

ABSTRACT

Title of Document: DETERMINANTS OF CUSTOMER
PARTNERING BEHAVIOR IN LOGISTICS
OUTSOURCING RELATIONSHIPS:
A RELATIONSHIP MARKETING
PERSPECTIVE

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Developing close relationships with third-party logistics providers (3PLs) has been acknowledged in the literature as a beneficial strategy for 3PLs and customer firms. It has been shown that customers embedded in close relationships with 3PLs achieve higher levels of operational and financial performance. 3PLs also benefit from engaging in these relationships by generating higher levels of customer satisfaction, customer retention, and referrals to new customers. In order to complement these findings, this study integrates theories and empirical evidence drawn primarily from relationship marketing to develop a model of the antecedents of customer partnering behavior in logistics outsourcing relationships.

It is proposed that a combination of key interorganizational conditions and customer characteristics directly impacts a customer's partnering behavior with a

3PL. More specifically, a customer embedded in a relationship with a 3PL in which there are high levels of dependence, trust, and satisfaction, is more likely to exhibit higher levels of partnering behavior with a 3PL. In addition, a customer's prior experiences with partnering, and policy of engaging in interactive relationships with customers, will also positively impact its partnering behavior with a 3PL.

Antecedents of dependence and trust are also identified in the model.

Data are collected through a web-based survey with customers of a large Brazilian 3PL and the model tested using structural equation modeling. The results support several of the hypotheses proposed in the model. In particular, evidence is found that customer-specific characteristics, such as a customer relationship marketing orientation and prior experience with 3PL partnering, have a positive effect on a customer partnering behavior with a 3PL, above and beyond the effect of interorganizational conditions, as advocated in traditional behavioral models.

Contributions of this research include the depiction of the interplay between environmental forces, interorganizational conditions, and firm-specific factors that are hypothesized to impact a customer's partnering behavior with its 3PL. With an understanding of the mechanisms on which a customer's partnering behavior is built, 3PLs can take effective action in the pursuit of the development of closer relationships with their customers, contributing to the maintenance and expansion of their customer base.

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A RELATIONSHIP MARKETING PERSPECTIVE

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2007

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Dedication

To the memory of my mom Glaucia who always encouraged me to pursue my dreams

and

to two wonderful and inspirational women:

grandmas “Vovó” Tildes and “Vovó” Teca.

Acknowledgements

I would like to thank, first and foremost, my husband Christian, my sister Gal, and my brother Nel, for their endless love and support throughout these five years of doctoral studies.

I would like to acknowledge that the completion of my PhD and this project would not have been possible without the guidance and friendship of Professor Martin Dresner, who has been an inspirational example of a mentor and scholar to me.

I would like to thank Dr. Donna B. Hamilton, Dr. Bill DeWitt, and Dr. Curt Grimm for kindly agreeing to serve on my dissertation committee and to share their expertise. I would also like to express my gratitude to Dr. Mike Knemeyer, whose support and encouragement have been crucial in the growth of my understanding of the logistics outsourcing research stream.

I would like acknowledge that this study was only possible thanks to the support of Rapidão Cometa by providing access to their customer base and assistance during the survey design and implementation. I would like to thank Rapidão Cometa's executives Américo Pereira Filho, Celso Queiroz, Vanessa Ramos, and Fernanda Rogrigues, for their consistent collaboration and assistance on the realization of this study.

I would like to thank Dr. Gregory Hancock for kindly and patiently guiding me through the structural equation modeling process. I would also like to thank him for his unforgettable statistics lectures.

I would like to thank special staff members of the R. H. Smith School of Business, Mary Slye, Ann Stevens, and Hazel Wentt, for always kindly assisting me with administrative issues.

Finally, I would like to thank all my professors, friends and colleagues for their friendship and support during the doctoral studies.

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Chapter 1: Introduction

“Companies will be looking for more flexibility and service partners who can allow them to focus on their core business and spend less time managing the supply chain.” (Dan Colleran, President Suddath Logistics Group, Inbound Logistics, July 2003, p. 102)

“Shippers who work with their carriers will get the trucks. Those who don’t will pay much more for transportation.” (Lance Craig, Inbound Logistics, January 2006, p. 166)

Outsourcing logistics functions to third-party logistics providers (3PLs) - independent firms that perform single or multiple logistics services on behalf of a shipper (Sink et al 1996) - is not a new phenomenon. For decades, firms have outsourced transportation and warehousing activities, and more recently have started to purchase complex and customized services, such as consulting for supply chain solutions and customer service management. Many advantages accrue from logistics outsourcing. 3PLs can provide logistics expertise and cost benefits to their customers, since firms that outsource logistics services do not have to spend large amounts of capital to own and manage expensive assets, such as trucks and warehouses (Bolumole 2003). In addition, 3PLs can also offer advantages of economies of scale, since they may use the assets more efficiently by sharing them among many customers.

A strong trend in the logistics outsourcing industry refers to the change in the nature of the relationship between 3PLs and their customers; i.e., the buyers of their services (Leahy et al 1995). Due to globalization, many 3PL customers face greater competition and more rapidly changing customer needs. These factors strengthen the

pressures for cost-reduction and increased customer service levels through the pursuit of operational efficiencies, introduction of new products, and improved product quality. In addition, expanding their business geographically through sourcing, manufacturing and distributing overseas – which means longer distances, language barriers, different regulations, etc – has brought increased complexity to logistics operations and coordination of supply chains. Moreover, recent capacity constraints, in terms of port congestion and restricted transportation supply, have imposed extra burdens on logistics managers. This challenging reality has brought the need for firms to change the nature of their relationships with their 3PLs in order to focus on their core competencies and compete in today's global markets. But 3PLs, as well, face many challenges. The 3PL industry has already grown to a considerable size (Berglund et al 1999). In the U.S., for example, it was estimated that payments for 3PLs services exceeded US\$ 103 billion in 2005 (<http://www.3plogistics.com/3PLmarket.htm>). The landscape of their market has continuously changed. Larger 3PLs have merged and have expanded their operations geographically (Lieb and Bentz 2005). New 3PLs have entered the market, with origins from the most unexpected areas, such as information technology and consulting (Berglund et al 1999). Due to capacity constraints, efficiently coordinating the operations of customers has become increasingly complex. While encountering continuous pressures to reduce prices, offer supplementary services, and expand geographic coverage, 3PLs face rising fuel prices and operating costs. 3PLs, then, also understand the need to collaborate with their customers. This is reflected in 3PL advertising campaigns, in which they emphasize their role as reliable partners. In

short, both 3PLs and customers of their services have realized the need to adapt to a new business environment. One way they both can do this is by developing long-term, collaborative relationships.

Accordingly, the changing nature of logistics outsourcing relationships has received much attention in the academic logistics literature, including the redefinition of “3PL.” The “modern” definition of 3PL follows Murphy and Poist (1998), who define third-party logistics as “a relationship between a shipper and third party which, compared to basic services, has more customized offerings, encompasses a broader number of service functions, and is characterized by a longer-term, more mutually beneficial relationship.” The 3PL literature, based mainly on case studies and surveys with 3PLs and their customers, has largely emphasized the importance of nurturing close relationships between 3PLs and their customers. For example, Leahy et al (1995) surveyed 3PLs and considered customer orientation and dependability as the most important determinants of successful relationships. Larson and Gammelgaard (2001), based on a survey with logistics providers and with case studies, found evidence that close collaboration between buyers, suppliers, and 3PLs provided benefits, such as greater flexibility, higher inventory availability, and more on-time pick up and delivery.

The few studies with theory-testing in the 3PL literature have also emphasized that relational elements are important for satisfactory logistics outsourcing relationships, and ultimately for achieving higher performance. Knemeyer et al (2003), for example, found that customers whose relationships with 3PLs involve higher operational and strategic integration, exhibit higher levels of key relationship

marketing elements, such as trust in the partner, commitment with the relationship, and dependence on the partner. These “closer relationships” also exhibited higher levels of relationship marketing outcomes, such as customer retention, and referrals of the 3PLs to other potential customers. Knemeyer and Murphy (2004) complemented their previous findings, showing that relationship marketing elements had a stronger impact on marketing outcomes than the effects of firm characteristics, such as size and number of functions outsourced. Positive effects from engaging in relationships with 3PLs were also found by Panayides and So (2005). They found that firms that engaged in relationships with 3PLs with higher levels of trust, bonding, communication, shared value, empathy, and reciprocity, developed higher levels of key organizational capabilities, such as organizational learning and innovation, promoting an improvement in supply chain effectiveness and performance. Sinkovics and Roath (2004) also found a positive effect of customer collaboration with 3PLs on a customer’s market and logistics performance. In the same manner, Stank et al (2003) showed a positive impact of relational performance between a 3PL and its customer on the customer’s market share. From the examples above, it can be noted that the relationships between 3PLs and their customers differ in terms of operational and strategic integration, and that, in general, closer relationships lead to greater benefits to the parties involved.

It is relevant to note that, although the measures adopted to describe the nature of the relationships between 3PLs and their customers differ across studies, they all convey the same concept: a “close relationship.” All of the measures capture, to some extent, dimensions of a *relational exchange*. A relational exchange differs from a

discrete exchange in the sense that it extends over time, and the participants can be expected to engage in social exchange and derive non-economic, personal satisfaction. Relational exchanges, however, can be translated into patterns of behavior. One construct that captures these facets of relational behavior is *partnering* behavior. Partnering can be defined as an “on-going relationship between two firms that involves a commitment over an extended time period, and mutual sharing of information and the risks and rewards of the relationship” (Ellram and Hendrick 1995). Partnerships are a “hybrid” governance mechanism in which the coordinative forces include trust and commitment (Rese 2006). Partnering behavior exhibits the characteristics of joint-planning, sharing benefits and burdens, extendedness, systematic operational exchange, and mutual operating controls (Gardner et al 1994).

Using the concept of partnering, the objective of this dissertation is to complement the existing theory-based 3PL literature (that focuses on the outcomes of close relationships) and, with a theoretical framework, answer the following research questions:

- 1) *For firms already outsourcing logistics services, under what conditions will they be more likely to exhibit a partnering behavior with their 3PLs?*
- 2) *What is the interplay between environmental forces, interorganizational conditions and firm specific factors in shaping such behavior?*

- 3) *Which factors have a stronger effect on shaping this behavior? Are interorganizational conditions created in the relationship stronger predictors than customer-specific factors?*

In order to answer these questions, a relationship marketing perspective is adopted. Relationship marketing, often referred to as a “major shift in marketing theory and practice” (Rao and Perry 2002), is a widely used perspective in marketing research that investigates the creation, development, and maintenance of committed, interactive, and profitable relationships with selected partners over time (Harker 1999). Given that the objective of relationship marketing is to establish, develop and maintain successful, mutually beneficial relational exchanges (Morgan and Hunt 1994, Hewett and Bearden 2001), bringing relationship marketing to 3PL research is an appropriate theoretical perspective to investigate the determinants of partnering.

The relationship marketing perspective draws on many theories and schools of thought, among which social exchange theory (SET) is used to investigate the formation and dynamics of relational exchanges (Rao and Perry 2002). According to social exchange theory, relationships are developed when exchange partners perceive that they accrue higher rewards from the relationship than would be possible outside the relationship (Thibaut and Kelley 1959). Dependence on the partner and trust in the partner are considered the main antecedents of relational exchanges (Lambe et al 2001). In addition, satisfaction with previous outcomes of a relationship has been shown to impact a relationship’s continuity and development (Ganesan 1994, Dwyer, Schurr and Oh 1987). These three factors are captured in the seminal marketing piece of Ganesan (1994), who investigated the determinants of long-term orientation in

buyer-seller relationships; i.e., the perception that the relationship outcomes are expected to benefit the exchange partners in the long run.

Following the foundational premises of relationship marketing and social exchange theory, this dissertation builds upon and extends Ganesan's (1994) model into the context of logistics outsourcing relationships. More specifically, following Ganesan, it is hypothesized that a 3PL customer's partnering behavior is positively influenced by: 1) a customer's dependence on a 3PL, 2) a customer's trust in a 3PL, and 3) a customer's satisfaction with a 3PL. However, it is hypothesized that these three factors are not sufficient to explain the customer's partnering behavior. SET predicts that the relationship dynamics are the major forces in explaining relationship development, but a partner's particular history (e.g., Uzzi 1996, Ho et al 2003) and internal orientation (e.g., Bolumole 2001, Sin et al 2005a) may affect relationship behavior as well. Firms that have had earlier partnership-type outsourcing relationships may have developed a capability that facilitates partnering with the current 3PL. Moreover, according to the relationship marketing literature, firms may have unique strategic orientations towards engaging in relationships with main stakeholders (e.g., customers, partners), or a relationship marketing orientation, that might also influence the decision to engage in partnerships with the 3PL.

In order to test the model briefly described above, the customers of a large Brazilian 3PL provider called Rapidão Cometa are surveyed. Rapidão Cometa (www.rapidaocometa.com.br) is an asset based company with broad geographical coverage both in Brazil and overseas through an operational alliance with a global logistics provider (i.e., FedEx). The firm has been in business for over 60 years, and

has over 3,000 employees and 7,000 active customers. It provides an entire array of logistics services, ranging from simple transportation and warehouse management to customized consulting for supply chain solutions. It also utilizes information technology in the provision of services, such as electronic data interchange - EDI and warehouse management systems – WMS. Its customer base is composed of small and large firms from a variety of industries, such as apparel, auto, and electronics, among others. Given its strong reputation, logistics capabilities, and its diverse customer-base, Rapidão Cometa is an appropriate source of information to address the research questions proposed in this dissertation.

This dissertation contributes to the logistics and marketing literatures and to managers as well. Contributions of this dissertation include:

- 1) Contributing to the 3PL literature by developing and testing a theoretically-driven model. As noted above, few examples in the literature on logistics outsourcing relationships have used hypotheses testing, and even fewer articles have been built on theory;
- 2) Extending Ganesan's model by: 1) including new explanatory variables using different theoretical perspectives; 2) including other dimensions of relational exchange in the dependent variable (long-term orientation in Ganesan's (1994) model is one dimension of partnering behavior);
- 3) Identifying whether a firm's particular experience with partnering or its specific orientation towards partnering with stakeholders is a stronger predictor of its partnering behavior than interorganizational

factors, such as trust in the partner, satisfaction with the partner, and dependence on the partner;

- 4) Using structural equation modeling (SEM), a powerful multivariate technique that can be used to investigate relationships among latent, unobserved variables. SEM is a more advanced analytical approach than those commonly in use in 3PL research, such as percentages or means testing. This provides a contribution to the 3PL literature, in which many papers lack a “formalized, advanced methodological approach” (Maloni and Carter 2005);
- 5) Expanding the geographical coverage of 3PL research by collecting data from Brazil, an important market with strong growth potential. As Maloni and Carter (2005) point out, “much of the existing 3PL research assessed one geographical region, generally the United States.” Other studies, however, have focused on Western Europe, the United Kingdom, the Netherlands, Australia, China, Singapore and Malaysia. An extended geographical scope in 3PL research can be beneficial, especially for practitioners given the importance of Brazil as an important U.S. trade partner. Also, since many constructs have been already tested with U.S. firms, there is an opportunity for future cross-cultural comparison studies;
- 6) And for managers, considering the performance benefits of close relationships for 3PLs and customers, the identification of what factors have a stronger effect on a customer partnering behavior can guide

3PL managers on the nurturing of partnerships with their customers, thus helping them maintain and develop their customer base.

The structure of this dissertation is as follows. Chapter 2 presents a literature review of the main research streams that are related to this dissertation, including logistics outsourcing, partnerships, relationship marketing, and a brief description of Ganesan's model of long-term orientation in buyer-seller relationships. Chapter 3 presents the conceptual model and describes the rationale for the hypotheses in detail. Chapter 4 describes the methodology to be undertaken in order to measure the constructs, survey design and implementation, and data collection. Chapter 5 presents the steps followed in the data analysis and the model results. Finally, Chapter 6 presents a discussion of the findings of this dissertation, contributions, limitations, and avenues for future research.

Chapter 2: Literature Review

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, the subject of Chapter 3. The first section describes the literature in logistics outsourcing, with a focus on the relationships between 3PLs and their customers. The second section provides the definition of customer partnering behavior and a brief overview of the various research streams in the logistics, marketing, and strategy literatures that have investigated the formation of “hybrid governance structures”, of which partnerships is one type. The third section presents an introduction to relationship marketing, with special attention to social exchange theory, the theoretical perspective that serves as the basis for the development of the model. Next, Ganesan’s (1994) model is briefly described, along with the literature that has extended his work. Finally, some comments on the effects of cultural differences in logistics outsourcing are addressed.

2.1. Logistics outsourcing

This section provides an introductory overview of logistics outsourcing concepts, industry trends, and academic research. First, due to the various terminologies used in the literature, the definition of third-party logistics providers (3PL) is provided, along with a brief characterization of the 3PL industry and its main trends both in North America and in Brazil, where the data were collected. Finally, an overview of the main research questions that have been addressed in the 3PL literature is presented with a focus on the empirical work dedicated to 3PL-customer

relationships (see Razzaque and Sheng 1998, or Maloni and Carter 2005 for comprehensive literature reviews on 3PL research).

2.1.1. Third-party logistics (3PL) providers defined

The involvement of 3PLs in the supply chain is becoming increasingly necessary for a firm's survival in the global and competitive environment (Bask 2001). Increased competition and globalization, and the need to reduce cycle times and inventory levels, have created a need for more responsive processes based on efficient supply chain partnerships. These pressures have encouraged management to re-examine a firm's individual and collective positions within the supply chain, and have increased the interest in outsourcing a broad array of logistics services. Outsourcing logistics services to 3PLs has become not only a means to cost-efficiency, but also a strategic tool for creating competitive advantage through increased service and flexibility (Skjoett-Larsen 2000).

3PLs are independent firms that provide single or multiple logistics services on behalf of a shipper (Sink et al 1996, Berglund et al 1999). For example, they can just provide transportation services, or, conversely, a broad array of logistics services, such as customs clearance, information technology (IT) based services for inventory and customer management, and consulting for supply chain solutions. The concept of 3PL, however, is often not well-defined, either in the academic or the industry literature. The earlier definitions of 3PL do not consider a crucial element of the current state of logistics outsourcing: the nature of the *relationship* between the provider and the customer (Murphy and Poist 2000). The clear trend in the literature is towards the notion that "modern" 3PL logistics involves long-term, mutually

beneficial relationships (Leahy et al 1995, Papadoupoulou and Macbeth 2001). Therefore, the definition of 3PL adopted for this dissertation follows Murphy and Poist (1998) and considers that third-party logistics involves “a relationship between a shipper and a third-party which, compared to basic services, has more customized offerings, encompasses a broader number of service functions and is characterized by a longer-term, more mutually beneficial relationship” (p. 26). The characteristics of long-term and mutual benefits are in line with the concept of partnering, the focus of this dissertation.

2.1.2. An overview of the 3PL industry

The main firms in the 3PL industry come from a variety of backgrounds, but can be categorized into three groups (Berglund et al 1999): 1) traditional transportation companies that have expanded their services into logistics; 2) parcel and express companies (e.g., DHL, TNT, UPS), that entered the logistics market based on their worldwide networks and experience with expediting freight; and finally 3) players from other areas, such as information technology, management consulting, and financial services.

The 3PL industry has achieved significant growth over the past several years (Berglund et al 1999). Although no official statistics are available, it is estimated that the U.S. 3PL/contract logistics market has grown from approximately US\$ 31 billion in revenues in 1996 to US\$ 85 billion in 2004 (Capgemini et al. 2005). This trend is mirrored by the number of firms outsourcing logistics services. Lieb and colleagues (1999, 2003, 2005) performed annual surveys of large U.S. manufacturers. The results show that the percentage of firms using 3PL services has grown from

approximately 65% in 2003 to 80% in 2004. This finding is consistent with the findings of the annual surveys conducted by Langley Jr. with industry partners (e.g., Capgemini et al. 2003, 2004, 2005). They have found that the percentage of 3PL users has increased from 72% in 2000 to 80% in 2005. Concurrent with its growth, the 3PL industry has also experienced fundamental changes. There are more competitors in the market. The array of services provided by 3PLs has increased in response to customer desires for one-stop shopping. Aside from the traditional service offerings of warehousing and outbound and inbound transportation services, other frequently outsourced activities are customs brokerage, customs clearance, and freight forwarding. Other more complex activities are also outsourced, including those directly related to customers (e.g., order fulfillment, customer service and order entry/processing), information technology (IT), and strategic services, such as consulting, procurement of logistics, and 4PL services¹ (Capgemini et al. 2005). In addition, pressures for reducing prices, providing multiple services, and expanding geographical coverage, have forced 3PL providers to engage in mergers, acquisitions, and/or strategic alliances (Foster 1999, Lieb 2003, 2005;). As a result, 3PLs face the challenges of working closely with their partners. Moreover, major 3PLs have become more selective about customers and have shifted their focus towards longer-term relationships (Lieb 2005), with greater emphasis on the overall logistics processes rather than on isolated task-based operations (Eyefortransport 2006). In this dynamic and challenging environment, the 3PL industry offers relevant research opportunities in the logistics and supply chain management arenas.

¹ 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.

2.1.3. Logistics outsourcing in Brazil

The state of logistics outsourcing in Brazil is, in many ways, similar to what is found in the U.S. Although Brazil is a smaller market, there are similarities in terms of challenges 3PLs face and in industry trends. Local 3PLs have merged and allied with global 3PLs in their search for larger market shares and broader geographical coverage. Although no official statistics are available, according to the Brazilian magazine *Tecnológica*², there are about 200 3PLs operating in Brazil, realizing in 2001 approximately US\$ 2.36 billion in total revenues (www.guiadelogistica.com.br). In Brazil, a great variety of industries outsource logistics services (e.g., chemical, pharmaceutical, electronics, furniture, apparel, wholesaling, and retailing), reflecting a diversity in terms of logistics complexity (COPPEAD and Booz-Allen, 2001). About 90% of the Brazilian 3PLs have roots as companies that provide basic transportation and warehousing services. Although some of these firms have increased their portfolios of services offered, many still offer only the basic services; i.e. transportation and warehousing. More recently, large American and European providers have entered the Brazilian market. About 70% of the logistics providers are asset-based firms and have grown, in part, due to the absence of a good public warehouse infrastructure, and their willingness to provide reliable transportation services.

In 2001, the consulting firm Booz Allen and the Brazilian academic institution CEL/COPPEAD (Center for Logistics Studies at the Business Graduate Studies and Research Institute at the Federal University of Rio de Janeiro) conducted a study of

² According to *Tecnológica* magazine, a 3PL “provides services related to the logistics area.”

the contract logistics market in Brazil. From a survey of 67 3PLs and additional in-depth interviews, they identified many challenges facing the 3PL industry in Brazil (Booz Allen 2001): First, the substantial differences in taxes among the different regions and states of Brazil hinder the optimization of logistics networks. Another major problem refers to the poor transportation (both in terms of physical conditions and security) and public warehousing infrastructures, which diminishes the ability of 3PLs to operate efficiently. Another barrier to the expansion of the industry is the lack of qualified human resources in logistics. More importantly, Brazilian 3PLs complain about the lack of customer maturity; i.e., customers not being able to specify expectations and needs. Customers, on the other hand, argue that 3PLs are not able to meet their expectations. This disagreement between 3PLs and their customers is an indicator that the “culture of customer-3PL collaboration” may not be mature; i.e., that there is room for 3PL-customer relationships to develop. As such, compared to the U.S. 3PL industry, one might expect fewer long-term relationships, and fewer activities outsourced in Brazil.

2.1.4. Logistics outsourcing research

The academic 3PL literature is primarily based on surveys and case studies that capture customer and 3PL perspectives on the following topics (Razzaque and Sheng 1998): the current and future state of the 3PL industry (Murphy and Poist 1998, Berglund et al 1999, Sum and Teo 1999); identification of drivers for outsourcing, the extent of logistics outsourcing, enablers and hinderers of logistics relationships (Wilding and Juriado 2004); and the investigation of the dynamics of logistics outsourcing relationships; i.e., how relationships grow and what factors

affect their evolution and decline (Knemeyer 2003, 2004, 2005). Overall, the articles emphasize the growing potential of the industry and the benefits to supply chains through logistics outsourcing, not only as a means to cost-efficiency, but also as a strategic tool for creating competitive advantage through increased service and flexibility (Skjoett-Larsen, 2000).

As the following paragraphs show, much of the academic 3PL literature has been exploratory in nature. There have been few examples of theory testing (Maloni and Carter 2005), indicating an opportunity gap for advancement of theory and status of academic work in this field. At this point, it is relevant to note that empirical work in the 3PL industry presents many challenges. First, the size of the industry is difficult to estimate, since governmental statistics are often not available. Also, many providers are part of larger companies that do not break out data on subsidiaries (Berglund et al 1999). Another problem relates to the confusion regarding terminology. As Skjoett-Larsen (2000) states, new concepts, such as third-party logistics, are characterized by multiple definitions (i.e., some researchers consider any transportation carrier as a logistics provider whereas others include only providers that offer a larger array of services). Berglund et al (1999), for example, mention that many transportation companies call themselves logistics companies, or even supply chain partners.

The current and future state of the industry. A number of articles focus on describing the current practices and trends in logistics outsourcing from both the 3PL and the customer perspectives. Longitudinal studies conducted by Lieb et al (e.g., 1999, 2003, 2005) and Langley (Capgemini et al 2003, 2004, 2005), with the support

of industry partners, reveal relevant information. The industry has grown continuously over the past several years, and the number and complexity of the functions outsourced has increased. 3PL CEOs consider supply chain integration as the most significant opportunity for 3PL providers (Lieb and Kendrick, 2003). Users are generally satisfied with their relationships with 3PLs, but point out that some areas should be improved, especially those related to advanced services, such as technology innovation (Capgemini et al 2005). In this sense, some observers predict that the 3PL entrants that emerged from the information technology and consulting areas may be more likely to have greater competitive advantage due to their skills in assisting supply chain optimization and integration activities (Berglund et al 1999). Overall, the 3PL industry may be reaching maturity as 3PLs start to focus activities on market segmentation (Lieb 2005).

Drivers and extent of logistics outsourcing. Frequently cited primary reasons for outsourcing logistics functions include (Boyson et al 1999, Maloni and Carter 2005): cost reduction, service improvements and efficiency, and focus on core competencies. In order to achieve these objectives, logistics outsourcing can occur at different levels, both in terms of scope of logistics activities to be outsourced and degree of integration between the 3PL and the buyer of the service. In this matter, a common research stream in the 3PL literature comprises the investigation of the types of relationships between 3PL providers and customers (Knemeyer et al 2003), and normative frameworks regarding the make or buy decision related to logistics activities; e.g., the steps and factors relating to the decision to outsource (Sink and

Langley, Jr , 1997, Maltz and Ellram, 1997), or the decision as to what kinds of services 3PLs should provide (Hanna and Maltz, 1998).

The variety of existing outsourcing relationships was captured by Knemeyer et al (2003). From a survey of logistics managers across the U.S. compiled from a trade magazine subscriber list, the authors found that more developed partnerships (in which more operational and/or strategic integration is in place) exhibit higher levels of relationship marketing elements (commitment, investment, dependence, communication, attachment, reciprocity) and outcomes (retention, referrals, recovery). Overall, many factors may impact the role that 3PL providers have on customer operations and strategies. Bolumole (2001), for example, examined 3PL relationships in the UK petrol industry. She identified four factors that determine the supply chain role of 3PL providers: 1) the competitive strategic orientation of the outsourcing organization, which influences the firm's logistics strategy; 2) the focal firm's perception of the 3PL role within the 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) surveyed 372 logistics managers and their results clarified different patterns of choice of logistics functions to be outsourced. They found that firms commonly bundle transactional and physical functions within inventory and customer service areas, with the purpose of achieving economies of scale (efficiency) and improving customer service levels without committing significant amounts of financial resources.

Regarding the process of outsourcing, Sink and Langley, Jr (1997), for instance, provided a framework to guide industrial buyers in the purchasing process

of third-party logistics services. The proposed process contains five steps: to identify need to outsource logistics, to develop feasible alternatives, to evaluate and select the supplier, to implement the service, and 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”, an adaptation of the total cost of ownership (TCO) procedures, traditionally used by manufacturers to incorporate non-price considerations into the make or buy decision. Meade and Sarkis (2002) developed a methodology to select and evaluate third-party reverse logistics providers. It consists of a decision network hierarchy, in which elements related to the product life cycle, the reverse logistics functions, organizational performance criteria, and the organizational role of reverse logistics, along with their relative importance, are simultaneously considered. Bask (2001) provided a strategic perspective on the relationships among 3PL providers and members of supply chains. Translated into a normative framework, she proposes that the purchased logistics services should match the supply chain strategies employed by 3PL customers. She argues that if, for example, a firm has a full speculation supply chain strategy³, it will be better off purchasing routine logistics services since it requires less coordination with a 3PL. Conversely, firms that employ manufacturing postponement⁴, which is operationally more challenging, should purchase customized logistics services. Hanna and Maltz (1998), focusing on the 3PL provider perspective, used transaction costs economics to investigate the specific decision of Class I less-than-truckload (LTL) carriers to

³ In a full speculation strategy, manufacturing is centralized, goods are produced to inventory, and finished products are stocked close to customers.

⁴ 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.

expand into warehousing. They found that increased asset specificity (e.g., warehouse with special store equipment, or with a strategic location) is associated with the probability of warehouse ownership, and that larger carriers are more likely to own warehousing assets used to expand their business.

Success factors / Barriers. Of great interest are the factors that contribute to the success (or lack thereof) of logistics outsourcing relationships. Surveys and case studies are the common methods utilized in such studies and the results obtained are usually descriptive. Success factors are found to be present not only during, but before the initiation of the outsourcing relationship. Factors that are cited as determinants of successful relationships relate to the importance of the customer in clearly specifying expectations prior to the relationship and in developing and monitoring performance metrics (Boyson et al 1999, van Laarhoven et al 2000). Boyson et al (1999), for example, in a survey of logistics managers across the U.S., emphasized the crucial importance of the contracting agreements and the need to have in-house knowledgeable managers to audit and monitor 3PLs. Sink et al (1996) made use of a focus group of experienced customers to capture observations of the U.S. third party logistics market. They highlighted the importance of understanding the various interests in contracting logistics in order to implement an efficient and effective marketing strategy. Developing and monitoring performance metrics are indeed very important. Through a telephone survey of third party logistics providers, van Hoek (2001) found empirical support for the contention that performance measurement contributes to the expansion of third party logistics alliances in terms of offering supplementary services (e.g., product configuration, packaging, etc).

Aside from performance monitoring, the willingness to collaborate and communicate with the 3PL is mentioned as a key element for relationship success. Leahy et al (1995) surveyed fifty-one 3PLs and found that customer orientation and dependability are the most important determinants of successful logistics outsourcing relationships. Murphy and Poist (2000) investigated perspectives of both 3PL providers and users. Although both providers and users expressed high levels of satisfaction with 3PL-customer relationships, the authors noted that there is room for improvement. They came to the conclusion that there is an apparent mismatch between the services offered by the 3PLs and the logistics services required by 3PL customers. This result reinforced the importance of ongoing communication between both parties. In this respect, effective and ongoing communication is key for anticipating customer needs and delivering solutions to problems when they emerge.

The role of information technologies (IT), including hardware, databases, software, and other devices that support any information systems, has also been presented as a crucial capability that enhances the 3PL-customer relationship. Lewis and Talalayevsky (2000), for example, emphasized that global competition and the rapid evolution of IT have contributed to the significant trend toward outsourcing of logistics services among major U.S. firms. They highlighted how information 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, van Hoek (2002) demonstrated that technology impacts operational relations in the supply chain and helps 3PLs improve their operations offerings. Sauvage (2003), in a survey of French logistics service providers, showed that the

success of logistics outsourcing relationships is enhanced by the 3PL's technological ability to improve supply chain reactivity in industries immersed in a competitive context characterized by "time compression" (i.e., shorter product life cycle times, shorter order cycle times, etc).

Dynamics of logistics relationships. Some researchers have relied on theory to develop models and test propositions related to the dynamics of logistics outsourcing relationships; i.e., how these relationships evolve and what factors influence their development. One example of a conceptual, theory-based article is Skjoett-Larsen (2000), who viewed third party logistics from an interorganizational point of view, using network theory to develop (but not test) propositions about the dynamics in third party cooperation. From three case studies, Skjoett-Larsen emphasized the importance of both exchange (e.g., technical, information, and social) and adaptation processes (e.g., mutual modification of systems and operations) in developing a relationship, since past and present experiences play a major part in the development of third party cooperation. Another example of a theory-based research can be found in Hertz and Alfredsson (2003). Adopting a social network perspective, and using three case studies on new entrant 3PL providers and their customers, they showed that 3PLs are influenced by customers' customers in the development of their business.

