Effects of Relationship Quality on Customer Perceived Value in Organizational Purchasing

Tao Gao

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M. Joseph Sirgy, Chair
Monroe M. Bird
David Brinberg
James R. Brown
James E. Littlefield
Larry D. Alexander

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Blacksburg, Virginia

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Tao Gao
M. Joseph Sirgy, Chair

(ABSTRACT)

Research and practitioners alike have underscored the importance of customer value creation in marketing. For any marketing practice to be successful, it must first create value for customers. This is also true for the practice of relationship marketing, which is enjoying popularity among organizational marketers. However, there has been a lack of research done on the predictive effects of relationship marketing constructs in relation to buyer perceived value in organizational marketing. In other words, we still know little about the *mechanism* through which a good relationship enhances customer perceived value.

The primary purpose of this study is to conceptually develop and empirically test a model that explains how the quality of a buyer-supplier relationship affects the buyer's value judgment in an organizational purchasing context. In the study, relationship quality is defined as comprising three different but mutually reinforcing dimensions: mutual trust, mutual commitment, and interdependence. Perceived value is conceptualized as an overall assessment of the utility of an offering based on the benefits and costs of accepting an offering.

The conceptual model specifies the several routes through which relationship quality impacts buyer perceived value. First, a good relationship increases relationship benefits and reduces relationship costs, which in turn influences customer value perception – the higher the relationship benefits (and lower relationship costs), the higher the customer perceived value. Second, a good relationship reduces decision-making uncertainty. Lower decision-making uncertainty is hypothesized to increase the effects of perceived purchase episode benefits and perceived purchase episode costs on perceived value. The model was generally confirmed by an empirical test based on data collected from a national sample of purchasing managers in the United States.

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CHAPTER 1: INTRODUCTION

1.1 Importance of Customer Perceived Value in Marketing

Marketing scholars and practitioners alike have highlighted the central role of customer perceived value in marketing (e.g., Anderson 1990; Bagozzi 1975; Flint, Woodruff, and Gardial 1997; Gould 1992; Holbrook 1994; Sharma and Sheth 1997). Customer perceived value can be defined as the customer's overall assessment of the utility or worthiness of an exchange partner's offering, based on what is to be received and what is to be given (cf. Churchill and Peter 1997; Monroe 1979; 1991; Zeithaml 1988). More than two decades ago, Alderson (1965), Bagozzi (1975), and Kotler and Levy 1969) regarded exchange as the essence of marketing activity. Kotler (1972) further envisioned that in an exchange each party offers something of value in return for something of greater value. That is, the comparison between what is to be received and what is to be given out precedes the decision to enter and stay in an exchange relationship. Without providing value, marketers cannot attract new customers, nor can they build loyalty among existing patrons. To survive and develop, firms need to create superior value for customers. In a sense, for all marketing activities to be successful, they must first create value for customers. Indeed, as Anderson (1995) recently puts it, the essential purpose for a customer firm and supplier firm engaging in a sustained relationship is to work together in ways that add value to both firms. Holbrook (1994) drives this point home when he asserts that customer value is the fundamental basis for all marketing activities. In other words, the extent to which marketers create value for their customers serves as a yardstick for the success of their overall competitive performance.

In recent years, noting the increasing competitive pressures in a more and more globalized economy, many organizational marketers have relied on the practice of relationship marketing as an effective tool to enhance their market performance. The essence of relationship marketing, as described by Morgan and Hunt (1994), is the cultivation and maintenance of long-term, high quality relationships with customers aimed at building sustained customer loyalty. However, to successfully deploy relationship marketing to enhance corporate performance, firms first need to create value for their customers. To more thoroughly appreciate the role of relationship marketing, there is a need to thoroughly investigate the causal link between

relationship factors and customer value perception. Furthermore, relationship building needs time and resource commitments. Some of the committed resources may become "locked" in a specific relationship and can hardly be transferred elsewhere without high costs (Han, Wilson, and Dant 1993; Harrigan 1985; Heide and John 1990). As De Rose (1992) and Sharma and Lambert (1994) correctly point out, misunderstanding one's customers can be costly. Therefore, firms are likely to be selective of the situations when they engage in relationship building efforts with their customers. Hence, the important questions are: Does a good relationship enhance customer perceived value? If yes, why, how, and when?

