modifications were made regarding the wording of the questions to increase comprehensibility and remove ambiguity. Interviewees accepted the questionnaire to be well structured.

4.1.7. Data Collection

The first important task in data collection is to identify the population source from where the samples has to be drawn. The samples or respondents in the case of this study are the logistics managers across industries as mention in previous section. Its oftentimes

observed that most logistics managers are associated to some professional groups. Such a group in India that is concerned with Logistics and Supply Chain Management is associated with the Conferendum of Indian Industries (CII). Therefore, the members of CII are contacted for the survey. Another professional organization in the field of logistics is CSCMP, their members in India were considered for the survey. Both organizations were contacted and asked for support regarding the present study by enrolling as a member. Out of the membership data, respondents were drawn from all manufacturing and trade industries, while industries such as information technology, LSPs, banking, consulting, and insurances were excluded. Names and e-mail-addresses of 4,560 individuals were obtained, out of which 2750, were from CII and 1810, from CSCMP.

In order to increase response rates, two approaches suggested by Larson and Poist (2004) were incorporated. First, incentives were offered to all participating individuals. Participants were also informed about the chances for winning a lottery for an Apple iPod® or a digital camera, participation in a lottery. The second step for increasing response rate was sending reminder e-mails to everyone that had not participated so far.

4.2. Sample

After outlining the design of data collection as given above, the next section will describe the characteristics of the sample.

4.2.1. Sample characteristics

Out of the 4,560 e-mails sent to the respondents, 2050 were returned as undelivered notice and therefore had to be subtracted from the total sample, resulting in 2,510 e-mails that supposedly reached their addressees. Out of these, a total of 354 questionnaires were received, resulting in a response rate of 14.10%. SEM does not permit any incomplete data, hence the 354 responses had to undergo some initial treatment. For this, Byrne (2001, pp. 289-291) suggestion of three procedural treatment is considered: 1) list-wise deletion, in which all cases having missing values are excluded from further analyses (see e.g. Boomsma 1985); 2) pairwise deletion, in which only cases with a missing value for a specific analysis are excluded (see e.g. Marsh 1998); and 3) imputation, which include replacing missing values by means of some estimate. 52 responses had to be eliminated using list-wise deletion as there were a large number of missing values.

Imputation was employed for the remaining 302 cases, by replacing missing values “with an observed score from another case in the data for which the response pattern across all variables is similar.” (Byrne 2001, p. 291) All subsequent analyses are therefore conducted on this sample of 302 cases.

Table 4-1. Size of respondents

Firm size (in million ₹)	Share (in percentage)
< 100 m	22.20%
100-249 m	21.00%
250-499 m	27.50%
500-999 m	18.70%
> 1,000 m	10.60%

Table 4-2. Industry composition of respondents

Industry	Share (in percentage)
Retailing	1%
Food and beverage	1.3%
Industrial equipment	3.5%
Petroleum Products	4.7%
Chemicals and plastics	5.8%
Electronics, electricals	7.9%
Metals, Iron & Steel	11.6%
Pharmaceuticals	13.2%
Consumer goods	13.5%
Fabrics & Textiles	15.4%
Automotive, engineering	18.3%
Others	3.8%

The sample consists of different types of organizations that varies with respect to firm-sizes and industry which they belong. Small and medium sized companies with of less than ₹ 100 million yearly revenues have a share of only 22%, whereas large companies with more than ₹ 100 million and less than ₹ 500 million constitute nearly half of the sample. The breakup of companies in terms share of size and composition is given in Tables 4-1 & 4-2.

Irrespective of company sizes an average of 52.40% of total logistics cost is spent on outsourcing logistics services on LSPs. Small firms with less than 100 million were found to spend highest (67%) on outsourcing logistics. Followed by spend of about 58% in 100 - 249 million ₹ category. Larger sized companies with turnover between 250 – 1000 million ₹ spend about 48%. Companies with more than 1000 million annual turnover spend the least about 40% of their total logistics cost on logistics outsourcing. The results are shown in Figures 4-1 & 4-2.

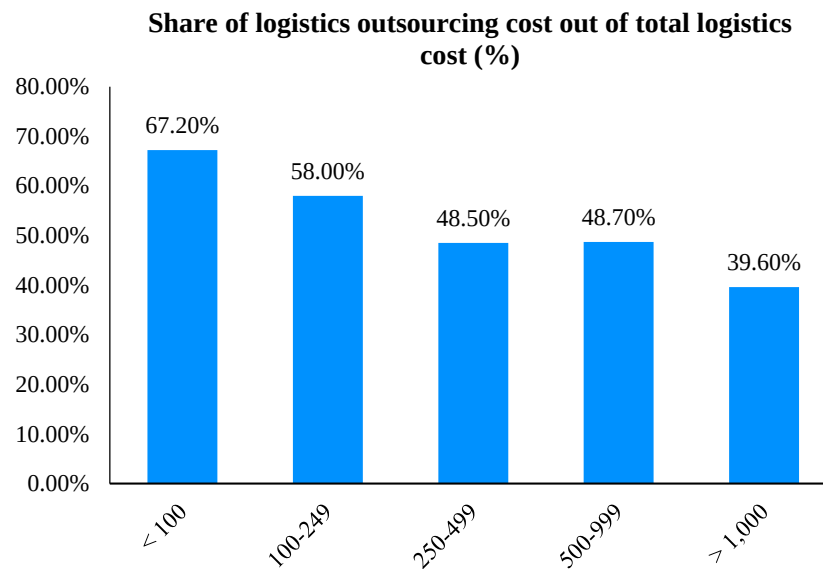


Figure 4-1. Importance of logistics outsourcing (total logistics cost)

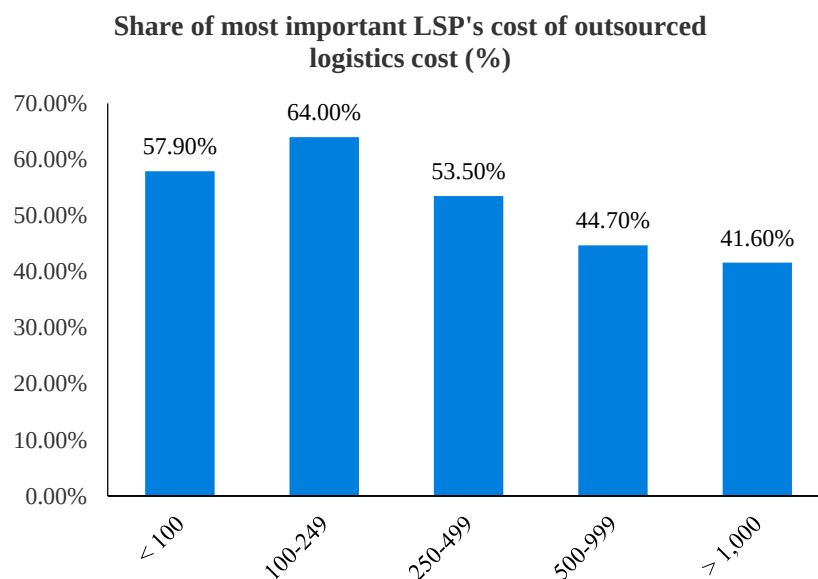


Figure 4-2. Importance of logistics outsourcing (lead LSP cost)

Outbound logistics are the major component of outsourced logistics whereas inbound logistics in this regard play a minor role. Out of the logistics activities that are outsourced to the focal LSP, transportation was found to be mainly outsourced, followed by warehousing, logistics information systems, customs clearance, international freight forwarding and value added services like inventory management, transportation planning, cross-docking and pick/pack operations. Advanced services, e.g., consulting services or assembly services, are seldom outsourced, as shown in Figure 4-3.

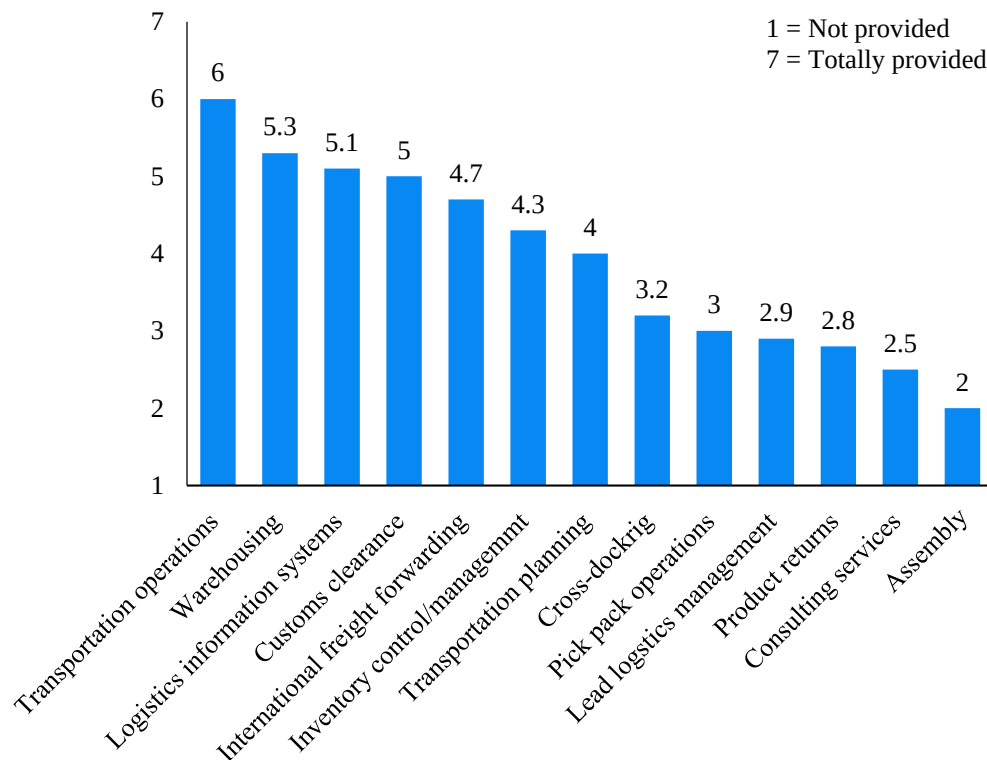


Figure 4-3. Logistics services provided by the selected LSP

The survey participants and their lead LSPs were found to have worked together for an average duration of over 3.5 years and the average duration of close relationship was 2 years. The average contract period of the sample was 1 years.

4.2.2. Representativeness of the sample – Test for sample bias.

An important aspect of sample characteristics is that, it should represent the population. Wallenburg (2004, p. 134) stated that, “In order to be able to draw generalizable conclusions from a sample, the sample needs to be representative of the underlying population.” This means that there should not be a significant systematic differences between answers provided by participants and those provided by non-

participants of the study. But if significant difference is detected between these two groups, a non-response bias is established and the sample fails to be representative. Armstrong and Overton (1977), proposed a procedure for testing representativeness by comparing early and late respondents, a prediction can thus be made as to whether the sample has a non-response bias or not. Using Armstrong and Overton (1977) method, samples are split into four equally sized parts, in the order of questionnaire submission. T-tests are used to compare the first and the last quarter of responses. Twelve key non-demographic questions (i.e., questions dealing with the theoretical base of this study - Mentzer and Flint, 1997) were selected from the survey instrument. Seventy five respondents from the initial questionnaire distribution were treated as the early respondents and equal numbers of respondents from the last quarter follow-up questionnaire were treated as the late respondents. The independent t-tests output of the responses to these questions showed no statistical significance ($\alpha = .05$) between early and late respondents (Table 4-3). This advises an absence of nonresponse bias in the survey sample.

Table 4-3. Test for Non-response Bias - Early Versus Late Respondents

Variable	Respondents	Mean	t-value	Significance
Repurchases	Early	4.9333	-.789	.431
	Late	5.1067		
Additional Purchases	Early	4.6667	-1.473	.143
	Late	4.9733		
Referrals	Early	4.6933	-1.500	.136
	Late	5.0267		
Price Satisfaction	Early	4.8400	.402	.688
	Late	4.7600		
Relational Satisfaction	Early	4.9067	-1.070	.286
	Late	5.1333		
Service Quality	Early	4.7600	-1.633	.105
	Late	5.0800		
Proactive Improvement	Early	4.8533	-.405	.686
	Late	4.9333		
Commitment	Early	4.8800	-1.467	.144
	Late	5.2000		
Organizational Trust	Early	4.9067	.311	.756
	Late	4.8400		
Personal Trust	Early	5.0667	-1.154	.251
	Late	5.2800		
Service Recovery	Early	5.3067	.974	.332
	Late	5.1200		
Alternatives	Early	6.1467	0.000	1.000
	Late	6.1467		

Collecting information from only one type of respondent from an organization[s] can lead to a systematic measurement error, called as respondent bias (Ernst 2003). In order to avoid respondent bias in the sample, respondent competency was assessed by examining respondents' characteristics, as proposed by Kumar, Stern, and Anderson (1993, p. 1645). In the sample, (90.8%) of respondents hold management positions in logistics, have been in their position for an average of 4.5 years, and have worked for the same company for 8.4 years and the remaining respondents are at the subordinate levels but are the actual user interface between the organizations and LSPs. Hence, respondents are highly qualified for completing the questionnaire, as they are logistics managers and the end users who are disposed of sufficient organizational and functional experience. The sample therefore is assumed to be free from respondent biased.

4.3. Introduction to the Data Analysis Methodology

The data analysis methodology adopted in this study is SEM (Structural Equation Modeling). SEM is a multivariate technique that surmises dependencies between latent variables or constructs, based on empirically measured variances and covariances of observed variables or indicators (Blalock 1963, p. 53). SEM has been chosen for the current study as it allows the estimation of both measurement and structural models simultaneous. The two-step approach proposed by Anderson and Gerbing (1988) is applied in this research. Confirmatory factor analysis is employed in the first step to estimate the measurement models, and in the second step, simultaneous estimation of measurement and structural models is conducted. The next sections will therefore provide an introduction to the basic concept and principles of measurement models, as well as the structural models.

4.3.1. Measurement Models

According to Bagozzi and Fornell (1982, p. 24) theoretical construct is “an abstract entity which represents the ‘true’, non-observable state or nature of a phenomenon.” In order to measure such a construct (also called as latent variable), a thorough understanding of the fundamental aspects and all the facets of the construct is essential. Based on the conceptualization of the construct, a set of indicators reflecting the latent variables are identified against which data is to be collected. This set of items is termed a measurement model, or scale.

There are two types of constructs: In first-order constructs, all the indicators belonging to one measurement model can be aggregated into one construct and loaded on that construct only, whereas in multi-order constructs indicators load onto more than one construct (Anderson, Gerbing, and Hunter 1987, p. 435). The present study uses first-order constructs only.

Looking at the textual complexity of the construct, one or more indicators can be used for measuring a construct. Single item constructs are only capable of capturing limited and most simple issues, on the other hand, multi-item measures are able to conceive more complex constructs (Churchill 1979, p. 66). Another type of indicators is the formative indicators, these are observed variables that are supposed to effect a latent variable (Diamantopoulos and Winklhofer 2001, p. 269), whereas reflective indicators work reversely by being effected by the latent variable. In Figure 4-4, reflective (observed) indicators are represented by rectangles and are shown being effected by the existence of the latent variable (constructs) represented by oval. Reflective indicators are used exclusively in this study as these are relevant for measuring the proposed problems.