Empirical tests of propositions derived from theory are relatively rare in 3PL research. van Hoek (2000) built a transaction cost economics (TCE) framework to test propositions related to the governance structure of 3PL-customer relationships, including the types of services, contracts, frequency of communication at different

organizational levels, frequency of reports, and content of coordination and communication. He found that the offering of supplementary services, relationship coordination, and frequency of contact are positively associated with detailed contracts. In later research, through a telephone survey of third party logistics providers, van Hoek (2001) found empirical support for the hypothesis that performance measurement contributes to the expansion of third party logistics partnerships. Another example of empirical tests of propositions can be found in Moore (1998), who tested a model of logistics alliances from a 3PL customer perspective. His results indicated that 3PL customers who perceive 3PLs to be trustworthy were committed to maintaining the alliance relationships, thus decreasing the risk of opportunism.

Knemeyer and Murphy (2004) adopted relationship marketing as a theoretical basis and found linkages between relationship marketing activities and the perceived performance of 3PL arrangements. More specifically, the levels of trust and communication were found to influence customer perspectives of various 3PL performance factors, such as operations performance and channel performance. In a later study, Knemeyer and Murphy (2005) investigated the impact of select relationship characteristics (e.g. communication, reputation) and customer attributes (e.g. size, number of functions outsourced) on 3PL relationship outcomes (e.g. customer retention, service recovery). They found that relationship characteristics have a stronger impact than customer attributes on relationship outcomes, reinforcing the importance of nurturing relationships regardless of the type and size of customer.

Sinkovics and Roath (2004), adapting the structure-conduct-performance paradigm, found that internal capabilities (operational flexibility and cooperation) mediate the relationship between two dimensions of firm strategic orientation (competitor and customer orientation) and customer market performance. Although they obtained mixed results for their hypotheses, operational flexibility was the most salient capability, and it augments competitor orientation to impact logistics and market performance. Positive effects of engaging in relationships with 3PLs were also found in Panayides and So (2005). They found that relationship orientation, measured in terms of trust, bonding, communication, shared values, empathy and reciprocity, had a positive influence on key organizational capabilities, such as organizational learning and innovation, thereby promoting an improvement in supply chain effectiveness and performance. A similar result was found by Stank et al (2003), who showed a positive impact from the relational performance between a 3PL and its customers on the customer's market share.

From the examples presented above, it can be seen that most work on 3PLs has focused on exploratory surveys, case studies, or conceptual frameworks to guide users and providers on the processes of the decision to outsource, what functions to outsource, selection of the provider, and maintenance and monitoring of the relationship. Theory grounded, or empirically tested research, appears with much less frequency in the literature. It can also be noted that research has shown that relationships between 3PLs and customers differ in terms of the functions that 3PLs provide and in terms of operational and strategic integration. It is also shown that, in

general, collaborative and interactive relationships exhibit higher satisfaction and performance.

Although the motivations to outsource seem to be consistent across studies, an overall theoretical framework of the conditions under which closer, collaborative relationships between 3PLs and customers will more likely occur remain unexplored. There is much research in marketing and strategy that has investigated the formation of interorganizational relationships, and, more specifically, interorganizational relational exchanges and partnering. Bringing these perspectives and applying them to the 3PL literature is, therefore, one of the main contributions of this dissertation.

2.2. Partnering

This subsection discusses relevant aspects of the partnering behavior, the focus of this dissertation. Initially, customer partnering behavior is defined. Next, a brief discussion of the concept of partnering is provided, distinguishing partnering from other ‘hybrid’-type relationships. Finally, research on antecedents and outcomes of partnering is reviewed.

2.2.1. 3PL-customer partnership defined

The pressures of increasing global competition and rapidly changing customer tastes and preferences have turned the integration and control of the supply chain and logistics functions into a critical activity for enterprises. In order to achieve supply chain coordination and integration, scholars and practitioners have emphasized the strategy of developing and nurturing long-term cooperative partnerships between supply chain members. The literature generally supports the ability of partnerships to

achieve cost savings, and as a result partnerships are increasingly cited as a common source of efficiency and competitive advantage (Gentry and Vellenga 1996, Mentzer et al 2000, Duffy and Fearne 2004).

Partnerships are a “hybrid” governance mechanism in which the coordinative forces include trust and commitment, in addition to price (Rese 2006). The partnership concept is borrowed from the relational contracting literature (e.g., Macneil, 1978, Dwyer et al 1987) and encompasses dimensions of relational governance (Joshi and Campbell, 2003), in which participants engage in social exchange and take not only economic, but also non-economic, social benefits into consideration. In a partnership, as with any relational exchange, each transaction is viewed in terms of its historical context and its anticipated future prospects (Kim and Chung 2003); i.e., as opposed to a discrete exchange that is relatively short term with limited communication. As well, with partnerships, as in relational exchanges, relational norms or expectations of behavior are developed over time. The expectation of continuity and/or the relational norms act as controls against possible opportunistic behaviors. Trust, commitment, and exchange norms complement more formal mechanisms, such as detailed contracts.

The exact definition of partnership, however, is not trivial, as can be noted in the academic literature:

- Mohr and Spekman (1994) define partnerships as “purposive strategic relationships between independent firms who share compatible goals, strive for mutual benefit and acknowledge a high level of interdependence” (p. 135);

- Gardner et al (1994) have a broader perspective on the concept and consider a partnership as the “relational contract” in Macneil’s (1980) language; i.e., a relationship style present within the continuum of interorganizational relationships from arm’s length to vertical integration;
- Ellram and Hendrick (1995) define partnering as an on-going relationship between two firms that involves a commitment over an extended time period with a mutual sharing of information, risks, and rewards from the relationship;
- Lambert et al (1996) classify partnerships into three types. In type I partnerships, firms recognize each other as partners and coordinate activities and planning on a limited basis. Type II partnerships are related to firms that have moved from simply coordinating activities to the integration of activities with a longer term orientation and involving multiple areas within the firm. Finally, firms involved in type III partnerships share a significant level of operational and strategic integration;
- Mentzer et al (2000) distinguish between strategic and operational partnering. While strategic partnering is an “on-going, long-term interfirm relationship for achieving strategic goals, which delivers value for customers and profitability to partners,” operational partnering is an “as-needed, shorter term relationship for obtaining parity with competitors.” An operational partnering orientation seeks improvements in operational efficiency and effectiveness;
- Rinehart et al (2004) classify partnerships as a “hybrid” system that is contained within a range of relational governing systems (from informal agreements to franchising), and is differentiated from mere activity-based or

functional systems for its emphasis on relational characteristics that guide the actions of parties. They argue that there are key distinguishing attributes among the types of partnerships in the transaction-relationship-ownership continuum, such as trust, interaction frequency, and commitment;

- Lambert et al (2004) define a partnership as “a *tailored* business relationship based on mutual trust, openness, shared risk and shared rewards that result in business performance greater than would be achieved by the two firms working together in the absence of partnership” (p. 22). The key point in this definition is that the relationship is customized and cannot be uniform for all customers, since the tailoring process consumes managerial time and effort.

From the definitions above, it can be noted that partnership agreements are unique and possess elements of relational exchange. Gentry (1996) points out that, although the definitions differ in the literature, partnerships usually share the common characteristics of:

- long term commitment;
- open communications and information sharing;
- cooperative, continuous improvements in cost reductions and increased quality;
- sharing of risks and rewards.

These partnering characteristics are among the main elements that exist in a relational exchange (Gardner et al 1994). Therefore, “partnership” is an appropriate and relevant construct to be investigated when studying relational exchanges. From a 3PL’s perspective, investigating the relevant antecedents to a customer’s relational

behavior is very useful in that a 3PL may be proactive and focus on these antecedents, enhancing the relationship and fostering the continuity and success of these relationships. As Ivens (2004) found in his study with members of a German market research association, a service provider's relational behavior exerts considerable influence on a customer's economic and social satisfaction.

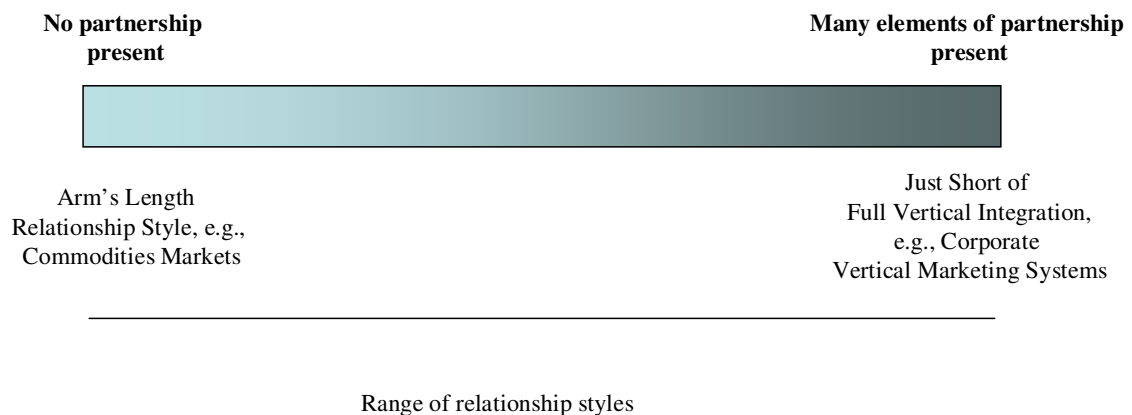
In this dissertation, Gardner et al's (1994) broader definition of partnerships is adopted – “partnering behavior” can exist in different degrees at any point on the continuum between discrete exchanges and vertical integration (see Figure 1). In their words, “partnership would be any relationship that falls to the right of the continuum, beyond arm's length” (p. 122). More specifically, in this dissertation the dependent variable is the *3PL customer's partnering behavior* which corresponds to the customer's perception that its relationship with a 3PL possesses the following behavioral elements (Gardner et al 1994, p. 127):

- *“planning*: integration of the operations of the two firms, smoothing the disturbances from expected and unexpected environmental factors;
- *sharing of benefits and burdens*: reflects the willingness of both parties to accept short-term hardships with the expectation that the opposite party will do the same. In this way both firms win in the long run;
- *extendedness*: refers to loyalty and long-term expectations of the two parties involved;
- *systematic operational information exchange* refers to the systems designed to provide accurate, concise, and usable day-to-day information transfers. These

systems would include automated and non-automated systems; EDI being a good example;

- *mutual operating controls*: reflects each party’s willingness to allow managers of the other party to have a meaningful say in its operations. The goal would be to build more efficient total systems and to verify optimal performance.”

Figure 1. Continuum of relationship styles (extracted from Gardner et al 1994)



2.2.2. Distinguishing between partnerships and other interorganizational relationships

An important point to highlight is the unclear distinction between partnerships and other forms of relational exchanges, especially alliances. There is no agreement in the literature as to whether these terms are synonymous or two independent concepts. Although the distinction between partnerships and other forms of relational behaviors is beyond the scope of this dissertation, this issue is relevant, given that both partnerships and alliances are relational governed, hybrid systems, and the understanding of their drivers and consequences follows the same logic. In addition,

the literature on alliances is also used in this dissertation for insights into the development of the partnering model.

Few scholars have aimed to clarify the behavioral dimensions of partnerships, as well as to differentiate partnerships from other relationship types. Gardner et al (1994) identified the five partnership dimensions presented in the previous subsection – planning, sharing of benefits and burdens, extendedness, systematic operational exchange, and mutual operating controls - and tested for partnership as a first-order factor. Although they were able to discriminate the partnership dimensions, their sample was too small for statistical significance, and relatively few of the potential influencing factors had clear, significant correlations with the overall measure of partnership (thus testing the validity and reliability of a second-order factor for partnerships is a contribution this research aims to make). Mohr and Spekman (1994) argued that partnerships possess behavioral attributes, such as commitment and trust, communication behaviors, and conflict resolution techniques.

Empirically distinguishing partnerships from other interorganizational relationships has not proven to be an easy task. Rinehart et al (2004), for example, explored whether different types of business relationships (e.g. non-strategic transactions, administered relationships, contractual relationship, partnerships, joint venture and alliances) exhibit different attribute levels (trust, interaction frequency, and commitment) through cluster analysis and concluded that this issue is more complex than traditional classifications would predict. The authors expected that closer relationships would exhibit higher levels of the behavioral attributes, but this was not found. Strategic alliances, for instance, did not exhibit higher levels of all the

behavioral dimensions than partnerships. As well, joint ventures exhibited lower levels of trust, which might be indicative of why greater investments are required for joint ventures.

In particular, the distinction between partnerships and alliances is not clear in the literature. Partnerships are a hybrid governance mechanism in which the coordinative forces include trust and commitment (in contrast to pure market transactions, in which price is the coordinative force) (Rese 2006). Indeed, as Mohr and Spekman (1994) point out, “closer, more intimate bonds are what separate these partnerships from a more transaction-based set of exchanges which are limited in scope and purpose.” Alliances on the other hand have been defined as “voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services” (Gulati 1998), or “a form of inter-organizational cooperation involving pooling of skills and resources to achieve common objectives of alliance partners, but retaining their separate entities” (Xie and Johnston 2004). Some researchers do not agree that alliances mean keeping separate entities and consider joint ventures and contracting agreements (e.g., licensing, distribution etc) as governance forms of alliances (e.g., Osborn and Baughn 1990). Zineldin and Bredenlow (2003), for example, argue that strategic alliances encompass agreements between firms needed to achieve some strategic objective, and can range from a simple handshake agreement to licensing, outsourcing, and equity joint-ventures.

In many instances, partnerships and alliances terms are considered to be the same concept (e.g., Gentry and Vellenga 1996, Wong et al 2005). However, partnerships are often distinguished from alliances. Webster (1992), for example,

distinguishes partnerships from long-term relationships in the sense that, in partnerships, cooperation substitutes for arm's length and adversarial behaviors that might exist in long-term relationships. Then, he distinguishes strategic alliances from partnerships arguing that strategic alliances are an entirely new venture where partners work towards a long-term, strategic goal. In his opinion, this strategic objective is one distinguishing feature that separates strategic alliances from other forms of inter-firm cooperation. Gardner et al (1994) view partnerships as a behavior style with some behavioral elements/characteristics (planning, sharing benefits and burdens, extendedness, operational information exchange, and mutual operating controls). Other types of relationships possess elements of partnerships (alliances, joint-ventures, small account selling) to a different extent. Gardner et al's (1994) view is adopted for this dissertation.

2.2.3. Previous research on the antecedents and outcomes of partnering

As outlined earlier, partnerships are a hybrid form of inter-organizational governance, in which relational behavior elements are present, and pure market forces and prices are no longer the only controlling mechanisms. The objective of this dissertation is to identify the antecedents of partnering behavior in the context of logistics outsourcing. For this reason, understanding the drivers of partnering requires a broad overview of the different research streams that have been used to investigate the drivers, structures and outcomes of interorganizational relationships in general.

Research on interorganizational relationships has been conducted in the marketing, strategy and logistics literatures. In all fields, researchers have drawn upon

various theories, such as: transaction costs economics (e.g., Osborn and Baughn 1990), resource dependency (e.g., Pfeffer and Salancik 1978, Thompson 1967), contract law and social exchange theory (Anderson and Narus 1984, Dwyer, Schurr and Oh 1987, Frazier 1983), and social network theory (Gulati 1998, 2000) to investigate the drivers and selection of governance structures. Aside from specifying the behavioral dimensions and attributes of partnerships described in the previous subsection (Gardner et al, 1994, Ellram and Hendrick, 1995, Rinehart et al, 2004), the main research questions addressed have been related to: partner selection (Ellram 1990, Rese 2006); partnership antecedents (Oliver 1990, Whipple et al 1996, Gulati 1998); partnership satisfaction (Anderson and Narus 1990, Walton, 1996, Mohr and Spekman 1994 Lambert et al, 1996, 1999, 2004), and partnership performance (Kleinsorge et al, 1991, Duffy and Fearn, 2004). As the paragraphs below show, the research on partnership formation focuses on either environmental, interorganizational, and firm-specific characteristics. The model proposed in this dissertation contributes to this literature by combining these three elements.

Partnering motivations and formation. Scholars have identified several factors that motivate firms to engage in close, collaborative relationships with other organizations. Mohr and Spekman (1994) argue that partnerships are primarily motivated to gain competitive advantage in the market place. Whipple et al (1996) cite cost reduction, performance improvement, operating stability, the desire to become more customer oriented, and access to the partner's expertise as motivations to enter alliances (or partnerships). They argued, however, that the list of potential motivations to engage in alliances is unlimited in scope and many times specific to

the position within the marketing channel. Oliver (1990), based on a comprehensive review of the interorganizational relationship literature, identified six motivations to establish a wide range of business-to-business relationships: necessity, asymmetry, reciprocity, efficiency, stability, and legitimacy. Bucklin and Sengupta (1993) pointed out that, regardless of the motivations, firms expect significant strategic and/or operational benefits that accrue from relationships to outweigh the costs of maintaining them.

Some researchers have focused on modeling the conditions that trigger the formation and shape the development of interorganizational relationships, such as partnerships and alliances. A traditional perspective is transaction costs economics (TCE) that aims to balance transaction and production costs in order to achieve an economically efficient governance structure (e.g., Osborn and Baughn 1990). Resource dependence theory examines the role of the external environment in shaping such decisions. Conversely, the resource-based view focuses primarily on the existing competence (or lack thereof) that may propel firms to ally with other firms (e.g., White 2000). A fourth perspective is the network theory, which builds on the notion that firms' actions are influenced by the social context in which they are embedded (Gulati 1998). TCE, resource dependency, resource-based view, and social network theories are widely used in strategy research. Another very common theoretical perspective, usually applied by marketing researchers, is social exchange theory (e.g., Dywer, Schurr and Oh 1987). Social exchange theory (SET) is thus an appropriate lens to investigate 3PL – customer relationships and is the main

theoretical perspective adopted in this dissertation. SET is reviewed in more detail in the next section.

Many researchers have linked theoretical perspectives. Joshi and Campbell (2003) investigated the effect of manufacturers' downstream environmental dynamism on the relational governance between manufacturers and their suppliers. They found that in dynamic environments, manufacturers adopt relational governance with suppliers when a manufacturer's collaborative belief is high and when a supplier's knowledge is high. Izquierdo and Cillan (2004) combined resource dependency theory, transaction cost economics, and relationship marketing. They found that trust strengthens the effect of interdependence on the relational exchange between suppliers and manufacturers in the automotive industry. White and Lui (2005) distinguished sources of costs of cooperation and control in alliances. They found that cooperation costs and transaction costs affect the level of time and effort a manager spends in the alliance. In summary, although different theories focus on firm, environmental, and inter-organizational factors, all factors seem to play a role in decisions to build and maintain partnerships.

A common ground among researchers is that no one partnership type is always appropriate. Zinn and Parasuraman (1997), for example, created a typology that classifies logistical alliances along the dimensions of scope (broad versus narrow) and intensity (high versus low). They emphasize that an alliance characterized by a broad scope is not necessarily better or more effective than one characterized by a narrow scope. Both broad and narrow scope strategic alliances can be equally cost effective under appropriate conditions. Indeed, as Lambert and

Knemeyer (2004) point out, partnerships are costly to implement and are justified only if the benefits of a partnership exceed those of not partnering. In a conceptual piece that explored how, why, and when to establish a wide range of possible B2B relationships, Cooper and Gardner (1993) suggest that firms should concentrate on developing good business relationships, which may have varying levels of partnership characteristics. Considering that partnerships may not be appropriate under all circumstances, Rese (2006) developed a normative decision model for managers to evaluate whether partnerships as a coordinative form are really the best choice in given situations. The decision to partner should be taken based on two criteria: the degree of standardization/individualization of the product purchased, and the possibilities to allocate revenue to the several partners in the network.

Partnering outcomes. The effects of partnering on performance and satisfaction have also been investigated. Duffy and Fearne (2004), using a sample of UK retailers and fresh produce suppliers, found a positive effect of main partnership dimensions on supplier performance (measured by future growth and current costs and sales). Walton (1996) found a positive relationship between the five partnership dimensions of planning, sharing benefits and burdens, interdependence, operational information exchange and extendedness, and partnership satisfaction. Mohr and Spekman (1994) showed that partnerships attributes (e.g., commitment, coordination, interdependence, trust), communication behavior and conflict resolution techniques do affect partnership success in terms of partner satisfaction and increases in sales. Gentry and Vellenga (1996), in a conceptual paper, propose that logistics alliances are a source of competitive advantage in the marketplace in that this allows for access to

superior skills and resources. Jonsson and Zineldin (2003) proposed a conceptual model of dealer satisfaction in long-term working relationships between suppliers and dealers. They found that reputation and close ties are key elements to achieving satisfactory relationships when trust and commitment are high, and that it is possible to achieve satisfactory relationships even if trust and commitment are lacking.

Research has also focused on the development of models that identify the factors that influence partnership formation and management and provide guidelines for managers to successfully implement partnerships. Lambert, Emmelhainz and Gardner's (1996, 1999) model, for example, provides managers with a series of steps to be followed in order to identify the drivers, the components, or the activities of the potential partnership, performance measures, etc. Tuten and Urban (2001) identified three main factors that make a partnership successful: improved communication in terms of frequency, characteristics of strong relationships (e.g. trust, reliability, honesty and fairness), and satisfactory performance indicators (e.g. profitability, market share, sales) in line with expectations. In a recent article, Lambert, Knemeyer and Gardner (2004) validated Lambert, Emmelhainz and Gardner's model based on a facilitation of 20 partnerships cases.

2.3. Relationship Marketing

This subsection introduces the concept of relationship marketing, and its theoretical foundations, with a focus on social exchange theory. A brief overview of the extant literature related to business-to-business exchange is presented. Finally, the concept of relationship marketing orientation, one of the main constructs of the proposed model for this dissertation, is discussed.

2.3.1. Relationship marketing defined

Although considered by some as a mere restatement of the marketing concept, thus “redundant and unnecessary” (Gruen 1997), relationship marketing has undeniably become a “hot topic discipline” (Möller and Halinen 2000), and has been referred to as “a major shift in marketing theory and practice” (Rao and Perry 2002). This shift is based on the fact that in the relationship marketing philosophy, the relationship between buyers and sellers becomes the core of the firm’s operational and strategic thinking (Tse and Sin 2004). This view is different from transactional marketing, where the customer remains faceless, and future interactions between buyers and sellers are not a major concern. Indeed, some researchers believe that relationship marketing is the opposite of transactional marketing (Rao and Perry 2002).

A comprehensive definition of relationship marketing is provided by Morgan and Hunt (1994): “Relationship marketing refers to all marketing activities directed towards establishing, developing, and maintaining successful relationship exchanges” (p. 22). Although many other definitions of relationship marketing exist in the literature, recent articles have often followed Harker (1999) who identified as many as seven conceptual categories and 26 definitions of relationship marketing, arrived at 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). Note that the word “partners” indicate 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) explain that in order to fully understand the nature of relationship marketing, the first step is to distinguish between a transactional exchange and a relational exchange. A discrete transaction involves a single, short-time exchange, and has a sharp beginning and ending. A relational exchange, however, encompasses multiple exchanges and usually involves both economic and social bonds (Rao and Perry 2002). To illustrate the broad range of possible forms of relationship marketing, Morgan and Hunt (1994) present ten examples: the partnering involved in relational exchanges between manufacturers and their goods suppliers, as in JIT procurement; relational exchanges with service providers; strategic alliances between firms and their “competitors”; co-marketing alliances and global strategic alliances; alliances with nonprofit organizations; partnerships for joint development; long-term exchanges with ultimate customers; relational exchanges with working partners, as in channels of distribution; exchanges involving functional departments; exchanges between a firm and its employees; within firm exchanges such as among subsidiaries or business units.

The central idea underlying the relationship marketing concept is, therefore, to build and nurture lasting and mutually beneficial relationships (Hewett and Bearden 2001). The expected benefit of systematically developing cooperative and collaborative partnerships is the decrease in exchange uncertainty through customer collaboration and commitment (Andersen 2002). As a consequence, a higher share of each customer’s lifetime business is attained (Gruen 1997). This notion was born

from the fact that organizations have realized that in today's competitive environment, firms need to collaborate in order to compete (Perlmutter and Heenan 1986). Interdependence and cooperation become, therefore, efficient tools to create value and achieve sustainable competitive advantage (Gruen 1997).

2.3.2. Theoretical foundations of relationship marketing

An important ongoing debate amongst marketing researchers is related to the scope and theoretical foundations of relationship marketing. Some articles have discussed the theoretical roots and future directions of the relationship marketing discipline (e.g., Möller and Halinen 2000, Rao and Perry 2002). Möller and Halinen (2000), for example, argue that a theory of relationship marketing has not been developed yet, but only a “variety of partial descriptions and theories focusing on the broad content of the phenomena researchers have labeled relationship marketing” (p. 34). Indeed, the academic background of relationship marketing contributors is extremely diverse (Harker 1999). For some researchers, however, this combination of seemingly unrelated strands of marketing thought makes relationship marketing an attractive concept and can become, in fact, its biggest strength (Harker 1999, Zinkhan 2002).

There is no agreement on the classification of the various relationship marketing schools of thought (for examples see Zinkhan 2002, Rao and Perry 2002, Möller and Halinen 2000). One common ground, however, is that the two major disciplinary roots of relationship marketing are the Nordic school (Gummerson et al 1997) focusing on services marketing, and the industrial marketing school developed

by the international marketing and purchasing group (IMP). The service marketing school focuses on explaining the management of services with special attention to the relationship between the consumer and the personnel that provide the service. The major questions investigated are the management of service encounters and service quality (e.g., Parasuraman, Zeithman and Berry 1985). The industrial marketing (marketing channels) school focuses on explaining governance structures and the modeling of socio-economic behaviors of channel members and draws on socio-economic theories (Spekman and Carraway 2006). Aside from the service and industrial marketing schools, database marketing and the network approach are also cited as strands of thought in the relationship marketing discipline (Möller and Halinen 2000). Another research stream comes from the work on market-oriented organizations, in which the culture of the firm places the customer as a primary stakeholder (e.g., Narver and Slater 1990). Given the broad scope of relationship marketing studies, a comprehensive literature review of all these schools of thought is beyond the scope of this dissertation. Therefore, this section focuses on the application of relationship marketing to business-to-business relationship formation and development.

A common topic examined in relationship marketing is the effect of characteristics of exchange relationships (e.g., trust, dependence) on outcomes (e.g., retention, referrals) that represent desired behaviors on the part of one or more of the partners in the exchange (Hewett and Bearden 2001). Other studies, however, focus on identifying the antecedents of relational behavior, such as trust (e.g., Morgan and Hunt 1994) and long-term orientation (e.g., Ganesan 1994). In addition, many

marketing scholars have developed models in order to explain the development of relationships between exchange partners (e.g., Dwyer, Schurr and Oh 1987). They are usually process models that suggest that relationships that facilitate relational exchanges develop in stages through exchange interactions over time. During the interactions, trustworthiness of suppliers and buyers are tested and norms of behavior are developed (Andersen 2002). These models are typically composed of phases that involve initiation, maintenance and termination (Dwyer, Schurr and Oh 1987, Frazier 1983).

The studies described above have drawn on a variety of theories (Harker 1999), including interorganizational theory (van de Ven 1992, Reve and Stern 1979), transaction-cost economics, resource dependency theory, and industrial network theory (Larson 1992, Johanson and Mattson 1987). However, one of the earliest approaches is social exchange theory (SET), which is the theoretical basis for this dissertation. For this reason, the next subsection presents a brief description of social exchange theory and provides a literature review on the development of relationships, especially from a SET perspective.

2.3.3. A brief introduction to social exchange theory

Marketing scholars have relied widely on social exchange theory (hereafter, SET) to explain relational governance in business-to-business relational exchanges. SET focuses on the relationship between partners, and advocates that relational control in the form of personal relations can be an effective means of governance. This is opposed to early research that focused solely on power and dependence

(Lambe et al 2001). This governance mechanism is built on the foundation of trust, commitment, and exchange norms that replace or complement more formal governance mechanisms, such as detailed contracts. In SET, the relationship is the unit of analysis and the key to relational exchange success.

Continuous interactions are said to build a relationship in stages. Anderson (1995), for example, explains that relationship development is experienced as a series of exchange episodes. Each exchange episode is composed of four events: defining the purpose of a relationship, setting relationship boundaries, creating relationship value, and evaluating exchange outcomes. Dwyer, Schurr and Oh (1987) stress the evolution of exchange relationships and propose that relationships develop through five phases, including awareness, exploration, expansion, commitment, and dissolution.

According to SET, firms engage in and maintain relationships because they expect that doing so will be rewarding (Blau 1964). Therefore, parties will remain in a relationship as long as the parties judge the relationship satisfactory (in other words, that the benefits of the relationship outweigh the costs). SET acknowledges that these rewards may come in various forms, such as: economic, information, product or service, and social rewards (such as emotional satisfaction, view sharing, etc). These rewards are acquired through a history of interactions; the relationship being the lens through which firms anticipate future costs and benefits. If previous experiences have been positive, SET assumes that firms will expect future interactions to have positive outcomes as well.

From a SET perspective, in order to assess whether rewards (i.e., benefits minus costs) are *satisfactory*, social and economic outcomes are compared to two standards that may vary from party to party (Thibaut and Kelley 1959): the benefit standard one feels is deserved in a given kind of relationship – the comparison level CL; and the overall benefit that one believes can be obtained from the best possible alternative exchange relationship – the comparison level of alternatives CL_{alt}. Note that the comparison level CL is based upon present and past experiences with similar relationships, and knowledge of other firms' relationships (Anderson and Narus 1984). In other words, firms evaluate the economic and social outcomes from each transaction and compare them to the level it is felt that the firm deserves (i.e., CL) as well as to the level of benefits provided by other potential exchange partners (i.e., CL_{alt}). If the outcomes level is above of what the firm believes is deserved (i.e., CL), some degree of satisfaction will occur. If rewards acquired from a given exchange relationship exceed CL_{alt}, Thibaut and Kelley (1959) suggest that the party will have a degree of *dependence* on the relationship. SET also suggests that, if positive outcomes (that exceed CL and CL_{alt}) and reciprocal beneficial actions occur, *trust* is built over time and the process of creating trust creates social obligations. Therefore, trust contributes significantly to the level of partner commitment to the relationship. Aside from the creation of trust, with continuous interactions, explicitly and/or tacitly determined rules of behavior, or relational exchange norms, are created. Relational exchange norms are very important because they increase the efficiency of a relationship and reduce the degree of uncertainty.

In a nutshell, the above paragraphs describe the four premises of social exchange theory (Lambe et al 2001, p. 6): “1) exchange interactions result in economic and/or social outcomes; 2) these outcomes are compared over time to other exchange alternatives to determine the dependence on the exchange relationship; 3) positive outcomes over time increase firms’ trust of their trading partner(s) and their commitment to the exchange relationship; and 4) positive exchange interactions over time produce relational exchange norms that govern the exchange relationship.”

2.3.4. Relationship marketing literature focused on business-to-business relational exchange

There is a substantial body of research on business-to-business relational exchange that uses and operationalizes SET (for a review, see Lambe et al 2001). This research can be divided into two groups (Lambe et al 2001). The first group has examined how antecedents contribute to a business-to-business exchange (Ganesan 1994, Morgan and Hunt 1994, Anderson and Weitz 1992, Frazier 1983, Dwyer Schurr and Oh 1987). In this case, the dependent variable is the degree to which the exchange is relational and the independent variables are derived from SET’s other fundamental premises: economic/social outcomes from interactions, and trust/commitment. The second group has investigated the outcomes or benefits of relational exchanges (Anderson and Narus 1984, 1990, Bucklin and Sengupta 1993). As a general observation, dependence and trust are commonly found to influence relational behavior, and a positive effect of relational behavior on outcomes, such as satisfaction and performance, is consistently found.

As mentioned above, researchers have investigated the antecedents of relational behavior and the factors that have most importance in explaining relational exchange. Anderson and Weitz (1992), for example, modeled commitment in distribution channel relationships as a function of (1) each party's perception of the other party's commitment, (2) self-reported and perceived pledges (idiosyncratic investments and contractual terms) made by each party, and (3) other factors, such as communication level, reputation and relationship history. Transaction-specific investments and contractual terms (constraining contractual clauses; e.g., territorial exclusivity, exclusive dealing, limit termination if some performance is not achieved) function as important pledges to build and sustain commitment, affecting each party's perceptions of the other party's commitment. Morgan and Hunt (1994), in their seminal "commitment-trust theory" paper, showed that trust and commitment are key mediating variables in explaining important relationship marketing outcomes. More specifically, trust and commitment have a positive effect on acquiescence (degree to which a partner accepts or adheres to another's specific requests or policies) and cooperation, while having a negative effect on the propensity to leave a relationship, functional conflict, and decision-making uncertainty. Interestingly, it has been shown that personal characteristics and the experience with an exchange partner also play roles in relational behavior. Coulter and Coulter (2002), for example, showed that person-related (e.g., empathy, politeness) and offer-related (customization, reliability) service representative characteristics have an impact on trust, moderated by the length of the relationship. They found that person-related service provider characteristics had a greater effect on trust when customers are in the early stages of a particular

service relationship. As customers gained more direct product experience, competence became more important. Izquierdo and Cillán (2004), in the context of supplier-manufacturer relationships in the automobile industry, found that trust enhances the effect of interdependence on the relational orientation of the exchange.