1.2 Deficiencies of Existing Research

Existing research does not provide satisfactory answers to these questions. Specifically, the current literature is deficient in the following four aspects. First, with the exception of Anderson, Jain, and Chintaguna (1993), few studies have used customer perceived value as a dependent variable to examine the organizational buyers' value formation process. This fact is in notable contrast to the increasing attention among consumer behavior researchers on consumer value perception process (Boulding, Kalra, Staelin, and Zeithaml 1993; Dodds and Monroe 1985; Grewal 1989; Monroe 1979; Westbrook and Reilly 1983; Zeithaml 1988). Given the potential importance of customer perceived value in organizational marketing, more empirical research is clearly needed on the antecedent factors of this construct and how these factors jointly affect an organizational buyer's value perception process.

Second, few studies of perceived value have examined the benefits and costs that are related to more than one transaction episode. A transaction episode can be defined as an event of interaction that has a clear starting point and ending point and represents a complete exchange. In organizational buying, a transaction episode includes purchasing and using a product. Viewed dynamically, a buyer-seller relationship comprises a series of sequential episodes that combine to make a relationship (Anderson 1995; Ravald and Gronroos 1996; Storbacka, Strandvik, and Gronroos 1996; Sudharshan 1995). In reviewing the literature on customer perceived value, it should be noted that the current research has enlisted an exhaustive number of benefits and costs pertaining to an individual transaction. With regard to the "get" aspect, these components include functional benefits, social benefits, personal benefits, and experiential benefits (Churchill

and Peter 1997; Gould 1992). With regard to the "give" aspect, the documented components include monetary costs, temporal costs, psychological costs, and behavioral costs (Churchill and Peter 1997). Monetary costs may further be classified into purchase, transportation, installation, maintenance, and operating costs (Best 1997; Zeithaml 1988). Still, most of these benefit or costs components are considered in the context of one particular transaction episode. Little attention has been paid to the benefits and costs that pertain to a series of transaction episodes.

Recently, Ravald and Gronroos (1996) have argued that benefits and sacrifices should be examined on both the episode and relationship levels. This insight sheds light on a better understanding of the linkage between relationship quality and value creation. While these authors offer important insights on the composition of total perceived value of a relationship, they do not explicitly investigate how a good relationship enhances customer value perception, nor do they conduct an empirical study on this issue.

Recognizing the importance of both customer satisfaction and perceived value in marketing, several authors have benchmarked the role of customer value against that of customer satisfaction. The important issue in this comparison is what underlies the construct of customer satisfaction (Ravald and Gronroos 1996). In traditional quality models, perceived quality/performance and confirmation of performance expectations are suggested to precede customer satisfaction (e.g., Parasuraman et al. 1988; Zeithaml 1988). However, both perceived quality/performance and confirmation of performance expectations, and subsequently customer satisfaction, are criticized for their being too focused on the benefits of the product while largely omitting the costs aspects (Anderson et al. 1994; Iacobucci et al. 1994; Liljander and Strandvik 1994). Customer perceived value, on the other hand, comprises both a benefit component and a sacrifice component. While there is further need to delineate the relationship between customer value and satisfaction (Butz and Goodstein 1996), one may speculate that customer value has a role potentially comparable to that of satisfaction in relationship marketing (Rust and Oliver 1994).

Third, virtually no existing studies thus far have examined the effects of relationship quality on customer perceived value. Crosby and Stephens (1987), based on data from the life insurance industry, found that good relationships add values through the following benefits:

social reinforcement, reassurance, benefit reinforcement, problem-solving assistance, customization, and labor substitution. However, what these authors really studied was the effects of relationship on customer satisfaction, not on customer perceived value. The concept of value, as used in these studies, merely refers to the benefits rather than perceived value (i.e., benefits - sacrifice comparison). Furthermore, among the available studies of customer value in the service literature, most (e.g., Bolton and Drew 1991) deal with influences on post-consumption value, or the value perception after a consumption experience. Yet, post-consumption value perception and pre-purchase value perception differ in significant ways. The largest differentiating factor is the amount of information available at the time of evaluation. While customers can evaluate post-consumption value with relative certainty, they may face higher levels of uncertainty and perceived risk when making pre-purchase value assessments.