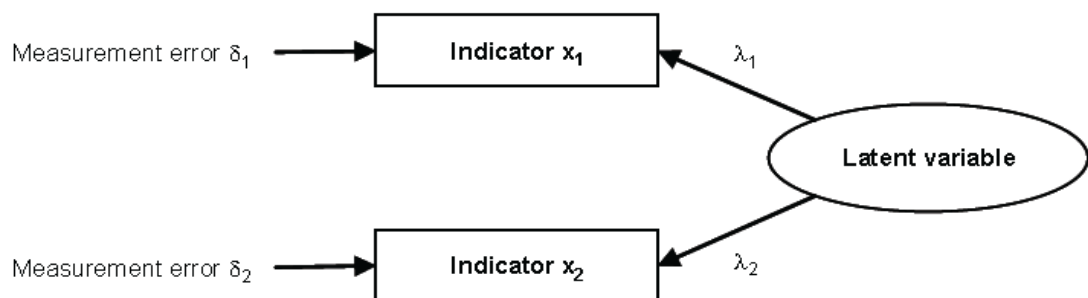


Figure 4-4. Measurement model with reflective indicators

Confirmatory factor analysis (CFA) is used to conduct construct measurement. CFA assesses model parameters by presenting the construct with its indicators as a linear system of equations and comparing the covariance matrix resulting from the model with the empirical (observed) covariance matrix. Reflective indicators comes with measurement error (Homburg and Giering 1996, p. 6), therefore a measurement error δ is estimated for each indicator, along with path coefficients λ between the indicators and latent variables.

In order to estimate a CFA model with higher accuracy, a minimum of three indicators per construct is needed (Wallenburg 2004, p. 137). As a standard procedure in SEM, all coefficients between observed variables and their measurement errors are set to one, also one coefficient between observed variables and latent variable per measurement model are set to one.

4.3.2. Structural Models

An SEM model consists of at least two measurement models, which are linked together into a structural model. Measurement models establish relationship between observed variables and latent variables. On the other hand, structural model establish relationships between latent variables (independent constructs) and dependent constructs (Bagozzi 1998, p. 67), where the former influences the later and the strength of the relation is denoted by the value of γ . And the signs '+' or '-' denote the direction of the relationship. In addition, a sensible interpretation of γ , is possible only when it is standardized.

The SEM model is expressed as a linear equation system. Again, all parameters, including measurement models, are estimated simultaneously, by relating the empirical covariance matrix with the covariance matrix expressed by the model. The prediction of dependent variables from independent variables cannot be presumed in the absence error, therefore, a residual error ζ is added to each dependent factor. An example of SEM model is displayed in Figure 4-5.

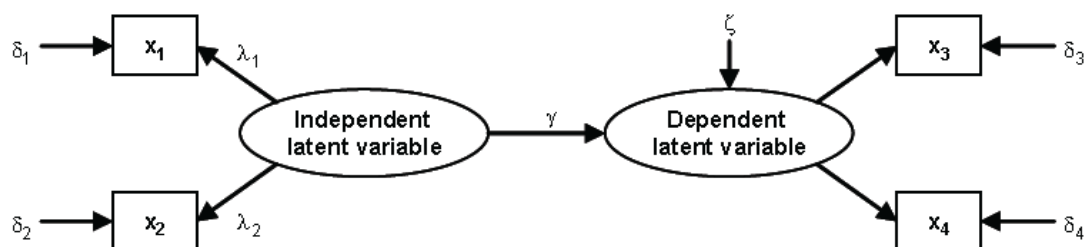


Figure 4-5. Generic structural model

The higher the quality of parameter estimation, the lower is the difference between the two covariance matrices. For minimizing this difference, a variety of estimation methods, like generalized least squares, weighted least squares, maximum likelihood (ML), or unweighted least squares could be used. These estimation methods differ in

their assumptions about the probability distribution, scale properties, and requirements regarding sample size (Golob 2003). Among these ML is the most common method which is also deployed in the present study. Following are the conditions to be met according to Byrne (2001, p. 70):

- Although a general minimum sample size cannot be established, sample size has to be fairly large.
- data should have multivariate normal distribution.
- observed variables should be in continuous scale.

An advantage of using ML estimation is its robustness, it can still operate in absence of one or more of these conditions. Bentler and Chou (1987, p. 89) points out that “ML estimators are almost always acceptable even when data are non-normally distributed” and Golob (2003, p. 9) also observed ML estimation’s robustness when dealing with ordinal scales, such as the Likert scales.

Furthermore, reliable estimations are only obtained when the SEM model is identified, i.e. there should be nonetheless as many equations in the model as there are parameters to be estimated (Bagozzi and Baumgartner 1994, p. 390). Nevertheless, a just identified SEM model lack degrees of freedom without which several fit criteria cannot be calculated, “just-identified model is not scientifically interesting because it has no degrees of freedom and therefore can never be rejected” (Byrne 2001, p. 35).

4.4. Model Assessment

The quality of results from statistical analyses depends on the goodness of the underlying measurements, in terms of objectivity, reliability, and validity. Objectivity in the present research, is ensured by employing the written survey mode, in which respondents cannot be influenced by the researcher and the questions are objective rather than open ended. A rigorous procedure has been developed for the assessment of reliability and validity which will be discussed in the following sections.

4.4.1. Reliability

Reliability is the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions. “Reliability means

low measurement error and indicates the extent to which measurements are repeatable and stable” John and Reve (1982, p. 520). Peter and Churchill Jr. (1986, p. 4) defined reliability as “the degree to which measures are free from random error and thus reliability coefficients estimate the amount of systematic variance in a measure”. Therefore, a respondent’s score (X_0) comprises of three components: the ‘real’ score (X_T), systematic error (E_S), and random error (E_R), and is represented by the following equation:

$$X_0 = X_T + E_S + E_R \quad (1)$$

Although systematic error does not lessen reliability, random error does, and according to Homburg and Giering (1996, p. 6), reliability can be expected when the individual indicators in a measurement model are highly correlated, in such a way that the measurement model is homogeneous (Peter 1979, p. 8).

4.4.2. Validity

Whereas reliability does not assess whether a measurement instrument does in fact measure what it is intended to, but if it does, the measurement instrument is said to be valid. According to Churchill (1979, p. 65), a measurement instrument is valid “when the differences in observed scores reflect the true differences on the characteristic one is attempting to measure and nothing else, that is $X_0 = X_T$ ”, in such a way that the measurement is error-free. Consequently, reliability is an essential condition for validity, as it requires $E_R = 0$, while validity requires $E_S = E_R = 0$ (Peter and Churchill Jr. 1986, pp. 4-5).

There are varieties of aspects on validity, but for the study at hand, only the following four (Wallenburg 2004, p. 142) are considered: content validity, convergent validity, discriminant validity, and nomological validity.

“Content validity exists when the scope of the construct is adequately reflected by the items as a group.” (Dunn, Seaker, and Waller 1994, p.157). In order to decide on the textual fit of items to the underlying construct, the assessment of content validity is necessary (Parasuraman, Zeithaml, and Berry 1988, p. 28). Content validity can be assured by carefully and precisely developing the measurement models and not just relying on statistical reasoning alone (Anderson and Gerbing 1988, p. 416).

According to Bagozzi and Phillips (1982, p. 468) convergent validity can be defined as “the degree to which two or more attempts to measure the same concept through maximally dissimilar methods are in agreement.” Convergent validity is said to exist when indicators belonging to one construct have a high correlation with each other (Peter 1981, p. 136), and is observed when conducting an exploratory factor analysis (Homburg and Giering 1996, p. 8).

Discriminant validity is the degree to which measurements of different concepts are distinct from one another (Bagozzi 1980, p. 130, Bagozzi 1981, p. 325). “The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly.” (Bagozzi, Yi, and Phillips 1991, p. 425)

Lastly, nomological validity is said to exist between constructs and present if the hypothesized relationships between constructs can be validated on the basis of the data. It is assessed through an “explicit investigation of constructs and measures in terms of formal hypotheses derived from theory.” (Peter and Churchill Jr. 1986, p. 5)

4.4.3. First Generation Criteria

First generation criteria are used for measuring and testing the validity and reliability of indicators or measurement instruments only. Three of these criteria - exploratory factor analysis, Cronbach’s alpha, and adjusted item-total correlation, are traditionally being used for the purpose (Gerbing and Anderson, 1988, p. 186). The first one estimates validity and the latter two evaluate reliability.

The underlying concept of exploratory factor analysis (EFA), is “that some underlying factors, which are smaller in number than the number of observed variables, are responsible for the covariation among the observed variables.” (Dunn, Seaker, and Waller 1994, p. 161). Thus, the aim of EFA is to exemplify the representation of indicators through as few factors as possible (see Mulaik 1987 for an examination of the history of EFA). EFA, as compared to CFA, is unrestricted, i.e. the structure of indicators is not fixed a priori through hypotheses. Factor loadings are calculated on the basis of correlations among indicators i.e., the association of items with corresponding factors. For extraction of factors, principal axis factoring is used and are rotated for the purpose of interpretation. Oblique technique of oblimin is used for rotation of factors on an axis not exactly at 95° of each other and allowing correlations among them. KMO and

Bartlett's test of sphericity is used as the criterion for determining the number of factors to be extracted which was developed by Kaiser (1974), who proposed considering only factors demonstrating high explanatory power through an Eigen-value above one.

Thus preliminarily, EFA is used to assess convergent and discriminant validity of the indicators. All indicators have to load explicitly on only one factor, with merely minor associations to other factors. According to Homburg and Giering (1998, pp. 128-129), convergent and discriminant validity requires the factor loadings to be more than 0.4 and an explained variance of over 50%.

According to Garver and Mentzer (1999, p. 43) "coefficient alpha is regarded as the most commonly used index for scale reliability." coefficient alpha also called as Cronbach's alpha is used to assess the reliability of internal consistency. Algebraic expression of coefficient alpha is stated as (Cronbach 1951, p. 304):

Where, I represents the number of indicators in a measurement instrument, σ_i^2

$$\alpha = \frac{I}{I-1} \left(\frac{\sum_{i=1}^I \sigma_i^2}{\sigma_t^2} \right), \quad (2)$$

represents the variance of the i^{th} indicator, and σ_t^2 represents the variance of the measurement instrument. Hence, "a low coefficient alpha indicates the sample of items executes poorly in explaining a construct" (Churchill 1979, p. 68). Generally an alpha of over 0.9 is considered necessary to assume sufficient internal consistency reliability for established scales, whereas 0.5 or 0.6 can be considered sufficient during early research stages (Nunnally 1967, p. 226). coefficient alpha increases with the increase in number of indicators included in the measurement (Garver and Mentzer 1999, p. 43), thus, higher alphas is prerequisite for factors including a large number of indicators, while lower alphas are acceptable for factors with few number of indicators. For the research at hand, the latent variables comprises of less than four indicators, a coefficient alpha of 0.8 is deemed to be sufficient. An important aspect to be noted here is that there should be at least three indicators in a measurement instrument to be able to calculate coefficient alpha.

The last criterion of the first generation is adjusted item-total correlation, which “is the statistical correlation between a given item and the scale to which it belongs. If a scale contains an item with a low item-to-scale correlation, then the scale is assumed to be unreliable and that the items are not internally consistent.” (Dunn, Seaker, and Waller 1994, p.160). In this regard, adjusted item-total correlation is related to coefficient alpha, and can be improved by eliminating items with low item-total correlation (Churchill 1979, p. 68). A minimum threshold value for adjusted item-total correlation need not to be fixed, besides item-total correlations will only be employed in model assessment when coefficient alpha is insufficient.

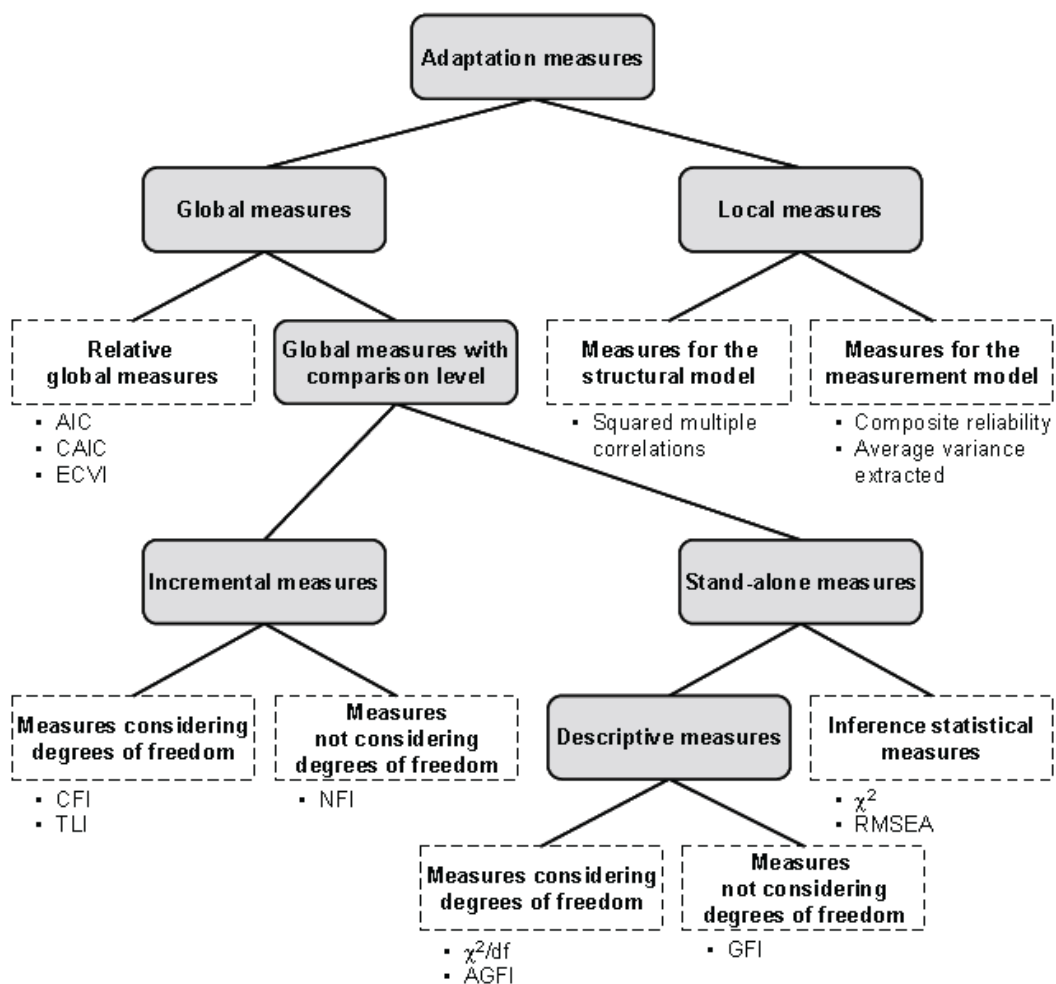


Figure 4-6. Overview of adaptation measures (Adapted from Homburg and Baumgartner 1995, p. 165).