Other researchers have focused on the effects of relational behavior on specific marketing outcomes, such as satisfaction or performance. Bucklin and Sengupta (1993) developed a model of successful co-marketing alliances, which are relationships between firms at the same level in the value chain, and found that a history of interactions between partners increase the effectiveness (what they called success) of the relationship. Moreover, reducing power and managerial imbalances can foster gains in effectiveness as well. Smith and Barclay (1997) tested the effects of organizational differences and trust on the effectiveness of selling partner relationships. Their model showed that key organizational differences, mutual perceived trustworthiness, and mutual trusting behaviors, all help explain perceived task performance and mutual satisfaction. Hewett and Bearden (2001) developed a model of success in relationships between foreign subsidiaries and headquarters marketing operations. In their study, trust and dependence are modeled as antecedents of relational behaviors (acquiescence and cooperation). In line with Smith and Barclay's (1997) findings, their results show that cooperative behaviors are positively associated with product performance (index function of profitability, sales and market share) in the subsidiaries' markets. Anderson and Narus (1984) developed a model of the distributor's perspective of distributor-manufacturer relationships and found support for SET premises. They found that distributors that perceived higher levels of

outcomes given CL_{alt} perceived lower levels of manufacturer control. Manufacturer control was found to be negatively related to distributor cooperation/satisfaction. Also, outcomes given CL positively affected distributor cooperation/satisfaction. In a later article, Anderson and Narus (1990) found that outcomes given CL, relative dependence, and communication are critical constructs in the explanation of “on-going” manufacturer and distributor working partnerships.

In addition, other researchers, such as Frazier (1983) and Dwyer, Schurr and Oh (1987), conceptualize the process of exchange behavior between organizations within marketing channels. As outlined above, these are process models in which the events occur in stages. Frazier (1983)’s framework, for example, includes processes of initiation, implementation, and review. His model also suggests that one source of power is based on dependence. A series of interactions occurs between firms during an exchange. Cooperation is high when communication is effective and participative decision making occurs. Satisfaction is influenced by a variety of social and economic factors. Dwyer, Schurr and Oh (1987) also propose a framework to describe the development of exchange relationships, drawing a parallel with a marital relationship model. They propose that relationships evolve in five general phases identified as (1) awareness, (2) exploration, (3) expansion, (4) commitment, and (5) dissolution. Each phase represents a major transition in how parties regard one another.

The objective of this dissertation is to identify the antecedents of partnering from a relationship marketing perspective. In the literature, Ganesan’s (1994) “determinants of long-term orientation” model incorporates the major variables

(dependence, trust, satisfaction, and their antecedents) considered in relationship marketing research. This dissertation applies and expands Ganesan's model to the context of logistics outsourcing relationships. A detailed description of Ganesan's model is presented in the next section.

2.3.5. Relationship marketing orientation

The objective of relationship marketing is to attract and develop mutually beneficial, profitable exchanges with customers and other stakeholders (Harker 1999). In order to achieve this objective, scholars have argued that the relationship marketing concept has to be incorporated into the organization's culture and values, placing the buyer-seller relationship "at the center of the firm's strategic or operational thinking" (Tse and Sin 2004). As Day (2000) pointed out, in order to continually attract and keep customers, a relationship orientation must be immersed in the mind-set, values, and norms of the organization. Following this logic, relationship marketing scholars have recently developed the concept of relationship marketing orientation – RMO (Tse and Sin 2004, Sin et al 2005 a, b), which captures the behaviors and activities dedicated to relational exchange processes.

Although relational behavior is the core of the relationship marketing discipline, RMO is a fairly new concept. In the marketing literature, the traditional construct that captures a firm's marketing behavior has been the market orientation (MO) construct, which is defined as the "organizational culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers and, thus, continuous superior performance for the business" (Narver and

Slater 1990). MO is composed of three behavioral dimensions - competitor orientation, customer orientation and interfunctional coordination – and two decision criteria – long-term focus and profitability. Although some research has highlighted the positive relationship between MO and relational norms (e.g., Siguaw et al 1998), Helfert et al (2002) were among the first to argue explicitly that the concept of MO should be explored with particular focus on inter-organizational relationships. This should occur since market oriented firms focus on understanding customer needs and are willing to commit themselves to customers. Moreover, market oriented firms are likely to provide financial, physical, and technical resources for relationships as they value these relationships as a source of information generation and dissemination.

Although researchers in the service and industrial marketing schools have indicated that relationship marketing has a positive effect on firm performance, very limited empirical research has formally measured the RMO construct. Sin et al (2005b), however, developed and validated a scale with six components – bonding, communication, shared value, empathy, reciprocity, and trust – and found a positive relationship between RMO and firm performance. In a second study, Sin et al (2005a) investigated the moderating role of economic ideology and industry type in the relationship between RMO and firm performance. They tested and found a positive relationship between RMO and performance in two models: one for Hong Kong, and another for Mainland China. RMO was found to be a stronger predictor in the service sector in China, and in the manufacturing sector in Hong Kong. Tse and Sin (2004) showed that the effects of RMO on performance are contingent on the competitive

strategic type of organizations. Also, the effect is stronger for market followers and market “nichers” than for market leaders.

In the context of logistics outsourcing, investigating whether buyers of logistics services engage in a relationship marketing philosophy is important to 3PLs in that 3PLs can better select a marketing strategy to be employed with that specific customer. As Day (2000) notes, some customers only want the timely exchange of products or services with a minimum of hassles. Therefore spending resources and effort on attempting to develop a relationship with these customers is not worthwhile. This fact was observed in Garbarino and Johnson’s (1999) study with the customer base of a nonprofit professional theater company. They demonstrated that the decision to employ relational or transactional marketing should depend on the relational orientation of the customer. For low relational customers (individual ticket buyers and occasional subscribers), overall satisfaction is the primary mediating construct between the customer attitudes towards the actors and the play and future intentions of attending and subscribing to the theater. For the high relational customers (consistent subscribers), trust and commitment, rather than satisfaction, are the mediators between customer attitudes and future intentions. Therefore, the extent to which 3PL customers engage in relationship marketing is an important consideration when investigating a customer’s propensity to engage in partnerships with their 3PL providers.

2.4. Ganesan’s (1994) model of long-term orientation

Since this dissertation builds upon Ganesan’s (1994) model of long-term orientation in retail buyer – vendor relationships, and tests the model in the context of

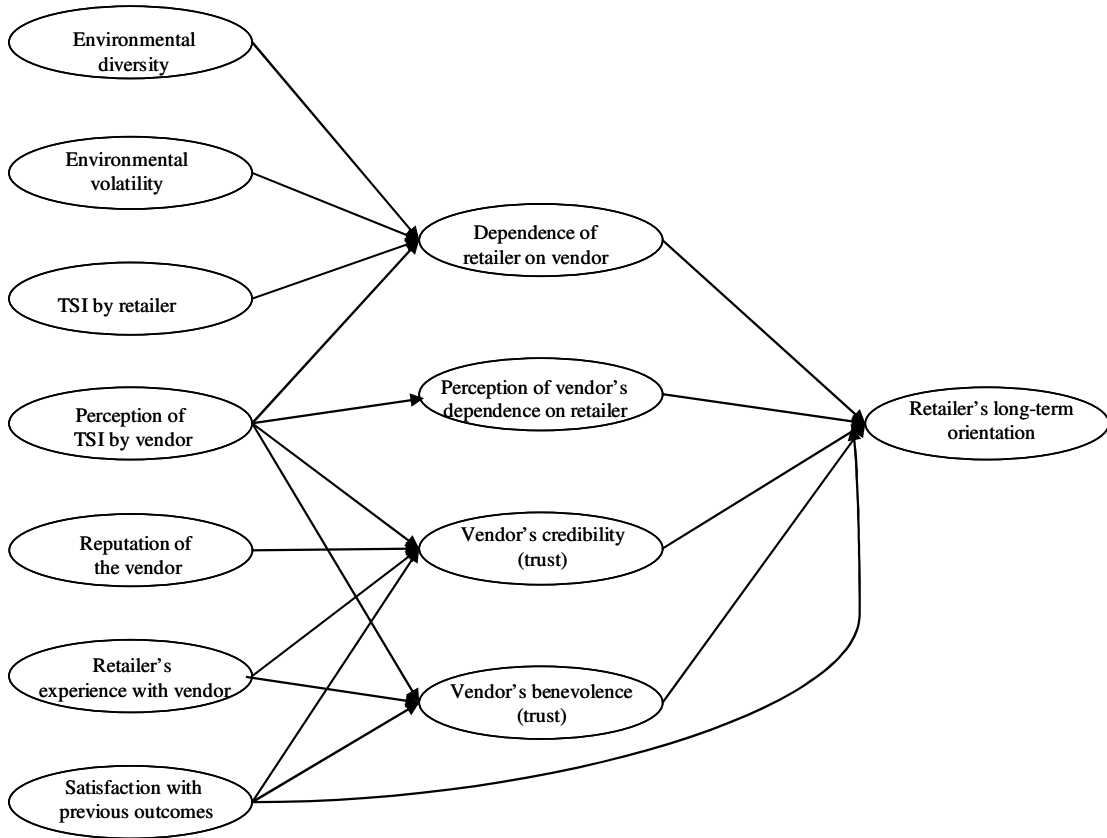
logistics outsourcing, an overview of Ganesan's model is appropriate. This section briefly describes the model, its main variables and its hypothesized relationships. The rationale for each of his propositions is described in detail in Chapter 3, along with the propositions for this study.

The model. Ganesan, based on the premises of relationship marketing, developed and tested the antecedents of long-term orientation in retail buyer – vendor relationships. A special feature of his research is that he tested both vendor and retailer perspectives, and was thus able to identify commonalities and differences between the two groups. Note that since this study investigates the partnering behavior from the 3PL customer's perspective (i.e. the buyer of the service), the discussion and analysis of Ganesan's model in this section is from the buyer's (i.e., the retailer's) perspective.

Ganesan defined a retailer's long-term orientation as the "perception of interdependence of outcomes in which both a vendor's outcomes and joint outcomes are expected to benefit the retailer in the long run." This means that while retailers with short-term orientation are concerned with the outcomes of the current period, retailers with long-term orientation are concerned with both current and future outcomes, while emphasizing future conditions. However, Ganesan pointed out that none of the orientations is altruistic, but focus on maximizing the outcomes obtained through the channel. Retailer's long-term orientation was modeled as a function of two main elements: dependence and reliance on trust (see Figure 2). More specifically, perceived dependence of a retailer on a vendor and retailer's trust in a vendor, are both positively associated with a retailer's long-term orientation. In

addition, a retailer's satisfaction with previous outcomes was hypothesized to have a direct effect on retailer's long-term orientation.

Figure 2. Ganesan's (1994) model



The antecedents of a retailer's dependence on a vendor are: the environmental diversity and volatility in the market of the product that the retailer buys from the vendor, as well as transaction specific investments⁵ by both firms. Environmental volatility, which is related to the extent that there are rapid fluctuations in demand and inability to predict trends, was hypothesized to be positively related to a retailer's dependence on a vendor. Conversely, environmental diversity, which is related to the

⁵ Investments in tangible and intangible assets that are specific to the relationship and that have little salvage value in case the relationship is terminated.

presence of multiple competitors, products, etc., was hypothesized to be negatively related to a retailer's dependence on a vendor. Transaction-specific investments to the relationship, when made by the retailer, were hypothesized to increase the retailer's dependence on a vendor, whereas investments made by the vendor were hypothesized to have the opposite effect.

Ganesan (1994) operationalized trust with two components: credibility and benevolence. Vendor's credibility is related to the belief that the vendor is reliable, whereas benevolence is related to the intentions and motivations of the vendor when unanticipated circumstances arise. The antecedents of trust were modeled as transaction specific investments undertaken by the vendor, reputation of the vendor, retailer's experience with the vendor, and retailer's satisfaction with previous outcomes of the relationship. All these elements were hypothesized to increase the perceived trust of the retailer in a vendor.

Ganesan's hypotheses are the following:

H1: Trust in a vendor's credibility and benevolence is positively related to retailer's long-term orientation.

H2: Dependence of a retailer on a vendor is positively related to the retailer's long-term orientation.

H3: Perceived dependence of a vendor on a retailer is negatively related to the retailer's long-term orientation.

H4: A retailer's satisfaction with past outcomes is positively related to the retailer's long-term orientation.

H5: Reputation of a vendor is positively related to the retailer's perception of vendor's credibility.

H6: A retailer's satisfaction with past outcomes is positively related to the retailer's perception of a vendor's benevolence and credibility.

H7: A retailer's experience with a vendor is positively related to the retailer's perception of the vendor's benevolence and credibility.

H8: A retailer's perception of vendor TSIs is positively related to the retailer's perception of the vendor's benevolence and credibility.

H9: Environmental volatility is positively related to a retailer's dependence on a vendor.

H10: Environmental diversity is negatively related to a retailer's dependence on a vendor.

H11: Retailer's TSIs are positively related to a retailer's dependence on a vendor and negatively related to the retailer's perception of the vendor's dependence on the retailer.

H12: A retailer's perception of vendor's TSIs is negatively related to a retailer's dependence on a vendor and positively related to the retailer's perception of the vendor's dependence on a retailer."

Ganesan's data were obtained from two separate surveys. First, he mailed a survey to retail buyers, who were asked to choose a specific vendor and respond to questions about their relationships with those vendors. Then, a second questionnaire was sent to the vendors indicated by the respondent retailers who were asked about their relationships with the retailers. In his sample, the vendors represented a variety of product lines, some of which had many competitors, others of which had few competitors. The retailers, thus, had various levels of dependence on the selected vendors, and vice-versa.

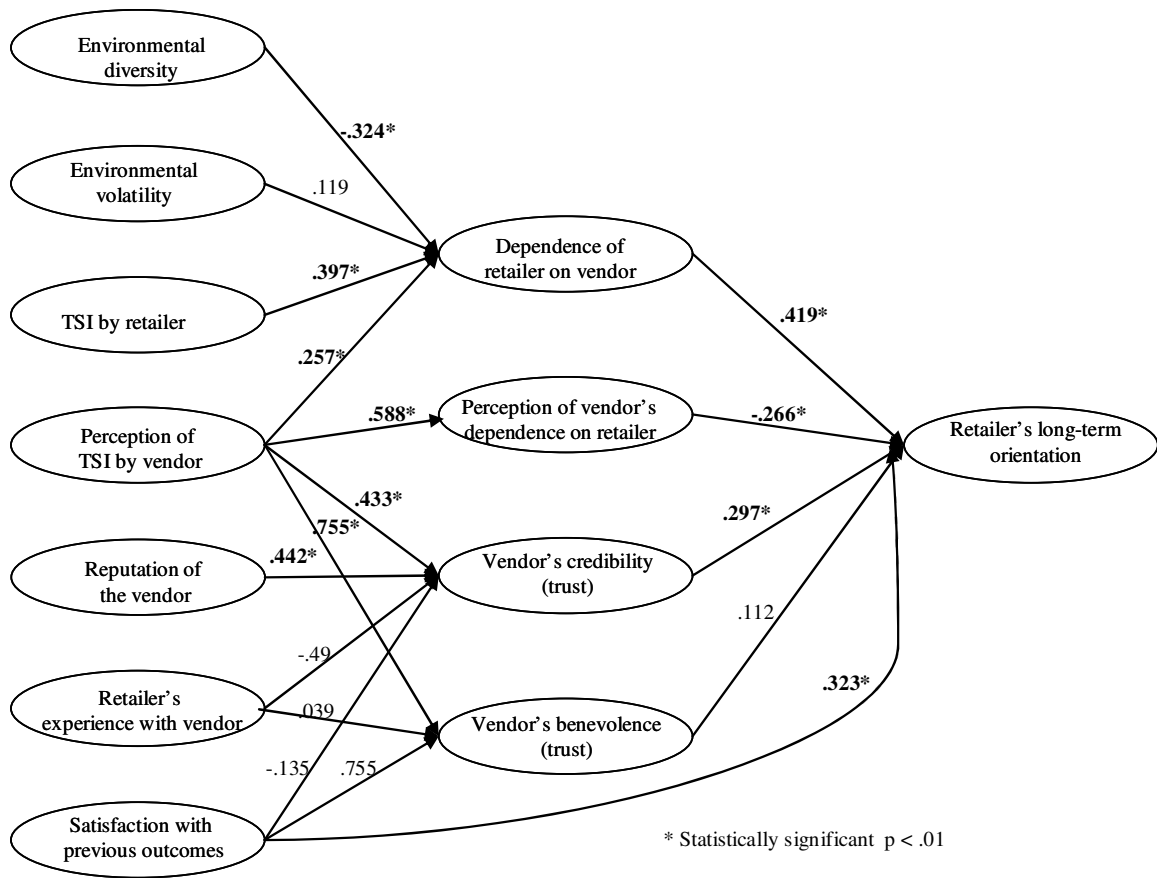
Results. Ganesan obtained excellent support for the primary antecedents of retailer's long-term orientation. He found that dependence, trust (credibility and benevolence), and satisfaction have an impact on a retailer's long-term orientation of a relationship. Figure 3, below, depicts the results of the model. The overall model fit was good ($\chi^2 = 39.95$. $df = 31$). All the five factors hypothesized to affect the

retailer's long-term orientation were significant except one: a retailer's perception of vendor benevolence. More specifically, dependence of a retailer on a vendor was positively related to a retailer's long-term orientation, and a retailer's perception of a vendor's dependence is negatively related to a retailer's long term orientation. A retailer's perception of the vendor's credibility was positively associated with a retailer's long-term orientation. A retailer's satisfaction with previous outcomes was positively related to the retailer's long term orientation. These four variables explained 75.2% of the variance associated with a retailer's long-term orientation.

The dependence of a retailer on a vendor was influenced by the availability of alternative vendors (environmental diversity) and the retailer's TSI in the relationship. Vendor TSI was a main predictor of retailer's trust in a vendor's credibility and benevolence. A retailer's satisfaction with a vendor and a retailer's experience with a vendor were not significant predictors of a vendor's credibility or benevolence.

It is important to point out that Ganesan also tested all the antecedents of trust and dependence in his model for their indirect effects on a retailer's long-term orientation. None of the indirect effects were significant, suggesting that the effects of the independent variables on long-term orientation were mediated through the dependence and trust constructs.

Figure 3. Ganesan's (1994) model with results



With respect to the hypotheses related to the antecedents of trust, the vendor's reputation had a positive effect on vendor's credibility, but not on benevolence, supporting H5. H8 was also fully supported; i.e., a retailer's perceptions of transaction specific investments by a vendor affect the retailer's perception of a vendor's credibility and benevolence. H7 was not supported; i.e., no effect was found for the retailer's experience with the vendor on the vendor's credibility and benevolence. Similarly, no significant relationship was found between satisfaction with previous outcomes and trust.

Mixed results were found for the hypotheses related to the antecedents of dependence. Environmental diversity had a significant, negative effect on retailer's dependence, providing support for the hypothesis, H10, whereas environmental volatility did not have a significant effect on a retailer's dependence on a vendor, as hypothesized in H9. Retailer's transaction specific investments had a significant, positive effect on the retailer's dependence on the vendor, and on a retailer's perception of vendor's dependence, providing partial support for H11. Finally, perception of a vendor's TSIs also had a significant, positive effect on a retailer's dependence on the vendor and on a retailer's perception of a vendor's dependence, providing partial support for H12. Table 1, below, summarizes the findings.

Table 1. Summary of the findings of Ganesan's (1994) model

Hypotheses (Retailer's perspective)	Result
Vendor's credibility → retailer's long-term orientation	Supported
Vendor's benevolence → retailer's long-term orientation	Not supported
Dependence of a retailer on a vendor → retailer's long-term orientation	Supported
Perceived dependence of a vendor on a retailer → retailer's long-term orientation	Supported
Retailer's satisfaction with previous outcomes → retailer's long term orientation	Supported
Reputation of a vendor → vendor's credibility	Supported
Retailer's satisfaction with past outcomes → vendor's benevolence	Not supported
Retailer's satisfaction with past outcomes → vendor's credibility	Not supported
Retailer's experience with a vendor → vendor's benevolence	Not supported
Retailer's experience with a vendor → vendor's credibility	Not supported
Retailer's perception of vendor TSI → vendor's benevolence	Supported
Retailer's perception of vendor TSI → vendor's credibility	Supported
Environmental volatility → retailer's dependence	Not supported
Environmental diversity → retailer's dependence	Supported

Table 1 (cont.) Summary of the findings of Ganesan's (1994) model

Hypotheses (Retailer's perspective)	Result
Retailer's TSIs → retailer's dependence	Supported
Retailer's TSI → retailer's perception of vendor's dependence	Not-supported
Retailer's perception of vendor TSI → retailer's dependence	Not-supported
Retailer's perception of vendor TSI → retailer's perception of vendor's dependence	Supported

Research that extends Ganesan's. The results achieved by Ganesan (1994) demonstrate the relevance of the predictors in explaining the perceived long-term orientation of exchange partners. Although numerous scholars have referred to Ganesan (1994) to support their hypotheses development, to the best of this author's knowledge, no research has explicitly replicated, or expanded Ganesan's model. However, subsequent research has focused on other facets of long-term orientation, such as: the effect of long-term orientation on performance (e.g., Kalwani and Narayandas 1995), the effect of long-term orientation on other relational behavior characteristics (Lusch and Brown 1996), other antecedents of long-term orientation (Schultz and Good 2000), and the potential negative impacts of long-term relationships (e.g., Grayson and Ambler 1999).

Additional explanatory variables have been used as predictors of long-term orientation, such as procedural and distributive justice (Griffith et al 2006) and customer orientation of the seller (Schultz and Good 2000). Based on social exchange theory, Griffith et al (2006) showed that a distributor's perception of a supplier's procedural and distributive justice in its policies enhanced the distributor's long-term orientation and relational behaviors. In Schultz and Good's (2000) model, a seller's orientation towards its customer was a predictor of long-term orientation. In this case,

interorganizational factors (i.e., trust, dependence) were not included in the model. One of the contributions of the present dissertation will be to test these two factors together. In addition, the present dissertation differs from previous models in that it tests the effect of a relational orientation of the 3PL customer with its own customers on the partnering behavior with a third party service provider.

The effect of long-term orientation on performance has also been investigated. Kalwani and Narayandas (1995), for example, showed that long-term orientation with select customers achieves higher profitability, but the same sales growth as does a transactional approach to servicing customers. Lusch and Brown (1996) consider long-term orientation as a mediator between dependence, type of contracts, and relational behavior (i.e., flexibility, information exchange, solidarity). All of these variables were found to have a positive impact on performance. The downside of long-term relationships has also been discussed. For example, Grayson and Ambler (1999) found that the dynamics of shorter relationships are different than those of longer relationships. For example, the effect of trust on commitment was found to be more important in earlier phases of a relationship. As well, in longer relationships, rising expectations and perception of loss of objectivity might occur, leading to dissatisfaction. Similar results were found by Claycomb and Frankwick (2005). Industrial buyers perceive the costs of maintaining relationships with key suppliers differently in the various relationship development phases. For example, information search costs about suppliers are higher in the early stages of a relationship. Buyer uncertainty is reduced over time, but human interaction costs increase substantially.

2.5. Cultural differences and logistics outsourcing

As noted in the previous section, most tests of theory-based models in logistics outsourcing have been conducted with firms in the U.S (e.g. Knemeyer 2003, 2004, 2005, Stank et al 2003). The studies that investigated logistics outsourcing in other countries have primarily relied on case studies and exploratory surveys to depict the reality of logistics outsourcing in those countries, such as Australia (Sohal, Millen, and Moss, 2002), Singapore (Sum and Teo 1999), New Zealand (Sankaran, Mun, Charman, 2002), India (Sahay and Mohan 2006), and Saudi Arabia (Sohail, Sadiq, and Obaid 2005). These articles focus on describing current logistics outsourcing practices undertaken in these countries and identifying future trends. The general claim is that logistics outsourcing practices are more developed in the U.S. and Western Europe than in developing countries. This claim also holds for Brazil, where the sample firms for this study are located. Indeed, as noted in the Booz-Allen report discussed earlier (COPPEAD and Booz-Allen 2001), logistics outsourcing is a recent trend in Brazil, given that the majority of firms still focus on short-term, arm's length relationships with 3PLs.

Given that most studies reinforce the notion that logistics outsourcing relationships differ between U.S. and developing countries, a fair concern is that the findings from this dissertation, that are drawn from a survey of Brazilian firms, may not be generalizable to 3PL relationships in developed countries, such as the U.S. In other words, the question is whether the relationships among the constructs proposed here (e.g., trust, dependence, and partnering behavior) can be directly comparable to the findings of studies conducted with U.S. firms.

Cultural differences and interorganizational relationships. As Anderson and Weitz (1989) state, differences in cultures influence the nature of interorganizational interactions. A sizable work on cross-cultural differences follows this logic and has focused on how culture can shape firms strategies. A seminal piece is the work of Hofstede (2001) who surveyed over 88,000 employees from more than 40 countries and identified four dimensions upon cultures vary: 1) *Power distance*, which assesses human inequalities of prestige, wealth, and power, 2) *Uncertainty avoidance*, which indicates how people feel threatened by uncertainties or unknown situations, thus preferring stability and rule orientation, 3) *Individualism*, which assesses how cultures emphasize individuality versus collectivity, 4) *Masculinity*, which assesses the importance cultures place on careers and money as opposed to social goals, such as relationships or protection of the physical environment. Comparing Brazil and the United States, for example, Brazil has higher scores of power distance and uncertainty avoidance than the U.S., but much lower scores of individualism. Various studies have validated these dimensions of cultural differences or have used them to identify differences in business practices.

Other studies focus on cross-cultural comparisons and find that culture does indeed play a role in the way business is conducted. In the context of headquarter – subsidiaries relationships, Hewett and Bearden (2001) found that individualism moderates the relationship between trust and cooperation. In other words, trust has a stronger effect on cooperation in cultures with higher levels of collectivism. Kogut and Singh (1988) found that the foreign direct investment (FDI) mode was influenced by the cultural distance between the home country of the entering firm and the host

country. Lin and Germain (1998) found support for the contention that cultural similarities affect joint venture performance.

One study that partially contradicts previous findings is Morris (2005). He replicated a model previously tested with American firms, the seminal KMV – “Key Mediating Variable” model of Morgan and Hunt (1995) that identifies the antecedents and consequences of trust. In Morgan and Hunt’s (1995) study, the respondents were retailers from the tire industry who normally do business with domestic suppliers. Morris (2005), on the other hand, surveyed a sample of U.S. purchasers in different industries that procure from international suppliers. He found an overall agreement with Morgan and Hunt’s findings. Morris (2005) also calculated the cultural distance between the purchasers and customers in the sample and tested two models: a culturally distant sample (composed of firms that procured from culturally distant countries), and a culturally similar sample (composed of firms that procured from culturally similar countries). Interestingly, he found that the relationships in the model were very similar for the two samples, implying that cultural differences did not impact the general relationships between the constructs.

Therefore, there is mixed evidence as to how generalizable the findings from one country can be applied to another country, given the cultural differences between them. On the one hand, it should be noted that the theoretical bases for this dissertation were developed by socio-psychologists and with no mention of potential cultural issues in the development of their hypotheses. On the other hand, certain studies have indicated that relationships between variables are intensified or weakened in the presence of different cultural traits. As the work of Hofstede (2001)

shows, for example, the U.S. has a higher individualistic culture as opposed to Brazil, which is more collectivistic. It might be the case that these differences in culture can affect the results of this dissertation.

In conclusion, as with any other empirical work, the results from this dissertation should be replicated in other industries and in other countries in order to determine the generalizability of the results. Since some of the constructs measured here are similar to those measured with American logistics outsourcing firms, a cross-cultural comparison study should be feasible.

2.6. Conclusion

This chapter presented a review of the relevant literature that serves as the basis of the development of the hypotheses presented in Chapter 3. First, the literature in logistics outsourcing was discussed, with a focus on the relationships between 3PLs and their customers. Then the definition of partnering behavior adopted in this dissertation was presented, along with a brief overview of the various research streams in the logistics, marketing and strategy literatures that have investigated the formation of “hybrid governance structures”, of which partnerships is one type. Next, the relationship marketing perspective was introduced, with special attention to social exchange theory that serves as basis for the development of the model in this dissertation. Next, a brief description of Ganesan’s (1994) model of long-term orientation in buyer-seller relationships was presented, upon which this dissertation builds. Finally, a discussion of the generalizability of the findings of this study was presented in light of the literature on cross-cultural differences.

Chapter 3: Model Development and Hypotheses

The objective of this chapter is to present the development of a model of the antecedents of customer partnering behavior in logistics outsourcing relationships. The initial section of the chapter describes the conceptual model based on the relationship marketing perspective and, more specifically, social exchange theory. Next, the rationale for each of the hypotheses that compose the model is discussed.

3.1. Conceptual model

In this dissertation, a customer's partnering behavior in the relationship with a 3PL corresponds to the customer's perception that this relationship presents the following behavioral elements (Gardner et al 1994): planning, sharing of benefits and burdens, extendedness, systematic operational information exchange, and mutual operating controls. In order to identify the antecedents of this type of behavior, a relationship marketing perspective is adopted.

Traditional relationship marketing models that investigate the development of interorganizational relationships follow the premises of social exchange theory (SET) and focus on the dynamics of the relationship under investigation (*i.e. they focus on interorganizational factors*). In these models, trust and dependence are consistently used as motivators for each partner to engage in and develop lasting and mutually beneficial relationships (Hewett and Bearden 2001). In addition, social exchange theory has emphasized that partners engage in relationships if they are rewarding or satisfactory (Lambe et al 2001). This dissertation follows the traditional social

exchange theory rationale (e.g., Ganesan 1994, Hewett and Bearden 2001) and includes trust, dependence, and satisfaction as main antecedents of customer partnering behavior in the relationship with a 3PL. More specifically, it is hypothesized that a customer's trust in a 3PL's credibility and benevolence, dependence on a 3PL, perception of 3PL dependence on a customer, and satisfaction with the relationship with a 3PL will be related to a customer's partnering behavior.

However, largely based on premises of relationship marketing, and in particular, social exchange theory, it is hypothesized that *interorganizational* factors, such as dependence, trust, and satisfaction are not the only elements that explain a customer's partnering behavior in the relationship with a 3PL. It is proposed that some *customer-specific* characteristics will also impact a customer's partnering behavior as well.

One of the foundational premises of social exchange theory is that social and economic outcomes of an exchange are compared to a specific comparison level (CL). This CL represents the benefits that a firm feels is deserved from a relationship and is unique to each firm (Lambe et al 2001). In the logistics outsourcing context, customers have also had unique partnering experiences with other 3PLs. This prior experience may affect their expectations regarding their relationship with the current 3PL (i.e., its respective CL). It can be inferred that if a 3PL customer had *positive* experience partnering with other 3PLs, then it would likely be more willing to exhibit partnership behavior in the present. This argument is consistent with network theory, in that one of the main assumptions is that experience from earlier relations is crucial

to understand the development of current cooperative behaviors (Skjoett-Larsen 2000).

Moreover, relationship marketing scholars propose that some firms have a particular orientation towards engaging in relationships with their main partners. More specifically, some firms have a “relationship marketing orientation” (RMO) incorporated in the firm’s values and culture. Awareness of a customer’s relationship marketing orientation can be crucial to identifying whether relational marketing is an appropriate strategy to adopt (Rao and Perry 2002). For example, Garbarino and Johnson (1999) found that for the customers of a New York repertory theater company, trust and commitment were mediators only for high relational customers, not for low relational customers. Therefore, in the 3PL context, it may be the case that even if the 3PL is performing efficiently and effectively, certain customers will not engage in partnerships with the 3PL simply because they are not focused on building close relationships or partnerships.