And last, few studies have used bilateral concepts in defining relationship quality. Irrespective of the potential prominence of the relationship quality concept, the marketing discipline so far does not have a relatively complete definition of this construct. One definition conceptualizes relationship quality as having two dimensions: trust and satisfaction (Crosby, Evans, and Cowles 1987). Other important aspects of relationship quality such as commitment and interdependence are not reflected in the definition. Also, this definition fails to capture the mutuality aspect of each relevant dimension. Furthermore, the inclusion of satisfaction as one dimension of relationship quality is not fully justified (Bitner and Hubbert 1994).

1.3 Research Questions

In view of the aforementioned limits in the existing research, specifying exactly how customer value is enhanced by maintaining a close relationship and assessing the magnitude of this effect appears to be both exceedingly difficult and seldom done (cf. Anderson 1995). In other words, we still know little about the *mechanism* through which a good buyer-supplier relationship enhances customer perceived value (cf. Anderson 1995). Yet, without a clear understanding of how relationship factors influence customer perceived value, the ultimate link between relationship marketing and supplier firm performance can best be said to be partially understood (cf. Anderson 1995). A similar observation led Crosby and Stephens (1987, p. 411) to conclude that "relationship marketing is not well understood." In sum, the lack of insights on

the linkage between relationship quality and customer value represents an important void in research on relationship marketing.

The current study intends to seek an answer to this question in the context of organizational purchasing. Specifically, the research questions are:

(1) What is a more complete definition of relationship quality?

(2) What are the relationship benefits and relationship costs in a supplier's offering?

(3) Does a good relationship add value to organizational customers, and, if so, how, and when?

The unit of analysis is a supplier's offering in a new episode of an ongoing relationship between the purchasing firm and the supplying firm. The dependent variable is the purchasing manager's perceived value of the supplier's new offering. The principal independent variable is the nature of the ongoing relationship (i.e., relationship quality), which involves three major dimensions: mutual trust, mutual commitment, and interdependence.

1.4 Organization of the Dissertation

The remainder of this proposal is organized as follows. The second chapter will overview the past research on customer value and lay out the definitional basis for the concepts of customer perceived value and its two principal antecedents: perceived benefits and perceived costs. In the next chapter, the literature on relationship marketing is reviewed, emphasizing three key relationship characteristics: mutual trust, mutual commitment, and interdependence. The fourth chapter deals with the literature on decision-making uncertainty and links it to the construct of confidence in judgment. The fifth chapter provides a detailed introduction to the model developed in this study, followed by a list of all the hypotheses and supporting rationales. The sixth chapter overviews the proposed method of data collection, construct operationalizations, and validity examination. The seventh chapter provides the results of structural model analysis using the LISREL program. The last chapter presents the potential conceptual and managerial contributions of this study and discusses future research implications.

CHAPTER 2: LITERATURE REVIEW - CUSTOMER PERCEIVED VALUE

2.1 Overview

This section first reviews the conceptualizations of value and proposes a definition of this concept. Then it will examine the differences among customer perceived value, personal values, and consumption values. After that, the conceptualizations of the two key antecedents of customer perceived value, perceived benefits and perceived costs, will be reviewed. Then, the author discusses the concepts and components of relationship benefits, perceived episode benefits, relationship costs, and perceived acquisition costs.

2.2 Customer Perceived Value

2.2.1 Definition and Dimensions

The concept of perceived value or subjective value evolved from early economic thought. The rational choice theory, founded by Adam Smith and refined by Bentham, offers the most important perspective from which to understand these early views (Burgess 1992; Light, Keller, and Calhoun 1989). Rational choice theory holds that people weigh the possible benefits of their actions against costs incurred. This view is further embraced in finance and economics disciplines. Finance theorists might contend that customers would choose from among alternative suppliers based on return on investment. It is also common in economics to assume that consumers seek to maximize the ratio of quality to price (Rust and Oliver 1994), given their budget constraints. While marketing and consumer behavior scholars have largely inherited this view of customer value, they have contributed an important additional conceptual feature to the customer value concept. That is, in marketing, individual differences are taken into consideration. Customer value is viewed as something perceived by individual customers rather than objectively and uniformly determined by a seller. Therefore, what marketers mean by value is not necessarily what the customer understands it to be (De Rose 1992). As a result of this difference, any marketer's effort to enhance customer value must be based on what they predict their target customers would perceive as valuable or worthy.