4.4.4. Second Generation Criteria

In contrast to First generation criteria, which take an exploratory approach to scale assessment, confirmatory factor analysis (CFA), is designed to assess a priori hypothesized factorial structures and a multitude of criteria for judging model adaptation. Some of the important second generation criteria (Figure 4-6), as suggested by Homburg and Baumgartner (1995, p. 165), is discussed in the following sections.

4.4.4.1. Global Adaptation Measures

Global adaptation measures are set of measures that evaluate the adaptation of the model in totality, i.e. how well the sample covariance matrix S and the model's covariance matrix $\Sigma(\theta)$ match up (Chou and Bentler 1995, p. 44). Global adaptation measures are further subdivided into relative measures and measures with comparison level. Further, global adaptation measures with comparison level can be subdivided into stand-alone measures and incremental measures. Incremental measures evaluate adaptation in comparison to a baseline or null model, whereas stand-alone measures suffice without and can be further subdivided into descriptive measures and inference statistical measures.

Inference statistical measures uses χ^2 statistic and the RMSEA (Root Mean Squared Error of Approximation) which are also used in this study.

The χ^2 test is based on the null hypotheses that $S = \Sigma(\theta)$, where

$$\chi^2 = (N - 1) F[S, \Sigma(\theta)], \quad (3)$$

and a χ^2 distribution with,

$$df = \frac{1}{2} q(q + 1) - t, \quad (4)$$

Here, N indicates the sample size, F indicates the discrepancy function of S and $\Sigma(\theta)$ that is minimized, q indicates the number of indicators in the model, and t indicates the number of parameters in the model. Generally, a probability of 5% is predictable for a valid model. χ^2 measure has a major drawback which is seen in complicated models, χ^2 significantly increases, at a slight differences on parts of S and $\Sigma(\theta)$ (Wallenburg 2004,

p. 148). Besides, the χ^2 statistic is very sensitive to sample size and “as the sample size increases, the chances of rejecting the model (whether true or false), also increases.” (Bagozzi and Yi, 1988, p. 77)

In this respect, RMSEA is employed to overcome the drawbacks of χ^2 , while testing the goodness of model approximation of the data (Willauer 2005, p. 168). RMSEA is considered as satisfactory at 0.08 or below (Browne and Cudeck 1993, pp. 136ff) and is expressed as:

$$RMSEA = \sqrt{\frac{\chi^2 - df}{df(N-1)}} \quad (5)$$

In descriptive adaptation measures, there are measures such as GFI (Goodness of Fit Index), which does not consider degrees of freedom, AGFI (Adjusted GFI) which consider degrees of freedom and adjusted χ^2 (also called normed χ^2). As proposed by Jöreskog and Sörbom (1982), GFI assesses the discrepancy between S and $\Sigma(\theta)$ with regard “to the relative amount of variances and covariances in S that are accounted for by the implied model $\Sigma(\theta)$ ” (Hu and Bentler 1995, p. 86), and is best when $GFI = 1$ i.e., when $S = \Sigma(\theta)$. It can be stated as,

$$GFI = 1 - \frac{tr \begin{bmatrix} \hat{\Sigma}^{-1} & S - I \\ \hline & \end{bmatrix}^2}{tr \begin{bmatrix} \hat{\Sigma}^{-1} & S \\ \hline & \end{bmatrix}^2}, \quad (6)$$

where $\hat{\Sigma}^{-1}$ is the inverse of the implied covariance matrix, tr is the sum of diagonal elements of the matrix (trace), and I is the identity matrix.

GFI can be further improved/adjusted by introducing a penalty term t for model complexity, such that

$$AGFI = 1 - \left[\frac{t(t+1)}{2df} \right] \frac{tr \begin{bmatrix} \hat{\Sigma}^{-1} & S - I \\ \hline & \end{bmatrix}^2}{tr \begin{bmatrix} \hat{\Sigma}^{-1} & S \\ \hline & \end{bmatrix}^2}. \quad (7)$$

AGFI therefore prefers parsimonious models over complicated models and a value > 0.9 is required to designate a good model fit (Bagozzi and Yi 1988, p. 79). Similarly, χ^2 is also adjusted in order to overcome its limitations in measuring complicated models.

Dividing χ^2 by the degrees of freedom gives the adjusted χ^2 (χ^2/df), and for measuring it, parsimonious models are preferred over complicated models. A measure of adjusted of χ^2 below 2.5), symbolizes a good model adaptation (Bollen 1989).

Besides stand-alone measures, incremental measures can also be used to assess structural models. These measures, use a baseline model as a comparison level and assume all indicators to be independent (Bentler and Bonett 1980). CFI (Comparative Fit Index) and TLI (Tucker-Lewis Index) are two indices mainly used in incremental measures. The TLI “measures parsimony by assessing the degrees of freedom from the proposed model to the degrees of freedom from the null model” (Garver and Mentzer 1999, p. 41). Unlike TLI, which is very sensitive to sample size, CFI is quite robust with regard to sample size. According to Garver and Mentzer (1999, p. 41) the recommend values of TLI and CFI is at least 0.9 for determining a good model fit. Algebraically, it can be stated as below (Hu and Bentler 1995, pp. 83-85):

$$TLI = \frac{\frac{\chi_B^2}{df_B} - \frac{\chi_M^2}{df_M}}{\frac{\chi_B^2}{df_B} - 1}, \quad (8)$$

$$CFI = 1 - \frac{\max[\chi_M^2 - df_M, 0]}{\max[\chi_M^2 - df_M, (\chi_B^2 - df_B), 0]}, \quad (9)$$

where χ_B^2 is the χ^2 statistic for the baseline model, χ_M^2 is the χ^2 statistic for the hypothesized model, df_B is the number of degrees of freedom of the baseline model, and df_M is the number of degrees of freedom of the hypothesized model.

Finally, relative adaptation measures, a part of global adaptation measures, are used to compare different models. This relative adaptation measures cannot be employed for the evaluation of a single model measures, they are used for comparative assessment and interpretation of measures from different models. Two relative global adaptation measures are utilized for the present study are CAIC (Consistent Akaike's Information Criterion) and ECVI (Expected Cross-Validation Index). Both CAIC and ECVI relate the χ^2 statistic to the number of parameters and sample size and is stated as:

$$CAIC = \chi_M^2 + t(1 + \ln N), \quad (10)$$

$$ECVI = \left(\frac{\chi^2}{N} \right) + \left(\frac{2t}{N} \right). \quad (11)$$

4.4.4.2. Local adaptation measures

The global adaptation measures discussed above addresses the overall fit of a model but they “do not explicitly provide information as to the nature of individual parameters and other aspects of the internal structure of a model.” (Bagozzi and Yi 1988, p. 80). In this regard, a variety of local adaptation measures have been operationalized in the current study. The average variance extracted $AVE(\xi_j)$, composite reliability $\rho(\xi_j)$, individual item reliability $\rho(x_i)$, t-value of factor loadings, and Fornell/Larcker criterion) is used for the assessment of measurement models, while squared multiple correlations $R^2(\xi_j)$, are calculated for measuring the fit of structural models.

$AVE(\xi_j)$ is the average variance extracted from a measurement model ξ_j and measures “the amount of variance that is captured by the construct in relation to the amount of variance due to measurement error” (Fornell and Larcker 1981, p. 45). The minimum value for AVE recommended by Bagozzi and Yi (1988, p. 82) is 0.5, and a value lower than that would mean for a larger amount of measurement variance than the factor itself. It can be expressed as,

$$AVE(\xi_j) = \frac{\sum_{i=1}^q \lambda_{ij}^2 \phi_{jj}}{\sum_{i=1}^q \lambda_{ij}^2 \phi_{jj} + \sum_{i=1}^q \theta_{ii}}, \quad (12)$$

Where ξ_j is the latent variable j, λ_{ij} is the factor loading of item i belonging to the latent variable j, ϕ_{jj} is the variance of latent variable j, and θ_{ii} is the measurement error of item i.

Composite and individual item reliabilities are two important measures used for assessing the internal structure of a model (Bagozzi and Yi 1988, p.80). Composite reliability $\rho(\xi_j)$, examines the internal consistency of a latent variable j. On the other hand, individual item reliability $\rho(x_i)$ estimates the extent of variance of an indicator i accounted by the latent variable j. Bagozzi and Yi (1988, p. 82) have recommended a minimum value of 0.6 for the existence of composite reliability. And a minimum of 0.4 is suggested by Homburg and Baumgartner (1995, p. 170) to indicate individual item reliability.

Thus,

$$\rho(\xi_j) = \frac{\left(\sum_{i=1}^q \lambda_{ij} \right)^2 \phi_{jj}}{\left(\sum_{i=1}^q \lambda_{ij} \right)^2 \phi_{jj} + \sum_{i=1}^q \theta_{ii}} \quad \text{and} \quad (13)$$

$$\rho(x_i) = \frac{\lambda_{ij}^2 \phi_{jj}}{\lambda_{ij}^2 \phi_{jj} + \theta_{ii}}. \quad (14)$$

According to Garver and Mentzer (1999, p. 43) “each parameter estimate should be statistically significant”, and these are assessed through t-values. T-values are equal to “parameter estimates divided by their standard errors” (Bagozzi, Yi, and Phillips 1991, p. 431). T-values of at least 1.96 indicate significant parameter estimates on 5% level.

Discriminant validity is determined using the Fornell/Larcker criterion. According to Fornell and Larcker (1981), a construct is said to be discriminant, if the construct’s average variance extracted is larger than the squared correlations with all other constructs.

Lastly, squared multiple correlations $R^2(\xi_j)$, is used to assess the adaptation of structural models, as they indicate the proportion of the variance of latent variable j that is explained by the predictors of latent variable j (Byrne 2001, p. 163). A threshold value

does not exist for $R^2(\xi_j)$, as the required explanatory power of a model depends on the research design, and it can be stated as

$$R^2(\xi_j) = 1 - \frac{\psi_{jj}}{\phi_{jj}}, \quad (15)$$

Where ψ_{jj} stands for the variance of the latent variable j 's residual error

4.4.5. Overview of Goodness of Fit Criteria

An overview of adaptation measures including recommended threshold values is provided in Figure 4-7 summarizing the information provided in the preceding sections. A very important point to note at this stage is that it is not mandatory to meet all the thresholds of the adaptation measures in order to achieve satisfactory model fit. Interpretation of results always has to take into consideration not only the statistical side but also the theoretical fundament on which a model is based upon.

	Adaptation measure	Threshold	
Fit of measurement models	Coefficient α	≥ 0.8	First generation criteria
	Explained factor variance	≥ 0.5	
	Factor loading	≥ 0.4	
	Adjusted item-total correlation	highest	
	t-value of factor loading	≥ 1.96	Second generation criteria
	Individual item reliability	≥ 0.4	
	Composite reliability	≥ 0.6	
	Average variance extracted	≥ 0.5	
Fit of measurement models and entire SEM model	CAIC	lowest	Second generation criteria
	ECVI	lowest	
	Adjusted χ^2	≤ 2.5	
	TLI	≥ 0.9	
	GFI	≥ 0.9	
	AGFI	≥ 0.9	
	CFI	≥ 0.9	
	RMSEA	≤ 0.08	
Fit of structural models	Squared multiple correlations		

Figure 4-7. Overview of fit criteria¹³

¹³ Adapted from Wallenburg 2004, p. 153.

In this respect, several authors, including Fornell and Larcker (1981), Bagozzi and Yi (1988), and Homburg and Baumgartner (1995), pointed out that threshold values should only be looked upon as recommendations and that overall judgment of a model fit has to be based on the examination of all available information, including both quantitative and qualitative perspectives.

4.5. Model Design and Modification

4.5.1. Measurement Models

A measurement model has to be both reliable and valid in apprehending the underlying construct. In order to attain this, the set of indicators gathered in questionnaire survey is subjected to numerous statistical tests to check the compliance with the fit criteria presented in the preceding sections. In case of the present research, the procedure suggested by Homburg and Giering (1996) and refined by Wallenburg and Weber (2005, pp. 175-176) is adopted, whereby the set of indicators is examined first by exposing to first generation criteria, and second by exposing to second generation criteria.

To begin with, coefficient alpha is calculated to ensure the existence of internal consistency reliability. If coefficient alpha is found below the recommended threshold of 0.8, the indicator showing the lowest adjusted item-total correlation is eliminated. This step is repeated until the threshold value is obtained. Next, an EFA is calculated for validating the single-factor structure of the measurement model. Convergent validity is demonstrated when only one factor is extracted. The factor extracted should explain at least 50% of the indicators' variance. If more than one factor is extracted, or the explained factor variance is below 50%, indicators having factor loadings of below 0.4 are identified and deleted.

The second step is to conduct CFA and here, global adaptation measures (CFI, TLI, RMSEA, GFI, AGFI, and adjusted χ^2)¹⁰, as well as individual item and composite reliability are evaluated. If several fit criteria are not met, indicators are removed by looking at their individual item reliabilities, those indicators having reliabilities below 0.4 are deleted. Likewise, a reliable and convergent-valid measurement model is derived at the end.

Wallenburg (2004, p. 155) maintains that the main advantage of this procedure is its high degree of rigor. However, he also points out that textual considerations are not included. According to Mulaik and James (1995, pp. 135-136) merely modifying measurement models for assuring statistical validity and reliability does not approve issues of content and nomological validity. The successive approach proposed by Homburg and Giering (1996) has the threat of increasing convergent validity alone by the way of eliminating indicators for reasons of low adjusted item-total correlations, hence neglecting and escalating the issues of reliability. Consequently, the present study will explicitly address textual issues when considering model modification. As mentioned previously, reliability is a necessary condition for validity, thus, both the steps, i.e. first and second generation criteria, will be carried out concurrently, such that reliability and validity issues are always considered mutually.

4.5.2. Structural Models

SEM is aimed at the examination of relationships between latent variables. According to Wallenburg (2004, p. 155), in order to do this, the SEM model has to meet certain fit criteria, i.e. the adaptation of the hypothesized model to the observed data has to be satisfactory. There can be various reasons for insufficient model adaptation, these can be attributed to inappropriate modeling of relationships, bad quality of empirical data, or exceedingly complex model structure.

Insufficient model fit may also occur due to an overly complex model. Model complexity increases unduly as more number of constructs is added to the model, and since each construct induces multiple relationships to other constructs. Model fit can be improved by eliminating constructs (Kaplan 1995, p. 100). This step should only be considered only when a specific construct does not contribute any explanatory value to the dependent variable(s) that the model intends to explain. Hence, constructs should only be eliminated, if the following two conditions are fulfilled:

- (1) There is a very small decrease in squared multiple correlations of the downstream dependent variables and
- (2) Eliminating the construct yields considerable improvement of model fit.

If the proposed measures do not result in satisfactory model fit, the model in its totality has to be rejected and hypotheses not evaluated. According to Bagozzi and Yi (1988, p. 93) “one must rely upon a judicious interpretation of statistical and nonstatistical rules-of-thumb along with conceptual and philosophical criteria.” this study thus, will discuss any necessary model modification in detail and examine both statistical and textual considerations.

Chapter 5.

DATA ANALYSIS AND RESULTS

5.1. Operationalization and Measurement

The conceptualizations of customer loyalty and its determinants and the methodology for measuring these concepts as constructs were described in chapter 4. The present chapter 5 deals with the operationalization of these constructs and their measurement in the empirical studies. Since the present study is founded on the empirical work of Wallenburg (2004), the following sections will introduce the measurement instruments used by Wallenburg.