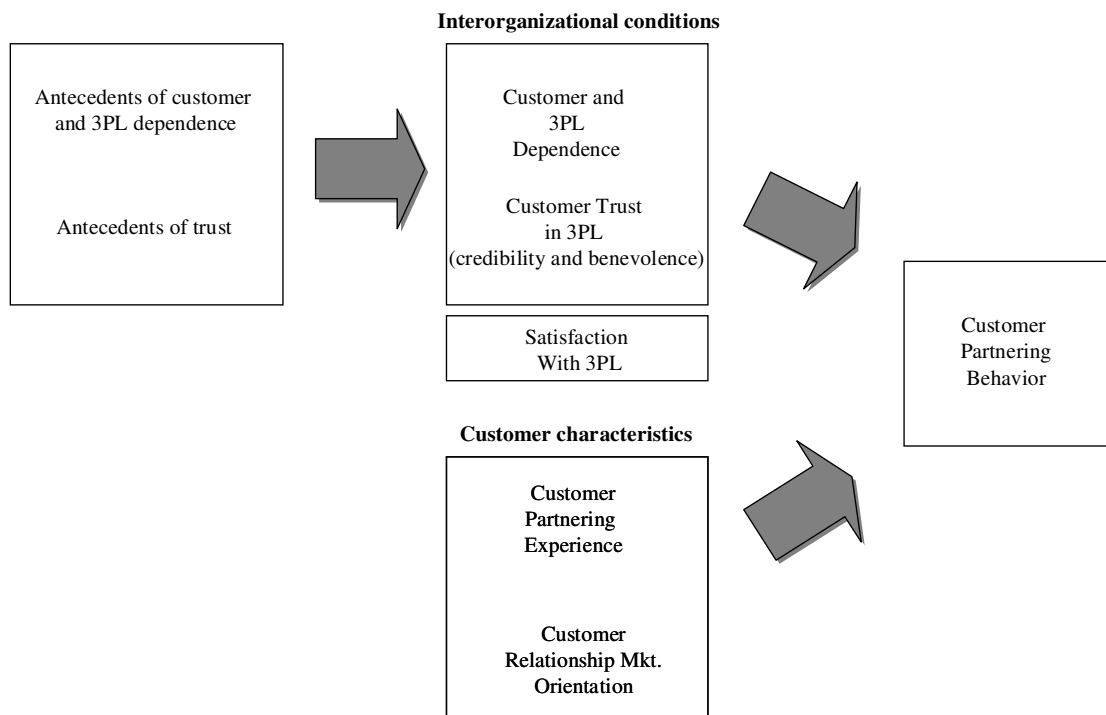
In sum, the present model hypothesizes that the following interorganizational conditions and customer-specific characteristics will influence a customer’s partnering behavior with its 3PL:

- a customer’s dependence on its 3PL;
- a customer’s perception of a 3PL’s dependence on the customer;
- a customer’s trust in its 3PL’s credibility;
- a customer’s trust in its 3PL’s benevolence;
- a customer’s satisfaction with previous outcomes of the relationship with the 3PL;

- a customer's prior experiences with partnering with other 3PLs;
- a customer's relationship marketing orientation.

In addition, the model proposes antecedents for the interorganizational factors as well (i.e., antecedents of both components of dependence and trust). Figure 4, below, depicts the conceptual model to be detailed in the following section.

Figure 4. Conceptual model of customer partnering behavior in logistics outsourcing relationships



In the pages that follow, the conceptual model is described in more detail through the development of specific hypotheses. The primary antecedents of customer partnering behavior are presented first, followed by the antecedents of dependence and trust.

3.2. Hypotheses development

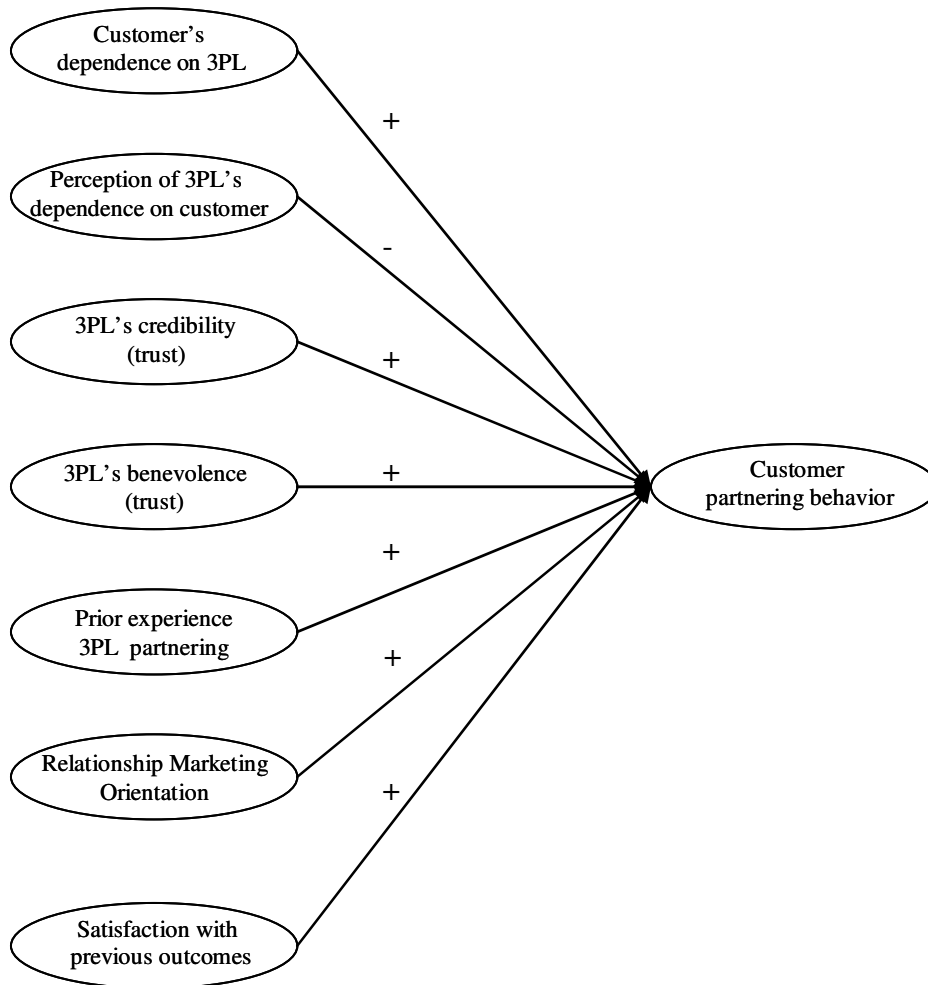
In this section the rationales for the hypotheses are presented. First, the primary antecedents of customer partnering behavior are discussed. Next, the antecedents of both customer dependence on a 3PL and the perception of 3PL dependence on a customer are discussed. Finally, the development of the hypotheses for the antecedents of both dimensions of trust (i.e. credibility and benevolence) is presented.

3.2.1. Primary antecedents

The rationale for the hypotheses related to primary antecedents of customer partnering behavior is based on the premises of social exchange theory, network theory, and the relationship marketing orientation perspective. They are related to both *interorganizational conditions* and *customer specific characteristics*. Five interorganizational conditions are identified: 1) customer's perception of its dependence on a 3PL; 2) customer's perception of a 3PL dependence on the relationship with a customer; 3) customer's trust in a 3P's credibility; 4) customer's trust in a 3PL's benevolence; 5) customer's satisfaction with previous outcomes of the relationship. Throughout the section, the discussion of both dimensions of dependence and both dimensions of trust will be presented jointly. The customer-specific characteristics hypothesized to impact customer partnering behavior with a 3PL are: 1) a customer's prior experience with partnering with 3PLs and 2) a customer's relationship marketing orientation.

Figure 5, below, depicts the sub-model comprising the primary hypotheses. In the paragraphs that follow, the rationale for each hypothesis is discussed in detail.

Figure 5. Primary antecedents of customer partnering behavior in logistics outsourcing relationships.



Customer dependence, 3PL dependence, and customer partnering behavior.

In the marketing literature, dependence has been viewed as both an antecedent and an outcome of a relationship. Dwyer et al (1987), for example, define dependence as “the recognition by both partners that the relationship provides greater benefits than either party could attain alone or that outcomes obtained from the exchange

relationship are greater than those possible from other business alternatives.” On the other hand, Lambe et al (2000) argue that dependence is *built over time* as the partners: 1) invest in the exchange relationship; 2) determine mutually compatible goals; and 3) see positive outcomes from the relationship. Most studies in channels of distribution, however, have viewed dependence as a determinant of organizational conduct and strategic behavior (Ganesan 1994).

In this research, dependence of a customer on a 3PL is considered as an antecedent of the relationship style between a customer and a 3PL, and is defined as a customer’s need to maintain the channel relationship to achieve desired goals (Frazier, 1983). Following the social exchange theory rationale, this study proposes that dependence of a customer firm on its 3PL occurs when the benefits accruing from the relationship are higher than those that could be obtained outside the relationship, either through an alternative partner or with no partner at all (Thibaut and Kelley 1959). As well, following Pfeffer and Salancik’s (1978) resource dependence rationale, it is considered that dependence of a customer on a 3PL is caused by the perceived need of a 3PL’s critical resource; i.e., the expertise and capability of planning and performing complex logistics activities more efficiently and more effectively. According to the resource dependency theory, the need to acquire these critical resources creates a situation of dependency, and in order to maintain a consistent supply of these resources, a firm (i.e. customer) may choose to generate alliances with the supplier organization (i.e. 3PL) (Sakaguchi et al 2004).

Pfeffer and Salancik (1978) suggest that the typical solution to problems of dependence and uncertainty involves increasing coordination, which means

increasing mutual control over one another's activities. For the retailer-vendor case, Ganesan (1994) proposes that one way for retailers to gain control over important and critical vendors is to have a long-term orientation, and to improve the overall profitability of both parties through investments in the relationship. Investing in the relationship with both tangible and intangible resources will eventually reduce asymmetries in dependence and increase mutual dependence. Examples of such investments in the 3PL setting are: compatible software, training of personnel, investment in physical assets such as warehouses, and so forth. Extending Ganesan's rationale and following Pfeffer and Salancik (1978), this study proposes that a 3PL customer's perceived dependence on a 3PL will lead to the customer's close involvement in the 3PL's activities. This can be achieved by means of partnering.

Research has consistently shown the key role that dependence plays in nurturing cooperation and adaptation in relational exchanges, thus contributing to partner commitment (Knemeyer et al 2003). Sakaguchi et al (2004), for example, created and tested a model of supply chain integration, theoretically grounded in the resource dependency perspective (tested with U.S. small businesses). They adopted the IT integration model of Chwelos, Benbasat and Dexter (2001) and found that companies with a higher level of resource dependency were more likely to integrate their supply chains compared to those with less resource dependency.

The opposite situation, however, might occur: a customer might perceive that a 3PL is dependent on it. The same rationale discussed above will hold in this situation. When a customer perceives a 3PL to be dependent on their relationship, a customer may be less willing to assume the costs of maintaining a close relationship.

The net benefits provided by this 3PL may not be perceived to be greater than what could be provided by alternative 3PLs (Ganesan 1994). In this situation, a customer has little incentive to exhibit partnering behavior with this 3PL. Based on the above discussion, two hypotheses are presented:

H1: Customer dependence on a 3PL is positively related to the customer's partnering behavior.

H2: Perceived dependence of a 3PL on a customer is negatively related to the customer's partnering behavior.

Customer's trust in a 3PL's credibility and benevolence, and customer partnering behavior. As discussed previously, the relationship marketing literature has emphasized that dependence is not sufficient to explain the decision to engage in business-to-business relationships (Ganesan 1994, Lambe et al 2001). Firms with exclusively high levels of dependence and asset specificity may seek to escape this dependence (Ganesan 1994). With trust, however, the focus is on future conditions: exchange partners weigh their outcomes through the lens of anticipated past and future exchanges and the social benefits of compromise. Moreover, when reciprocal motivations for developing relationships are in place, partners have the objective of obtaining mutual benefits by means of cooperation, collaboration, and coordination (Oliver 1990).

Trust is defined as the belief in an exchange party's reliability and integrity (Morgan and Hunt 1994) or as the belief that a party's word is reliable and that a party will fulfill its obligations in an exchange (Pruitt 1981). Previous research has operationalized trust in a number of ways. Many studies operationalize trust as a unidimensional factor (Morgan and Hunt 1994, Doney and Cannon 1997, Hewett and

Bearden 2001, Nicholson et al 2001). Knemeyer (2000) defines trust as a construct with three dimensions: achieving results, acting with integrity, and demonstrating concern. Achieving business results is related to the ability to perform tasks in which the trustee is expected to be an expert. Demonstrating concern is equivalent to benevolence, while acting with integrity is related to the trustor's perception that the trustee adheres to a set of principles that the trustor finds acceptable. This study follows Ganesan (1994) and defines trust as a construct with two components: credibility and benevolence. Credibility is based on the extent to which the customer believes that a firm has the required expertise to perform the job effectively and efficiently. This dimension is related to the consistency and stability of the trustee's behavior. Benevolence is based on the extent that the customer believes that a firm has intentions and motives beneficial to the customer when new conditions arise; conditions to which a commitment has not been made (i.e., it focuses on the intentions of the exchange partner rather than on the exchange partner's specific behavior).

Trust is a major construct in most relationship marketing models (Wilson 1995) and the key social variable in explaining interfirm cooperation and long-term relationships (Izquierdo and Cillán 2004). Indeed, Morgan and Hunt's (1994) finding that trust leads to acquiescence, cooperative behaviors, and a decrease in uncertainty, supports the argument that from a relational perspective, trust is an important mechanism for persuasion and fostering future exchanges (Hewett and Bearden 2001). Doney and Canon (1997), likewise, find that trust enhances the likelihood of future interactions among parties. Pruitt (1981) indicates that trust is highly related to

a firm's desires to collaborate. In the outsourcing and 3PL literatures, trust has been often presented as an important driver or mediator of successful 3PL-customer relationships. Zineldin and Bredenlow (2003), for example, in a case study with two Swedish manufacturers involved in strategic outsourcing relationships, emphasized that a long-term relationship does not guarantee success without trust and commitment. Similarly, Knemeyer and Murphy (2004) surveyed 3PL users and found a positive relationship between trust and the 3PL customer's perceived performance.

In a 3PL-customer relationship setting, it is expected that a customer's trust in a 3PL increases customer partnering behavior. More specifically, a customer's trust in a 3PL affects its decision to enter into a partnership in three ways (Ganesan 1994): 1) it reduces the perception of risk associated with opportunistic behavior by the 3PL; 2) it increases the confidence of the retailer that short-term inequities will be resolved over a long period, and; 3) it reduces the transaction costs in an exchange relationship (Williamson, 1981). From the above discussion, it is hypothesized that higher levels of customer trust in a 3PL are related to a higher level of customer partnering behavior.

H3: A customer's trust in a 3PL's credibility is positively related to a customer's partnering behavior.

H4: A customer's trust in a 3PL's benevolence is positively related to a customer's partnering behavior.

Prior partnering experience and customer partnering behavior. Network and social exchange theories propose that the earlier experiences that a firm has had with other partners play a role in explaining a firm's behavior in present relationships (Skjoett-Larsen 2000). Network scholars, for example, emphasize the important role

of prior experience with other partners as a factor that will shape the organization's expectations regarding the new relationships and increase the likelihood of future endeavors (Uzzi 1996). As Skjoett-Larsen (2000) emphasizes, one of the main assumptions in the network model is that not only the "chemistry between individuals" within the parties, but also the actual (positive) experience from earlier relations is crucial to understanding the development of cooperative behaviors between 3PLs and their customers. From a social exchange theory perspective, each firm has a social and economic benefit standard that it feels is deserved in a relationship; i.e., the so called comparison level CL (Thibaut and Kelley 1959). This level is compared to the outcomes from a particular relationship. In a logistics outsourcing relationship context, it can be inferred that customer firms with positive previous experiences with partnering (with other 3PLs) have passed through the inherent difficulties and challenges of the process. As a result, these firms have acquired a capability to plan and coordinate operational and administrative logistics-related activities and manage a partnership-type relationship with an external organization. These firms are then more likely to have realistic expectations towards their present relationship and to engage in a partnership with their 3PLs.

This line of reasoning is supported in several empirical studies. Ho et al (2003), in the context of spin-off IT outsourcing (i.e., an IT department within an organization gets "spun-off into a separate external entity"), found that firms with prior outsourcing experience with other third-parties experienced less managerial conflicts, with this previous experience having a positive impact on performance. In his study of alliances and networks, Gulati (1999) noted that by participating in

alliances, firms can develop managerial capabilities that result from their experiences and learning. This learning can enhance the likelihood of engaging in new alliances. Gulati found that the greater a firm's alliance formation capabilities, the greater the likelihood for that firm to enter a new alliance. In another study, Gulati et al (2000) noted that firms that forged a greater number of alliances appeared to extract more value from their alliances over time. He suggested that experience with alliances can be a source of strategic advantage.

Therefore, it is hypothesized that customers that had prior positive experiences in partnering with 3PLs are more likely to exhibit higher levels of partnering behavior with the present 3PL.

H5: Prior partnering experience with 3PLs is positively related to customer's partnering behavior with the focal 3PL.

Relationship Marketing Orientation and customer partnering behavior. The marketing discipline has been reshaped with a *relationship marketing orientation* (Sin et al 2005), in which short term transactional exchanges are replaced with long-term buyer-seller relationships. When exhibiting a relationship marketing orientation, a firm's strategy emphasizes relationship building by cultivating trust, empathy, bonding and reciprocity between a firm and its customers (Tse et al, 2004). The nurturing of market relationships is considered in the literature as a top priority for most firms (Day, 2000) and a valuable resource (Helfert et al, 2002).

Gronroos (1991) argued that the purpose of relationship marketing is to "establish, maintain, and enhance relationships with customers and other parties at a profit by mutual exchange and fulfillment of promises." After a comprehensive

review of 26 definitions of relationship marketing, Harker (1999) proposed that “*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*” (p. 16). In order to maintain relationships with valuable customers, a *relationship orientation* must pervade the mind-set, values, and norms of the organization (Day, 2000). In other words, the buyer-seller relationship must be at the center of the firm’s strategic or operational thinking (Tse et al 2004, Sin et al 2005). One interesting point to highlight is that relationship marketing is in line with the concept of supply chain management (SCM), since the one main characteristic of the SCM philosophy is “a strategic orientation toward cooperative efforts to synchronize and converge intrafirm and interfirm operational and strategic capabilities into a unified whole, as well as a customer focus to create unique and individualized sources of customer value, leading to customer satisfaction” (Min and Mentzer 2004).

In the logistics outsourcing literature, the 3PL customer’s orientation towards building and maintaining lasting relationships with customers and partners has been considered to be a crucial factor in determining the supply chain role of logistics providers (Bolumole, 2001). Larson and Gammelard (2001), for example, argued that close cooperation between buyer and supplier may lead to plans to bring a carrier into the collaborative process. In a study of the role of carriers within buyer-supplier partnerships, Gentry (1996) enforced that logic and proposed that increasing the involvement of carriers within these partnerships may enhance cost savings and service improvements, as all parties work together to improve quality and operational

efficiencies. She found empirical support for the contention that carriers utilized in buyer-supplier partnerships were viewed differently from carriers used in non-partnering buyer-supplier relationships. More specifically, she found that carriers within existing buyer-supplier partnerships were more likely to embody the dimensions of: (1) long term commitments, (2) open communications and information sharing, (3) cooperative continuous improvements on cost reductions and increased quality, and (4) the sharing of risks and rewards of the relationship.

Based on the above discussion, it is hypothesized that organizations that engage in a relational approach with customers and suppliers have a more external focus and are thus more likely to perceive the 3PL as an integral part of their supply chain, as a facilitator of supply chain integration. In other words, it is proposed that a firm with a relationship marketing orientation towards (i.e. collaborates and bonds with) channel partners and is using a 3PL provider will more likely exhibit characteristics of partnering with a 3PL.

H6: A customer's relationship marketing orientation is positively related to a customer's partnering behavior with a 3PL.

Satisfaction with previous outcomes and customer partnering behavior. As social exchange theory emphasizes, firms engage in relationships because they expect the benefits to exceed the costs of maintaining them. In exchange relationships, firms utilize the history of a relationship to anticipate the costs and benefits of continuing and developing the relationship (Lambe et al 2001). Although most studies include satisfaction as an outcome variable of relational exchange, Ganesan (1994) considers satisfaction with previous outcomes as a predictor of relational exchange (long-term

orientation is one dimension of relational exchange). Network scholars share the perspective for this argument, and argue that connections between firms become closer (i.e., become an “embedded tie”) if expectations are met, or in other words, some level of satisfaction is achieved (Uzzi 1996). Therefore, if a 3PL customer is satisfied with its relationship with the 3PL, it is reasonable for the customer to assume that continuing the relationship is appropriate.

H7: A customer’s satisfaction with past outcomes of the relationship with a 3PL is positively related to the customer’s partnering behavior with that 3PL.

3.2.2. Antecedents of dependence

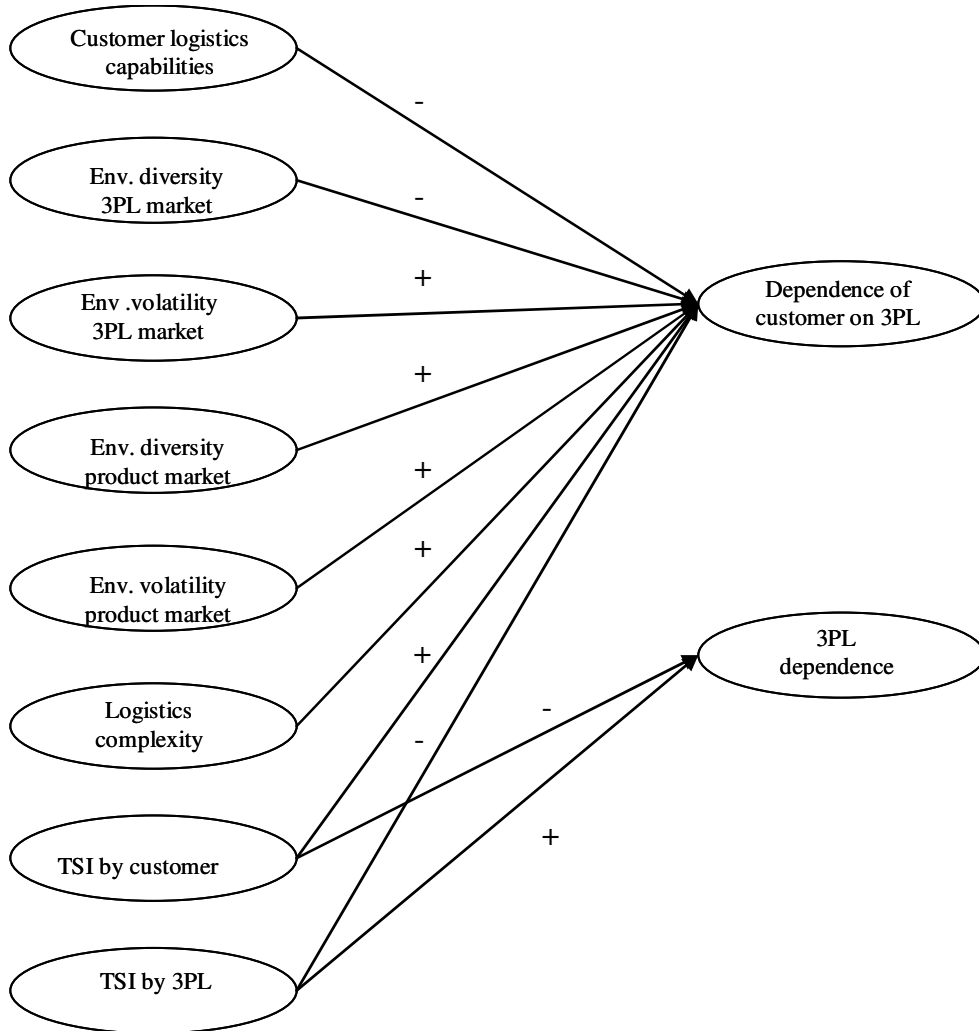
Dependence, itself, is caused by a number of factors. Heide and John (1988) follow Emerson’s (1962) theory of dependence and identify four circumstances in which dependence is increased: 1) when the outcomes of a relationship are highly valued; 2) when the outcomes of a relationship are higher than those obtained from alternative relationships (notion of comparison of outcome levels); 3) when there are few available alternative sources of exchange (concentration of resources); and 4) when there are fewer potential alternative sources of exchange.

Ganesan (1994), as well as many other researchers (e.g., Anderson and Narus 1990, Anderson and Weitz 1992, Heide and John 1988), have emphasized the roles of transaction specific investments and environmental volatility and diversity as predictors of dependence. However, in the context of logistics outsourcing, it is also proposed that the nature and complexity of logistics operations will impact the level of perceived dependence of a customer on a 3PL. If any firm is operating

internationally, for example, it has to deal with complicating factors, such as customs and local import/export regulations. In this case, the expertise of a 3PL may be much more valued by a customer than if the firm only has domestic operations. Another example relates to the breadth and complexity of the distribution or sourcing network: If it is broad and complex, the network should require more expertise than if the network is simple. Finally, according to the capabilities perspective, a firm's consideration of its internal resources and capabilities vis-à-vis the capabilities of potential partners may also impact the decision to partner (White 2000).

In summary, the antecedents of dependence identified in this study include: environmental volatility and diversity in the 3PL and product markets, transaction specific investments, complexity of logistics operations, and internal logistics capabilities. Figure 6, below, depicts the antecedents of customer and 3PL dependence. Each of these antecedents is discussed in depth below.

Figure 6. Sub-model of antecedents of dependence.



Internal logistical capabilities and dependence. Resource based view and dynamic capabilities literatures have defined capabilities or distinctive competencies as “those attributes, abilities, organizational processes, knowledge and skills that allow a firm to achieve superior performance and sustained competitive advantage” (Peteraf 1993, Morash et al 1996). In the logistics setting, Morash et al (1996) propose that logistics capabilities can be divided into two major groups: demand

oriented and supply oriented capabilities. Demand oriented capabilities emphasize customer closeness and responsiveness to the target market, whereas supply oriented capabilities are related to operational excellence, usually with an internal focus and an emphasis on cost reduction. They point out that no strategy is necessarily superior to the other. Each firm's logistics strategies should be designed to support the firm's overall strategies.

The capabilities perspective postulates that a firm's decision to make, buy, or ally is generally made after consideration of not solely external competitive factors, but also internal capability-related factors (White 2000). Each firm has unique capabilities that incur in unique production costs that by their turn influence strategic decisions, including the formation and development of interorganizational relationships. Empirical evidence for this argument is shown in several studies. In a case study article within a multidivisional firm that produced industrial goods for the electronics, telecommunications, aerospace and electric power industries, Argyres (1996) observed that firms vertically integrated into those activities in which they have greater production experience and/or organizational skills (i.e., capabilities) than their potential suppliers. Combining internal capabilities and TCE perspectives, White (2000), in a study of state-owned pharmaceutical firms, found that firms with prior experience in new compound development were more likely to be involved in undertaking development activities. His rationale was that these firms had developed capabilities that allowed them to do so.

The effect of firms' logistics capabilities on their logistics outsourcing decisions has been acknowledged in the logistics literature as well. As Gilley et al

(2004) point out, it is essential to include both internal and external antecedents of outsourcing for the development of a general theory of outsourcing. Bolumole (2001) explains that a firm's outsourcing strategies will largely depend on the way a firm perceives its own capabilities compared to its perception of 3PL abilities. Similarly, Rao et al (1994) argue that one obstacle to the expansion of logistics outsourcing is that many customers believe that their own departments provide more cost-effective service than that provided by a 3PL.

Following this logic, this study proposes that a customer's perception of its logistical competencies will impact the degree of its perceived dependence on its 3PL. It is proposed that when a customer perceives its logistics capabilities to be adequate, it feels self-sufficient and not dependent on its 3PL. Conversely, a customer that has lower logistics capabilities perceives itself to be more dependent on its 3PL. In this case, the outcomes obtained through the relationship with the 3PL are more highly valued. It is proposed, then:

H8: A customer's logistics capabilities are negatively related to a customer's dependence on a 3PL.

Environmental volatility, environmental diversity, and dependence.

Decision-making uncertainty refers to the degree to which a firm is not able to predict or anticipate the environment. In the strategy literature, environmental uncertainty is linked to different dimensions, such as demand unpredictability or difficulty in anticipating actions from actual and potential competitors (Boyd, 1990). Following Ganesan (1994), this research investigates the effects of two key dimensions of environmental uncertainty - environmental dynamism and environmental complexity

– on dependence in buyer-seller relationships. Environmental volatility (or dynamism) refers to rapid and unpredictable changes or fluctuations in demand in an industry, representing the level of turbulence or instability facing an environment. In a highly volatile environment, the difficulty to forecast demand and predict trends increases substantially. The second dimension is environmental diversity (or environmental complexity), which is defined as the heterogeneity of resources in an environment (Boyd, 1990). A diverse environment is composed of many products, vendors, and competitors.

The effects of these two sources of environmental uncertainty on firm strategy and behavior have been extensively studied in the strategy, outsourcing, and relationship marketing literature. Environmental complexity, for example, was found to have a positive effect on firm linkages in terms of number of interlocks⁶ (Boyd 1990). Environmental volatility or dynamism, often called “the strongest determinant of environmental uncertainty” (Joshi and Campbell 2003), was found to be positively associated with: 1) relational governance between manufacturers and suppliers (Joshi and Campbell 2003), 2) outsourcing activities of small firms (Gilley et al 2004) and, 3) degree of modularity⁷ (Schilling and Steensma 2001).

The question, then, is why uncertainty leads to dependence. In the retailer-vendor context, Ganesan (1994) examines dimensions of uncertainty in the retail market. Ganesan proposes that environmental volatility increases the dependence of a retailer on a vendor because in a high volatile environment, in which sales fluctuate

⁶ An interlock between two firms occurs when one director of a firm also sits on the board of directors of the second firm (direct interlock), or when two firms have representatives on the board of a third firm (indirect interlock).

⁷ Usage of “flexible” organizational forms, such as contract manufacturing, alliances, or alternative work arrangements.

and sales forecasts are difficult to predict, retailers may not be able to foresee all circumstances in a contract. Therefore, they may engage in long term relationships with vendors in order to prevent possible opportunistic behaviors. On the other hand, Ganesan proposes that environmental diversity is *negatively* associated with a retailer's dependence on a vendor. He argues that in markets with a variety of products and alternate vendors, retailers may have difficulty in developing appropriate strategic programs for each product. The retailers, therefore, may be encouraged to develop flexible and temporary channel structures with multiple channel partners.

In the logistics outsourcing setting, it is proposed that environmental volatility and diversity should be investigated in two distinct markets: 1) the market for the product the 3PL customer buys from the 3PL; i.e., logistics services, and 2) the market for the product the 3PL customer sells to its own customers. As the paragraphs that follow illustrate, the proposed rationale for understanding the effects of uncertainty differs between these two markets.

In the market for 3PL services, a source of dependence is related to availability of alternative 3PLs to the one currently used by the customer, i.e., the diversity of the market for 3PL services. If the customer perceives the 3PL industry to have many competitors and service offerings (i.e., diverse) it will perceive itself to have more alternatives to the focal 3PL, reducing the level of dependence on the focal 3PL. On the other hand, if the service offerings in a 3PL market is perceived to be volatile, due to capacity problems or high demand, the customer may feel itself to be more dependent on a 3PL (i.e., to lock-in supply).

Diversity and volatility in the market for the product the customer ships with the 3PL (here called the product market) will also impact perceived dependence of on a 3PL. In the context of logistics operations, when a firm is embedded in a volatile environment, shipment sizes and locations may change rapidly, leading to higher complexity in operational planning. (Cooper and Gardner 1993). Having a close relationship with a 3PL may increase the probability of 3PL assistance in these circumstances. With respect to environmental diversity (e.g., high level of competition, short product life cycles), firms may more likely focus on their core competencies and outsource its logistics functions (Quinn and Hilmer 1994; Rabinovich et al. 1999). Therefore, a firm will tend to strengthen links with a 3PL provider in order to gain better control over its operations.

Based on the above discussion, the following hypotheses are presented:

H9: Environmental diversity in the market for 3PL services is negatively related to a customer's dependence on a 3PL.

H10: Environmental volatility in the market for 3PL services is positively related to a customer's dependence on a 3PL.

H11: Environmental diversity in the product market is positively related to a customer's dependence on a 3PL.

H12: Environmental volatility in the product market is positively related to a customer's dependence on a 3PL.

Logistics complexity and dependence. With the advent of globalization and internationalization, many firms have extended their geographic activities and product scope, and are now dealing with a more diversified range of customers with different tastes and preferences. These firms must face multifold and simultaneous pressures: the need for ceaseless innovation to cope with shorter product-life cycles, the

requirements for consistent efficiency improvements in order to compete in highly competitive global markets; and the need to meet customers increasing demands for on-time performance, more frequent deliveries, etc. These pressures are not restricted to multinationals. Even those firms focusing on domestic markets must compete with foreign rivals and develop a global perspective (Mentzer et al 2000). These challenging requirements increase the complexity of a firm's logistics operations.

Rao and Young (1994) propose that logistics complexity has to do with the following: 1) the volume and variety of logistics transactions, impacting both physical and information tasks; 2) divergence in the number and sequence of transactions that must be performed for the various products moving in different regions of the world, and 3) interdependency of tasks within the supply chain process, which places a premium on co-ordination and control. More specifically, they argue that logistics complexity is composed of three components that affect the difficulty of coordinating material and information flows:

Network complexity refers to both the geographic dispersion of a firm's trading partners as well as the intensiveness of transactions with selected trading partners which can give rise to volume leveraging effects.