An examination of several available definitions of customer perceived value reflect perhaps more discrepancies than commonalities among them (Zeithaml 1988; Monroe 1979; 1991; Anderson, Jain, and Chintagunta 1993; Gale 1994; Butz and Goodstein 1996). To Peter

and Olson (1993), perceived value is the value or utility the customer believes s/he receives when purchasing a product. Grewal (1989), following Thaler (1985), defines perceived value as the overall evaluation of the offer and as the sum of net acquisition value and net transaction value. Monroe (1991) has defined customer perceived value as the ratio between perceived benefits and perceived sacrifice. Zeithaml (1988, p.14) has used an almost identical definition to that of Monroe's: "perceived value is the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given." But she pointed out that perceived value is subjective and individual, and therefore varies across consumers (Ravald and Gronroos 1996). Different customers may derive differing value from the same offering because of the differences in individual needs and desires (based on personal or organizational values) as well as in financial resources and slacks.

One important commonality among these definitions of customer value is that customer value is something of a trade-off between two basic components: what is received, the benefits, and what is given, the costs. This characteristic distinguishes the concept of perceived value from those of personal values and consumption values. Thus, following Peter and Olson (1993), this paper conceptualizes customer perceived value in organizational purchasing as the customer's overall assessment of worth or utility of an offering by the supplier, based on what is to be received and what is to given out.

To understand why and how individual customers would perceive the same offering as providing differing values, one needs to understand the concepts of personal values and consumption values. Besides perceived value, the concepts of personal values and consumption values have also received considerable attention (cf. Flint, Woodruff, and Gardial 1997), especially in the disciplines of sociology, anthropology, and psychology. In the following section, the author introduces the two other concepts and discusses the key differences between the three constructs, namely, customer perceived value, personal values, and consumption values.

2.2.2. Customer Perceived Value, Personal Values, and Consumption Value

There is a clear distinction between the concept of *perceived value* and those of *personal values* and *consumption values.* That is, customer perceived value is something of a trade-off between two basic components: what is received (the benefits) and what is given (the costs),

while the other two concepts are more related to the benefit components (Flint, Woodruff, and Gardial 1997). Personal values (e.g., accomplishment, belonging, enjoyment, security, self-respect, and warm relationships) reflect desirable end states in life and desirable modes of conduct sought by all individuals (Munson 1984). Consumption values (e.g., functional value, emotional value, conditional value, etc.) can be defined as the customers' perceptions of what they want to happen in a specific *use* (i.e., consumption) situation, in order to accomplish a desired purpose or goal in one's life (Woodruff and Gardial 1996). Both constructs deal with the goals of an exchange or the benefits to be sought thereof. But neither of them captures the overall assessment of an offering based on what it would actually deliver and what it would actually cost.

Specifically, personal values are end-states or modes of conduct considered to be desirable by individuals (Burgess 1992). These "values" are the enduring beliefs about what is right or wrong, good or bad that cut across situations and products. Personal values have deep societal and cultural roots. To the extent that personal values serve as the guidelines of human judgments and behaviors, many authors have compared personal values with attitudes. According to Rokeach, values and attitudes differ in many important aspects. An attitude is "an organization of several beliefs about an object or situation" (Rokeach 1973, p. 18). Values, on the other hand, are universal human requirements (Kamakura and Novak 1992), are deeper and more stable bases of motivation, and transcend objects and events (Burgess 1992). Values are used to resolve conflicts among alternatives and decision making. More importantly, values are often a major determinant of human attitudes, which in turn, drive behavior (Burgess 1992).