5.1.1. Customer Loyalty dimensions

There is a lack of a generally accepted customer loyalty conceptualization when it comes to the development of the measurement scale. Most empirical studies conducted by researchers had captured customer loyalty as one factorial construct, but in the present study customer loyalty is further divided into three elements - repurchases, additional purchases, and referrals. As proposed by Wallenburg (2004) this study is based on a three-dimensional conceptualization of customer loyalty.

5.1.1.1. Repurchases

The measurement of repurchases is taken from the scale developed by Wallenburg (2004, pp. 157-158) who had modified operationalization of Giering (2000) to account for the specific logistics outsourcing from the original industrial goods context. The indicators are shown in Table 5-1. The full questionnaires included in appendices A.

Table 5-1. Indicators measuring “Repurchase”

Indicators	Questions for the measurement of “repurchase”
Indicator 1	We will continue using this LSP in the future.
Indicator 2	Right now, we intend to extend existing contracts with this LSP.
Indicator 3	If we knew then what we know now, we would again select this LSP.
Indicator 4	When the contract with this LSP ends, we will most likely negotiate a new contract with it, without starting a new bidding process.

Indicator 1 is a general question measuring customer's intention to continue its relationship with an LSP. Indicator 2 unambiguously captures contract duration and indicator 4 is an extension of indicator 2 by including the contract extensions. If a customer is ready to extend an existing contract without going for a new bidding process, this is a strong sign of loyalty. Indicator 3, assures for a customer's reflected considerations on the issue of repurchases. Assessment of the measurement model is shown in Table 5-2

Table 5-2. Adaptation of "Repurchase" (4 indicators)

Information on the factor "Repurchase"(4 indicators)			
Coefficient alpha	0.897	AGFI	0.94
Explained factor variance	68.95 %	CFI	0.99
χ^2/df	3.77	RMSEA	0.096
TLI	0.98	Composite reliability	0.90
GFI	0.99	Average variance extracted	0.69
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.73	0.58	-
Indicator 2	0.75	0.65	14.38
Indicator 3	0.82	0.80	16.04
Indicator 4	0.80	0.73	15.44

Table 5-2 shows that adjusted χ^2 and RMSEA do not meet the proposed standards. The reason for that is a high correlation between the error terms of indicators 1 and 2. As a result, indicator 1 demonstrates inferior adaptation, as compared to item-total correlation and individual item reliability. From a textual perspective, both indicators are so interrelated that the elimination of either one still guarantees sufficient content validity. The resulting three-indicator measurements, with indicator 1 eliminated, shows excellent fit and does not require further modification, as shown in Table 5-3.

Very limited work is found to be done on additional purchase intentions which are even lesser than repurchase intentions and thus, very few scales are available. For the present research, the scale of this indicator is based on the scale developed by Wallenburg (2004, pp. 159-160) who had modified the version of Giering (2000), in order to fit the logistics context.

Table 5-3. Adaptation of “Repurchase” (3 indicators)

Information on the factor "Repurchase"(3 indicators)			
Coefficient alpha	0.88	AGFI	*
Explained factor variance	72.46%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.89
GFI	*	Average variance extracted	0.73
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 2	0.74	0.64	-
Indicator 3	0.82	0.85	19.89
Indicator 4	0.77	0.69	18.74
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.1.2. Additional Purchases

Table 5-4. Indicators measuring “Additional Purchase”

Indicators	Questions for the measurement of “Additional Purchase”
Indicator 1	In the future, this LSP will have a higher share of our logistics volume.
Indicator 2	In the future, we will use this LSP more than we do now.
Indicator 3	When we call out bids for services other than the ones we outsource today, we will consider this LSP preferentially.
Indicator 4	When we outsource additional services, we will first offer them to this LSP, before starting a bidding process.

Indicators 1 and 2 probe the incremental usage of the focal LSP that is expected in future. Indicators 3 and 4 enquire the probability of reselection of the key LSP for future projects. Table 5-5 shows the fit of the measurement model.

Table 5-5. Adaptation of “Additional Purchase” (4 indicators)

Information on the factor "Additional Purchase" (4 indicators)			
Coefficient alpha	.89	AGFI	0.95
Explained factor variance	66.37%	CFI	0.99
χ^2/df	3.25	RMSEA	0.086
TLI	0.98	Composite reliability	0.89
GFI	0.99	Average variance extracted	0.66
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.76	0.67	-
Indicator 2	0.74	0.64	15.02
Indicator 3	0.77	0.69	15.79
Indicator 4	0.75	0.66	15.45

χ^2/df and RMSEA is not showing satisfactory fit of the measurement with 4 indicators. high correlation between the error terms of indicators 2 and 3 is present. Therefore, indicator 2 is deleted. The resulting three-indicator measurements, with indicator 2 eliminated, shows excellent fit and does not require further modification.

Table 5-6. Adaptation of “Additional Purchase” (3 indicators)

Information on the factor “Additional Purchase” (3 indicators)			
Coefficient alpha	0.86	AGFI	*
Explained factor variance	67.40%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.86
GFI	*	Average variance extracted	0.68
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.78	0.63	-
Indicator 3	0.83	0.69	14.23
Indicator 4	0.82	0.71	14.33
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.1.3. Referrals

Referrals made by customers are an act of loyalty. This construct is developed by considering the actual referral behavior, instead of intentions. The following Table 5-7 shows four indicators measuring the construct.

Table 5-7. Indicators measuring “Referrals”

Indicators	Questions for the measurement of “Referrals”
Indicator 1	Within our organization, we have recommended preferential consideration of this LSP for further projects.
Indicator 2	I often mention this LSP to my co-workers in a positive way.
Indicator 3	I often recommend this LSP to persons outside my company.
Indicator 4	We often recommend this LSP.

Indicator 4, captures general referral behavior of the respondent’s organization. Indicator 1 refers to the matter of recommendations. On the other hand, indicators 2 and 3 take a more personal approach, interrogating into individual recommendation behavior of the respondents. Indicator 2 reflects referrals to other individuals within the respondent’s organization and indicator 3 to individuals outside the organization.

Table 5-8. Adaptation of “Referrals” (4 indicators)

Information on the factor "Referrals" (4 indicators)			
Coefficient alpha	0.90	AGFI	0.94
Explained factor variance	69.66%	CFI	0.99
χ^2/df	4.144	RMSEA	0.102
TLI	0.98	Composite reliability	0.90
GFI	0.99	Average variance extracted	0.70
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.73	0.58	-
Indicator 2	0.77	0.67	14.66
Indicator 3	0.82	0.80	16.02
Indicator 4	0.80	0.74	15.45

Once again adjusted χ^2 and RMSEA are found not meeting the proposed standards. high correlation between the error terms of indicators 1 and 2 is detected. As a result, indicator 1 was deleted, and the resulting three-indicator measurements, demonstrated a good fit (Table 5-9).

Table 5-9. Adaptation of “Referrals” (3 indicators)

Information on the factor “Referrals” (3 indicators)			
Coefficient alpha	.89	AGFI	*
Explained factor variance	73.46%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.89
GFI	*	Average variance extracted	0.73
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 2	0.75	0.64	-
Indicator 3	0.83	0.84	17.07
Indicator 4	0.78	0.72	16.37
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.1.4. Convergent and Discriminant Validity of Customer Loyalty

Examination conducted above on each of the three dimensions of customer loyalty individually was found to be discriminant. Yet, convergent and discriminant validity will again be assessed by examining the three dimensions of customer loyalty simultaneously, as confirmation of this approach has to be achieved. Consequently, the two methods, described in chapter 4.4.1, will be applied: EFA for testing for convergent validity, and the Fornell/Larcker criterion for assessing discriminant validity.

Table 5-10. EFA on customer Loyalty dimensions¹⁴

Indicator	Factors		
	1	2	3
Repurchase 2	.773		
Repurchase 3	.844		
Repurchase 4	.803		
Additional Purchase 1	.719		
Additional Purchase 3	.738		
Additional Purchase 4	.717		
Referrals 2	.770		
Referrals 3	.857		
Referrals 4	.811		

The result of EFA (Table 5-10) indicates that the three factorial structure of customer loyalty is not supported, as all indicators of are highly correlated with each other, and only one factor is extracted instead of three i.e. they are not convergent to their individual constructs. Moreover, testing for discriminant validity using the Fornell/Larcker criterion (Table 5-11) does not supports existence of discriminance as AVE of referral construct is less than the squared correlations with repurchases.

Table 5-11. Fornell/Larcker criterion for customer loyalty

	AVE	Repurchase	Additional Purchase	Referrals
Repurchase	0.73			
Additional Purchase	0.67	0.60		
Referrals	0.74	0.78	0.60	

From the above analysis, the evidence on the dimensionality of customer loyalty is unclear, and hence the hypothesis of a three dimensional construct cannot be supported. Thus, a new measurement model has to be developed. The three dimensions were integrated into a single construct of customer loyalty, for this reason all the original 12 indicators of customer loyalty are included in an integrated customer loyalty construct as presented in Table 5-12.

¹⁴ 1Only one factor is extracted, wherefore factor loadings for the other two factors cannot be reported.

Table 5-12. Indicators measuring “Loyalty”

Indicators	Questions for the measurement of “Loyalty”
Indicator 1	We will continue using this LSP in the future.
Indicator 2	Right now, we intend to extend existing contracts with this LSP.
Indicator 3	If we knew then what we know now, we would again select this LSP.
Indicator 4	When the contract with this LSP ends, we will most likely negotiate a new contract with it, without starting a new bidding process.
Indicator 5	In the future, the LSP will have a higher share of our logistics volume.
Indicator 6	In the future, we will use this LSP more than we do now.
Indicator 7	When we bid out other services than the ones we outsource today, we will consider this LSP preferentially.
Indicator 8	When we outsource additional services, we will first offer them to this LSP, before starting a bidding process.
Indicator 9	Within our organization, we have recommended preferential consideration of this LSP for further projects.
Indicator 10	I often mention this LSP to my co-workers in a positive way.
Indicator 11	I often recommend this LSP to persons outside my company.
Indicator 12	We often recommend this LSP.

Table 5-13. Adaptation of “Customer Loyalty” (12 indicators)

Information on the factor "Customer Loyalty" (12 indicators)			
Coefficient alpha	0.95	AGFI	0.70
Explained factor variance	60.84%	CFI	0.86
χ^2/df	8.71	RMSEA	0.160
TLI	0.83	Composite reliability	0.95
GFI	0.79	Average variance extracted	0.61
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.73	0.56	-
Indicator 2	0.75	0.60	13.95
Indicator 3	0.82	0.74	15.66
Indicator 4	0.78	0.65	14.61
Indicator 5	0.70	0.51	12.70
Indicator 6	0.81	0.70	15.16
Indicator 7	0.72	0.52	12.87
Indicator 8	0.69	0.49	12.37
Referrals 9	0.72	0.53	12.98
Indicator 10	0.75	0.60	13.93
Indicator 11	0.83	0.74	15.66
Indicator 12	0.79	0.66	14.64

Table 5-13 shows that the adaptations of 12 indicator customer loyalty construct do not possess good fit, as most fit criteria are far from meeting the recommended threshold values. For example the values of GFI, AGFI, TLI and CFI are much below the threshold value whereas, RMSEA and χ^2/df values are much more than the maximum threshold

values. The individual item reliability and item-total correlation do not propose further elimination of indicators. But, high correlations among the error terms among indicators were observed indicating the necessity of identifying and eliminating indicators causing disturbance in the model. Some indicators are eliminated subsequently, to better fit the model. Out of the 12 indicators, indicator 9 is showing highest correlation with indicators 1, 3, 10, and 12 therefore, eliminated. Several measures were still not satisfying the threshold values, hence indicators 8, 11, 5, 10, 6 were eliminated consecutively.

Elimination of 6 indicators as described ahead, resulted into an excellent model fit that does not require further modification. The remaining 6 indicators comprises of 4 indicators of repurchase, 1 indicator from additional repurchases and 1 indicator from referrals. Hence, the adapted measurement model is still representing the essence of the three perspectives of loyalty as an integrated construct.

Table 5-14. Adaptation of “Customer Loyalty” (6 indicators)

Information on the factor “Customer Loyalty” (6 indicators)			
Coefficient alpha	0.91	AGFI	0.97
Explained factor variance	63.04%	CFI	1.00
χ^2/df	1.35	RMSEA	0.034
TLI	1.00	Composite reliability	0.91
GFI	0.99	Average variance extracted	0.63
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.73	0.59	-
Indicator 2	0.75	0.64	14.60
Indicator 3	0.82	0.77	16.41
Indicator 4	0.82	0.75	16.14
Indicator 7	0.64	0.44	11.84
Indicator 12	0.73	0.58	13.87

5.1.2. Customer Loyalty determinants

5.1.2.1. Satisfaction

Chapter 2.4.2.2 introduced the disconfirmation paradigm is the conceptual backbone of the assessment of satisfaction. Operationalization of satisfaction can be conducted in two ways depending on whether measurements should reflect the individual components of satisfaction according to the disconfirmation paradigm, or to an overall perception of satisfaction (Dabholkar 1995, p. 32). For the present study, the former approach, i.e. measuring and comparing expectations and outcomes separately for assessing

satisfaction is considered. The measurement instruments of satisfaction for this research, will reflect upon an overall evaluation of the services provided by an LSP, by capturing the general perceptions of respondents on price satisfaction, service quality, and relational satisfaction.

5.1.2.1.1. Service Quality

Service quality has been conceptualized by many researchers as the satisfaction towards the services provided by an LSP. Service quality, generally has been measured using the SERVQUAL instrument, which was developed by Parasuraman, Zeithaml, and Berry (1985, 1988). He proposed the instrument that measures the five-dimensional structure of SERVQUAL, which are tangibles, responsiveness, empathy, reliability, and assurance. For each of these dimensions, expected service quality and actual service quality are measured and the resulting difference between expectations and actual outcomes marks confirmation or disconfirmation. However, several researchers after testing the SERVQUAL instrument in different settings observed that its use is not suitable in industrial service contexts (Bienstock, Mentzer, and Bird 1997, Mentzer, Flint, and Kent 1999). And moreover, Brown, Churchill Jr., and Peter (1993, p. 138) were of the opinion that “a scale to measure service quality should be universally applicable across industries.” Therefore, instead of SERVQUAL, the instrument developed by Dabholkar, Shepherd, and Thorpe (2000, p. 151) and modified by Wallenburg (2004, pp. 167-168) is employed in the present research.

Table 5-15. Indicators measuring “Service Quality”

Indicators	Questions for the measurement of “Service Quality”
Indicator 1	Overall, this LSP offers excellent services.
Indicator 2	This LSP offers great performance.
Indicator 3	This LSP offers very high quality services.

Indicators 1 and 3 refers to excellence in service and quality while indicator 2 refers to performance instead of quality, which assures a better fit to the logistics context since higher performance symbolizes quality. Table 5-16 exhibit excellent fit of the measurement model.