Process complexity refers to time and task compression (or lack thereof) in the supply chain. When the logistics process is complicated by the number of tasks which have to be performed and coordinated within a short span of time, such as in JIT environments, numerous cost/service tradeoffs and functional interdependency arise in operations.

Product complexity refers to the special circumstances required by products and materials due to the complexity of the environment (temperature, humidity, etc.) governing their transportation, storage and handling. Hazardous materials, goods with short shelf lives or that are susceptible to damage, and other physical properties make logistics more difficult.

According to the resource dependence perspective, one critical factor that increases the degree of perceived dependence is the importance of the resource to the firm (Pfeffer and Salancik, 1978). It is proposed that 3PL customers, whose businesses involve complex logistics operations in terms of network, process, and product complexity, perceive logistics to be crucial to their businesses and thus may perceive themselves to be dependent on the 3PL provider. It is proposed, then:

H13: A customer's logistics complexity is positively related to a customer's dependence on a 3PL.

Transaction-specific investments (TSI) by customer and 3PL, and dependence. 3PLs and their customers may have to undertake investments in assets that may be specific to their particular relationships and not be easily deployed in other relationships. Examples of such investments include: cold storage areas, customized trailers, special warehouse material-handling equipment (Cooper and Gardner, 1993), training of warehousing personnel, and the provision of “dedicated electronic linkups for inventory control for a particular partner’s account” (Knemeyer et al, 2003). These are called transaction-specific investments – TSI (Williamson, 1981), key considerations in make-or-buy decisions (Aersten 1993) and widely used as antecedent factors affecting the degree of channel and supply chain integration (e.g., Wu et al 2004).

TSIs have several relationship stabilizing properties (Wu 2004): for example, they act as important pledges in the channel relationship and have a positive effect on the partner commitment to the relationship (Anderson and Weitz 1992); they are

useful in minimizing opportunistic behavior, and; they facilitate expectations of continued exchange (Heide and John, 1990). Indeed, TSIs are the most frequent demonstration of commitment to a relationship (Rinehart et al 2004). In addition, all other things being equal, as the need to invest in relationship-specific assets increases, firms may seek to incorporate additional partnership elements into their relationship (Cooper and Gardner 1993). Ganesan (1994) argues that TSIs create exit barriers to the investing party, thus increasing dependence on its partner. In his research setting, Ganesan proposes that retailer TSIs are positively related to the retailer's dependence on a vendor, and that a retailer's perception of vendor TSIs are negatively related to a retailer's dependence on a vendor.

It can be argued that the same rationale holds in the context of 3PL-customer relationships. A customer that has invested in specific assets, such as capital investments or in training and equipment (or in the present context, has divested of assets that are replaced by those of the 3PL) has created exit barriers and may perceive itself to be more dependent on the 3PL. But 3PLs will often invest in tangible and intangible assets dedicated to specific customers. In this case, specific investments made by the 3PL decrease the customer's perceived dependence on the 3PL because they reduce the threat that the 3PL provider might abandon the relationship. Therefore, it is hypothesized that:

H14: A customer's TSIs are positively related to a customer's dependence on a 3PL.

H15: A customer's TSIs are negatively related to a customer's perception of a 3PL's dependence on a customer.

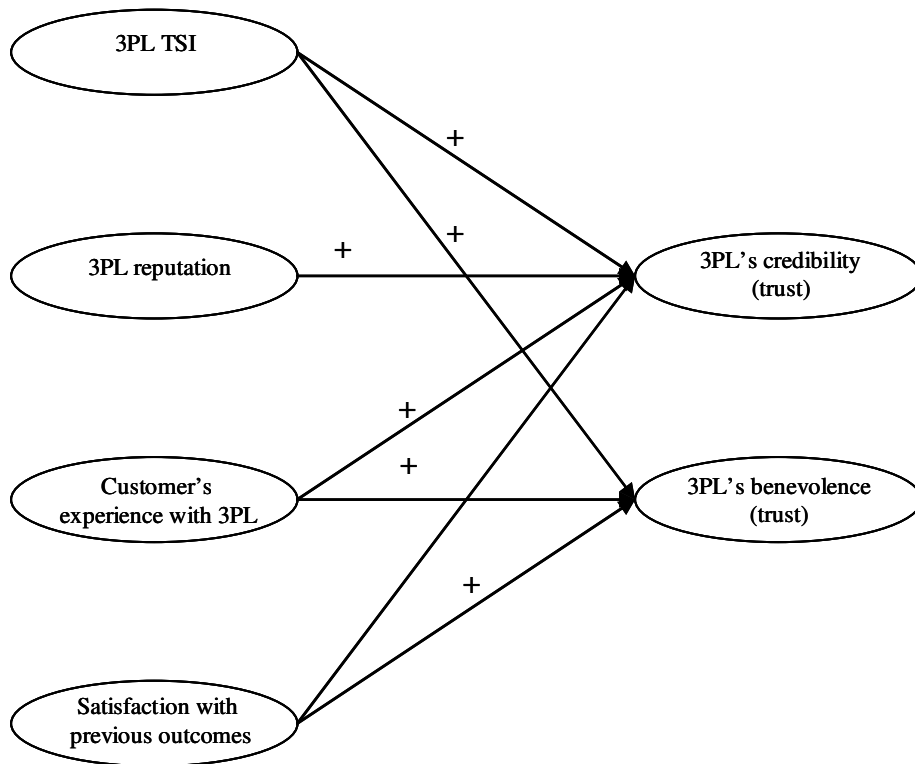
H16: A customer's perception of a 3PL's TSIs is negatively related to a customer's dependence on a 3PL.

H17: A customer's perception of a 3PL's TSIs is positively negatively related to a customer's perception of a 3PL's dependence on a customer.

3.2.3. Antecedents of trust

The antecedents of a customer's trust in a 3PL are related to the 3PL behavior towards the relationship, experience of the customer with the 3PL, and satisfaction with previous outcomes with the relationship. Figure 7, below, depicts the antecedents of both dimensions of trust (i.e. credibility and benevolence) to be discussed in detail in the following paragraphs.

Figure 7. Sub-model of the antecedents of trust



TSIs by 3PL and trust. A customer's perception of a 3PL's specific investments in a relationship provides a signal that the 3PL can be trusted (Ganesan 1994). An investment specific to a relationship is tangible evidence that a party is committed to the relationship, and that it cares for such relationship (Anderson and Weitz 1992). Indeed, these resources directed specifically towards the other party are the most frequent demonstration of commitment to the relationship (Rinehart et al 2004). In addition, as mentioned earlier, a party that has invested in a relationship has increased exit barriers and is less likely to exhibit opportunistic behavior (Heide and John 1990), which are two factors that reduce the level of trust (Morgan and Hunt 1994). Therefore, it is hypothesized that:

H18. A customer's perception of 3PL specific investments is positively related to the customer's perception of the 3PL's credibility.

H19. A customer's perception of 3PL specific investments is positively related to the customer's perception of the 3PL's benevolence.

3PL reputation and trust. Firm reputation is defined as the opinion or perception that stakeholders have about a firm's knowledge, honesty, and care (Doney and Cannon 1997, Deephouse 2000). Reputation is one of the most powerful factors in acquiring and retaining customers (Jonsson and Zineldin 2003) and has been referred to as a means to achieve competitive advantage (Barney 1991). Bharadway et al (1993) refer to reputation as "brand equity" and define it as "a set of brand assets and liabilities linked to a brand, its name and symbol that add or subtract from the value provided by a product to a firm and/or that firm's customers." They argue that firms having strong brand names and symbols are better positioned to

mitigate customer perceptions over variability in quality. Firms with strong brands can, therefore, differentiate themselves from the competition.

The reputation of a firm is built over time through the demonstration of consistent and reliable behavior (Ganesan 1994). Therefore, if a firm enjoys a credible reputation in a market, it can be inferred that the firm is trustworthy in relationships. Kwon and Suh (2004), for example, in a survey of members of four organizations, found a positive relationship between a partner's reputation in the market and the level of trust in the partner.

This study follows Ganesan's (1994) model and proposes that a 3PL's reputation will have a positive effect on a customer's perception of its credibility, but not on benevolence. As Knemeyer (2000) explains, reputation for fairness and effective performance is easily transferable across firms. Therefore, when a customer perceives its 3PL to have a reputation for achieving the desired results and for being efficient, it is likely that it will trust the 3PL to perform correctly (i.e. credibility). On the other hand, caring for the partner and demonstrating concern (i.e. benevolence) is relationship specific. Perceiving this characteristic can only be realized through actual interaction, not via word-of-mouth communication.

It is proposed that, when a 3PL has the reputation for effective performance, it is likely that its customers will trust its credibility and its ability to achieve the desired results (Knemeyer 2000).

H20: The reputation of a 3PL is positively related to its customer's perception of the 3PL's credibility.

Experience with 3PL and trust. Outsourcing logistics activities enables firms to achieve operational flexibility and efficiency but, on the other hand, requires firms to develop capabilities in order to coordinate their relationship with the 3PL. Managing an interorganizational relationship involves using appropriate governance mechanisms, developing inter-firm knowledge-sharing routines, making appropriate relationship-specific investments, and initiating necessary changes to the partnership as it evolves, while maintaining the partner's expectations (Gulati et al 2000). In the initial stages of a relationship, lack of experience working with the new partner can put significant demands on management time, efforts and energy (Zineldin and Bredenlow 2003). Failure is then more common in the initial period of relationships, whereas longer relationships are less vulnerable to threats (Bucklin and Sengupta 1993) since older relationships have survived phases of adjustment and accommodation (Anderson and Weitz 1989). Indeed, as Doney and Cannon (1997) state, partners within older relationships are more familiar and more comfortable working with each other.

Based on the above rationale, both relationship marketing (Dwyer, Schurr and Oh 1987) and network perspectives (Gulati et al 2000) postulate that experience with the partner is a crucial element in explaining increasing levels of trust and strategic integration (Wu et al 2004). Relationship marketing scholars, such Dwyer, Schurr and Oh (1987), argue that as experience with a vendor increases, a vendor-customer dyad is more likely to have passed through critical shakeout periods in the relationship. Bucklin and Sengupta (1993), in a study of co-marketing alliances, argued that a long and stable history of business relations between partners builds

trust and commitment, achieving greater effectiveness of the relationship. Heide and John (1990) found a positive association between the historical length of an alliance and the expected continuity of future interaction. Network scholars share the same view. Powell et al (1996)'s empirical work of "cycles of learning" in the biotechnology industry has shown that initial collaborative relationships trigger the development of experience in managing ties, thus enabling firms to become more central in a network. This leads to the continuation of the ties, sustaining a positive feedback process. In the 3PL context, Skjoett-Larsen (2000) defended the importance of network theory to better understand the dynamics of third party cooperation, and emphasized the importance of the exchange and adaptation processes in developing the 3PL-customer relationship, since past and present experience play a major part in the development of third party cooperation.

Therefore, it is proposed that experience in a relationship with a 3PL provider will positively impact the customer's perception of the 3PL's credibility and benevolence. Specifically:

H21: A customer's experience with a 3PL is positively related to the customer's perception of the 3PL's credibility.

H22: A customer's experience with a 3PL is positively related to the customer's perception of the 3PL's benevolence.

Satisfaction with previous outcomes and trust. One of the foundational premises of social exchange theory is that over time, positive outcomes increase trust (Lambe et al 2001). As Knemeyer (2000) points out, social exchange theory postulates that outcomes affect behaviors in subsequent periods. Therefore, with

mutual exchanges of beneficial action over time, trust and cooperation can be developed.

Ganesan (1994) proposes that satisfaction with outcomes positively impact the perception of a partner's credibility and benevolence. This rationale can be applied to the 3PL-customer setting. A 3PL customer's satisfaction is likely to affect the customer's perception of the 3PL's credibility, because it means that the 3PL has performed its services in an appropriate manner. Similarly, a customer's satisfaction is likely to affect the customer's perception of 3PL benevolence, since it shows that the 3PL is concerned for the welfare of its customer (Knemeyer 2000). This leads to the following hypotheses:

H23: A customer's satisfaction with past outcomes is positively related to the customer's perception of the 3PL's credibility.

H24: A customer's satisfaction with past outcomes is positively related to the customer's perception of the 3PL's benevolence.

3.3. Hypothesized model

In sum, the overall model of the determinants of customer partnering behavior in logistics outsourcing relationships (see Figure 8) is composed by the following 24 hypotheses presented in Table 2, below.

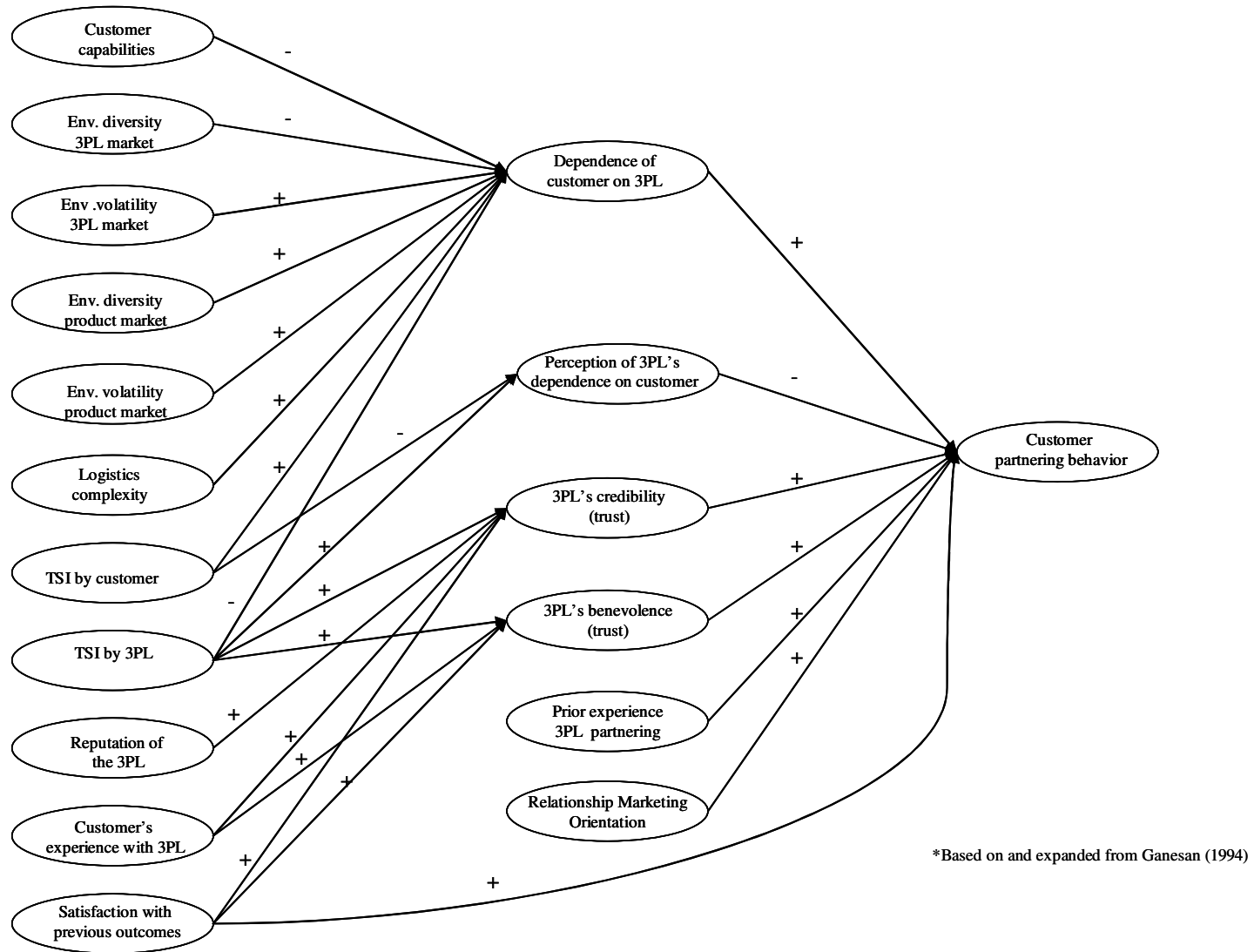
Table 2. List of hypotheses of the determinants of customer partnering behavior

Number	Hypotheses
	<i>Primary hypotheses</i>
H1	<i>Customer dependence on a 3PL is positively related to a customer's partnering behavior.</i>
H2	<i>Perceived dependence of a 3PL on a customer is negatively related to a customer's partnering behavior.</i>
H3	<i>A customer's trust in a 3PL's credibility is positively related to a customer's partnering behavior.</i>
H4	<i>A customer's trust in a 3PL's benevolence is positively related to a customer's partnering behavior.</i>
H5	<i>Prior partnering experience with 3PLs is positively related to customer's partnering behavior with the focal 3PL.</i>
H6	<i>A customer's relationship marketing orientation is positively related to a customer's partnering behavior with a 3PL.</i>
H7	<i>A customer's satisfaction with past outcomes of the relationship with a 3PL is positively related to the customer's partnering behavior with that 3PL.</i>
	<i>Antecedents of dependence</i>
H8	<i>A customer's logistics capabilities are negatively related to a customer's dependence on a 3PL.</i>
H9	<i>Environmental diversity in the market for 3PL services is negatively related to a customer's dependence on a 3PL.</i>
H10	<i>Environmental volatility in the market for 3PL services is positively related to a customer's dependence on a 3PL.</i>
H11	<i>Environmental diversity in the product market is positively related to a customer's dependence on a 3PL.</i>
H12	<i>Environmental volatility in the product market is positively related to a customer's dependence on a 3PL.</i>
H13	<i>A customer's logistics complexity is positively related to a customer's dependence on a 3PL.</i>
H14	<i>A customer's TSIs are positively related to a customer's dependence on a 3PL.</i>
H15	<i>A customer's TSIs are negatively related to a customer's perception of a 3PL dependence on a customer.</i>
H16	<i>A customer's perception of a 3PL's TSIs is negatively related to a customer's dependence on a 3PL.</i>

Table 2 (cont.) List of the hypotheses of customer partnering behavior

Number	Hypotheses
H17	<i>A customer's perception of a 3PL's TSIs is positively negatively related to a customer's perception of a 3PL's dependence on a customer.</i>
	<i>Antecedents of trust</i>
H18	<i>A customer's perception of 3PL specific investments is positively related to the customer's perception of the 3PL's credibility.</i>
H19	<i>A customer's perception of 3PL specific investments is positively related to the customer's perception of the 3PL's benevolence.</i>
H20	<i>The reputation of a 3PL is positively related to its customer's perception of the 3PL's credibility.</i>
H21	<i>A customer's experience with a 3PL is positively related to the customer's perception of the 3PL's credibility.</i>
H22	<i>A customer's experience with a 3PL is positively related to the customer's perception of the 3PL's benevolence.</i>
H23	<i>A customer's satisfaction with past outcomes is positively related to the customer's perception of the 3PL's credibility.</i>
H24	<i>A customer's satisfaction with past outcomes is positively related to the customer's perception of the 3PL's benevolence.</i>

Figure 8. A model of the determinants of customer partnering behavior in logistics outsourcing relationships

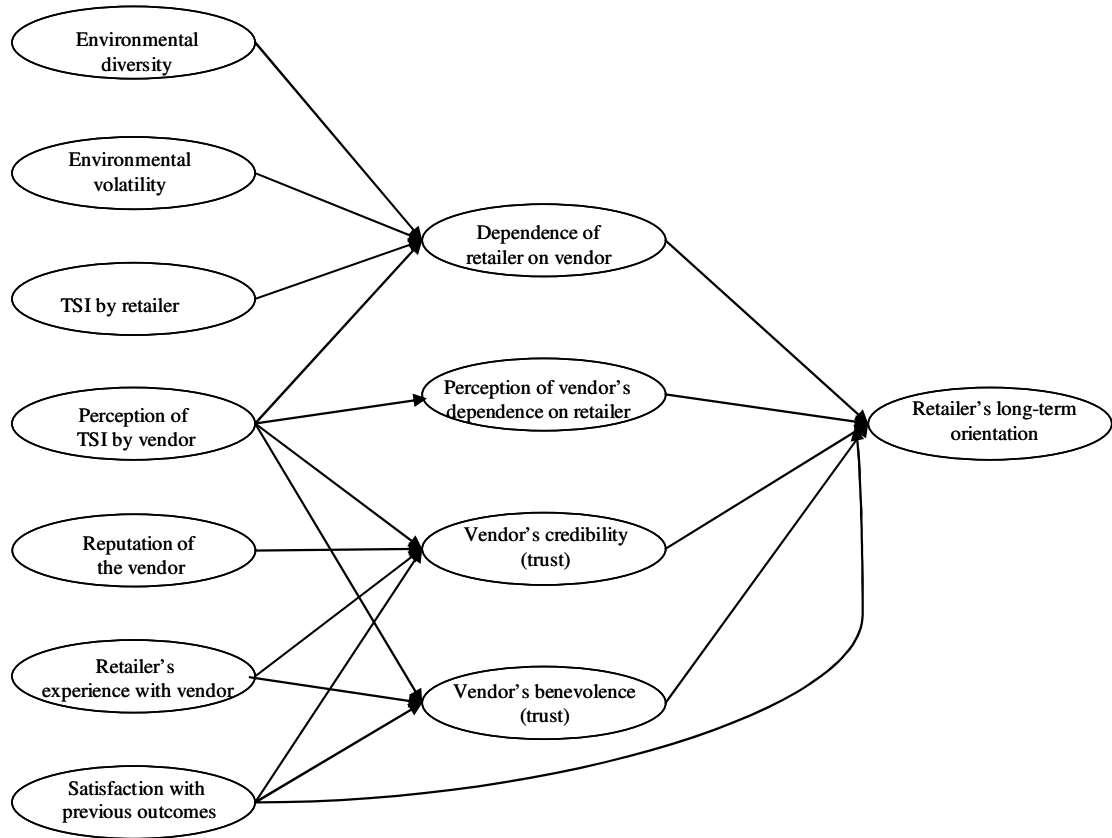


3.4. Contrasting the model of customer partnering behavior with Ganesan's model of long term orientation

This subsection has the objective to highlight the contributions and extensions that the present model of customer partnering behavior in logistics outsourcing relationships add to Ganesan's (1994) model of the antecedents of long term orientation in buyer seller relationships (Figure 9). As the following paragraphs describe, the main contributions are related to: 1) the nature of the dependent variable, 2) consideration of firm-specific factors as primary antecedents of the dependent variable (i.e. customer partnering behavior), and 3) consideration of firm's internal capabilities and firm-specific competitive and operational environments as antecedents of dependence. Figure 10, next, highlights these elements in the overall model.

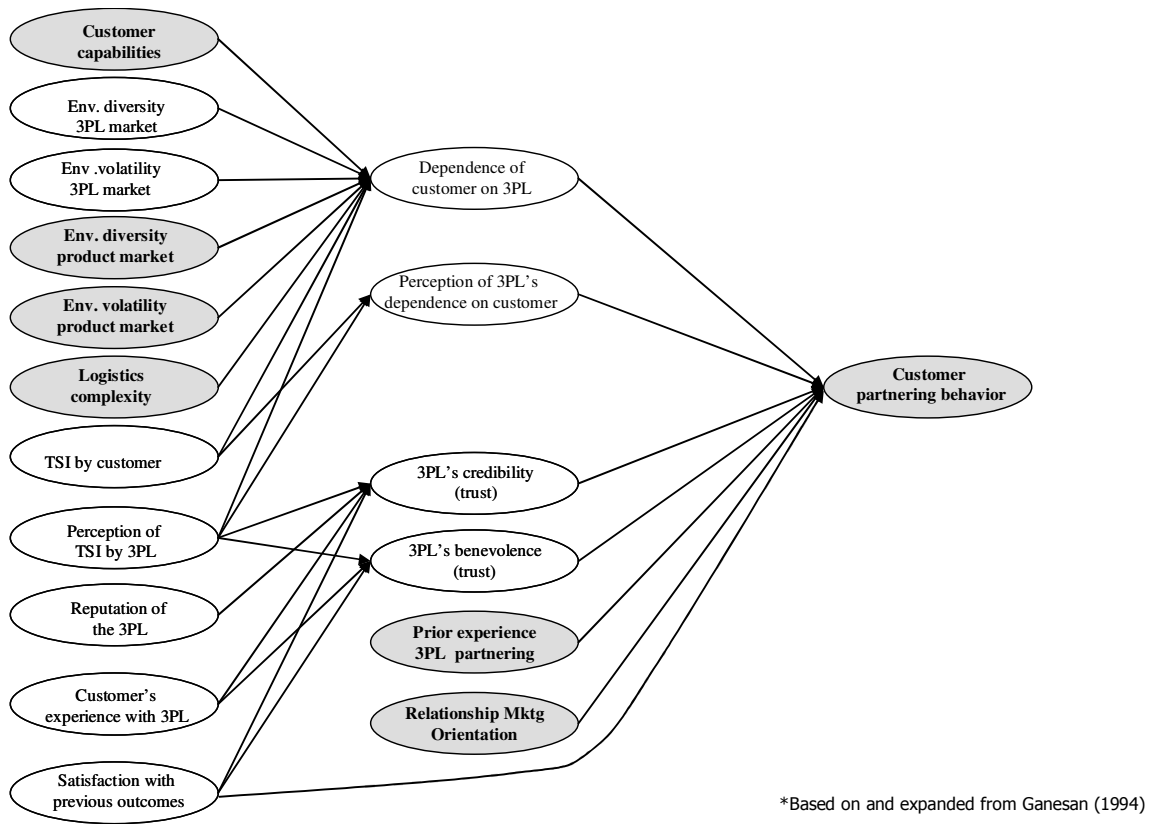
In Ganesan's (1994) model, the dependent variable is "a retailer long term orientation" in the relationship with its vendor, which is the expectation that the relationship will last a long time. In the case of the present model, the dependent variable is "customer partnering behavior", which is composed of five dimensions: extendedness, operational information exchange, operating controls, sharing benefits and burdens of the relationship, and joint planning. Ganesan's "long-term orientation" is conceptually equivalent to "extendedness" in the present model. The dependent variable "customer partnering behavior" is, thus, a broader representation of relational behavior, whereas Ganesan's dependent variable focuses on a single dimension of relational behavior.

Figure 9. Ganesan's (1994) model of long term orientation



The rationale of Ganesan's (1994) model was primarily based on the premises of social exchange theory, i.e., interorganizational conditions (trust, dependence, and satisfaction) are the primary antecedents of relational behavior (long term orientation in his case). In the model presented in this dissertation, in addition to interorganizational conditions, firm-specific factors (i.e., experience with partnering and relationship marketing orientation) are also considered as key antecedents of relational behavior. The rationale for including firm-specific factors as antecedents of partnering behavior is drawn from network theory and the strategic orientation perspective.

Figure 10. New variables introduced in the model of customer partnering behavior



Finally, based on the premises of resource dependence theory and transaction costs economics, the antecedents of dependence in Ganesan's model include the effects of environmental diversity and volatility in the vendor's market and transaction-specific investments by retailer and vendor. The direct equivalents of these variables in the present model are environmental diversity and volatility in the 3PL market (the 3PL is the vendor) and transaction specific investments by the customer and 3PL. In the model presented in this dissertation the competitive and operational environments of the customer are also considered. Specifically, environmental volatility and diversity in the market in which the customer operates (i.e., the product market) are also hypothesized to impact dependence. In addition, the

present model borrows the rationale of the capabilities perspective to introduce a customer's internal capabilities as an additional antecedent of customer dependence.

In conclusion, the model presented in this dissertation is a more complete representation of the antecedents of relational behavior (more specifically, partnering behavior). Moreover, it provides a combination of key theoretical perspectives which have been shown to explain relational behavior.

3.5. Conclusions

This chapter presented the rationale for the conceptual model of customer partnering behavior in logistics outsourcing relationships and for the hypotheses that compose the model. The model was developed in light of relationship marketing, especially social exchange theory and relationship marketing orientation. It included interorganizational conditions and firm specific factors as well. The proposed main antecedents of a 3PL customer's partnering behavior are: 1) a customer's perceived dependence on a 3PL; 2) a customer's trust in a 3PL's credibility and benevolence; 3) a customer's prior experience with partnering with other 3PLs and; 4) a customer's relationship marketing orientation. The antecedents of dependence are hypothesized to be: environmental volatility and diversity in the 3PL and product markets, transaction-specific investments by the customer and the 3PL, complexity of logistics operations, and a customer's internal logistics capabilities. The proposed antecedents of trust are: 3PL reputation, experience with the 3PL, satisfaction with previous outcomes, and transaction-specific investments undertaken by the customer.

In Chapter 4, the methodological steps that were followed in order to test the above hypotheses are described.

Chapter 4: Methodology

This chapter details the methodology that was followed in order to address the research questions discussed in the previous chapter. First, the selected research design for the study is presented. The research structure has shaped the choice of measures for the variables, as well as the methods of data collection and analysis.

A survey instrument was used in this study. The survey design and implementation followed the steps described under the survey procedure by Dillman (2000) - *The Tailored Design Method*. Following the research design subsection, in accordance with Dillman's method, this chapter details the operationalization and measurement of the constructs and variables, as well as the survey design and implementation.

A detailed description of all steps used in the data analysis, including the treatment of possible non-response bias and the quantitative methods adopted, is presented in Chapter 5.

4.1. Research design

This study utilized a non-experimental design⁸, testing a cross-sectional model through a survey instrument, which is a standard procedure in the marketing literature. The survey was conducted with the customer firms of a large Brazilian 3PL provider called Rapidão Cometa (www.rapidaocometa.com.br). It is an asset-based company that has been operating for over 60 years. Originating as a traditional carrier, this firm has transformed itself into a logistics provider, offering a wide

⁸ i.e., no treatments are given: naturally occurring variation in the independent and dependent variables without any intervention (by the researcher or anyone else) are used to conduct the research.

variety of services ranging from traditional transportation and warehousing to supply chain solutions. This 3PL has wide geographic coverage in Brazil, and has access to numerous international locations through an operational partnership with a major global 3PL. Its customer base comprises firms from various industries, sizes and markets, thus offering a good picture of the Brazilian logistics outsourcing industry.

The utilization of a survey instrument is necessary given that the majority of the variables in the model are perceptual measures of behavior that cannot be captured by secondary/archival data. In addition, one of the purposes of this research is to adapt and test Ganesan's (1994) model of determinants of long-term orientation in buyer-seller relationships to the context of logistics outsourcing. Therefore, utilizing the same type of methodology is appropriate.

Given that the study was to be conducted with Brazilian firms, performing a traditional mail survey from Maryland was not feasible. In addition, electronic surveys present certain advantages, such as faster delivery, faster data collection, higher response rates, and low cost (Griffis, Goldsby, and Cooper 2003). Therefore, a web-based survey instrument was considered to be the most efficient means to acquire information from the 3PL customers.

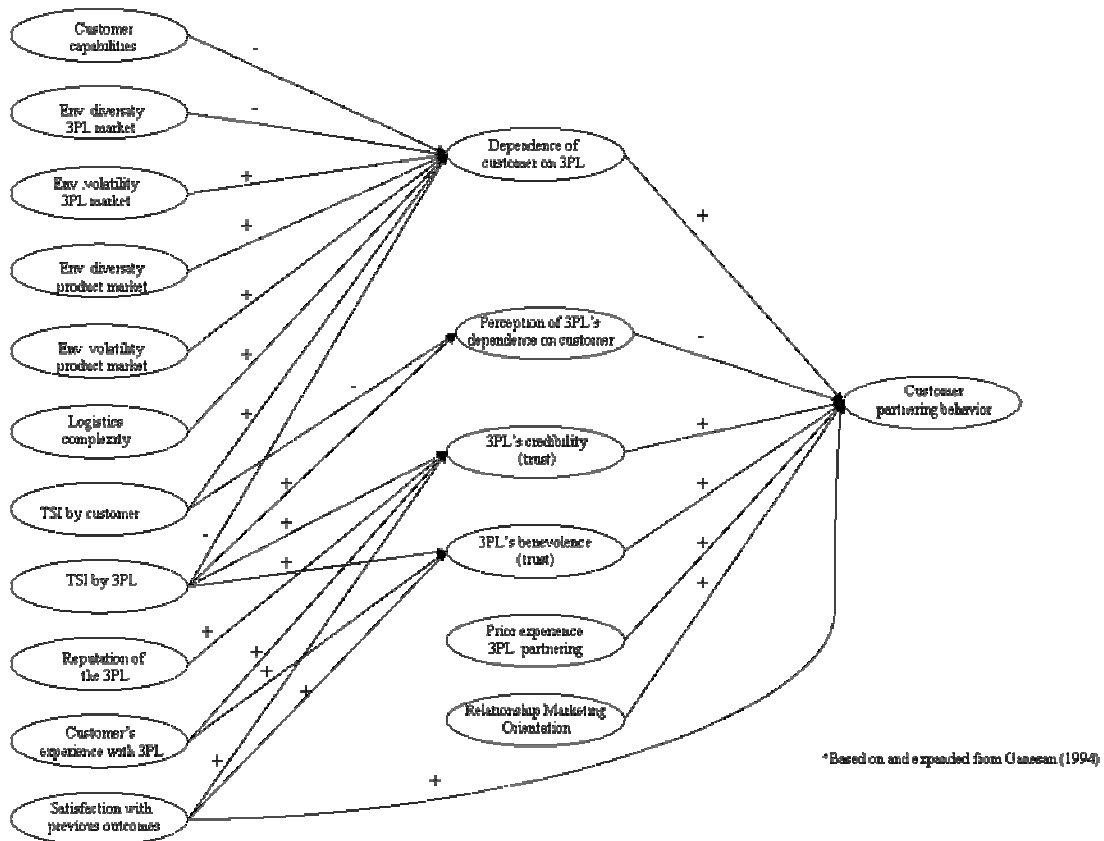
Rapidão Cometa sent this researcher its list of customers comprising 4,523 firms. The list contained the names of the individuals who manage their companys' accounts with Rapidão Cometa. It also contained the following information: company name, industry, position of the contact, e-mail address of the contact, city and state of company location. The unit of analysis is the firm, with one key informant.