Table 5-16. Adaptation of “Service Quality” (3 indicators)

Information on the factor "Service Quality "(3 indicators)			
Coefficient alpha	0.88	AGFI	*
Explained factor variance	70.78%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.88
GFI	*	Average variance extracted	0.71
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.77	0.72	-
Indicator 2	0.75	0.67	15.82
Indicator 3	0.78	0.73	16.41
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.2.1.2. Price Satisfaction

Price satisfaction is assessed as a result of evaluating all experiences made with an LSP regarding its prices. Individual transactions are not taken into consideration, because logistics outsourcing relationships typically have a long-term character.

Table 5-17. Indicators measuring “Price Satisfaction”

Indicators	Questions for the measurement of “Price Satisfaction”
Indicator 1	Compared to other LSPs, our LSP's prices are very good.
Indicator 2	The LSP offers a very good price-performance ratio.
Indicator 3	Compared to carrying out those tasks ourselves, our LSP's prices are very good.

The measurement instrument, comprised of three indicators. These three indicators are displayed in Table 5-17.

Table 5-18. Adaptation of “Price Satisfaction” (3 indicators)

Information on the factor “Price Satisfaction” (3 indicators)			
Coefficient alpha	0.84	AGFI	*
Explained factor variance	63.06%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.84
GFI	*	Average variance extracted	0.63
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.72	0.63	
Indicator 2	0.70	0.65	12.81
Indicator 3	0.68	0.61	12.67
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

These indicators differ in their comparison styles – indicator 1 assesses price satisfaction in relation to prices offered by other LSPs, indicator 2 assesses the respondent's perception of the price-performance ratio and the third indicator 3 compares the LSP's prices to the costs of carrying out the tasks in-house. The measurement model shows excellent and further adaptation is not required (Table 5-18).

5.1.2.1.3. Relational Satisfaction

Relational satisfaction can be accounted for all aspects of customer's satisfaction which arises from interaction and relationship with its most important LSP. The measure of this scale should capture respondent's evaluation of all experiences made in the relationship with the lead LSP. A measurement instrument consisting of three indicators is developed based on Wallenburg (2004, pp. 165-166). Indicator 1 refers to the interaction with the LSP specifically, indicator 2 is concerned with the way conflicts are handled as doing this leads to more secured relationships. Indicator 3 on the other hand refers to the relationship in general. Table 5-19 displays the measurement model. Table 5-20 exhibits the measurement model with excellent fit.

Table 5-19. Indicators measuring "Relational Satisfaction".

Indicators	Questions for the measurement of "Relational Satisfaction"
Indicator 1	We are very satisfied with the way we interact with our LSP.
Indicator 2	Differences when cooperating with this LSP are always settled smoothly.
Indicator 3	The relationship with this LSP is very good.

Table 5-20. Adaptation of "Relational Satisfaction" (3 indicators)

Information on the factor "Relational satisfaction "(3 indicators)			
Coefficient alpha	0.90	AGFI	*
Explained factor variance	75.06%	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.90
GFI	*	Average variance extracted	0.75
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.82	0.79	-
Indicator 2	0.79	0.73	18.61
Indicator 3	0.80	0.73	18.70
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.2.2. Proactive Improvement

Proactive improvement with reference to the present study, is supposed to measure the initiativeness and drive with which an LSP continually improves its customer's logistics processes. Proactive improvement is a scale developed by Engelbrecht (2004). For the purpose of the study at hand, the measurement scale for this construct is adopted from Wallenburg (2004, pp. 182-183) who modified the scale used by Engelbrecht (2004). The indicators are displayed in Table 5-21.

Indicators 1 and 5 are more general capturing measures for customers' perceptions on continuous improvement efforts and innovativeness of the LSP. Indicators 2, 3 and 4 indicators are more specific. Indicator 2 refers to improvement efforts outside the LSP's direct responsibility, whereas Indicators 3 and 4 measure self-motivational aspects, to improve its customer's logistics processes.

Table 5-21. Indicators measuring "Proactive Improvement"

Indicators	Questions for the measurement of "Proactive Improvement"
Indicator 1	The LSP puts strong effort into continuously optimizing logistics processes.
Indicator 2	The LSP continuously makes suggestions for improvements of activities, even those outside its direct responsibility.
Indicator 3	When the situation changes, the LSP by itself modifies the logistics activities and processes, if this is useful and necessary.
Indicator 4	The LSP shows initiative by approaching us with suggestions for improvement.
Indicator 5	The LSP shows a high level of innovation.

Table 5-22. Adaptation of "Proactive Improvement" (5 indicators)

Information on the factor "Proactive Improvement" (5 indicators)			
Coefficient alpha	.92	AGFI	0.88
Explained factor variance	69.94 %	CFI	0.97
χ^2/df	7.013	RMSEA	0.141
TLI	0.95	Composite reliability	0.92
GFI	0.96	Average variance extracted	0.70
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.70	0.51	-
Indicator 2	0.83	0.77	14.84
Indicator 3	0.79	0.65	13.61
Indicator 4	0.86	0.84	15.46
Indicator 5	0.79	0.72	14.33
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

The measurement models in Table 5-22 are does not have a good fit. Adjusted χ^2 is much above the recommended threshold value, RMSEA as well is above the threshold. Exceeding only one or two criteria does not necessarily induce modification of the model, in this case high correlations of the error terms of indicators 1 and 3 cause some unbalance in the model. As indicator 1 is framed as a general indicator, it can be eliminated without sacrificing content validity for the whole instrument. Table 5-23 show that the elimination of indicator 1 improved model fit considerably.

Table 5-23. Adaptation of “Proactive Improvement” (4 indicators)

Information on the factor “Proactive Improvement” (4 indicators)			
Coefficient alpha	0.92	AGFI	0.97
Explained factor variance	74.30 %	CFI	1.00
χ^2/df	1.95	RMSEA	0.056
TLI	0.99	Composite reliability	0.92
GFI	0.99	Average variance extracted	0.74
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 2	0.82	0.76	-
Indicator 3	0.76	0.62	17.18
Indicator 4	0.87	0.86	22.61
Indicator 5	0.82	0.73	19.66
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.2.3. Service Recovery

Measurements of recovery satisfaction are assessed by the satisfaction induced after the perceived service recovery experiences and were modified from Maxham and Netemeyer (2002), Oliver & Swan (1989), and Blodgett, Granbois, & Walters (1993).

Table 5-24. Indicators measuring “Service Recovery”

Indicators	Questions for the measurement of “Service Recovery”
Indicator 1	I am extremely satisfied with this LSP when I consider the speed with which the problem was fixed
Indicator 2	After experiencing the service recovery, I am more likely to continue with this LSP
Indicator 3	Based on the recovery experience, I will tend to be more loyal to this LSP in the future

In case of the present study, indicator 1 and 2 are adapted from the scale developed by Blodgett et al (1993 and 1997) but were modified to fit in the research in hand.

Indicator 1 refers to the speed of recovery with which the problem is fixed whereas indicator 2 and 3 refers to the behavior of customer post recovery, the former measures the intention of remaining with the lead LSP aftermath a specific recovery act. Indicator 3 is taken from the work of Cranage (2004) and examines the impact of overall recovery experience on loyalty of the customer.

Table 5-25 shows a satisfactory model fit and no further modification and adaptation is required for the 3 given indicators.

Table 5-25. Adaptation of “Service Recovery” (3 indicators)

Information on the factor “Service Recovery” (3 indicators)			
Coefficient alpha	0.89	AGFI	*
Explained factor variance	73.60 %	CFI	*
χ^2/df	*	RMSEA	*
TLI	*	Composite reliability	0.89
GFI	*	Average variance extracted	0.74
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.76	0.66	-
Indicator 2	0.82	0.82	17.30
Indicator 3	0.79	0.73	16.73
* Value cannot be calculated, because factor with 3 indicators does not possess degrees of freedom.			

5.1.2.4. Trust

According to Ganesan (1994), benevolence and credibility are both antecedents and consequences of trust. So, both aspects have been included in the operationalization of the construct. As described in chapter 3.2.3, trustees can be both organizations and individuals. Hence, trust is operationalized into two constructs, on the basis of Wallenburg (2004), which are in turn based on scales developed by Doney and Cannon (1997, pp. 48-49) and Werner (1997).

For operationalizing trust, scale was adopted from the scales for trust in supplier firms developed by Doney and Cannon (1997) which was also used later by Wallenburg’s measurement instrument. Table 5-26 display indicators 1, 2, and 4 that was developed by Doney and Cannon (1997), indicator 3 was derived from Werner (1997). On the other hand, indicator 5 was taken from Wallenburg (2004) to compensate the other indicators.

Indicators 1, 2, and 3 measure general credibility, indicator 5 captures an additional

aspect of credibility that refers to the trust on tasks carried out beyond the direct control of the customer. Indicator 4, on the other hand, captures benevolence, as it reflects the customer's trust that the supplier will actually contribute to the success of the company. Indicators 1 and 4 also takes care of both organizational and the personal trust factors.

Table 5-26. Indicators measuring “Trust”

Indicators	Questions for the measurement of “Trust”
Indicator 1	This LSP and its personnel keeps promises it makes to our firm.
Indicator 2	Regarding problems, this LSP is always honest with us.
Indicator 3	This LSP and its personnel are trustworthy.
Indicator 4	This LSP is genuinely concerned that our business succeeds.
Indicator 5	The LSP correctly carries out tasks that we cannot directly control.

Table 5-27 shows that the measurement model in possesses satisfactory adaptation in all dimensions. displays excellent model fit and does not require further modification.

Table 5-27. Adaptation of “Trust” (5 indicators)

Information on the factor “Organizational Trust” (5 indicators)			
Coefficient alpha	0.84	AGFI	0.95
Explained factor variance	51.028 %	CFI	0.99
χ^2/df	2.340	RMSEA	0.067
TLI	0.98	Composite reliability	0.84
GFI	0.99	Average variance extracted	0.51
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.619	0.47	-
Indicator 2	0.676	0.57	11.01
Indicator 3	0.648	0.53	10.67
Indicator 4	0.644	0.51	10.56
Indicator 5	0.617	0.47	10.21

5.1.2.5. Commitment

The scale for commitment construct is operationalized again from the work of Wallenburg (2004, pp. 189-190), who instead had adapted the scale from German researcher Zimmer (2000). According to Zimmer, the affective commitment construct in business-to-business relationships, captures two items - a positive emotional attitude towards a supplier, as well as congruence between suppliers' and customers' goals. But for the current study, the measurement scale will embrace only one item which refers to the customer's emotional attitude (Wallerburg 2004, p. 189).

Indicators 1 and 2 in Table 5-28 refers to two emotional attitude items. Indicator 3 refers to an even stronger indication of commitment that measures the customers' emotional response yielded when the service provider is criticized. Indicator 4 grasps the customer's motivation to maintain relationship with a supplier even if this meets resistance.

Table 5-28. Indicators measuring "Commitment"

Indicators	Questions for the measurement of "Commitment"
Indicator 1	We come to our LSP's defense when it is criticized by persons from inside or outside our organization.
Indicator 2	We would be very sorry personally if we had to terminate the relationship with this LSP.
Indicator 3	We feel personally offended, when this LSP is criticized by persons from inside or outside of our company.
Indicator 4	We strongly intend to keep up the relationship with this LSP for as long as possible.

Table 5-29. Adaptation of "Commitment" (4 indicators)

Information on the factor " Commitment" (4 indicators)			
Coefficient alpha	0.85	AGFI	0.98
Explained factor variance	58.50%	CFI	1.00
χ^2/df	1.34	RMSEA	0.034
TLI	1.00	Composite reliability	0.85
GFI	1.00	Average variance extracted	0.59
Information on the indicators			
	Item-total correlation	Individual item reliability	t-value of factor loadings
Indicator 1	0.68	0.58	-
Indicator 2	0.71	0.63	12.93
Indicator 3	0.71	0.62	12.81
Indicator 4	0.65	0.51	11.77

As Table 5-29 show, the measurement of commitment with four indicators has got an excellent fit with no further requirement of model modifications.

5.1.2.6. Alternatives

The presence of adequate alternatives to existing LSP might provoke the customer to be 'unloyal' and switch to another service provider. Therefore, the presence of the adequate member of LSPs that offer the same service at the same price necessitates the measurement and evaluation of alternatives. The market for logistics services is

manifested by a high degree of competition since there always are alternate LSPs which can deliver a range of services at different prices and qualities. In this regard, a single item measurement is sufficient for capturing the current construct. According to Wallenburg (2004, p.201), LSPs available in the market form a continuum that ranges from unattractive LSPs, characterized by high prices and/or insufficient performance, to attractive LSPs, which offer very good prices and/or very high performance. Therefore, analyzing the effect of alternatives is assumed to be profound on the loyalty parameters of a customer to its focal LSP. The following sole indicator displayed in Table 5-30 is intended to achieve the purpose of measurement.

Assessing model fit with a single item measurements is not possible. But, for conducting analysis on discriminant validity prescribed by Fornell/Larcker, calculation of the average variance extracted is necessary. And for computing AVE factor loadings, item measurement errors, and the construct's variance are needed as discussed in the earlier chapters. Item's factor loading can be taken as 1 in single item measurements but its measurement error cannot be determined in the absence of other indicators. For this purpose, the approach proposed by Wallenburg (2004, p. 161), is followed who maintains that the value of the measurement error in single item measurements should be estimated by examining the best indicators of the other constructs. For the present study, the best indicator has measurement errors of approximately 0.2, and is thus considered to be used as an estimate in further analyses¹⁵.

Table 5-30. Indicator measuring “Alternatives”

Indicators	Questions for the measurement of “Alternatives”
Indicator 1	There are many alternative LSPs that can offer the same service at the same cost.

5.1.3. Discriminant Validity

The final step in operationalizing the present measurement models is the examination of discriminant validity, by applying the Fornell/Larcker criterion.

¹⁵ Conducting a CFA taking indicator 1 of alternatives measurement setting error to 0.2 yields an AVE of 0.77. This value will be used in subsequent assessment of discriminant validity based on Fornell/Larcker criterion

Table 5-31. Fit of the 8-factor CFA

Fit of the 8-factor customer loyalty model			
Coefficient alpha	*	AGFI	0.894
Explained factor variance	*	CFI	0.993
χ^2/df	1.100	RMSEA	0.018
TLI	0.992	Composite reliability	*
GFI	0.914	Average variance extracted	*
* This value can only be calculated on the factor level.			

The fit criteria of the CFA conducted on the 8-factor model show that all requirements are met, except for AGFI, which remain slightly below the recommended threshold value of 0.9 (see Table 5-31). Due to the model's complexity, however, this is tolerable, and a first indication of discriminant validity is therefore identified.

Table 5-32. Test for discriminant validity

		Customer Loyalty	Service Quality	Price Satisfaction	Relational Satisfaction	Proactive Improvement	Service Recovery	Trust	Commitment
Customer Loyalty	AVE 0.63	0.63	0.71	0.63	0.75	0.74	0.74	0.51	0.59
Service Quality	0.71	0.67							
Price Satisfaction	0.63	0.54	0.45						
Relational Satisfaction	0.75	0.48	0.41	0.47					
Proactive Improvement	0.74	0.21	0.18	0.14	0.22				
Service Recovery	0.74	0.33	0.23	0.23	0.21	0.26			
Trust	0.51	0.26	0.29	0.34	0.42	0.24	0.28		
Commitment	0.59	0.27	0.33	0.40	0.31	0.13	0.20	0.32	
Alternatives	0.77	0.24	0.24	0.20	0.23	0.12	0.21	0.20	0.14

As a second step, squared correlations between constructs are compared with the corresponding AVEs. This analysis reveals no problems with discriminant validity exist with regard to any of the constructs (Table 5-32). A partial evidence of non-discriminance of service quality and loyalty is visible. However, the two constructs are textually different and EFA does not show indication of significant cross loadings between them. And hence, no further action is necessary and both constructs will be used in further analyses.