4.2. Measurement of the constructs

This section describes the measurement items of the constructs to be tested. Figure 11 depicts the model. The dependent construct is the customer partnering behavior in its relationship with a 3PL. The main predictors are the customer's dependence on the 3PL, the perceived 3PL dependence on the customer, the customer's trust in the 3PL (decomposed into two parts – 3PL credibility and benevolence), the customer satisfaction with previous outcomes of the relationship, the customer's prior experience with outsourcing, and the customer's relationship marketing orientation.

Dependence and trust are hypothesized to have specific antecedents. The antecedents of 3PL and customer dependence are the customer's perception of: environmental volatility and complexity in the 3PL market and in the market of the products it ships with the 3PL (i.e., the product market), transaction-specific investments (TSI) by both customer and 3PL, the customer's internal logistical capabilities, and the logistics complexity of the customer's operations. The antecedents of both components of trust – credibility and benevolence - are the customer's perception of: transaction specific investments, reputation of the 3PL, customer experience with the 3PL, and customer satisfaction with previous outcomes of the relationship.

Figure 11. Model of customer partnering behavior in logistics outsourcing relationships.



The measures for most constructs were adapted from existing research and have been previously tested for validity and reliability. Since one objective of this study is test for the reliability of Ganesan (1994)'s study in the 3PL context, all items for identical constructs were adapted from his study. It is relevant to point out that Ganesan's measures have been extensively adopted in subsequent articles, generally presenting strong convergent validity. The remaining measures were adapted from studies in relationship marketing (e.g., Sin et al 2005) and logistics (e.g., Rao and Young 1994, Morash 1996, Gardner et al 1994). For two constructs - logistics complexity and logistical capabilities - items were created rather than adapted.

In addition, a number of the variables not directly associated with the study were included in the questionnaire in order to provide demographic information and data for future research. These variables include: position of respondent, professional experience of respondent, number of functions outsourced, various measures of performance, number of logistics providers currently used by the respondent's firm, and demographics of the respondents' firm (e.g. number of employees, annual sales).

In the paragraphs that follow, the measures for the constructs directly included in the model are presented.

4.2.1. Dependent construct: customer partnering behavior

Customer partnering behavior. The measures for customer partnering behavior were adapted from Gardner et al (1994). Partnering is a behavior style that occurs along the continuum between arm's-length and vertical integration, and is composed of five dimensions: extendedness, operational information exchange, operating controls, sharing benefits and burdens, and planning. The fifteen-item, seven-point Likert scales (anchored by strongly disagree (1) and strongly agree (7)) are as follows.

Extendedness (EXT)

We expect our relationship with Rapidão Cometa to last a long time.

We are very loyal to Rapidão Cometa.

Maintaining a long-term relationship with Rapidão Cometa is important to us.

Operational Information Exchange (OIE)

We conduct many transactions via computers with Rapidão Cometa.

We exchange operational information with Rapidão Cometa.

We use software dedicated to our relationship with Rapidão Cometa. (i.e., EDI)

Operating controls (OCL)

We require shipment tracking ability.

We frequently request delivery control reports.

We request damage/lost control reports.

Sharing of benefits and burdens (SSB)

We are willing to help Rapidão Cometa in difficult situations.

We share risks with Rapidão Cometa.

We have a high willingness to handle unexpected situations by negotiation.

Planning

Rapidão Cometa and our company interact in the activities planning.

We and Rapidão Cometa exchange information that helps establishment of business planning.

We regularly study Rapidão Cometa's operations for planning.

4.2.2. Primary antecedents

Dependence on 3PL. Dependence items assess the customer's need to maintain the relationship with the 3PL in order to achieve desired goals (Frazier 1983). The two measures for customer dependence were adapted from Ganesan (1994). The first is composed of six item, 7-point Likert scale measures (anchored by strongly disagree (1) and strongly agree (7)). The second measure refers to the percentage of the customer's business for which the 3PL is responsible. The items are:

Measure 1

- 1) Rapidão Cometa is crucial to our performance.
- 2) Rapidão Cometa is important to our business.
- 3) If our relationship with Rapidão Cometa were discontinued, we would have difficulty in performing its services.
- 4) It would be difficult for us to replace Rapidão Cometa.
- 5) We are dependent on Rapidão Cometa.
- 6) We do not have a good alternative to Rapidão Cometa.

Measure 2

What is Rapidão Cometa's approximate share of your outsourced logistics expenditures? ____%

Perception of 3PL provider's dependence on customer. This construct was also adapted from Ganesan (1994). The three-item, 7-point Likert-scale measures (anchored by strongly disagree (1) and strongly agree (7)) are:

- 1) We are important to Rapidão Cometa.
- 2) We are a major customer for Rapidão Cometa in our trading area.
- 3) We are not a major customer for Rapidão Cometa (R).

Trust. Following Ganesan (1994), trust is decomposed into two major components: credibility and benevolence. Credibility is based on the extent to which the customer believes that the 3PL has the required expertise to perform the job effectively and efficiently. Benevolence is related to the customer's beliefs in the 3PL's good intentions and motives towards the customer. Therefore, two latent constructs are tested. Credibility is composed of 7 items, whereas benevolence is composed of 5 items. All items are measured by Likert scales (anchored by strongly disagree (1) and strongly agree (7)).

Credibility

Rapidão Cometa's representative ...

- 1) ... has been frank in dealing with us.
- 2) ... makes reliable promises.
- 3) ... is knowledgeable regarding his services.
- 4) ... does not make false claims.
- 5) ... is not open in dealing with us. (R)
- 6) ... is honest about the problems may they arise.
- 7) ... has difficulties answering our questions. (R)

Benevolence

Rapidão Cometa's representative ...

- 1) ... has made sacrifices for us in the past.
- 2) ... cares for us.
- 3) ... has supported us in times of shortages.

- 4) ... is like a friend.
- 5) ... has been on our side.

Satisfaction with previous outcomes. As social exchange theory emphasizes, firms engage in relationships because they expect the outcomes to be rewarding. Therefore, firms that are satisfied with their 3PLs are more likely to exhibit partnering behavior in the relationships with their 3PLs. The seven measures are adapted from Ganesan (1994) and are measured by Likert scales (anchored by strongly disagree (1) and strongly agree (7)).

- *Are you satisfied with the services provided by Rapidão Cometa? Please describe your opinion with respect to the outcomes with Rapidão Cometa in the past year:*

Last year...

- 1) ... we were pleased with the outcomes.
- 2) ... working with Rapidão Cometa was very useful.
- 3) ... Rapidão Cometa was ineffective. (R)
- 4) ... we were dissatisfied. (R)
- 5) ... the outcomes were outstanding.
- 6) ... the outcomes were of bad value for our company (R)
- 7) ... we were comfortable in working with Rapidão Cometa.

Prior experience with partnering with 3PLs. This variable measures the number of years that the firm has been partnering with 3PLs in general, not necessarily with Rapidão Cometa. It is a continuous variable.

Has your company ever partnered with logistics providers? ___ Yes ___ No

If yes, how many years has your company partnered with other logistics providers (in general, not necessarily with Rapidão Cometa)? ____ years.

Relationship Marketing Orientation. According to Sin et al (2005), RMO is considered to be composed of six dimensions: trust, bonding, communication, shared value, empathy, reciprocity. The 22-item, 7-point Likert-scale measures (anchored by strongly disagree (1) and strongly agree (7)) are:

- *The following sentences describe the relationship between your company and your company's major customers (attention: NOT Rapidão Cometa). Please indicate your level of agreement.*

Trust

1. We trust each other
2. They are trustworthy on important things.
3. According to our past business relationship, my company thinks that they are trustworthy persons.

4. My company trusts them.

Bonding

5. We rely on each other.

6. We both try very hard to establish a long-term relationship.

7. We work in close cooperation.

8. We keep in touch constantly.

Communication

9. We communicate and express our opinions to each other frequently.

10. We can show our discontent towards each other through communication.

11. We can communicate honestly.

Shared value

12. We share the same worldview.

13. We share the same opinion about most things.

14. We share the same perspectives toward things around us.

15. We share the same values.

Empathy

16. We always see things from each other's view.

17. We know how each other feels.

18. We understand each other's values and goals.

19. We care about each other's feelings.

Reciprocity

20. My company regards "never forget a good turn" as our business motto.

21. We keep our promises to each other in any situation.

22. If our customers gave assistance when my company had difficulties, then I would repay their kindness.

4.2.3. Antecedents of dependence

Customer Transaction-specific investments. The customer specific investments are tangible and intangible assets that are particular to the relationship and cannot be easily redeployable. Examples of specific assets in the logistics setting undertaken by 3PL customers are dedicated software, personnel training, etc. The items are adapted from Ganesan (1994) and are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7)).

- 1) We have made significant investments (e.g., technology, training etc.) dedicated to our relationship with Rapidão Cometa.
- 2) If we switched to a competing logistics provider, we would lose a lot of the investment we have made in this relationship.
- 3) We have invested substantially in personnel dedicated to this relationship.
- 4) If we decided to stop working with Rapidão Cometa, we would be wasting a lot of knowledge regarding its method of operation.

Perception of 3PL's specific investments. The items for this construct were adapted from Ganesan (1994) and are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7)).

- 1) Rapidão Cometa has gone out of its way to link us with its business.

- 2) Rapidão Cometa has tailored its services and procedures to meet the specific needs of our company.
- 3) Rapidão Cometa would find it difficult to recoup its investments in us if our relationship were to end.

Environmental diversity in the product market. Environmental diversity or complexity is related to the heterogeneity and concentration of resources in an environment. The measurement of the construct is borrowed from Ganesan (1994) and the items are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7))

- *How would you describe the market for the product you ship with Rapidão Cometa?*

- 1) There are many new products.
- 2) There are many new competitors.
- 3) The market is very complex.

Environmental volatility in the product market. Environmental volatility (or dynamism) represents the level of turbulence or instability facing an environment, and is related to unpredictable changes and fluctuations in demand in an industry. The measurement of the construct is borrowed from Ganesan (1994). The items are

measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7))

- *How would you describe the market for the product you ship with Rapidão Cometa?*

- 1) The demand is unpredictable.
- 2) Sales forecasts are accurate. (R)
- 3) The industry production is stable. (R)
- 4) The demand trends are easy to monitor. (R)

Environmental diversity in the market for 3PL services. 3PL environmental diversity is related to the alternatives that customers have to the focal 3PL (i.e., competition in the 3PL industry). The scales are the same here as they are for the customer's environmental diversity, only with modifications to suit the 3PL industry.

- *How would you describe the market for logistics services in Brazil?*

The market for logistics services in Brazil...

- 1) ... has many service offerings.
- 2) ... has many carriers/logistics providers.
- 3) ... is very complex.

Environmental volatility in the market for 3PL services. 3PL environmental volatility is related to the instability in the availability of services in the 3PL industry.

In the current situation of carrier and port capacity constraints, for example, the availability of services cannot be taken for granted. The scales are the same here as they are for the customer's environmental volatility, only with modifications for the 3PL industry.

- *How would you describe the market for logistics services in Brazil?*

The market for logistics services in Brazil...

- 4) ... has an unpredictable demand.
- 5) ... has a stable service availability. (R)
- 6) ... is easy to monitor. (R)

Logistics complexity. Rao and Young (1994) suggest that logistics complexity is composed of three components that affect the difficulty of coordinating material and information: 1) network complexity (e.g., geographic dispersion and intensiveness of transactions); 2) process complexity (e.g., time and task compression in operations); 3) product complexity (i.e., special handling and transporting requirements). The measures adopted here follow these three dimensions. The items are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7)).

- *The following items describe the complexity of your company's logistics operations. Please indicate your level of agreement.*

- 1) We have a complex network of trading partners.

- 2) The timeliness of the transactions in our supply chain is crucial in our business.
- 3) We must accomplish very short order cycle times for customer orders.
- 4) We have a complex network of origin/destination (OD) pairs.
- 5) Our products require specialized transportation, storage, or handling (eg. temperature, humidity, etc.).

Internal logistics competencies. The following items aim to capture the extent to which the firm dedicates human resources to the management of logistics operations and to what extent these professionals possess knowledge to manage the operations and overcome problems. The items are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7)).

- *The following items describe the logistics personnel of your company.*

Please indicate your level of agreement.

- 1) Relative to the size of our firm, we have a large group of upper-level managers dedicated to logistics.
- 2) Relative to the size of our firm, we have a large group of employees across all levels dedicated to logistics.
- 3) Our logistics personnel have a deep understanding of our logistics operations.
- 4) Our logistics personnel know where problems and bottlenecks might exist in our logistics operations.

- 5) Our logistics personnel are capable of finding effective solutions when problems arise.

4.2.4. Antecedents of trust

3PL Reputation. The items for the construct measure the extent to which the customer perceives the 3PL to enhance the welfare of its customers. The four items were adapted from Ganesan (1994) and are measured by a 7-point Likert scale (anchored by strongly disagree (1) and strongly agree (7)).

- 1) Rapidão Cometa has a reputation for being honest
- 2) Rapidão Cometa has a reputation for being concerned about its customers
- 3) Rapidão Cometa has a bad reputation in the market (R)
- 4) Most customers think that Rapidão Cometa has a reputation for being fair.

Customer experience with 3PL. Following Ganesan (1994), customer experience with the 3PL is measured by the number of years the customer has been associated with the 3PL.

How many years has your company worked with Rapidão Cometa? ____ years. (e.g., 2.5)

Transaction-specific investments by 3PL. (presented under “Antecedents of dependence,” above)

Satisfaction with previous outcomes. (presented under “Primary antecedents,” above)

4.3. Survey design

After selecting the items for the constructs of interest, the next step was to design the questionnaire, which involved not only the appropriate arrangement of questions, but also the presentation letters, conduction of pretests to guarantee the quality of content, ease of understanding and visual appeal of the questionnaire and computer interface to the respondent, among other factors. According to Dillman (2000), the questionnaire design has two main objectives: to reduce non-response and to reduce or eliminate measurement error. Structure and visual appeal can be equally important. Dillman (2000) points out that while a respondent-friendly appearance and a good structure can improve response rates, a poor questionnaire layout can cause questions to be overlooked. Therefore, it is important to keep the wording and visual appearance of questions simple.

In terms of survey structure, Dillman (2000) emphasizes that the order of the questions is crucial. The questions should be grouped in a general way from the most salient to the least salient to the respondent. Moreover, the order must be logical to the respondent, as if a conversation were taking place. Therefore, before each group of questions, a general explanation has been included in order to clarify the logic flow of the questionnaire to the respondent. Also, special attention should be paid to the first question, which can impact the desirability of the respondent to complete the questionnaire. It should be appealing to the respondent. The question regarding the degree of partnering was selected to be first, while the demographic information was positioned at the end of the questionnaire.

Once the survey instrument (questionnaire plus letters) was created, several pretests were implemented. The pretests involved four steps:

Review by experts. The survey instrument was refined with the aid of feedback provided by logistics experts (professors with knowledge of logistics outsourcing research and doctoral students experienced in survey research) in order to finalize substantive content. Experts in logistics with experience in survey research can identify problematic questions in terms of response rate or understandability. The objective in this phase was to assure that all necessary questions were included and that they were consistent with prior studies.

Think-aloud interviews. A think-aloud interview is a common technique in which the respondent answers the questionnaire in the presence of the interviewer and is asked to tell the interviewer whatever he/she is thinking from the moment he/she opens the email until the questionnaire is finished and sent. After reviewing the survey for substantive content, a first series of think-aloud interviews was conducted with three doctoral students to assess possible inconsistencies in wording and structure. In other words, the objective was to evaluate whether the respondents could understand and answer all questions, and whether the e-mails and questionnaire on the website created a positive impression. After this first series of interviews, the survey was revised and translated into Portuguese. In order to prevent possible translation bias, a Brazilian marketing scholar who works in the U.S., thus being fluent in both languages and in marketing, reviewed the original and translated the survey instrument. Other professionals, who are knowledgeable in both Portuguese

and English, as well as in transportation and logistics, kindly agreed to review the survey translation. Minor modifications were needed.

Final check. Next, the website was created with special attention to the ease and comfort of the user. The online survey instrument was designed in a way that groups of questions were presented together. Therefore it resembled the experience of using the Internet. It was possible to interrupt and return to the survey website for completion at any time. Once the website was ready, it was completed by industry professionals not involved in any phase of the development or review of the questionnaire or website. Minor adjustments were made.

Pretest with a reduced sample. The final phase of the pretest involved conducting the survey online with a reduced sample. The objective was to identify operational problems in the software utilization by the respondents, as well as in the implementation of the survey itself. Four hundred customers were randomly selected from the customer base. Rapidão Cometa sent them an e-mail in which they were invited to visit a website and provide their names and e-mails if willing to participate in the survey. One hundred, eighteen emails were returned due to non-existent e-mail addresses, implying that 282 firms received the invitation. Forty-three e-mail respondents agreed to participate in the project and received the link to the website. Sixteen respondents completed the questionnaire, corresponding to a response rate of 5.67%. No problems were encountered and no modifications were made to any part the survey instrument.

4.4. Survey implementation

A major objective of carefully planning the survey implementation is to reduce the non-response rate. According to Dillman (2000), repeated contacts with potential respondents have been shown to be the most effective strategy in increasing the response rate. His “tailored design” method of implementation includes: a “respondent-friendly” questionnaire, up to five contacts with the recipient, plus a financial incentive sent with the survey request (in the present case, the chance of “winning” an iPod).

Given that in the pretest no problems were encountered in administering the survey, the next step was to follow the same process with the remaining customers in the database. An important point was to make each contact with respondents unique, since it has been shown that a variety of stimuli are generally more powerful than a repetition of previously used techniques in increasing response rate (Dillman 2000). It is also relevant to point out that during the contact period, attention was given to sending individualized messages (not showing multiple recipient addresses or a listserv origin).

The survey implementation activities can be summarized as follows:

First contact: pre-notification e-mail. According to Dillman, this is important for Internet surveys, given the ease in discarding e-mail messages. Following Dillman’s recommendations, the email was aimed at building anticipation rather than providing the details and conditions for participation in the survey. In the study, the first contact began with a pre-notification e-mail sent by Rapidão Cometa in order to guarantee that our source was trustworthy, to emphasize the confidentiality of the

responses, and to express support for the study. In this e-mail, Rapidão Cometa invited the firms to access a website (created by this researcher) and to provide their e-mail addresses in order to participate in the study. The e-mail also included a brief description of the study and its purpose. The e-mail was sent to a total of 2,649 customer firms⁹. Three hundred, thirty-five customer firms accepted Rapidão Cometa's invitation, provided their contact information, and received the link to the website.

Second contact: e-mail with link to website. This e-mail was sent to the 335 firms that responded to Rapidão Cometa's invitation. It was sent few days after the pre-notification e-mail. The e-mail contained a letter describing the objective and importance of the study, emphasizing the confidentiality of the responses. In addition, the possibility of receiving a gift was indicated.

Follow-up contacts: thank you/reminder e-mails. Thank you e-mails were sent to all firms that completely filled out the questionnaire. Reminder e-mails and announcements of the gift winners were sent once a week during a four week period to all contacts on the e-mail list. It is interesting to note that once winners were selected and announced to the entire contact list, a temporary increase in the number of respondent replies was observed.

In total, 265 firms filled out the survey completely, representing a response rate of 79.1% of those that accepted Rapidão Cometa's invitation (or 10.0 %, of the entire customer base that received Rapidão Cometa's invitation net of the emails that bounced back).

⁹ In reality 4,123 e-mails were sent, of which 1,474 "bounced back" as being unknown e-mail addresses.

Short version of the survey for non-respondents. Finally, in order to test for non-response bias, a short version of the survey composed of 13 theoretically meaningful items was sent to two groups of non-respondents: 1) those who accepted the invitation but did not fill out the survey completely, and 2) those who did not accept Rapidao Cometa's invitation. In total, 5 customers from the first group and 93 customers from the second group filled out the short version of the survey.

4.5. Conclusions

This chapter presented the research methodology used to test the hypotheses. The measurement of the variables was defined. A web-based survey instrument was developed and pre-tested prior to its final implementation. A short version of the survey was also implemented with the objective to test for non-response bias. All steps followed in the data analysis, along with the model results, are presented in Chapter 5.

Chapter 5: Data Analysis and Results

This chapter presents a detailed description of all steps followed to analyze the data and test the hypotheses proposed in this study. First, the characteristics of the respondents are examined, followed by the descriptive statistics of the variables and constructs. Next, the tests for non-response bias are presented. Finally, all quantitative procedures and tests conducted during the structural equation modeling process are discussed, along with the model results.

5.1. Final sample and respondents characteristics

As outlined in the previous chapter, 16 firms completed the survey during the pretest phase and 265 firms completed the survey during the survey implementation phase. Given that no modifications were made in the survey instrument between the phases, and given that the pretest and survey were implemented consecutively (i.e., during the months of August and September), the combination of both response groups was considered as the final sample. In total, a final sample size of 281 observations was used.

The position profile of the respondents was fairly diverse. The respondents were mostly logistics supervisors, logistics managers, general managers, CEOs, and partners (see Table 3). Considering that these individuals were Rapidão Cometa's contacts for coordination of their activities, and they were professionals in the management level, this might indicate that the respondents were knowledgeable about their company's relationship with Rapidão Cometa. This implies that key informant

bias may not be a concern in this study. These firms belonged to a variety of industries, such as (Table 4): apparel (18.5%), health care (6.4%), automotive and auto parts (5.7%), electronics (5.7%), cosmetics (5.3%), telecommunications (4.3%), food and beverage (5.0%), and others.

Table 3. Position profile of the respondents

Position	Count	%
President/CEO/COO	18	6.41%
Owner/Partner	19	6.76%
Logistics director	8	2.85%
Logistics manager	53	18.86%
Logistics supervisor	35	12.46%
Logistics employee	23	8.19%
Logistics Analyst	14	4.98%
General manager	29	10.32%
Procurement manager	16	5.69%
Director	7	2.49%
Sales supervisor	5	1.78%
Sales manager	2	0.71%
Other	24	8.54%
Not informed	28	9.96%
Total	281	100.00%

Table 4. Respondents' Industries

Industry	Count	%
Apparel	52	18.51%
Health care/Pharmaceutical	18	6.41%
Auto/Auto Parts	16	5.69%
Electronics	16	5.69%
Cosmetics	15	5.34%
Food and Beverage	14	4.98%
Chemicals and Plastics	14	4.98%
Telecommunications	11	3.91%
Retail	11	3.91%
Service	11	3.91%
Other	77	27.40%
Not informed	26	9.25%
Total	281	100.00%

Almost 75% of the sample was composed of small firms with fewer than 250 employees. Larger firms with more than 1,000 employees composed less than 10% of the sample. The complete distribution is found in Table 5. The small size of the firms in the sample can be also seen by observing their annual sales distribution¹⁰. Of the respondent firms, 18.5% had annual sales of less than US\$ 0.5 million, 31.3% of the firms had annual sales that ranged from US\$ 0.5 to US\$ 4.3 million, and 10.3% of the firms had annual sales ranging between US\$ 4.3 to 11.4 million. The remaining respondents had annual sales greater than US\$ 11.5 million, of which only 6% had annual sales greater than US\$ 120 million.

Table 5. Number of employees of the respondent firms

Number of Employees	Quantity	%
Fewer than 100	144	51.25%
100 - 249	53	18.86%
250 - 499	19	6.76%
500 - 999	15	5.34%
1,000 - 2,499	13	4.63%
2,500 - 4,999	5	1.78%
5,000 - 9,999	3	1.07%
more than 10,000	1	0.36%
Not informed	28	9.96%
Total	281	100.00%

¹⁰ The “unusual” breakdown of sales categories is a result of converting from the Brazilian currency “Real” (R\$) to U.S. dollars.

Regarding the respondents' logistics outsourcing practices, more than half of the sample (52.7%) outsourced only one logistics function, while about 5% of the firms outsourced 6 or more functions. The remaining firms outsourced from 2 to 5 functions (Table 6). The vast majority of firms outsourced transportation operations, which seems to be the strongest capability of the 3PL. Other outsourced functions were transportation planning, freight consolidation, and distribution to final customer (see details on Table 7).

Table 6. Number of functions outsourced

Number of functions	# Firms	%
1	148	52.67%
2	38	13.52%
3	27	9.61%
4	12	4.27%
5	9	3.20%
6	6	2.14%
7	3	1.07%
8	2	0.71%
9	1	0.36%
10	0	0.00%
11	1	0.36%
Not informed	34	12.10%
Total	281	100.00%

Table 7. Respondents' logistics functions outsourced

Activity	# Firms
Transportation operations	216
Freight consolidation	48
Final consumer distribution	43
Freight bill payment	34
Warehousing	26
Reverse logistics	22
IT systems	14
EDI capability	14
Traffic control (distribution)	14
Transportation planning	13
Network/route optimization	8
Inventory management/control	7
Order management	7
Cross-docking	6
Traffic control (supply)	5
Packaging	3
After-sale service distribution	3
Pick & pack operations	2
Lead logistics management	1

5.2. Descriptive statistics of the constructs

Table 8 provides the means and standard deviations of the constructs¹¹. It can be noted that, in general, the variable averages were slightly above the central point of the Likert scale (i.e., 4) and presented good variability. Customer Transaction Specific Investments (Customer TSI) presented the highest standard deviation (1.684). Relationship Marketing Orientation (RMO), however, presented a smaller standard deviation compared to the other constructs. Since some of the variable means were located to the right of the central point of the 7-point Likert scale, there is

¹¹ The value of each construct for each observation was calculated as the average of the scale items.

an indication that some distributions might be skewed (to be tested in the following sections). For this reason, the robust estimation technique might need to be employed in order to correct for skewed data.

Table 8. Descriptive statistics of the constructs

Construct	Mean	Std.
Customer partnering behavior	4.587	1.131
Satisfaction	5.179	1.375
Credibility	5.867	1.210
Benevolence	4.990	1.556
Reputation	5.966	1.074
Customer dependence	3.772	1.358
Customer TSI	2.797	1.684
3PL TSI	3.436	1.623
3PL dependence	4.983	1.485
Volatility product market	3.198	1.491
Diversity product market	5.083	1.334
Volatility 3PL market	3.886	1.253
Diversity 3PL market	4.241	1.160
Logistics complexity	5.237	1.323
Logistics capabilities	4.787	1.648
RMO	5.892	0.803

Table 9 presents the correlation table between the constructs. It should be noted that most of the statistically significant correlations had small values. Many other correlations were not statistically significant, which should have implications for the model fit to be tested later in this chapter.

Table 9. Correlation matrix for the averages of the constructs

Construct	LCAP	VOLPM	DIVPM	VOL3PL	DIV3PL	LCOMP	TSI	3PLTSI	REP	EXPTPL	SAT	DEP	3PLDEP	CRED	BENEV	EXPPART	RMO
Customer logistics capabilities																	
Volatility product market	-0.033																
Diversity product market	0.052	0.154															
Volatility 3PL market	0.043	0.219	0.144														
Diversity 3PL market	0.032	0.078	0.234	-0.089													
Logistics complexity	0.448	0.079	0.115	0.022	-0.009												
Customer TSI	0.261	-0.114	-0.142	-0.171	-0.039	0.290											
3PL TSI	0.282	-0.109	-0.084	-0.124	-0.054	0.377	0.716										
3PL reputation	0.072	0.092	0.057	-0.045	0.173	0.125	0.105	0.208									
Experience with 3PL	0.104	-0.058	0.047	-0.010	-0.034	0.162	0.156	0.159	0.081								
Satisfaction	0.132	-0.030	0.030	-0.187	0.117	0.071	0.218	0.299	0.457	0.058							
Dependence	0.169	-0.067	-0.025	-0.129	0.050	0.290	0.686	0.636	0.298	0.196	0.422						
3PL dependence	0.315	-0.021	0.080	-0.055	0.150	0.360	0.235	0.413	0.260	0.086	0.332	0.357					
3PL credibility	0.101	0.010	0.082	-0.148	0.138	0.177	0.151	0.247	0.573	0.077	0.460	0.313	0.231				
3PL benevolence	0.263	-0.031	-0.096	-0.188	0.113	0.262	0.372	0.478	0.426	0.149	0.411	0.489	0.372	0.583			
Experience partnering	0.203	0.000	0.044	0.010	0.030	0.069	-0.156	-0.145	0.076	0.096	0.008	-0.117	0.078	-0.019	-0.021		
RMO	0.281	-0.021	0.076	-0.157	-0.068	0.320	0.178	0.127	-0.013	0.128	0.081	0.054	0.159	0.007	0.096	0.070	
Customer partnering behavior	0.383	-0.039	-0.003	-0.127	0.122	0.318	0.508	0.533	0.388	0.168	0.352	0.565	0.360	0.370	0.522	0.125	0.128

Observation: The figures in **bold** are statistically significant at the 0.05 level.

5.3. Tests for non-response bias

Before any analysis can be performed, a test for non-response bias must be conducted. Non-response bias occurs when the answers of the respondents are statistically different from the answers of the non-respondents (Lambert and Harrington 1990). Testing for non-response bias is critical to the generalizability of the research findings.

Two standard methods were used to test for non-response bias in this study: *1st method*: Comparison of early and late respondents. From the software it was possible to identify the date when each respondent had finalized the survey instrument. Figure 12 presents a graph with the counts of respondents per day. A first wave of respondents was identified from September 2nd to 5th, comprising 94 respondents. This first group was considered as the early respondents group. The last 94 respondents were considered as the late respondents. The thirteen key non-demographic questions provided in the short version of the questionnaire were compared through a Two Group Hotelling T-Squared Test - Manova (Table 10). The test showed no statistical significance between the vector of early and late respondents. This result indicated that the null hypothesis that the vectors are equal could not be rejected. Therefore an absence of response bias between early and late respondents was inferred.

Figure 12. Daily counts of survey completion.

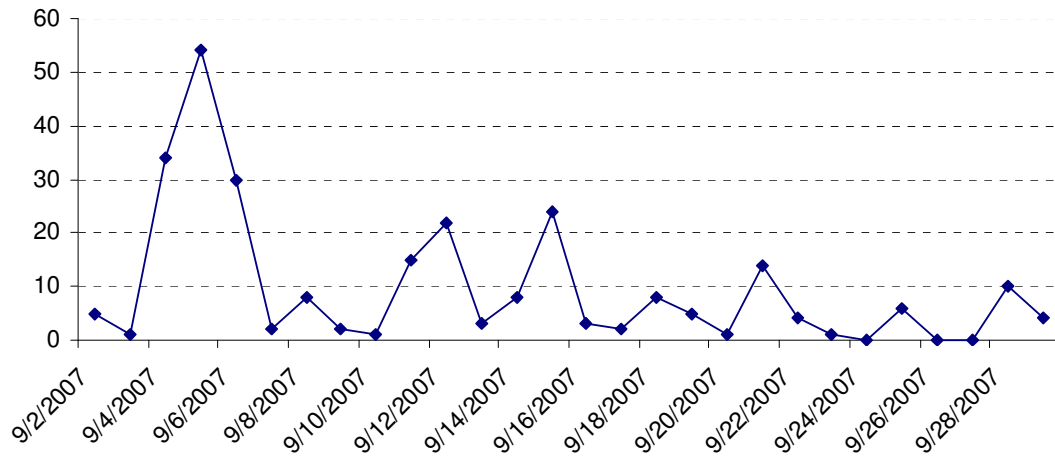


Table 10. Comparison of vector means between early vs. late respondents

Item	Mean (Early)	Mean (Late)
Extendedness	6.28	6.42
Operational Information Exchange	4.42	4.11
Operating Controls	5.24	5.04
Sharing Benefits and Burdens	6.03	5.69
Planning	4.08	3.60
Dependence	5.43	5.65
3PL Dependence	5.65	5.35
3PL Credibility	6.09	6.22
3PL Benevolence	5.48	5.32
RMO	6.49	6.10
Customer TSI	2.37	2.63
3PL reputation	2.02	1.79
Satisfaction	5.15	5.40

2-group Hotelling's T-squared = 19.056

F test statistic = 1.3612, p = 0.1841.

2nd method: According to Lambert and Harrington's (1990) method of testing for non-response bias, a random sample of the non respondents should be selected and contacted to answer the same set of questions used when examining the early and late

respondents. Their results then should be generalized to the non-respondent population.

An e-mail with the link to the short version of the survey was sent to the customers who did not respond to Rapidão Cometa’s initial invitation to participate in the survey. Seventy-five responses were collected. Again, the Two Group Hotelling t-squared test was used to compare the vector means between the respondent and non-respondent groups (Table 11). The null hypothesis that the vectors of means are equal for the two groups could not be rejected. Therefore, the absence of non-response bias was inferred.

Table 11. Manova comparison of vector means (respondents vs. non-respondents)

Item	Mean (Respondents)	Mean (Non- respondents)
Extendedness	6.31	6.37
Operational Information Exchange	4.39	4.70
Operating Controls	5.18	4.89
Sharing Benefits and Burdens	5.89	5.67
Planning	4.02	4.03
Dependence	5.56	5.86
3PL Dependence	5.57	5.60
3PL Credibility	6.15	6.17
3PL Benevolence	5.53	5.59
RMO	6.32	6.14
Customer TSI	2.59	2.90
3PL reputation	1.85	2.00
Satisfaction	5.32	5.60

2-group Hotelling’s t-squared = 12.741

F-test statistic = 0.9439, p = 0.5075

5.4. Structural equation modeling

Following Ganesan (1994) and a substantial group of relationship marketing researchers (e.g., Morgan and Hunt 1994, Hewett and Bearden 2001, Knemeyer 2000, 2004), structural equation modeling (SEM) was the statistical technique employed in this study. SEM is a powerful multivariate technique that can be used to investigate *a priori* specified, theory-derived, hypothesized correlations or causal relations among latent, unobserved variables. SEM is a largely confirmatory, rather than exploratory, technique.

The underlying logic of SEM is as follows: A structural equation model implies a structure of the covariance matrix of the variables that are used as measurement items¹² for the latent variables, or *constructs* (hence an alternative name for this field, "analysis of covariance structures"). Once the model's parameters have been estimated, the resulting model-implied covariance matrix can then be compared to an empirical or data-based covariance matrix. If the two matrices are consistent, then the structural equation model can be considered a plausible explanation for the hypothesized relations between the measurement items.

Overview of the SEM process. The SEM process centers around two steps: validating the measurement model and fitting the structural model. The former is accomplished primarily through confirmatory factor analysis, while the latter is accomplished primarily through path analysis with latent variables.

In the first phase, the *measurement phase*, a confirmatory model allowing covariances among all construct and stand-alone variables (not intended as indicators)

¹² The terms "measurement items," "items," and "variables" are used interchangeably.

is tested. The objective of the measurement model is to assess how well the indicators serve as a measurement instrument for the latent constructs (Garver and Mentzer 1999). Thus, the objective is to identify and correct measurement error, ensuring the correct interpretation of the results of the structural model (phase 2). In the measurement phase, the constructs are tested for reliability, convergent validity, and discriminant validity. Theoretically meaningful respecifications in the measurement model might be necessary in order to obtain an adequate model fit.

After a reasonable model fit is achieved in the measurement model, and it is shown that the constructs are reliable and valid, the second phase of SEM process, the *structural phase*, can be initiated. Here the hypothesized path model is tested and the model fit and structural paths are examined.

5.4.1. Data preparation and preliminary analysis

Before starting the SEM process, it is necessary to follow a few pre-steps that involve an overview of the quality of the data and data preparation (i.e., assessment of unidimensionality and item cleaning).

Quality of data evaluation

Before utilizing the SEM software (EQS in this dissertation), a preliminary evaluation of the quality of the data was conducted.

Outliers. All variables, which correspond to the measurement items, were checked for obvious univariate outliers using box plots. No outliers were found.

Normality. The univariate distributions for each variable were checked for symmetry through histograms. Many of the variables were shown to be skewed to the left (i.e.,

most observations fell on the right side of the scale). For this reason, the robust estimation procedure in EQS, which accounts for non-normal data, was utilized. The robust procedure corrects the maximum likelihood model χ^2 statistic and the standard error to adjust for non-normal data. This was preferred to transforming the data, given that a disadvantage of data transformation is that the new variable is no longer a direct representation of the underlying construct.

Missing data. The data set was checked for the presence of missing data. There were a few instances of missing data, which was expected given that the original questionnaire had more than 100 questions. Although the cases and variables in which the missing data occurred were random, it was decided to run the model with the complete observations only. Substituting the missing data with the mean values of the variables in question can lead to under-representation of the variance of the population. Also, using pairwise deletion to generate variances and covariances can lead to convergence problems and bias in the results.

Undimensionality

Before testing the model fit and the hypothesized relationships in the structural phase, the set of variables (i.e., measurement items) for each of the constructs in the model need to be tested for unidimensionality, reliability and validity (Garver and Menzer 1999). Once unidimensionality has been established, construct validity and reliability can be investigated.

Unidimensionality is “the degree to which items represent one and only one underlying latent variable” (Garver and Mentzer 1999). Unidimensionality was assessed with the aid of exploratory factor analysis. Reliability, convergent and

discriminant validity were assessed in the measurement phase of the structural equation modeling process.

As most constructs in this dissertation were adapted from prior research, it was expected that the measurement items would have high reliability and validity. However, many of the constructs were originally used in fields other than logistics (e.g. marketing and strategy). Therefore, it was still necessary to closely examine the items comprising the constructs.

Initially, exploratory factor analysis (principal component analysis with Varimax rotation,) was conducted for each construct to assess unidimensionality. Varimax rotation maximizes the variance of squared loadings in the columns of the structure matrix. Therefore it provides a simpler and clearer structure of loadings. Those items that loaded weakly (e.g. less than 0.4) were removed from the scale, while still ensuring content validity of the construct. Of the 88 items comprising 18 constructs, 79 loaded highly on their factors while 7 items were removed from the scales due to low loadings.

Partial disaggregation

SEM might encounter convergence problems in models in which constructs have many indicators (Knemeyer 2000). In models with factors with many items, employing the traditional structural equation approach “can be unwieldy because of likely high levels of random error in typical items and the many parameters that must be estimated” (Bagozzi and Heartherton 1994, pp. 42-43). This can be especially true in the case of the present model which is fairly complex, with many of the constructs having six, seven, or more items.

In order to correct for this potential problem, partial disaggregation was adopted in this dissertation. Partial disaggregation is operationally accomplished by randomly assigning items of a construct into composites. These composites then become the new measurement items. The process is conducted in a way that each factor has no more than 3 combined indicators instead of many indicators. The rationale of partial disaggregation is that all items related to a factor should correspond in the same way to that latent factor; therefore any combination of these items should yield the same model fit (Dabholkar et al 1996). The advantage of partial disaggregation is that the multivariate aspect of the model tested is maintained while the model is simplified and the levels of random error are reduced. In this study, the items were randomly allocated to composites for the constructs that had more than four items after the initial item cleaning.

5.4.2. Measurement phase

The objective of the measurement phase is to isolate model misspecification and to verify that the measures adopted appropriately represent the latent constructs in the model. Syntax was written for the confirmatory model allowing covariances among all constructs and stand-alone variables (not intended as indicators). By allowing all factors to co-vary, the structural portion became just identified (thus with a perfect fit), and the measurement part of the model could be assessed.

The robust fit indices obtained for the measurement model were: $\chi^2 = 1883.013$ ($df = 1279$), CFI = .878, RMSEA = .045 and SRMR = .070. The χ^2 statistic was statistically significant. It is noted that RMSEA and SRMR indices presented

good fits. The CFI index, however, was marginally significant (threshold is .90). The fit indices indicate that the data covariance matrix has a relatively good fit.

Convergent validity

Convergent validity refers to the extent that the items of the factor capture the content of the construct. Two standard means of assessing convergent validity are: 1) by examining whether the factor loadings of the measurement equations (that explain all variables as a function of the factor) are positive and statistically significant, and; 2) by calculating the “variance extracted” by the construct, which corresponds to the mean squared standardized loading. Ideally it should exceed .50 (Garver and Mentzer 1999).

Convergent validity was checked by both methods. By examining the software output, it was noted that all loadings were positive and statistically significant. It was thus inferred that convergent validity exists. In addition, the “variance extracted” was calculated for all constructs (see Table 12). Out of 18 constructs, four fell significantly below the desired 0.50 threshold. Another four also fell below the threshold but were very close to 0.5. Given that the PCA results showed that these items did load on a single factor, it was decided not to eliminate or rearrange the items used for these four constructs with low convergent validity.

Table 12 Variance extracted of the constructs

Construct	Variance extracted
Logistics capabilities	0.685
Volatility product market	0.401
Diversity product market	0.582
Volatility 3PL market	0.342
Diversity 3PL market	0.651
Logistics complexity	0.498
Customer TSI	0.643
3PL TSI	0.451
3PL reputation	0.371
Experience with 3PL	1.000
Satisfaction	0.804
Customer dependence	0.542
3PL dependence	0.463
3PL credibility	0.737
3PL benevolence	0.721
Experience partnering	1.000
RMO	0.469
Partnering behavior	0.391

* The variance extracted for “Experience with 3PL” and “Experience partnering” are 1 given that they were measured by a single indicator.

Discriminant validity

Another test conducted in the measurement phase consisted of examining the discriminant validity of the constructs; i.e., verifying that the items loaded on the construct of interest and not on other constructs. According to several authors (Shook et al 2005, Kline 2005, p. 182), achieving a good fit for the model in which each indicator loads on only one factor provides a precise test of discriminant validity.

The measurement model presented reasonable fit indices; thus it was inferred that discriminant validity existed. In addition, the factor covariances were fairly small in the vast majority of cases and non-significant in many cases as well. This fact also

diminished concerns that factors assumed as independent were in reality a single factor (i.e., not discriminant).

Shook et al (2005) indicate that an alternative method for testing for discriminant validity is to calculate the shared variance between constructs and verify that it is lower than the average variance extracted for each individual construct. This procedure was conducted for all pairs of constructs. All but three pairs (TSI – 3PLTSI, TSI – DEP, 3PLTSI – DEP) did pass this test. Therefore, for these three pairs, a fit comparison of nested models was conducted. Models with correlations between the two factors set equal to 1 (i.e., where the two factors are considered a single, unique factor) were compared to models where the two factors were free to correlate. Given that the difference in χ^2 was statistically significant for all three pairs (see Table 13), the existence of discriminant validity was inferred.

Table 13. Test for discriminant validity for construct pairs with high covariance

Construct pairs	Single factor model		Two factor model		Fit difference		Stat. sig at 5% level?	Discrim. Validity ?
	χ^2	df	χ^2	df	$\Delta\chi^2$	Δdf		
TSI - 3PL TSI	62.765	14	51.178	13	11.587	1	Yes	Yes
TSI - DEP	143.134	20	63.352	19	79.782	1	Yes	Yes
3PL TSI - DEP	61.199	14	16.372	13	44.827	1	Yes	Yes

Scale reliability

Scale reliability refers to the internal consistency of a particular scale to measure a latent variable (Garver and Mentzer 1999); i.e., indicates whether a factor is expected to be stable and replicable. Garver and Mentzer (1999) point out that the coefficient alpha, the traditionally adopted measure of reliability, has some

limitations. In some cases, it tends to underestimate the scale reliability or become inflated when the construct has a larger number of items. They suggest the use of SEM reliability measures, such as the variance extraction measure and the SEM “Reliability of the Construct” measure. Following their recommendations, SEM measures of reliability were taken into consideration.

The “variance extracted” was calculated for all constructs (Table 12 above) and most constructs had values above the recommended figure of 0.5. In addition, the coefficient “Maximal Reliability”, Coefficient H developed by Hancock and Mueller (2001), a measure of construct reliability, was calculated. Hancock and Mueller (2001) argue that the traditional “Reliability of the Construct,” RC, developed by Fornell and Larcker (1981) has some limitations: 1) its value is affected by loading signs; 2) it is decreased by additional indicators if those have small loadings; 3) it can be smaller than the reliability (squared loading) of the best indicator. Table 14, below, presents the coefficient H for each construct. All values were found to be above the 0.7 threshold.

Given that the measurement model has been assessed in terms of fit and convergent and discriminant validity, the next step was to test the structural model where the theoretical links are investigated.

Table 14. Construct reliability results

Construct	Construct Reliability (H)
LCAP	0.921
VOLPM	0.816
DIVPM	0.737
VOL3PL	0.515
DIV3PL	0.830
LCOMP	0.797
TSI	0.892
3PLTSI	0.730
REP	0.781
SAT	0.938
DEP	0.876
3PLDEP	0.875
CRED	0.919
BENEV	0.948
RMO	0.848
PART	0.801

5.4.3. Structural phase

In the second phase, a new EQS program was written for the confirmatory model. All independent constructs were allowed to correlate. The disturbances of the construct pairs credibility/benevolence and dependence/3PL dependence were allowed to correlate as well.

The following steps were followed:

Check of goodness-of-fit information. There are a dozen fit indices that are used to assess the fit of structural equation models. Because there are so many options, different articles report different indices and reviewers may request different fit indices that they know or prefer (Kline 2005). Kline (2005) recommends the

following set of indices that reflect “the current state of practice and recommendations about what to report in written summary of the analysis” (p. 134):

- 1) *The model chi-square (χ^2):* The chi-square statistic compares the observed and the model-implied covariance matrices. Since the objective is that these two matrices are similar, a non-significant chi-square is desired. However, it is a very powerful test that can detect small discrepancies in the data. Therefore, it is likely that the this statistic will be significant; i.e., will predict that the model does not fit the data;
- 2) *The Steiger-Lind root mean square error of approximation (RMSEA):*
RMSEA is a fit index that evaluates the overall discrepancy between observed and model implied (co)variances, while taking into account the model’s simplicity. It improves as more parameters are added to the model, as long as those parameters are making a useful contribution. It is a “badness-of-fit” index, which means that a value of zero indicates the best fit. Values less than 0.06 are considered acceptable;
- 3) *The Bentler comparative fit index (CFI):* CFI is a data-model fit index that evaluates the improvement in the model’s fit relative to a baseline model, usually the independence model (also called null model). The independence model is the worst possible model, in which there are no relationships in the data (i.e., population covariances among observed variables are zero). A rule of thumb is that CFI values greater than roughly 0.90 are considered acceptable (Kline 2005);

4) *The standardized root mean squared residual (SRMR)*: SRMR is a measure of the mean absolute squared residual; i.e., the overall difference between observed and predicted correlations. Values of SRMR less than 0.10 are considered acceptable (Kline 2005).

This study follows Kline’s (2005) recommendations and uses these four indices (χ^2 , SRMR, RMSEA, and CFI) to assess the model fit. As expected, the χ^2 was statistically significant, which indicates that the model does not have a good fit. This does not undermine the fit evaluation. As with the measurement model, the values for RMSEA and SRMR fit indices fell within the desired range (see Table 15). The CFI index, however, was marginally below the 0.90 threshold. The model fit was considered to be marginally acceptable.

Table 15. Summary of fit indices for the full model

	Chi-square	CFI	RMSEA	SRMR
<i>Desirable range</i>		<i>> 0.9</i>	<i>< 0.06</i>	<i>< 0.10</i>
Full model	1994.388 (df = 1328)	0.865	0.047	0.075

Check of inter-factor path coefficients. With the model presenting a marginal level of acceptance, the structural paths were examined for theoretical and practical implications. Table 16 provides an overview of the standardized solution of the structural model. The first part of the table presents the primary antecedents of customer partnering behavior, followed by the antecedents of dependence and antecedents of trust.

Table 16. Standardized path coefficients.

Hypothesis	Relation	Full model
Primary Hypotheses		
1	Customer dependence \Rightarrow Partnering	0.374*
2	3PL dependence \Rightarrow Partnering	0.095
3	3PL credibility \Rightarrow Partnering	0.027
4	3PL benevolence \Rightarrow Partnering	0.245*
5	Partnering experience \Rightarrow Partnering	0.206*
6	RMO \Rightarrow Partnering	0.216*
7	Satisfaction \Rightarrow Partnering	0.06
Antecedents of dependence		
8	Customer capabilities \Rightarrow Dependence	-0.140*
9	Environmental diversity 3PL \Rightarrow Dependence	-0.043
10	Environmental volatility 3PL \Rightarrow Dependence	-0.056
11	Environmental diversity product market. \Rightarrow Dependence	0.056
12	Environmental volatility in product market \Rightarrow Dependence	0.025
13	Logistics Complexity \Rightarrow Dependence	-0.041
14	TSI by customer \Rightarrow Dependence	0.234
15	TSI by customer \Rightarrow 3PL dependence	-0.639*
16	3PL TSI \Rightarrow Dependence	0.668*
17	3PL TSI \Rightarrow 3PL dependence	1.114*
Antecedents of trust		
18	3PL TSI \Rightarrow Credibility	0.217*
19	3PL TSI \Rightarrow Benevolence	0.454*
20	Reputation \Rightarrow Credibility	0.273*
21	Experience with 3PL \Rightarrow Credibility	-0.049
22	Experience with 3PL \Rightarrow Benevolence	0.028
23	Satisfaction \Rightarrow Credibility	0.271*
24	Satisfaction \Rightarrow Benevolence	0.248*

Obs.: The figures indicated by * are significant at the 5% level.

5.5. Results

In this subsection, the model results are discussed in light of the hypotheses proposed. Figure 13, below, presents a diagram with the statistically significant paths and Table 17 presents the model results and support for the hypotheses. A more detailed discussion of the implications of the results is found in Chapter 6.

Figure 13. Statistically significant path coefficients.

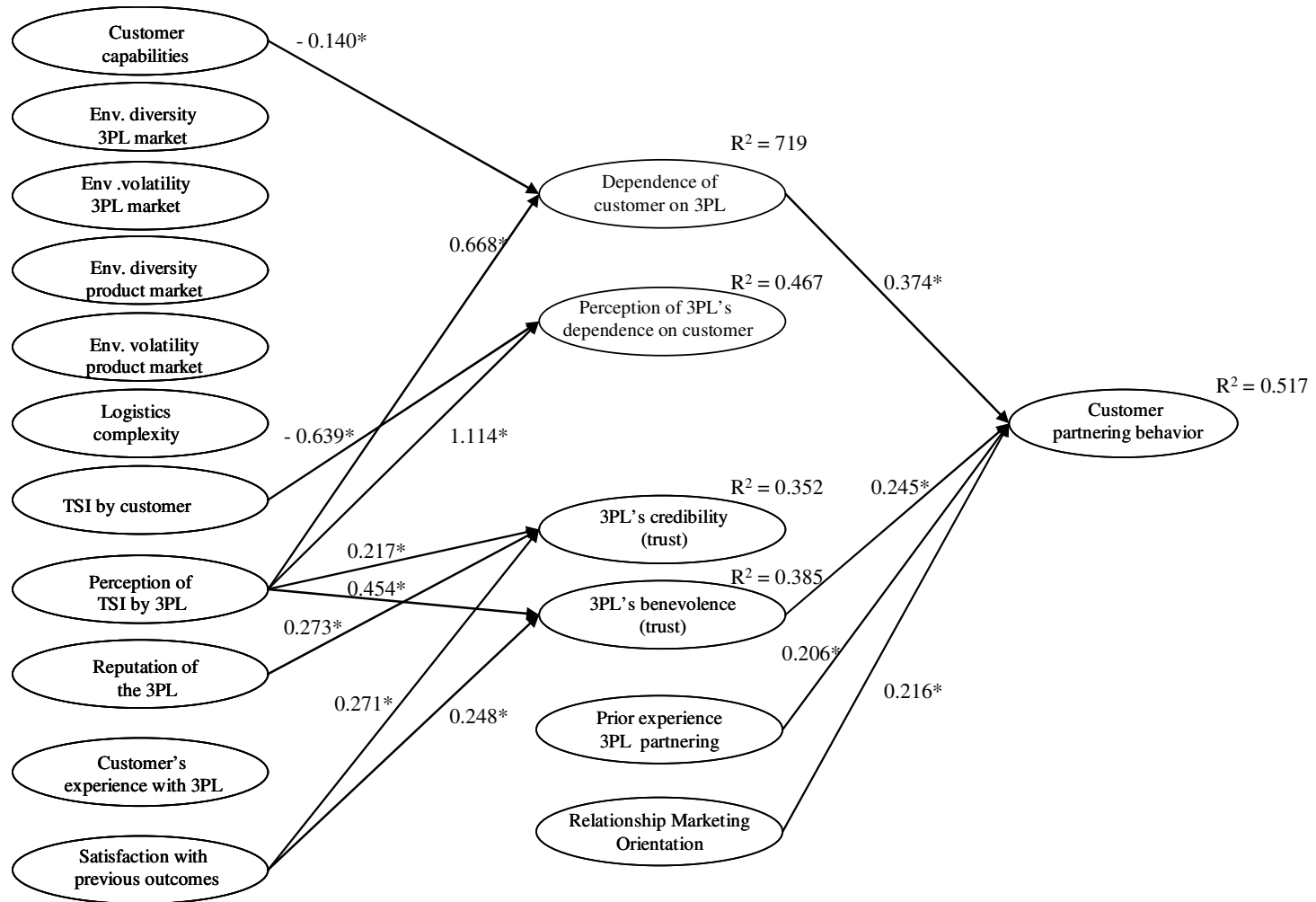


Table 17. Summary of Results

Hypothesis	Relation	Full model	Support/ Nonsupport
Primary Hypotheses			
1	Customer dependence \Rightarrow Partnering	positive, significant	supported
2	3PL dependence \Rightarrow Partnering	nonsignificant	not supported
3	3PL credibility \Rightarrow Partnering	nonsignificant	not supported
4	3PL benevolence \Rightarrow Partnering	positive, significant	supported
5	Partnering experience \Rightarrow Partnering	positive, significant	supported
6	RMO \Rightarrow Partnering	positive, significant	supported
7	Satisfaction \Rightarrow Partnering	nonsignificant	not supported
Antecedents of dependence			
8	Customer capabilities \Rightarrow Dependence	negative, significant	supported
9	Environmental diversity 3PL \Rightarrow Dependence	nonsignificant	not supported
10	Environmental volatility 3PL \Rightarrow Dependence	nonsignificant	not supported
11	Environmental diversity product market. \Rightarrow Dependence	nonsignificant	not supported
12	Environmental volatility in product market \Rightarrow Dependence	nonsignificant	not supported
13	Logistics Complexity \Rightarrow Dependence	nonsignificant	not supported
14	TSI by customer \Rightarrow Dependence	nonsignificant	not supported
15	TSI by customer \Rightarrow 3PL dependence	negative, significant	supported
16	3PL TSI \Rightarrow Dependence	positive, significant	not supported
17	3PL TSI \Rightarrow 3PL dependence	positive, significant	supported
Antecedents of trust			
18	3PL TSI \Rightarrow Credibility	positive, significant	supported
19	3PL TSI \Rightarrow Benevolence	positive, significant	supported
20	Reputation \Rightarrow Credibility	positive, significant	supported
21	Experience with 3PL \Rightarrow Credibility	nonsignificant	not supported
22	Experience with 3PL \Rightarrow Benevolence	nonsignificant	not supported
23	Satisfaction \Rightarrow Credibility	positive, significant	supported
24	Satisfaction \Rightarrow Benevolence	positive, significant	supported

Antecedents of customer partnering behavior. The primary hypotheses proposed that, with the exception of perceived 3PL dependence, all primary antecedents (i.e., customer dependence on a 3PL, 3PL credibility, 3PL benevolence,

customer experience with partnering, customer relationship marketing orientation, and satisfaction with previous outcomes) have a positive effect on customer partnering behavior. In other words, it was proposed that a customer with higher levels of dependence on a 3PL, trust in a 3PL's credibility and benevolence, satisfaction with a 3PL, relationship marketing orientation, and satisfaction with the relationship, will exhibit higher levels of partnering behavior.

Examining the signs and statistical significance of the structural paths linking these constructs provides information on whether the hypotheses are supported. It was found that there is a statistically significant positive relationship between a customer's dependence on a 3PL (H1), a customer's trust in a 3PL's benevolence (H4), a customer's experience with partnering (H5), a customer's relationship marketing orientation (H6), and a customer's partnering behavior. Hypotheses H1, H4, H5, and H6 were supported.

The paths linking a 3PL's dependence (H2), a 3PL's credibility (H3) and satisfaction with previous outcomes (H7), to a customer's partnership behavior were not statistically significant. Therefore, these hypotheses were not supported.

These findings indicate that both interorganizational conditions (i.e., customer dependence and customer's trust in a 3PL's benevolence) and firm specific factors (i.e., customer partnering experience and a customer's relationship marketing orientation) play a role in shaping a customer's perceived partnering behavior with a 3PL. It can also be observed from the magnitude of the standardized path coefficients that interorganizational factors, especially dependence, have a stronger influence than firm specific factors (i.e., customer's partnering experience and relationship marketing

orientation). The surprising finding that 3PL credibility had no significant influence on customer partnering behavior might indicate that the interpersonal relationships between a 3PL representative and his/her customer cannot be underestimated and is crucial in shaping a customer's trust. These four constructs explained almost 52% of partnering behavior's variance.

Antecedents of customer dependence. The hypothesized antecedents of customer dependence are related to a customer's internal logistics capabilities, its competitive and operational environment, a 3PL's competitive environment, and transaction specific investments (TSI) by both customers and the 3PL. It has been proposed that a customer with higher levels of internal logistics capabilities (H8) perceives itself to be less dependent on a 3PL. It was also hypothesized that a customer will perceive itself to be less dependent on a 3PL if the 3PL is immersed in a diverse environment (H9) and invests in their relationship (H16).

It was also proposed that a customer's dependence on a 3PL increases if a firm is immersed in a diverse (H11) and volatile market (H12), with complex logistics operations (H13), and when the customer invests in its relationship with the 3PL (H14). Volatility in the 3PL market (H10) was also hypothesized to have a positive relationship with customer dependence.

Surprisingly, for the sample under study, competitive pressures, operations complexity or lack of alternatives (i.e., H9, H10, H11, H12, and H13) and TSI by customer (H14) do not have a statistically significant effect on a customer's perceived dependence on a 3PL. Only a customer's logistics capabilities (H8) and TSI by 3PL (H16) had statistically significant results.

It was found that there is a negative relationship between a customer's logistics capabilities and a customer's dependence on a 3PL (H8 supported). This means that when a customer has a greater understanding of the management of its logistics operations, a customer will perceive itself to be less dependent on a 3PL. A (strong) positive effect was found between a TSI done by a 3PL and a customer perceived dependence on a 3PL, which is the opposite effect that was hypothesized (H16 not supported). This finding means that when a 3PL invests in a relationship with a customer, this customer perceives itself to be more dependent on the 3PL. This point is very important. The traditional resource dependence rationale is based on an adversarial point of view – dependence asymmetry. If a firm perceives its partner to be dependent, a firm's level of dependence is reduced. The unexpected findings might suggest that a customer that perceived the 3PL to be investing in their relationship perceives itself to be more dependent on the partner. This might suggest that they are more loyal to trade partners that invest in a relationship, or may be an indication that they perceive that no other 3PLs would be willing to make such investment on their behalf.

Antecedents of 3PL dependence. Two hypotheses were presented for the antecedents of 3PL dependence. First, it was hypothesized that a customer will perceive the 3PL to be more dependent on it when the 3PL invests in the relationship (H17). Second, it was hypothesized that a customer will perceive the 3PL to be less dependent on it when the customer invests in the relationship (H15). Both hypotheses were found to be statistically significant and in the expected direction. It was found that there is a negative relationship between TSI by a customer and 3PL dependence

(H15 supported) and a positive relationship between 3PL TSI and 3PL dependence (H17 supported).

Antecedents of trust. TSI by the 3PL have a significantly positive impact on both credibility and benevolence (H18 and H19 supported). Reputation has a significantly positive impact on credibility (H20 supported). There was no statistically significant link found between experience with 3PL and credibility and benevolence (H21 and H22). Finally, satisfaction significantly impacts both credibility and benevolence (H23 and H24 supported). Therefore, given that the direct link between satisfaction and customer partnering behavior satisfaction (H7) was not found, this implies that satisfaction does not lead directly to customer's partnering behavior, but indirectly through the building of trust.

Contrasting the results with Ganesan's model of long term orientation.

Eventhough Ganesan's (1994) model has a different dependent variable (i.e., retailer long term orientation in its relationship with a vendor) than the one adopted in this dissertation, it is useful to identify which results were consistent (or inconsistent) to Ganesan's findings. Regarding the antecedents of the long-term orientation, the present model was consistent to Ganesan's solely regarding the customer's dependence (equivalent to retailer's dependence on Ganesan's model). Satisfaction, credibility, and 3PL dependence, which were significant in Ganesan's model, were not found to be significant in the present model.

Regarding the antecedents of dependence, only the effects of transaction specific investments by the customer and 3PL on customer dependence were consistent to Ganesan's findings. There is an interesting point to highlight here. In

both models, it was hypothesized that transaction specific investments by the vendor (or 3PL) would have a negative effect on a firm's dependence. In both models, the results were the opposite as expected (i.e., transaction specific investments by a vendor have a positive effect on a firm's dependence) and significant.

Regarding the antecedents of trust, both models presented very similar findings. It was found a positive effect of reputation on credibility in both models. Also in both models, prior experience with the vendor (or 3PL) was not found to have a significant effect on credibility and benevolence. Transaction specific investments by a vendor (or 3PL) had a positive effect on both credibility and benevolence. However, satisfaction was found to directly impact credibility and benevolence in the present model, but not in Ganesan's model. In his case, satisfaction directly impacted the dependent variable. In the model of this dissertation, satisfaction impacts the dependent variable mediated by trust.

As a conclusion, it can be said that Ganesan's contentions were generally validated although the dependent variable of this dissertation (partnering behavior) is a broader description of relational behavior, as opposed to Ganesan's long term orientation, which is a single dimension of relational behavior. The model presented in this dissertation contributes to the previous model by providing evidence that other firm specific characteristics, such as prior experience with partnering, relationship marketing orientation, and capabilities, do impact relational behavior as well.

5.6. Conclusions

This chapter presented the procedures followed in order to analyze the data and the results from the formal tests of the hypotheses. The process started with

testing for non-response bias and a preliminary analysis of the data. The steps following included the analysis of the measurement model, including construct reliability, discriminant validity, and convergent validity. Finally the structural model was analyzed and the results presented. The next chapter presents the conclusions and discussion of the results, along with an overview of the contributions of the study, limitations, and directions for future research.

Chapter 6: Discussion and Concluding Remarks

This chapter comprises four main topics. First, an overall discussion of the model results is presented. Second, the contributions of this dissertation to the academic literature and managerial implications are examined. Third, the limitations of this study are addressed. Next, the directions for future research are outlined. Concluding remarks finalize the chapter.

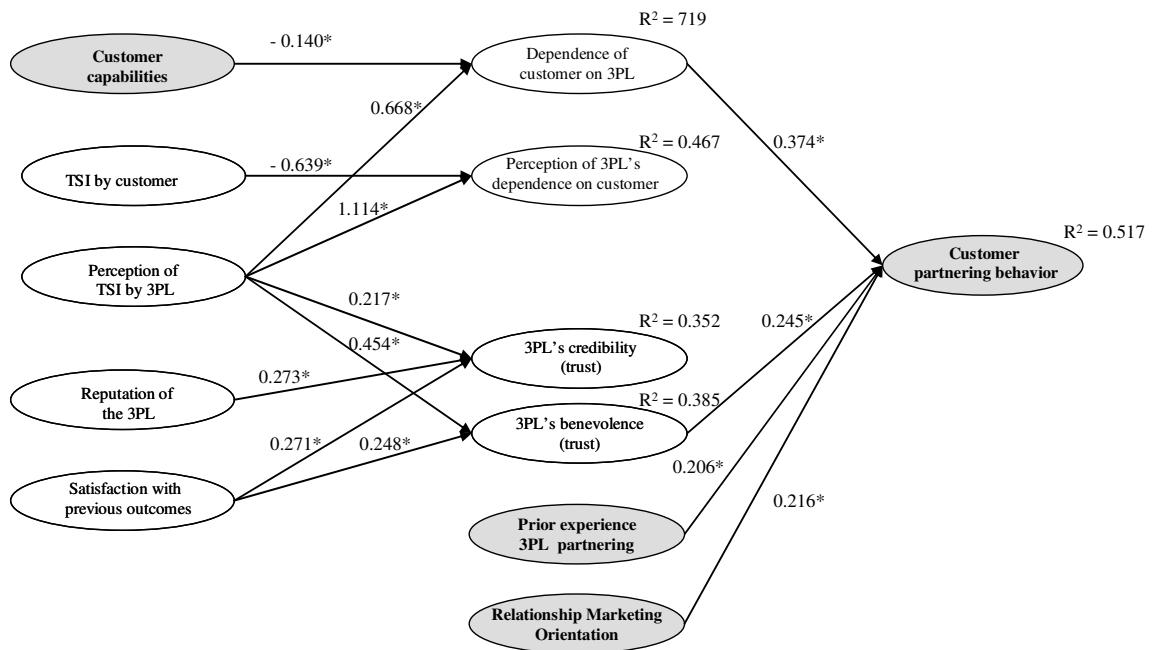
6.1. Discussion of model results

The objective of this dissertation was to develop a model of the determinants of customer partnering behavior in logistics outsourcing relationships. Customer partnering behavior in the relationship with a 3PL is defined as the customer's perception that this relationship presents five key behavioral elements (Gardner et al 1994): planning, sharing benefits and burdens of the relationship, systematic operational information exchange, and mutual operating controls. Developing close relationships between 3PLs and customers has been shown to bring them many benefits, such as: 1) increased customer's performance (Knemeyer and Murphy 2004) and market share (Stank et al 2003), and 2) greater levels of customer retention, service recovery, and referrals to new customers (Knemeyer and Murphy 2005).