5.2. Structural Models

5.2.1. Results and Findings

After structural assessment of the original customer loyalty model, necessary model refitting and adjustment will be conducted first, then, interdependencies between the included determinants and their loyalty-effects will be drawn and discussed.

5.2.1.1. Customer Loyalty model

The result of testing in the previous chapter 5.1.3 exhibited that the 8 factor customer loyalty model has discriminant validity and thus no additional factors were required to be eliminated. The EFA analysis in chapter 5.1.1.4 has found that the three dimensions of repurchase and additional purchases and referral behavior were found to be highly correlated and not clearly separable, thus customer loyalty is represented by one comprehensive construct.

Table 5-33. Adaptation of the 8-factor customer loyalty model

Fit of the 8-factor customer loyalty model	
χ^2/df	1.30
TLI	0.976
GFI	0.898
AGFI	0.878
CFI	0.979
RMSEA	0.032
Explanatory power (R^2)	77. %

Results of the SEM estimation for the 8-factor model displayed in Table 5-33 shows that that the model does not satisfactorily represent the data collected in the survey, as indicated by the values of GFI and AGFI which are below the recommended threshold. And so, model refitting has been conducted with the purpose of attaining a model that provides better adaptation. However, the linkages between the constructs are not modified as changing the causal structure of the model would mean sacrificing nomological validity. Therefore, model refitting is carried out by identifying factors that

can be eliminated from the model without substantially reducing the model's explanatory power.

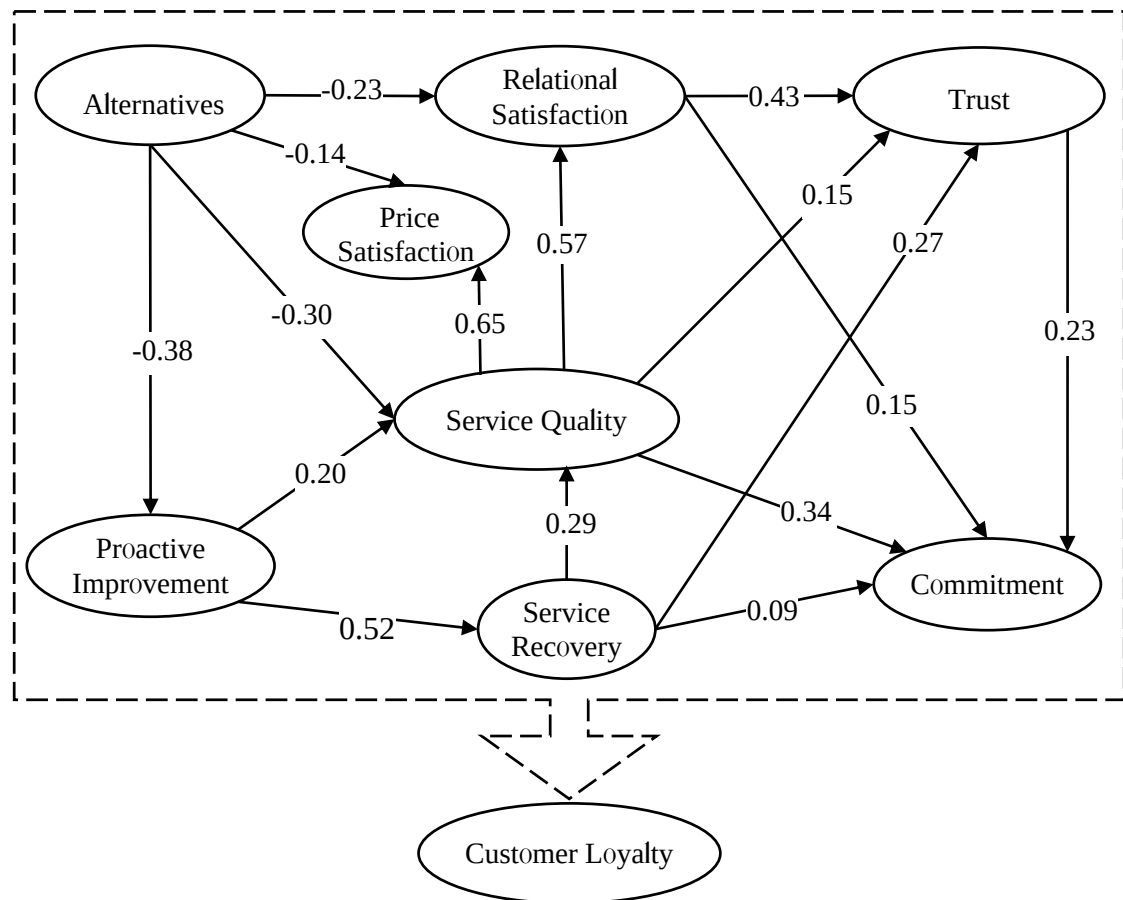


Figure 5-1. Revised hypothesized model of customer loyalty

Firstly, total effects of the eight factors are examined to find out whether all factors significantly contribute in explaining the loyalty construct (Table 5-34).

Table 5-34. Effects of Determinants on Customer Loyalty

Determinant of Customer Loyalty	Customer Loyalty
	Total Effect (Standardized)
Service Quality	0.723
Price Satisfaction	0.223
Relational Satisfaction	0.12
Proactive Improvement	0.358
Service Recovery	0.356
Trust	-0.149
Commitment	-0.068
Alternatives	-0.435

And the examination shows that the total effects of commitment, personal trust, on customer loyalty are below 0.100, while the effects of all other constructs are substantially stronger. Removing these three constructs significantly increases model fit without significantly decreasing the model's explanatory power of customer loyalty – the reduction of 1.4% points, as listed in Table 5-35, is insignificant. In addition, considerable decrease in CAIC and ECVI was visible in 6-factor model as compared to the original 9-factor model, indicating superior model fit.

Table 5-35. Comparison of 8 and 6-factor models

Adaptation Measures	Models	
	8-factors	6-factors
χ^2/df	1.30	1.35
TLI	0.976	0.981
GFI	0.898	0.926
AGFI	0.878	0.906
CFI	0.979	0.984
CAIC	1156.869	694.970
ECVI	2.482	1.370
RMSEA	0.032	0.034
Explanatory power (R^2)	77. %	76%

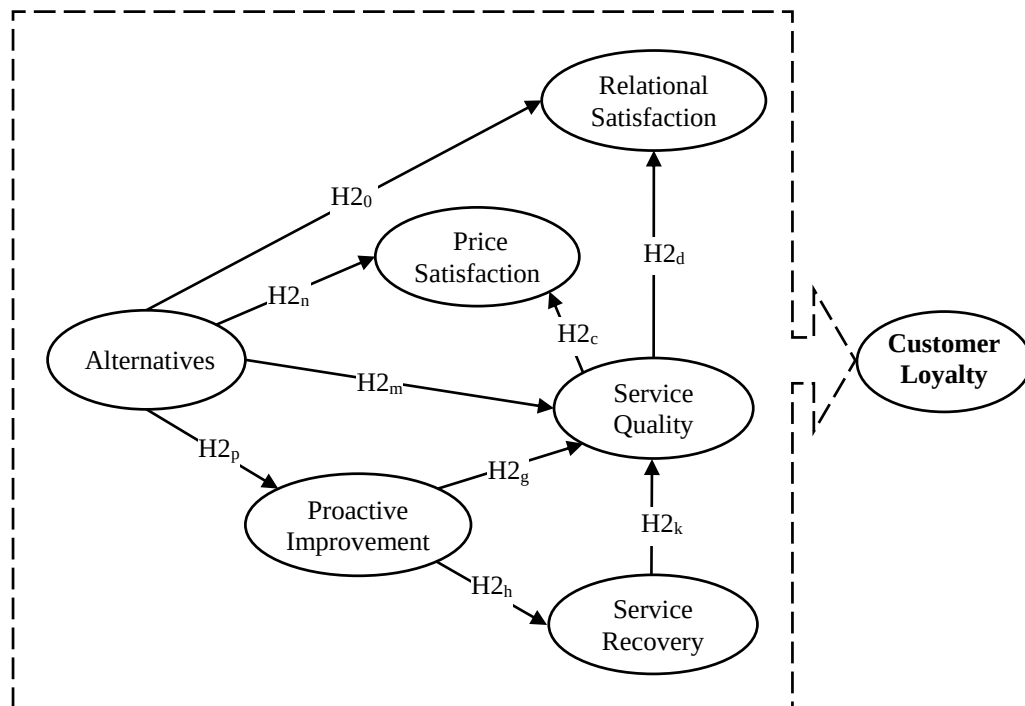


Figure 5-2. Validated 6-factor customer loyalty model

This adapted 6-factor model of customer loyalty still contains the three dimensions of satisfaction i.e., price satisfaction, service quality, relational satisfaction and three other factors - proactive improvement, service recovery and alternatives. Both trust constructs and commitment had to be eliminated from the model, because they do not subscribe significantly to the explanation of customer loyalty. It seems that Indian customers are rather short-term oriented, do not value relationships as highly, and do not strongly require personal bonds for maintaining relationships.

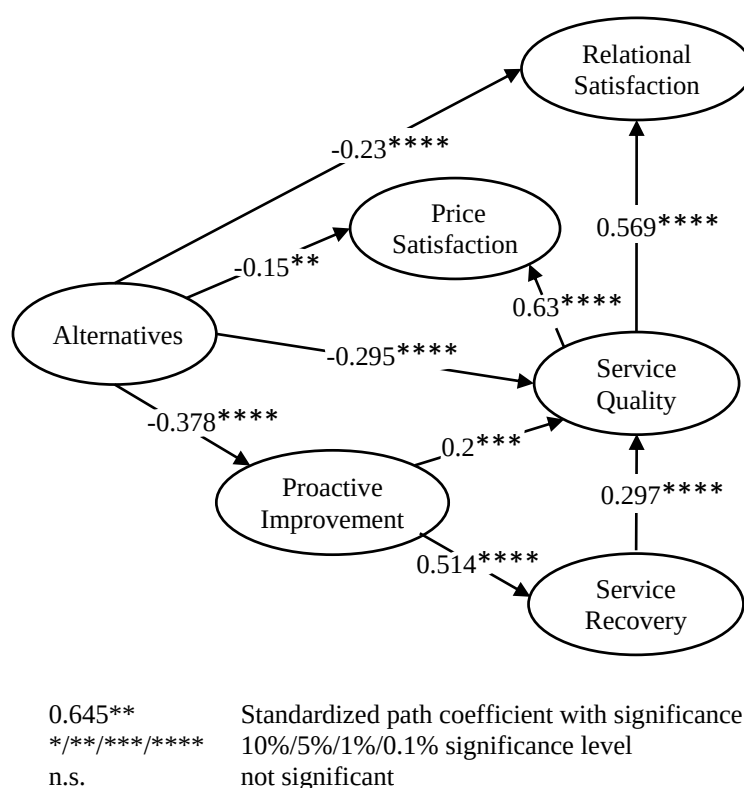


Figure 5-3. Relationships between customer loyalty determinants

The 6-factor model (Figure 5-2) fulfill all fit criteria requirements, thus it will be used in the subsequent analyses

5.2.1.2. Relationships between the determinants

The simplified model contains a total of nine linkages between the six determinants of customer loyalty, as graphically shown in Figure 5-3. All the nine linkages are significant,

thereby supporting hypotheses H2_c, H2_d, H2_g, H2_h, H2_k, H2_m, H2_n, H2_o and H2_p. Results of the hypotheses-tests are displayed in Table 5-36.

The availability of adequate market alternatives to the existing LSP has got a negative impact on proactive improvement, price satisfaction, and relational satisfaction and service quality.

The hypotheses that exhibited strong support subsequently are the effect of service quality on price satisfaction, H2_c; effect of service quality on relational satisfaction, H2_d and effect of proactive improvement on service recovery, H2_h. The former two relationships are particularly strong, indicating that the three constructs of satisfaction are closely tied to one another. Proactive improvement is a decisive driver of service quality, it not only supports the hypothesized direct effect on service quality and service recovery but also has fair degree of total effect on relational and price satisfaction as well, mediated through service quality. Additionally, proactive have some indirect effect mediated through service recovery. Similarly, service recovery is found to have indirect effects though not substantial on relational satisfaction and price satisfaction mediated through service quality.

Table 5-36. Hypothesis-tests for linkages between determinants

Effects of \ Effects on	Service Quality		Price Satisfaction		Relational Satisfaction		Proactive Improvement		Service Recovery		Trust		Commitment	
Service Quality			H2 _c	✓	H2 _d	✓					H2 _a	×	H2 _b	×
Price Satisfaction														
Relational Satisfaction											H2 _e	×	H2 _f	×
Proactive Improvement	H2 _g	✓							H2 _h	✓				
Service Recovery	H2 _k	✓									H2 _i	×	H2 _j	×
Trust													H2 _l	×
Commitment														
Alternatives	H2 _m	✓	H2 _n	✓	H2 _o	✓	H2 _p	✓			H2 _a			
✓ Hypothesis cannot be rejected ∅ Hypothesis is rejected × Hypothesis cannot be tested														

5.2.1.3. Effects on Customer Loyalty

Table 5-37 shows the direct and total effects of determinants on customer loyalty and an overview of hypothesis-tests is displayed in Table 5-40. The effects of four constructs (i.e., service recovery, service quality, relational satisfaction and price satisfaction) out of 6-factors from the validated customer loyalty model are found supporting the hypotheses as reported in Table 5-38. Additionally, 76% of the variance of the customer loyalty construct is apprehended by the model, which means that only 24% are attributable to factors outside the model. This indicates that the model fits well for explaining customer loyalty.

Table 5-37. Effects of determinants on customer loyalty

	Direct effect	Total effect
Alternatives	-0.022 n.s.	-0.430
Proactive Improvement	0.017 n.s.	0.350
Service Recovery	0.151***	0.366
Service Quality	0.521*****	0.726
Relational Satisfaction	0.129**	0.129
Price Satisfaction	0.207*****	0.207
0.15** Standardized path coefficient with significance level 0.645 Standardized total effect n.s.,*/**/***/**/***** not significant; significant at the 10%/ 5%/ 1%/ 0.1% level		

Examining the direct effects and the total effects of the six determinants on customer loyalty, a particularly strong effect on loyalty can be detected for service quality, which is substantially stronger than all other direct effects. This reveals that service quality is the most important among drivers of loyalty.

Direct influences of alternatives and proactive improvement on customer loyalty are not observed. However, the presence of sizeable mediated effects of these factors on customer loyalty cannot be denied. So, even though the hypothesized direct relationships cannot be confirmed, the underlying effects of alternatives and proactive improvement on loyalty can still be observed. This indicates that competing LSPs do not have a decisive direct impact on loyalty considerations, but they influence by serving as comparative standards for the evaluation of other factors affecting loyalty.