The hypotheses that compose the model were developed based on theories and empirical evidence in the marketing, logistics, and strategy literatures. The model was tested following established statistical procedures and Figure 14 depicts the simplified model comprising solely the statistically significant structural paths. Overall, the model findings support the contention that interorganizational conditions created

through the relationship interactions (i.e. trust, dependence, and satisfaction) combined with firm specific factors (i.e. experience with partnering and customer relationship marketing orientation) influence a customer partnering behavior with a 3PL. The interorganizational conditions are influenced also by both firms specific characteristics (e.g., customer's logistics capabilities, 3PL reputation), and both firms actions towards the relationship (i.e., transaction specific investments). In the paragraphs that follow, the results obtained from the data analysis are discussed in detail.

Figure 14. A simplified model of customer partnering behavior in logistics outsourcing relationships¹³



Antecedents of customer partnering behavior. The antecedents of customer

partnering behavior in its relationship with a 3PL are related to interorganizational

¹³ The shaded constructs represent the validated extensions to Ganesan's (1994) model of the antecedents long term orientation in buyer-seller relationships.

conditions and customer specific characteristics. The model identified four main antecedents of customer partnering behavior:

- The perception of a customer's dependence on a 3PL (H1);
- A customer's trust in a 3PL's benevolence (H4);
- A customer's prior partnering experience with other 3PLs (H5), and;
- A customer's relationship marketing orientation (H6).

The model provided support for the contention that higher levels of customer dependence lead to higher levels of customer partnering behavior (H1). It was also found that the perception that a 3PL depends on the customer does not influence a customer partnering behavior (H2 not supported). In other words, a customer will be willing to exchange information, engage in joint planning, and share benefits and burdens of the relationship, when it perceives itself to be dependent on the 3PL's expertise in providing logistics services. This occurs regardless of whether the customer perceives itself to be a major customer of the 3PL (i.e., when the customer perceives the 3PL to be dependent on its business relationship).

The model also supported the hypothesis that a customer's trust in a 3PL's benevolence positively affects a customer's partnering behavior (H4). This means that when a customer perceives the 3PL to care for the relationship and to be willing to make sacrifices for the relationship, a customer will be more likely to exhibit a partnering behavior with a 3PL. Indeed, during semi-structured interviews conducted in December of 2006 with customers of Rapidão Cometa, it was evident that customers very much appreciated the weekly visits conducted by Rapidão Cometa's representatives and the personal and close relationship developed between them. In

the event of operational problems and difficulties, all interviewed customers agreed that Rapidão Cometa's representatives were very active in assisting them.

Surprisingly, support was not found for the contention that a customer's perception of a 3PL's credibility, i.e., reliability and consistency of behavior, positively impacts a customer's partnering behavior (H3). This result implies that the belief in a 3PL ability to efficiently perform does not directly impact the customer's partnering behavior. To some extent, however, this dimension is captured by customer satisfaction (discussed later in the antecedents of trust).

The model found strong support for the contention that customer specific characteristics play an important role in shaping a customer's partnering behavior with a 3PL. It was found that a customer's prior experience with other 3PLs (H5) and a customer's relationship marketing orientation (H6) positively affect a customer's partnering behavior. The first result indicates that firms that are more experienced in partnering with a logistics provider organization may be better at implementing and maintaining close and interactive relationships. In addition, the strategy a firm embraces with regards to its own customers will influence the nature of the relationship with the 3PL. Therefore, it is crucial that 3PLs investigate the history and relationship practices of potential customers before incurring investment costs to build relationships.

Antecedents of dependence. This sub-model presented the most surprising results. Out of the eight hypothesized antecedents of customer dependence on a 3PL, only two paths were statistically significant: the perception of a customer's internal logistics capabilities (H8) and the transaction-specific investments (TSI) performed

by the 3PL (H16). The model found a negative relationship between a customer's logistics capabilities and the perceived dependence on a 3PL, providing support for H8. The result supported the contention that when a firm perceives itself to be knowledgeable about its logistics processes, it may believe itself to be less dependent on a 3PL. An unexpected finding was related to the effect of TSI by 3PL on customer dependence. It was hypothesized that when a customer perceives that a 3PL has invested in their relationship, the customer would believe itself to be less dependent on a 3PL. The rationale was that the 3PL would have incurred relationship costs, thus creating exit barriers for the 3PL. Interestingly, the result was the opposite. It was found that a customer that believes a 3PL has invested in a relationship feels that it is *more dependent* on the 3PL. This might indicate that the customer has become more loyal to the 3PL, or that the customer perceives that it would have difficulties finding another 3PL that would make the same investments. During the semi-structured interviews conducted with customers of Rapidão Cometa, anecdotal evidence was found for this contention. One motorcycle manufacturer indicated that Rapidão Cometa built and attached racks in their trucks to load motorcycles. Due to Rapidão Cometa's initiative and willingness to assume the costs of the racks, the manufacturer reduced costs by not requiring heavy and expensive packaging. Another example is related to Rapidão Cometa's investments in its relationship with a large cosmetics company. Rapidão Cometa assumed the costs for the "kits assembly" (packaging) equipment that was installed in the manufacturer's distribution center.

Interestingly, none of the factors related to environmental pressures in the product market or in the market for 3PL services (H9, H10, H11, and H12) had an

impact on the perceived customer dependence. As well, the complexities of logistics operations showed no influence on customer dependence (H13).

Both hypothesized antecedents of perceived 3PL dependence on a customer were supported. It was found that TSI by customer had a negative impact on perceived 3PL dependence (H15) and that TSI by the 3PL had a positive effect on the perceived 3PL dependence on a customer (H17). These results have limited interest in the context of the overall model, since 3PL dependence had no significant effect on customer partnering behavior (see main antecedents of partnering, above).

Antecedents of trust. With the exception of customer experience with 3PLs, all proposed antecedents of both dimensions of trust, i.e., credibility and benevolence, were supported. Transaction-specific investments (TSI) by the 3PL positively impact a customer's perception of a 3PL's credibility and benevolence. The crucial importance of 3PL investments are noted in that they ultimately influence a customer's partnering behavior. Not only does a customer perceive itself to be more dependent on the 3PL, but it also believes the 3PL to be efficient and to care for the relationship. As noted in the antecedents of dependence subsection above, customers greatly appreciate Rapidão Cometa's investments in their relationships. These investments constitute, therefore, tangible demonstrations of benevolence. A 3PL's reputation in the market was also found to have a positive effect on a 3PL's credibility. Therefore it is crucial for 3PLs not only to invest in advertising, but, especially, to build strong reputations through excellence of service. Reputation may be disseminated via word-of-mouth communication. Satisfaction with previous outcomes of the relationship also had a positive effect on credibility (H23) and

benevolence (H24). Given that the direct link between satisfaction and customer partnering behavior was not found to be statistically significant (H7), the results of the model indicates that the effect of satisfaction on partnering behavior is indirect through the building of trust.

6.2. Contributions

This research provides contributions to both academics and practitioners. As the following paragraphs describe, contributions have been made to the logistics and marketing fields, as well as to managers.

Contributions to the logistics literature: The main contribution of this dissertation to the logistics literature is the development and testing of a theory-based model. Most logistics outsourcing literature has been exploratory in nature and there have been few examples of theory testing (Maloni and Carter 2005). This dissertation provides and tests a theoretical framework of the conditions under which partnerships between 3PLs and customers will more likely occur. A second contribution to the logistics literature related to the integrative nature of the model that combines theories and findings from other disciplines, such as marketing and strategy. More specifically, rationales borrowed from network theory, the capabilities perspective, and the strategic orientation perspective were combined with social exchange theory in the model.

Another contribution of this dissertation to the logistics outsourcing literature is its focus on the antecedents of partnering behavior. As noted in the literature review, the few examples of theory testing in the logistics outsourcing literature have focused on other aspects of these relationships, e.g., the positive effects of logistics

outsourcing relationships on customer and 3PL performance (e.g. Sinkovics and Roath 2004, Panayides and So 2005, Knemeyer and Murphy 2005).

Aside from identifying the antecedents of customer partnering behavior, an important contribution of the model is to provide an understanding of how the interplay among various factors occurs, leading to a customer's partnering behavior with its 3PL. The factors that composed the model were related to environmental forces, interorganizational conditions and firm-specific factors. Since it has been shown that these factors contribute positively to performance, understanding the mechanisms through which these close relationships occur is very relevant.

Collecting data from Brazilian 3PL customers is a final contribution. The majority of studies in the logistics outsourcing literature have focused on U.S. firms. Other studies have focused on surveys and case studies in countries such as New Zealand, Saudi Arabia, China, and Mexico. However, to the best of this author's knowledge, no study has used Brazilian data. Given the importance of the Brazilian market to world trade, understanding the dynamics of logistics outsourcing partnerships in that market is relevant. Moreover, since many of the constructs tested here were first developed and used with U.S. data, future cross-cultural comparisons can be undertaken.

Contributions to the marketing literature: An important contribution of this dissertation to the marketing literature is extending the seminal marketing study developed by Ganesan (1994). Although written more than ten years ago, this study continues to be cited by marketing researchers. His model identified the antecedents of long-term orientation in buyer-seller relationships and was tested with retailers and

their vendors. The constructs adopted by Ganesan (1994) focused primarily on interorganizational conditions (e.g. trust in the partner, dependence on the partner) and elements of environmental conditions (e.g., environmental uncertainty). The present model contributes to the extension of Ganesan's model by combining firm-specific characteristics with interorganizational factors in the explanation of a firm partnering behavior. The results of the model indicate that Ganesan's rationale also holds in the case of partnering behavior in logistics outsourcing relationships, but provides statistical validation that firm-specific factors also play an important role in shaping partnering behavior as well.

Another contribution to the marketing and partnering literatures relates to the multidimensional nature of the dependent variable: customer partnering behavior. Ganesan's (1994) study focuses on long-term orientation, which is one dimension of partnering. To the best of its author's knowledge, there has been no study in which partnering behavior itself is the dependent variable. A final contribution to the marketing literature is testing the model in an industry that is not commonly investigated by marketing researchers, the logistics outsourcing industry.

Contributions to managers: This study brings relevant contributions to 3PL managers. It has been consistently shown in the logistics literature that developing and nurturing close relationships between 3PLs and customer firms results in benefits for 3PLs and customers (e.g., higher performance, higher levels of customer retention and referrals, increased market share, etc). It is thus in the 3PL's interest to identify the factors that are important or effective in stimulating their customers to engage in close relationships; i.e., to exhibit partnering behavior. The present model identified

these factors and their relative effects on shaping customer partnering behavior.

Identifying the factors that have a strong influence on customer partnering behavior provides guidance to 3PLs on how to best nurture partnerships with their customers.

This could assist 3PLs in maintaining and expanding their customer base.

6.3. Managerial implications

This research has identified several major factors that influence a customer's partnering behavior in its relationship with a 3PL. Based on the results of the research, several recommendations can be made to 3PL managers:

Increasing a customer dependence on a 3PL. A 3PL can increase the depth of its partnerships with its customers by increasing customer dependence on its services. It was shown that when a customer perceives to be dependent on a 3PL, a customer exhibits higher levels of partnering behavior (H1). The level of a customer dependence on a 3PL will be a function of two main factors: a customer's logistics capabilities and the degree to which a 3PL invests in the relationship. The results of the model indicated that there is a negative relationship between a customer's internal logistics capabilities and customer dependence on a 3PL. The key idea is that a 3PL should carefully protect its core competencies. If a customer perceives to fully understand how to perform those activities outsourced to the 3PL, it will perceive to be less dependent and exhibit a partnering behavior to a less degree. This increases the likelihood that a customer will quit the relationship for an alternative 3PL and contract less of the focal 3PL services.

Secondly, as counterintuitive as it may sound, the results from this dissertation suggest that a 3PL should invest in a relationship (H16) in order to increase customer

dependence. This might be either because the investments increase customer loyalty, or because the customer perceives that no other 3PL may be willing to invest in the relationship. A 3PL that invests in a relationship may feel appreciated by its customer. These investments do not necessarily need to be in physical assets. They can be related to training of transactional activities related to the operations between 3PL and customer, or processes developed exclusively for that particular relationship. It is relevant to note that there was no evidence found that competitive pressures in the customer industry, or that complexity of customer operations, or availability of other 3PLs, impacts a customer's perceived dependence on a 3PL. Therefore, in order to increase a customer's perceived dependence, a 3PL should focus on its capabilities and investments in the customer relationship.

Increasing customer trust in a 3PL. The model results indicate that there is a positive relationship between a customer's perception of a 3PL's benevolence and a customer's partnering behavior (H4). Therefore, it is crucial for a 3PL representative to make an effort to develop personal and interactive relationships with its customers. Personal relationships may be emphasized in many areas of a 3PL's activities, including those that deal with customer issues or complaints (e.g., the marketing department and call-center). Several semi-structured interviews were conducted with Rapidão Cometa's customers. During the interviews, it was emphasized how important the weekly visits from Rapidão Cometa's representatives were for the customers. The customers argued that Rapidão Cometa was responsive when problems arose, such as late shipments. They pointed out that it was important to

know that someone from Rapidão Cometa was paying attention to their problems and working to solve them.

Aside from working on interpersonal interactions with customers, one way to increase a customer's perception of a 3PL's benevolence is by investing in the relationship. It was shown that there is a positive relationship between 3PL transaction-specific investments and 3PL benevolence. Transaction specific investments are a demonstration of concern and care for the relationship. Therefore, if a 3PL invests in the relationship with a customer, the customer will not only perceive itself to be dependent on the 3PL, but will also trust the 3PL.

An important means of increasing a customer's perception of a 3PL's credibility is by increasing the 3PL's reputation. A positive relationship was found between a 3PL's reputation and its customer's perception of the 3PL's credibility. Reputational advertising may help here. In addition, reputation may spread through word-of-mouth. One of the customers interviewed said that his company chose Rapidão Cometa based on conversations with managers from other firms who already worked with Rapidão Cometa.

Finally, it is crucial that a customer is satisfied with the services provided. The model results show that satisfaction with outcomes of the relationship build trust that in turn shapes a customer's partnering behavior with a 3PL. During the interviews, on-time performance, freight visibility through a satellite tracking system, and cargo integrity (i.e., absence of damage and spoilage) were clearly the main factors that customers used to evaluate Rapidão Cometa's performance.

Knowing a 3PL customer. The model results showed that a customer relationship marketing orientation and a customer's prior experience with partnering had strong positive impacts on partnering behavior. These findings are particularly important for a 3PL when deciding whether to start working a new customer. A customer's own marketing strategies and philosophies of relating with business partners will influence the quality and dynamics of its relationship with the 3PL. A 3PL should try to understand how a customer relates to its own customers. If the customer firm's strategy focuses on nurturing mutually beneficial relationships with its own customers, it is more likely that the customer will do the same with the 3PL.

In addition, a customer's experience with other 3PLs will shape its expectations in the present relationship. Therefore, it is recommended that 3PLs investigate a customer's prior experiences with other 3PLs. If a customer has any prior experience partnering with other 3PLs, it may have more realistic expectations with the current service level.

6.4. Limitations

There are key limitations of this study. The first set of limitations is related to the nature of the model, variable measurement, and data collected. First, this study examined customer partnering behavior in a relationship with a 3PL from the customer's perspective. The perception of the 3PL provider was not captured in the data. Second, all constructs were measured by perceptual scales. Ideally objective measures should be utilized to match the perceptual measures, especially those that are related to operational activities (e.g., information exchange, planning, operating controls, logistics operations). Third, the sample respondent firms are customers of a

single 3PL. These customers might not represent the population profile of Brazilian firms, in general.

Another concern is related to the comparability of the findings from this study to those of other studies. The fact that the sample is composed of Brazilian firms may make the findings difficult to compare to those from other studies, given that most of the studies have been conducted with U.S. firms. In addition, given that the model focused on a single industry (i.e. logistics outsourcing industry) the findings may not be generalizable to other industries.

The second set of limitations is related to methodological issues. Many variables were skewed, which violates the normality assumption of structural equation models. This research tried to overcome this problem by using robust estimation techniques. In addition, despite concerted efforts to increase survey responses, there were still a fairly small number of observations to test a complex model.

6.5. Future research

Several avenues for future research can be identified:

First, the model could be enhanced by testing the effects of customer partnering behavior on performance. Performance measures could include perceptual measures from the customer's perspective, or objective measures, such as on-time performance, or sales. It would be interesting to contrast the results of models estimated using perceptual versus objective measures.

Second, an alternative model without trust or dependence as mediating variables could be tested. As explained in the literature review section, according to

social exchange theory, environmental and firm-specific factors contribute to the creation of interorganizational conditions (i.e. dependence and trust) that, in turn, influence relational behavior (customer partnering behavior in this dissertation). Studies that follow other theories, such as resource dependency and transaction costs economics, link environmental and firm-specific factors directly to relational behavior variables. Comparing alternative models would be a good extension of this paper.

The model could be tested linking the independent variables separately to each of the dimensions of partnering behavior. It might be the case that some dimensions of partnering behavior, such as operating controls, might be highly influenced by the partnering antecedents, while others might not be influenced to the same extent. Similarly, a model where performance is the dependent variable could be tested with separate dimensions of partnering as the independent variables. It might be the case that some components of partnering have a greater effect on performance than do others.

Simpler models could be tested well. For example, the effect of RMO on partnering, moderated by environmental uncertainty could be tested. Customer demographics may also play a role in shaping partnering behavior. For example, the customer partnering behavior of small and large firms could be compared. As well, different types of customers could be compared; e.g., partnership behavior could be compared between those with few and many functions outsourced.

Finally, previous work on marketing and transaction costs economics has shown that factors, such as contractual issues, legal issues and relationship

measurement issues, could also affect partnering behavior. A future model could encompass these additional variables.

6.6. Summary and concluding remarks

Although the logistics literature has reinforced the importance of relationship building between 3PLs and their customers, a theoretical and testable model that identifies the factors that lead customers to exhibit partnering behavior is still lacking. This dissertation fills this gap by identifying the factors that lead to customer partnering behavior in a relationship with a 3PL. In addition, the interplay between environmental forces, interorganizational conditions, and firm-specific factors in the shaping of such behavior is described.

Interorganizational conditions of trust and dependence were found to be key drivers of a customer's partnering behavior, and correspond to the factors 3PLs must focus on to improve partnering. It is relevant to note that these interorganizational influences are stronger than other factors, such as a customer's experience with partnering or the strategic orientation of the customer. In order to increase levels of dependence and trust, transaction-specific investments may be made by the 3PL. This single element has a strong influence on both trust and dependence. An important point is that competitive and operational environments do not seem to have a significant influence on a customer's dependence.

Aside from investing in the relationship with customers, levels of trust can be increased by building reputation for excellence and fairness and, especially, by demonstrating concern for the relationship with customers. The interpersonal side of a relationship should not be underestimated.

This research shows that a customer's experience with partnering and strategic orientation (i.e., relationship marketing orientation) also play important roles in explaining a customer's partnering behavior. This means that before investing in a relationship with a specific customer, the 3PL could closely investigate how the potential customer behaves in its relationships with its own customers. It is important to identify the nature of a customer's relationship with its own customers, since this relationship might mirror the customer-3PL partnership.

In conclusion, maintaining interorganizational relationships requires a broad knowledge of a partner's strategic profile and expectations. It requires creating conditions of satisfaction, trust, and dependence on the relationship. Partnerships are hard to build and maintain. This study may shed some light on effective actions that 3PLs can undertake in order to build strong partnerships with their customers.

Appendices

1. E-mails
2. Survey instrument

Initial E-mailing cover letter

Dear <Name>,

With the emphasis on cost reduction and service improvement, more companies have engaged in partnerships with one or more third party logistics providers (3PLs). To gain a better understanding of what factors trigger that decision and what are the performance effects, Prof. Martin Dresner and Adriana Rossiter at the University of Maryland, with the support of Rapidao Cometa, are conducting a research study that examines the roles of dependence, trust, and strategic orientation in partnering relationships with logistics providers, and what effects these relationships have on customer performance.

You are one of a small group of individuals selected as being particularly knowledgeable about these types of relationships. We are asking you to provide input on your experience in working with Rapidão Cometa. To ensure that the results of this research represent the opinion of firms that are involved in these relationships, it is important that the web-based survey be fully completed. The survey should take approximately 20 minutes to complete.

Your participation involves the completion of the survey at the link provided below. Sending the questionnaire is your consent to participate in this study and the acknowledgement that you are 18 years or over. Your responses will be completely confidential and combined with data others provide for presentation purposes. Individual email addresses will be kept on file for about six weeks after the launch of the survey for potential follow-up e-mails, but will be removed from the database afterwards. Rapidao Cometa will not have access to individual responses. As an incentive for you fully completing the survey, we offer you a summary report of the research and the chance to win an **iPod**. You may withdraw from participation in this survey at any time and your data will be removed from the study results. If you want to withdraw from participation in this survey, please send an e-mail to Adriana Rossiter.

The overall results from this research may be very helpful to you in identifying the key factors that lead to 3PL-customer partnering, and how that affects a customer's performance. If you would like to receive a summary copy of the results, please include your contact information at the end of the survey. Some examples of questions in the survey include your agreement with sentences such as: "The relationship with Rapidao Cometa has improved our information technology", or "We require shipment tracking ability."

If you have any questions about this project, please call Adriana Rossiter at 1.301.456.9163 or e-mail to arossite@rhsmith.umd.edu. Thank you very much for your support in this important study about the 3PL industry. If you have questions about your right as a research subject, please contact: Institutional Review Board Office, University of Maryland, College Park, MD 20742, irb@deans.umd.edu or 1.301.405.4212.

Sincerely,

Prof. Martin Dresner
The R. H. Smith School of Business
University of Maryland

Adriana Rossiter
The R. H. Smith School of Business
University of Maryland

Follow-up e-mail

Dear <Name>,

I recently e-mailed you seeking your input on your relationship with Rapidão Cometa. If you already completed the survey, thank you for your participation. If you have not yet had the chance to complete the survey, could you please take a few minutes now and complete the survey found at the link below?

The results of this study should be very helpful to you in identifying the key factors that led you to engage in a relationship with Rapidão Cometa. If you would like to receive a summary copy of the results, simply include your contact information at the end of the survey.

If you have any questions, please call me at 1.301. 456.9163 or send me an email at arossite@rhsmith.umd.edu. Again, thank you for your cooperation. I greatly appreciate your time and effort in completing the survey.

Sincerely,

Adriana Rossiter
University of Maryland

3PL-customer partnerships: A study about your relationship with Rapidão Cometa

The success of this research is depends on your participation. Thank you in advance for your time and support!

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

- **an opportunity to win a digital camera/iPod (retail value \$ 150.00)**
- a summary report so you can identify the drivers of your relationship with Rapidão Cometa and how it affects your performance.

Instructions

Please read the following instructions carefully before beginning the survey:

- Your responses to the questions will be **strictly confidential** and accessible only to the researchers. Rapidão Cometa will **not** have access to your individual responses. Your responses will be used along with responses from other participating customers to create summary reports.
- **Please answer all the questions as well as you can**, even if some questions may appear similar. If you do not know the exact answer, please provide your best estimate.
- **Please refer all questions to your business unit** or the unit of your company responsible for managing logistics.
- **You can suspend the completion of the survey after each page that you have submitted** and continue later using the hyperlink and password that were included in your invitation email. Your entries are saved by clicking on the “submit” button at the end of each page. **Please note that the chances to win gifts are available only to those respondents who complete the entire survey.**
- **Please use the “submit” and “back” buttons within the survey.** Using the “back” and “next” buttons of your browser may result in data loss.

Please contact Adriana Rossiter for questions:

Email: arossite@rhsmith.umd.edu

Phone: 1.301.314.9170

A. Relationship with Rapidão Cometa

This first set of statements describes the relationship between Rapidão Cometa and your company. Please indicate your level of agreement.

	Strongly disagree			Neither agree nor disagree			Strongly agree		
We expect our relationship with Rapidão Cometa to last a long time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are very loyal to Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintaining a long-term relationship with Rapidão Cometa is important to us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have many direct computer to computer links with Rapidão Cometa (i.e., EDI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We use software compatible with Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are linked to Rapidão Cometa through computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We and Rapidão Cometa exchange information that helps establishment of our business planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We require shipment tracking ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We require frequent fleet status reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We require on-time performance reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are willing to help Rapidão Cometa in difficult situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We share risk with Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have a high willingness to handle exceptions by negotiation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa and our company have joint committees/task forces	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We heavily exchange technical information with Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We regularly study Rapidão Cometa's operations for our planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The next set of statements is related to how your relationship with Rapidão Cometa has helped improve your company performance. Please indicate your level of agreement.

	Strongly disagree		Neutral		Strongly agree
This relationship has....					
improved our logistics system responsiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
improved our logistics system information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
reduced our operational risk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
improved our product/service availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
allowed us to achieve logistics costs reductions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
improved our information technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled us to implement changes faster/better	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
provided us more specialized logistics expertise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
enabled us to move from a "push" to a "pull" system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
reduced our order cycle time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
improved our post-sale customer support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helped us integrate our supply chain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are you satisfied with the services provided by Rapidão Cometa? Please describe your opinions with respect to the outcomes with Rapidão Cometa in the past year:

Last year...	Strongly disagree			Neither agree nor disagree			Strongly agree		
...we were pleased with the outcomes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... working with Rapidao was very useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... Rapidao Cometa was ineffective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... we were dissatisfied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... the outcomes were outstanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... the outcomes were of bad value for our company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... we were comfortable in working with Rapidao Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many years has your company worked with Rapidão Cometa? ____ years. (e.g., 2.5)

Has your company ever partnered with logistics providers? ___ Yes ___ No

If yes, how many years has your company partnered with other logistics providers (in general, not necessarily with Rapidão Cometa)? ____ years (e.g., 2.5)

The following statements describe your relationship with Rapidao Cometa's representative. Please indicate the level of agreement.

	Strongly disagree						Strongly agree
Rapidão Cometa's representative...							
... has been frank in dealing with us	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... makes reliable promises	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is knowledgeable regarding his services	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... does not make false claims	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is not open in dealing with us	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is honest about the problems may them arise	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has difficulties answering our questions	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has made sacrifices for us in the past	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... cares about us	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has supported us in times of shortages	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is like a friend	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has has been on our side	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa...							
... has a reputation for being honest	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has a reputation for being concerned about its customers	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has a bad reputation in the market	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has a reputation for being fair according to most customers	<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How important is Rapidão Cometa to your company? Please indicate your level of agreement with the following statements.

	Strongly disagree						Strongly agree
Rapidão Cometa is crucial to our performance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa is important to our business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If our relationship with Rapidão Cometa were discontinued, we would have difficulty in performing its services.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It would be difficult for us to replace Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are dependent on Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We do not have a good alternative to Rapidão Cometa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are important to Rapidão Cometa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are a major customer for Rapidão Cometa in our trading area.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We are not a major customer for Rapidão Cometa.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have made significant investments (e.g., technology, training etc.) dedicated to our relationship with Rapidão Cometa	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If we switched to a competing logistics provider, we would lose a lot of the investment we have made in this relationship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have invested substantially in personnel dedicated to this relationship	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If we decided to stop working with Rapidão Cometa, we would be wasting a lot of knowledge regarding its methods of operation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa has gone out of its way to link us with its business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa has tailored its services and procedures to meet the specific needs of our company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rapidão Cometa would find it difficult to recoup its investments in us if our relationship were to end.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you describe the market for the product you ship with Rapidão Cometa ?

	Strongly disagree			Neutral			Strongly agree	
The demand is unpredictable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales forecasts are accurate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The industry production is stable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The demand trends are easy to monitor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The market is very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are many new products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are many competitors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you describe the market for logistics services in Brazil?

	Strongly disagree			Neutral			Strongly agree	
The market for logistics services in Brazil								
.... has an unpredictable demand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
.... has a stable of service availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is easy to monitor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... is very complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has many service offerings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
... has many logistics providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B. Questions on the operational and competitive profiles of your company

The following items describe the complexity of the logistics operations of your company. Please indicate your level of agreement.

	Strongly disagree		Neutral		Strongly agree
We have a complex network of trading partners.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The timeliness of the transactions in our supply chain is crucial in our business.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We must accomplish very short order cycle times for customer orders.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We have a complex network of origin/destination (OD) pairs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our products require specialized transportation, storage, or handling (e.g. temperature, humidity, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following items describe the logistics personnel of your company. Please indicate your level of agreement.

	Strongly disagree		Neutral		Strongly agree
Relative to the size of our firm, we have a large group of upper-level managers dedicated to logistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relative to the size of our firm, we have a large group of employees across all levels dedicated to logistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our logistics personnel have a deep understanding of our logistics operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our logistics personnel know where problems and bottlenecks might exist in our logistics operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our logistics personnel are capable of finding effective solutions when problems arise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following sentences describe the relationship between your company and your company's major customers (attention: NOT Rapidao Cometa). Please indicate your level of agreement.

	Strongly disagree						Strongly agree
We trust each other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
They are trustworthy on important things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
According to our past business relationship, my company thinks that they are trustworthy persons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My company trusts them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We rely on each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We both try very hard to establish a long-term relationship.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We work in close cooperation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We keep in touch constantly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We communicate and express our opinions to each other frequently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We can show our discontent towards each other through communication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We can communicate honestly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We share the same worldview.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We share the same opinion about most things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We share the same perspectives toward things around us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We share the same values.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We always see things from each other's perspective.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We know how each other thinks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We understand each other's values and goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We care about each other's feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My company regards "never forget a good turn" as our business motto.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We keep our promises to each other in any situation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If our customers gave assistance when my company had difficulties, then I would repay their kindness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you for completing the survey to this point. We appreciate the time you have taken to complete this survey!

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

What is your position?

President/CEO/COO

Vice president, logistics, transportation, or distribution

Director, Logistics, transportation, or distribution

Manager, Logistics, transportation, or distribution

Supervisor, Logistics, transportation, or distribution

Employee, Logistics, transportation, or distribution

Logistics analyst

Other, please specify:

For how many years has your company been operating?

For ___ years (e.g. 2.5)

For how many years have you been working in this position?

For ___ years (e.g. 2.5)

For how many years have you been working for this company?

For ___ years (e.g. 2.5)

What category better describe your industry?

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

Other ___

What are the current monthly revenues of your company (in R\$ thousand/month)

Up to 9	10-100	101-1000	1001-5000	5001-10000	10001 - 100000	100.001 - 499.000	More than 500.000
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What is the approximate number of employees in your business unit?

.... Employees

How many logistics providers/carriers does your business unit use?

.... logistics providers.

Please complete the following questions having Rapidao Cometa in mind.

Which services does Rapidão Cometa provide to your company?

Please mark **all** applicable services.

- Transportation planning
- Transportation operations
- International freight forwarding
- Cross-docking
- Warehousing
- Inventory control/management
- Pick/pack operations
- Assembly
- Reverse logistics
- Logistics information systems
- Lead logistics management
- EDI capability
- Order fulfillment
- Freight forwarding
- Route and network optimization
- Freight consolidation
- Outbound traffic control
- Inbound traffic control
- Other: _____

What is Rapidão Cometa’s approximate share of your total outsourced logistics expenditures?

.... Percent (e.g., 2.5)

For how long has your unit been working together with Rapidao Cometa in a way that you would call a “close relationship”?

For Years (e.g., 2.5)

What is the total duration of the current contract with Rapidao Cometa?

..... years (Zero – 0 – if no contract)

Thank you for taking part in this survey!

Please provide us with the address to which we may forward your summary report:

Last name

First name

Email address

Company

Street

Zip

City

Phone number

Can we contact you in order to get further information? ___ Yes ___ No

Please use the space below for comments and suggestions:

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