Table 5-38. Hypothesis-tests for effects on customer loyalty

Effects of \ Effects on	Customer Loyalty	
Service Quality	H1 _a	✓
Price Satisfaction	H1 _b	✓
Relational Satisfaction	H1 _c	✓
Proactive Improvement	H1 _b	X
Service Recovery	H1 _c	✓
Trust	H1 _d	X
Commitment	H1 _e	X
Alternatives	H1 _f	X
✓ Hypothesis cannot be rejected ∅ Hypothesis is rejected X Hypothesis cannot be tested		

Price satisfaction, relational satisfaction and service recovery has a fairly strong direct effect on customer loyalty, which is significant at 0.1%, 5% and 1% levels. Since the effect on customer loyalty is the only effect stemming from price satisfaction and relational satisfaction, the total effects is equal to the direct effect. On the contrary, the total effect of service recovery is more than its direct effect since much of its effect is mediated through service quality indirectly. Another interesting observation is a very strong total effect of service quality on customer loyalty, indicating that a substantial part of the loyalty-effect of service quality is mediated through relational satisfaction. This emphasizes the importance of service quality for relational satisfaction, as posited by social exchange theory.

Chapter 6.

CONCLUSION

After the thorough data analysis and empirical findings in the preceding chapter, the present chapter will conclude by summarize the key findings. Further, an insight on managerial implications will be drawn and relevant recommendations for future research will be envisaged.

6.1. Summary

An in-depth review of research literature in the logistics and marketing fields demonstrates that LSPs have been facing diverse operational and management challenges which are consequences of ever expanding market, continuous growth, technological advancement, increasing service level, shorter lead time, globalization, and customer diversity. Though there are various operational and technical ways to tackle these challenges, one of the novel way which is also central to the present study is to instill effectiveness and efficiency in the management of customer loyalty. This approach thus is being demonstrated in the present study by focusing on identifying the determinants of customer loyalty affecting relationships between the customers and their LSPs in Indian scenario.

In order to cope up with the research needs, an approach consisting of a sequence of steps was adopted. In the first step, literature reviews were conducted on social exchange theory, equity theory, and commitment trust theory in order to conceptualize eight determinants of customer loyalty in the milieu of the relationship between customers and their LSPs and the way they impacted customer loyalty. This was followed by designing a model comprising of identified loyalty determinants and then developing hypotheses to examine their effects on the three dimensions of customer loyalty and relational linkages between the determinants as well.

In second step, a total of 2,510 questionnaires were sent out for survey via e-mail, out of which, 14.10% or 354 were returned completed. Missing values were corrected arriving to a total of 302 usable responses which was then used for later analyses. On this basis of the data analysis methodology mentioned in chapter 5, measurement models of the conceptualized constructs were evaluated and structural equation modeling (SEM)

was used to test the proposed hypotheses. The results of the analysis are instrumental in deriving answers to the three research questions (RQ) that guided the present study which will further be elaborated in the following paragraphs.

RQ1: What are the determinants of customer loyalty in Logistics Outsourcing Relationships?

For identifying the relevant determinants of customer loyalty, a detailed review of logistics and marketing literature was carried out. Most of the determinants used by Wallenburg (2004) were also found appropriate for this study and hence was adopted and modified wherever necessary. Finally, eight factors were presumed to be the relevant drivers of customer loyalty. These drivers are also presumed to exhibit certain relationships between LSPs and their customers. These are service quality, price satisfaction, relational satisfaction, proactive improvement, alternatives, service recovery, trust and commitment.

Drawing on social exchange theory, equity theory, commitment trust theory, and previous research by Wallenburg (2004), direct effects on the three dimensions of customer loyalty were hypothesized for each of the determinants. In order to validate the effects empirically, however, research question two (RQ2) has to be treated first, as the selected methodology (structural equation modeling) requires that all relationships within the models are specified ex ante.

RQ2: How can the selected factors be incorporated into a comprehensive model of customer loyalty and what are the interdependencies observed?

Based on the theoretical framework as stated above, relationships between the eight customer loyalty determinants were established and hypothesized. As shown in Figure 3-4, 16 relationships between/among the determinants and 8 direct effects on the three dimensions of customer loyalty were listed. Thus, a comprehensive explanatory model of customer loyalty was formulated and subjected to empirical validation using the data collected.

The measurement model assessment revealed several deficits. The three dimensional structure of customer loyalty clearly lacked the convergent validity. Consequently, a single customer loyalty construct, which integrates aspects of repurchase intentions,

additional purchase intentions, and referral behavior was designed. For this reason, research questions were designed to assess the direct effects of the proposed 8 determinants on the comprehensive customer loyalty construct. Assessment using Fornell/Larcker criterion showed that the eight measurement models of customer loyalty fulfills the discriminant validity. Various other SEM tests were also run to examine the convergent validity and reliability of the measurement models, thus conforming that the measurement instruments indeed does measure what is intended to measure with consistency. Further, SEM estimation of the structural model led to the elimination of trust and commitment. These two constructs displayed only minute effects on customer loyalty and did not increase the model's explanatory power. Hence, the validated customer loyalty model includes the remaining 6 determinants i.e., alternatives, proactive improvement, service recovery, service quality, price satisfaction and relational satisfaction and the customer loyalty construct. Thus, the analysis accomplished a very good explanatory power of loyalty with an R^2 of 77%.

Among the six loyalty determinants in the model, service quality is found to have the greatest effects on customer loyalty. Though service quality has the major share of the effect of directly influencing loyalty, service recovery also contributes in increasing the influence on loyalty through mediation by service quality.

The other two constructs, i.e. relational satisfaction and price satisfaction also have direct effect on customer loyalty, but are noticeably weaker. The remaining two constructs i.e., proactive improvement and alternatives were not found to support significant contribution to customer loyalty. Therefore, only four determinants i.e., **service quality, service recovery, relational satisfaction** and **price satisfaction** out of the total eight determinants are found to have a positive and direct effect in the formation of customer loyalty.

RQ3: Do the effects of determinants on customer loyalty differ significantly in India as compared to the west?

Due to the limitation of time and resources, collecting a first-hand data from other countries were restricted. Therefore, in order to carry out a comparative analysis of the effects of the determinants finally identified in the end of this study to the same kind of study in the west, the findings of the work of David L Cahil. Cahill, D. L. (2007), in his

empirical research conducted in US and Germany on customer loyalty in third party logistics relationships, revealed that service quality, relational satisfaction, proactive improvement and alternatives were the major determinants having substantial effects on customer loyalty among US customers. The direct effect for service quality on loyalty is substantially stronger than all other direct effects. On the other hand, total effects reveal that both service quality and proactive improvement are important drivers of loyalty. In addition, alternatives have minute direct effect suggesting that the majority of the effect of alternatives on loyalty is mediated through service quality and proactive improvement. This indicates that competing LSPs do not have a decisive direct impact on loyalty considerations, but serves as comparison standards for the evaluation of other factors affecting loyalty. Relational satisfaction has a fair degree of effect on customer loyalty. A very strong total effect of service quality on customer loyalty, indicates that a substantial part of the loyalty-effect of service quality is mediated.

On the other hand, his study on German customers exhibited the effects of the determinants on the three dimensions of loyalty i.e., repurchases, additional purchases and referrals. Proactive Improvement and Commitment were found to have significant effects on all the three dimensions of loyalty. Commitment has highest direct effect on repurchases and both highest significant direct and total effects on additional purchases and referrals. Service quality was the next determinant that had substantial effect on repurchases and referrals. Organizational trust was found to have no significant effect on any of the three dimensions. Personal trust and relational satisfaction were found to have some effect on repurchase intentions but minimal on additional purchases and referrals. In the case of price satisfaction, it was found to play only a minor role in customers' considerations once submerged in a relationship with an LSP.

In case of India, service recovery was a new antecedent introduced in the model unlike in US and Germany study and was found to have substantial effect on loyalty. Some striking similarities observed in both the models of India and US-Germany as discussed in the preceding sections is that service quality had the strongest and significant effect on loyalty among the customers of India and US. Relational satisfaction was found to have impact to some extent on customer loyalty in India and US as well. Price satisfaction though in lower intensity was observed to have some effect on loyalty in India and Germany but was not significant in US.

6.2. Managerial Implications

The managerial implications of the findings from the present research are discussed in the following paragraph:

1. Management of LSPs should focus primarily on service quality followed by service recovery:

This study has demonstrated that Service quality is clearly an important factor in any logistics outsourcing relationship which stands out among all other determinants of loyalty, therefore, organizations should focus more on increasing the level of service quality. In fact, service quality induced a total effect (both direct and mediated) of 0.73 on customer's loyalty which is considerably higher than service quality's direct effect of 0.521. The difference is attributed to the effect of service quality which is mediated through price satisfaction and relational satisfaction. Subsequently, the higher the level of service quality the more loyal the customers become towards its focal LSPs. This result is consistent with the findings of Cronin & Taylor (1992). In addition, as posited in the conceptualization of three dimensions of satisfaction (similar to the logistics performance dimensions proposed by Stank et al. 2003, pp. 28- 29), all the three components i.e., service quality, price satisfaction and relational satisfaction were found to have significant effects on building customer loyalty. But unlike service quality, both price and relational satisfactions seems to have fair degree of direct effects.

Another important implications for service managers and academicians from the present research, is that service recovery has got fairly significant direct and indirect impact on building customer loyalty. As service failures at some point are unavoidable due to the surmounting challenges LSPs are facing on day to day basis, a robust service recovery policy and efforts may influence consumers to continue service with those organizations. poor recoveries may translate into lost revenues due to customer turnover and may increase a firm's sales and administration costs associated with recruiting new customers as it oftentimes costs considerably less to maintain a current customer than attract a new one (Hart et al., 1990). Consumers who receive high service recovery are more likely to develop higher satisfaction, purchase intentions and even engage in positive WOM behaviour, thus spreading goodwill for the service provider. This suggests that firms can maintain customer retention and loyalty through effective service

recoveries.

2. The second aspect of customer loyalty where the management of an LSP should emphasize is on the effect of price on customer loyalty.

In a developing country like India, cost reduction is an important factor while taking the initial decision to outsource logistics services. Therefore, price satisfaction has a significant direct impact on loyalty considerations after service quality. This suggests that though price is not an order winning criterion, it certainly is an order qualifying criterion while engaging in an outsourcing relationship. It can therefore be stated that offering lower prices will not necessarily increase customer loyalty, while offering high prices could actually be disadvantageous. But low prices at a given expected level of service satisfaction might lead to improved customer loyalty.

3. Thirdly, the effect of relational satisfaction is another important factor to be considered by the management while doing transactions with their customers.

The aforementioned factors determining loyalty i.e., service quality, service recovery and price satisfactions, though, have major impacts on the development of customer loyalty, LSPs would only be able to sustain long-term customer loyalty through the fourth factor i.e., relational satisfaction. A healthy and effective relationship management along with service quality, service recovery and price satisfactions will pay a long way in achieving and sustaining customer loyalty.

Therefore, management of LSPs should take into account of these four factor at the time of planning, developing, organizing, implementing and controlling strategic as well as operational decisions.

4. Almost all the verified determinants identified in Indian scenario is also found relevant for other countries specifically US and Germany.

It is imperative from the comparative analysis of the resultant studies in India, US and Germany that the identified determinants have more or less similar effects on customer loyalty in all these countries. Moreover, logistics and supply chain surpasses national boundaries. Therefore management of LSPs should take these determinants into account while formulating their global strategies since these determinants have universal applicability with perhaps some tweaking here and there.

6.3. Recommendations for Further Research

In addition to the managerial implications mentioned above, suggestions for further research are given below:

- (1) As mentioned earlier, there might be other factors not taken into consideration in the present study but can be assumed to affect the intention of customers to outsource additional logistics activities to the currently most important LSP, for example strategic outsourcing considerations. Hence, future studies should explore additional determinants of loyalty dimension.
- (2) Measurement model assessment also showed that the ex-ante surmised three dimensional structure of customer loyalty is not supported by the empirical data collected. The possible reasons for this should further be researched and considered in further studies. For example, a qualitative pre-study should be conducted to explore whether the three-dimensional conceptualization matches the perception of customer loyalty.
- (3) This study, as well as studies conducted by Zemke, R. (1991), Durvasula, S., Lysonski, S., & Mehta, S. C. (2000), Shapiro, T., et al (2006), Komunda, M. & Oserankhoe, A. (2012), indicates that service recovery is an important factor in relationships between customers and their service providers. Therefore, research efforts should be carried forward to elaborate this construct. The antecedents of service recovery should be investigated and differentiated outcome components should be identified and empirically examined.
- (4) Other than the eight antecedents in this study, which were used to examine their relationships and impact on loyalty, there might be a multitude of other contingency factors and moderators that are not included in the study. For example, factors like switching cost, age of relationship, national culture etc., may be assumed to induce moderating effects in the development of customer loyalty. The determinants in this study, captures rather general evaluations of relationships between LSPs and their customers, this limits the effects of moderations. Hence, it would be advantageous to include the antecedents of the employed determinants, so as to extract effects of moderations in greater details.

- (5) Although the present study is conducted in Indian scenario, a similar kind of business set up and LSPs to customers' relationship might exist elsewhere. In this regard, a relevant question that arises here is the generalizability of the present research findings to other nations. Therefore, in future studies, intercultural effects on the customer loyalty models across nations should be studied. Along these lines, initial analyses could be conducted to endorse that cultural differences actually exist between two collected databases of two nations. If significant differences are found, such items could be used as moderators to test for variances between the structural models of two nations even if the models are dissimilar.

APPENDIX-A

Table-A. Determinants of customer loyalty in empirical research¹⁶

	Prices and Conditions	Product and Service Quality	Product Line, Availability, Accessibility	Image and Reputation	Customer Loyalty Programs	Intensity and Quality of Business Relationship	Own Experiences and Recommendations from Others	Trust	Commitment	Economic Switching Barriers	Psychological and Social Barriers to Switching	Sociodemographic Customer Attributes	Affect	Involvement	Importance of the Product for the Customer	Pattern of Customers' Behavior	Expectations	Utility from Consumption/ Business Relationship	Attractiveness of Competitors' Offers/Incentives to Change	Customer Satisfaction
Bitner (1990)		✓																		✓
Sriram and Mummalaneni (1990)										✓									✓	
Bloemer and Lemmink (1992)																				✓
Cronin Jr. and Taylor (1992)		✓																		✓
Fornell (1992)		✓								✓	✓						✓			✓
Anderson and Sullivan (1993)		✓															✓			✓
Biong (1993)	✓	✓																		✓
Boulding et al. (1993)		✓															✓			
Ping (1993)										✓									✓	✓
Rust and Zahorik (1993)	✓	✓	✓			✓		✓												
Selnes (1993)		✓		✓																✓
Ganesan (1994)				✓			✓	✓		✓										✓
Taylor and Baker (1994)		✓																		✓
Bloemer and Kasper (1995)																✓				✓

¹⁶ Adapted from Fassnacht and Daus 2004, pp. 8-9 and extended for 2004-2005

Keaveney (1995)	✓	✓	✓			✓								✓			✓	
Fornell et al. (1996)		✓													✓	✓		✓
Hallowell (1996)																		✓
Zeithaml, Berry, and Parasuraman (1996)																		✓
Macintosh and Lockshin (1997)					✓	✓												✓
Oliver, Rust, and Varki (1997)										✓				✓				✓
Sharp and Sharp (1997)				✓														
Bolton (1998)						✓												✓
de Ruyter, Wetzels, and Bloemer (1998)	✓																	
Mittal, Ross, and Baldasare (1998)														✓				✓
Bloemer, de Ruyter, and Wetzels (1999)	✓																	
Bloemer and de Ruyter (1999)										✓								✓
Garbarino and Johnson (1999)										✓					✓			✓
Mittal, Kumar, and Tsiros (1999)																		✓
Pritchard, Havitz, and Howard (1999)							✓	✓		✓								
Reynolds and Beatty (1999)											✓				✓			✓
Bolton, Kannan, and Bramlett (2000)	✓	✓		✓	✓												✓	✓
Gronholdt, Martensen, and Kristensen (2000)		✓	✓											✓	✓			✓
Chaudhuri and Holbrook (2001)						✓				✓					✓			
De Wulf, et al.(2001)				✓	✓	✓	✓											✓
Mittal and Kamakura (2001)									✓									✓
Too, Souchon, and Thirkell (2001)		✓		✓		✓	✓											
Olsen (2002)	✓																	✓
Roehm, Pullins, and Roehm Jr. (2002)				✓														
Sirdeshmukh, Singh, and Sabol (2002)						✓									✓			
Hellier et al. (2003)																		✓
Homburg, Giering, and Menon (2003)					✓	✓	✓	✓	✓									✓

Ranaweera and Prabhu (2003)							✓	✓									✓
Shankar, Smith, and Rangaswamy (2003)																	✓
Verhoef (2003)				✓			✓										
Yen and Gwinner (2003)							✓									✓	
Yi and Jeon (2003)				✓													
Bansal, Irving, and Taylor (2004)							✓										
Beerli, Martín, and Quintana (2004)								✓									✓
Guenzi and Pelloni (2004)				✓													✓
Harris and Goode (2004)							✓									✓	✓
Hennig-Thurau (2004)				✓			✓										✓
Lam et al. (2004)								✓								✓	✓
Lewis (2004)				✓													
Ngobo (2004)	✓							✓								✓	✓
Venetis and Ghauri (2004)	✓						✓										
Wallace, Giese, and Johnson (2004)																	✓
Agustin and Singh (2005)							✓									✓	
Algesheimer, Dholakia, and Herrmann (2005)				✓													
Bell, Auh, and Smalley (2005)	✓																
Borle et al. (2005)		✓															
Fullerton (2005)	✓						✓										
Gustafsson, Johnson, and Roos (2005)							✓										✓
Homburg and Fürst (2005)																	✓
Jiang and Rosenbloom (2005)	✓																✓
Lin and Ding (2005)				✓			✓										✓

✓ = in the empirical study listed in the row, the determinant listed in the column had an effect on customer loyalty.

APPENDIX B

Questionnaire

Cover Letter

Dear Sir/Madam,

My heartiest greetings to you

I am currently working as a professor in ASM Group of Institutes, Pune and a doctoral student at Tilak Maharashtra Vidyapeeth, Pune.

The purpose of this survey is to understand the loyalty quotient of the customers towards their Logistics Service Providers (LSP) and the factors affecting it.

This instrument is designed to be taken by people at all levels of the organization who have an interface with their LSP and its representatives. As you respond to the different statements, please answer as to what you believe is generally true about your relationship with LSP.

I assure you that data provided will be kept strictly confidential & would be used only for Academic research purpose.

The success of this research is highly dependent on your participation. Thank you in advance for your time and effort:

I would like to thank you for participating and offer you:

- an individual benchmarking report comparing your company with the other participants in the research (We have information from over 100 companies to-date).

plus the following gift package:

- complimentary copies of recently published cases and books on Supply Chain Management (worth for Rs.2500 on e-retail stores)

and

- an opportunity to win an Apple iPod/ digital camera (retail value Rs.10000). Estimated odds of winning: 1 in 50.

- Please contact Sanjit Singh for questions:

Tel.: (020) 27471753

Email : sanzitt@gmail.com

General Instructions:

Please read the following instructions before beginning the survey:

- All responses will be kept anonymous with strictest confidentiality.
- Please complete all questions (as much as possible) based upon your experience. If doubtful about the exact answer, please provide the best guess.
- When answering the questions, please select and focus on a specific logistics service provider (LSP), preferably your largest provider or with whom you are having best relationship.
- Question marked with * is required and compulsory, without completing it, you cannot continue to next page.
- The survey will be completed only after clicking on the “submit” button present at the end of the survey.
- Please note that gifts are eligible only to those who complete the entire survey.

A. General questions on logistics outsourcing

Major reasons for outsourcing parts of our logistics activities were:

Please mark all applicable reasons and indicate to what extent they apply.

	<i>Does not apply</i>	<i>Fully applies</i>
1. The reduction of our logistics costs.	☐	☐
2. To turn fixed costs into variable costs.	☐	☐
3. To level peaks when order volumes vary.	☐	☐
4. To reduce our capital employed in logistics processes.	☐	☐
5. To increase the speed of our logistics.	☐	☐
6. To increase process flexibility and shorten response times.	☐	☐
7. To lower the damage- or error ratio.	☐	☐
8. To increase our ability to deliver.	☐	☐
9. Our LSP has significantly better logistics skills.	☐	☐
10. We consider logistics to be a rather unimportant process.	☐	☐
11. Our management capacities are limited.	☐	☐

Important: From now on, please answer all questions for the specific logistics service provider (LSP) you selected to serve as your focal provider.

Which services does your selected logistics service provider (LSP) provide? – Part A

Please mark all applicable services that this specific LSP provides.

	<i>Degree of Control</i>	
	<i>Not at all</i>	<i>Completely</i>
12.A.Transportation Planning	☐	☐
13.A.Transportation Operations	☐	☐
14.A.International Freight Forwarding	☐	☐
15.A.Customs Clearance	☐	☐
16.A.Cross-Docking	☐	☐
17.A.Warehousing	☐	☐
18.A.Inventory Control / Management	☐	☐
19.A.Pick/Pack Operations	☐	☐
20.A.Assembly	☐	☐
21.A.Product Returns	☐	☐
22.A.Logistics Information Systems	☐	☐
23.A.Lead Logistics Management	☐	☐
24.A.Consulting services	☐	☐

Which services does your selected logistics service provider (LSP) provide? - Part B

Please mark all applicable services that this specific LSP provides. In addition, please also indicate if the focus of this service lies on the inbound side, internal, or outbound side of the business.

	<i>Focus of Service</i>		
	<i>Inbound</i>	<i>Internal</i>	<i>Out-bound</i>
12.B. Transportation Planning	☐	☐	☐
13.B. Transportation Operations	☐	☐	☐
14.B. International Freight Forwarding	☐	☐	☐
15.B. Customs Clearance	☐	☐	☐
16.B. Cross-Docking	☐	☐	☐
17.B. Warehousing	☐	☐	☐
18.B. Inventory Control / Management	☐	☐	☐
19.B. Pick/Pack Operations	☐	☐	☐
20.B. Assembly	☐	☐	☐
21.B. Product Returns	☐	☐	☐
22.B. Logistics Information Systems	☐	☐	☐
23.B. Lead Logistics Management	☐	☐	☐
24.B. Consulting services	☐	☐	☐

B. Relationship with your logistics service provider

Please indicate your level of agreement with the following statements on how satisfied you are with the relationship between this logistics service provider and your company.

Please indicate your level of agreement with each statement.

	<i>Strongly Disagree</i>	<i>Neutral</i>	<i>Strongly Agree</i>
25. We are very satisfied with the way we interact with our LSP.	☐	☐	☐
26. Differences when cooperating with this LSP are always settled smoothly.	☐	☐	☐
27. The relationship with this LSP is very good.	☐	☐	☐

Please indicate your level of agreement with the following statements regarding your logistics service provider.

Please indicate your level of agreement with each statement.

	<i>Strongly Disagree</i>	<i>Neutral</i>	<i>Strongly Agree</i>
28. This LSP and its personnel keeps promises it makes to our firm.	☐	☐	☐
29. Regarding problems, this LSP is always honest with us.	☐	☐	☐
30. This LSP and its personnel are trustworthy.	☐	☐	☐
31. This LSP is genuinely concerned that our business succeeds.	☐	☐	☐
32. The LSP correctly carries out tasks that we cannot directly control.	☐	☐	☐
33. We come to our LSP's defense when it is criticized by persons from inside or outside our organization.	☐	☐	☐
34. We would be very sorry personally if we had to terminate the relationship with this LSP.	☐	☐	☐
35. We feel personally offended, when this LSP is criticized by persons from inside or outside of our company.	☐	☐	☐
36. We strongly intend to keep up the relationship with this LSP for as long as possible.	☐	☐	☐

Please indicate your level of agreement with the following statements regarding your contact person at the logistics service provider.

Please indicate your level of agreement with each statement.

	<i>Strongly Disagree</i>	<i>Neutral</i>	<i>Strongly Agree</i>
37. This person is trustworthy.	☐	☐	☐
38. This person does not make false promises.	☐	☐	☐
39. This person is a highly knowledgeable manager.	☐	☐	☐

40. This person speaks the same "language" we do.	☐	☐	☐	☐	☐	☐	☐
41. We trust this person to keep our best interests in mind.	☐	☐	☐	☐	☐	☐	☐

Please indicate your level of agreement with the following statements on the continuous improvement efforts of this LSP.

Please indicate your level of agreement with each statement.

42. The LSP puts strong effort into continuously optimizing logistics processes.	☐	☐	☐	☐	☐	☐	☐
43. The LSP continuously makes suggestions for improvements of activities, even those outside its direct responsibility.	☐	☐	☐	☐	☐	☐	☐
44. When the situation changes, the LSP by itself modifies the logistics activities and processes, if this is useful and necessary.	☐	☐	☐	☐	☐	☐	☐
45. The LSP shows initiative by approaching us with suggestions for improvement.	☐	☐	☐	☐	☐	☐	☐
46. The LSP shows a high level of innovation.	☐	☐	☐	☐	☐	☐	☐

Please indicate your level of agreement with the following statements on your satisfaction with the LSP's service quality.

Please indicate your level of agreement with each statement.

47. Overall, this LSP offers excellent services.	☐	☐	☐	☐	☐	☐	☐
48. This LSP offers great performance.	☐	☐	☐	☐	☐	☐	☐
49. This LSP offers very high-quality services.	☐	☐	☐	☐	☐	☐	☐

Please indicate your level of agreement with the following statements regarding your past and future relationship with this LSP.

Please indicate your level of agreement with each statement.

50. We will continue using this LSP in the future.	☐	☐	☐	☐	☐	☐	☐
51. Right now, we intend to extend existing contracts with this LSP.	☐	☐	☐	☐	☐	☐	☐
52. If we knew then what we know now, we would again select this LSP.	☐	☐	☐	☐	☐	☐	☐
53. When the contract with this LSP ends, we will most likely negotiate a new contract with it, without starting a new bidding process.	☐	☐	☐	☐	☐	☐	☐
54. Within our organization, we have recommended preferential consideration of this LSP for further projects.	☐	☐	☐	☐	☐	☐	☐
55. I often mention this LSP to my co-workers in a positive way.	☐	☐	☐	☐	☐	☐	☐
56. I often recommend this LSP to persons outside my company.	☐	☐	☐	☐	☐	☐	☐
57. We often recommend this LSP.	☐	☐	☐	☐	☐	☐	☐

Please indicate your level of agreement with the following statements on the recovery efforts taken by this LSP in event of service failure

Please indicate your level of agreement with each statement.

58. I am extremely satisfied with this LSP when I consider the speed with which the problem was fixed	☐	☐	☐	☐	☐	☐	☐
59. After experiencing the service recovery, I am more likely to continue with this LSP.	☐	☐	☐	☐	☐	☐	☐
60. Based on the recovery experience, I will tend to be more loyal to this LSP in the future	☐	☐	☐	☐	☐	☐	☐

Please indicate your level of agreement with the following statements regarding your LSP's pricing.

Please indicate your level of agreement with each statement.

61. Compared to other LSPs, our LSP's prices are very good.	☐	☐	☐	☐	☐	☐	☐
62. The LSP offers a very good price-performance ratio.	☐	☐	☐	☐	☐	☐	☐

63. Compared to carrying out those tasks ourselves, our LSP's prices are very good.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Please indicate your level of agreement with the following statements regarding your past and future relationship with this LSP. Please indicate your level of agreement with each statement.	
64. In the future, this LSP will have a higher share of our logistics volume.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
65. In the future, we will use this LSP more than we do now.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
66. When we call out bids for services other than the ones we outsource today, we will consider this LSP preferentially.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
67. When we outsource additional services, we will first offer them to this LSP, before starting a bidding process.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Please indicate your level of agreement with the following statements on your attitude towards this LSP and on market alternatives. Please indicate your level of agreement with each statement.	
68. There are many alternative LSPs that can offer the same service at the same cost.	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

C. Background Questions

Thank you for completing the survey to this point.

We would now like to ask you to complete a few background questions. As with the rest of the survey, we guarantee the strictest confidentiality!

69. What is your position?

- ☐ President/ CEO/ COO
- ☐ Vice President Logistics
- ☐ Logistics Manager
- ☐ Logistics Employee
- ☐ Others _____

70. For how many years have you been working in this position? for ____ years (e.g. 2.5)

71. For how many years have you been working for this company? for ____ years (e.g. 2.5)

72. Which industry does your business unit belong to?

Please select only one industry.

- ☐ Food and beverage
- ☐ Automotive
- ☐ Consumer goods
- ☐ Industrial equipment
- ☐ Electronics and related instruments
- ☐ Computer hardware and peripheral equipment
- ☐ Chemicals and plastics
- ☐ Retailing
- ☐ Healthcare
- ☐ Others _____

73. What are the current yearly revenues of your business unit (in ₹ Million/year)?

up to 24	☐	25-49	☐	50-99	☐	100-249	☐
250-499	☐	500-999	☐	1,000-4,999	☐	More than 5,000	☐

74. What is the approximate number of employees in your business _____employees
unit?
75. How many LSPs does your business unit use? _____logistics service providers
76. What is the share of logistics cost that external LSPs have (in %)? _____percent

Please complete the following questions having your selected LSP in mind.

77. What is the share of total outsourced logistics cost that this LSP has? _____percent
78. For how long have you been working together with this LSP? for_____years (e.g. 2.5)
79. For how long have you been working together with this LSP in a way that you would call a "close relationship"? for_____years (e.g. 2.5)
80. What is the total duration of the current contract with this LSP? _____years (e.g. 2.5)
81. What is the remaining duration of this contract with this LSP? _____years (e.g. 2.5)

Thank you for taking part in the survey!

Please provide us with the address to which we may forward your complimentary report and book and notify you should you win the iPod raffle.

Last name: _____

First name: _____

Email address: _____

Company: _____

Street: _____

Zip: _____

City: _____

Phone number: _____

Please use the space provided for comments and suggestions:

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