Research into people's values has led to the identification of consumer values relevant to marketers such as the list of values (LOV) and the values and lifestyles profile (VALS) (Mitchell 1983; Rokeach 1973; Flint, Woodruff, and Gardial 1997). These desirable end-states and modes of conduct provide general guidelines for customer's evaluations of various objects and behaviors, including those involved in purchasing decisions.

Consumption values can be defined as the customers' perceptions of what they want to happen in a specific *use* (i.e., consumption) situation, in order to accomplish a desired purpose or goal in one's life (Woodruff and Gardial 1996). In comparison with the numerous accounts of

"values" of consumers, organizations, or societies, like equality, beauty, knowledge, ethics, etc., customer consumption values are more product specific. They can be categorized by a simple question: what can the product specifically do to enhance the customer's generally held beliefs about some end results of life or some desirable procedures? In this sense, consumption value is what customers seek from a consumption experience that is consistent with their desired end-states and modes of conduct. Consumption value is created when the delivered performance meets the desired performance of customers (Sheth, Newman, and Gross 1991). It is thus similar to the concept of benefits used in many studies of perceived value (Lai 1995; Flint, Woodruff, and Gardial 1997). In contrast, perceived value may involve a comparison of what is to be received with what is to be given.

It is also useful to differentiate between consumption values and personal values (Oliver 1996). Specifically, one must acknowledge that values derived from consumption differ from values desired by individuals in general (cf. Corfman, Lehman, and Narayanan 1991; Pitts and Woodside 1984; Oliver 1996). Personal values (e.g., accomplishment, belongings, enjoyment, security, self-respect, and warm relationships) reflect desirable end states in life and desirable modes of conduct sought by all individuals (Munson 1984). Not all personal values, however, can be obtained from a customer's consumption experiences. Nor do the same set of values hold true for all consumption encounters. As a result, marketing scholars and marketing practitioners have used the concept of consumption values to study customer value in a buying or selling context.

2.2.3. Pre-Purchase Value and Post-Consumption Value

Customers may consider value at different times, such as when making a purchase or when experiencing product performance during or after use (Woodruff 1997). In this paper, it is useful to differentiate between two types of perceived value: the pre-purchase value and post-purchase value. Each of these value perceptions centers on a quite different customer judgment task, differing in focus and amount of available information, among other factors. On the one hand, the pre-purchase value perception is the customer's value perception before purchase. It is defined as an overall assessment of the utility of an offering based on perceptions of what is *to be* received and what is *to be* given. On the other hand, the customer's value perception after use as

the post-consumption, or the customer's assessment of the utility of the past purchase based on what is *actually* received and what is *actually* given.

The major difference between the two value perception tasks is the amount of information and uncertainty. The current study examines how the quality of an existing relationship affects an organizational buyer's value perception in an upcoming offering by the relationship partner. Thus, customer value perception used in this study pertains to the pre-purchase process. In an ongoing relationship, each pre-purchase value perception may be based on a cumulative perception of post-purchase values, which arise from a series of interaction and consumption experiences. However, relationship quality differs from one buyer-seller encounter to another. In many cases, customers may still face considerable amounts of uncertainty and risks in the renewed pre-purchase value perception process. In extreme cases where no prior relationship exists between an organizational buyer and a seller (such as in the case of a new-buy task; see Robinson, Faris, and Wind 1967), the customer may face a tremendous amount of uncertainty.

This distinction is useful for the comparison of various studies of customer value in the literature. For example, the concept of customer value used in the service marketing literature is principally examined in the post-purchase stage. The customer value concepts used in Monroe (1979) and Zeithaml (1988) are more similar to the pre-purchase value concept. This distinction may also shed some light on the effects of customer satisfaction, post-purchase value, and perceived post-purchase quality on repurchase intention. For instance, it is likely that a pre-purchase value perception mediates the effects of these three variables on repurchase intention.

Next, I will turn to the definitions and compositions of the perceived benefits and perceived costs components.

2.3. Perceived Benefits

2.3.1. Definition

Perceived benefits of a supplier's offering is defined as the customer's evaluation of the extent to which this offering meets or satisfies[1] customer – desired attributes from a consumption experience (cf. Woodruff and Gardial 1996). This definition is similar to the concept of "desire congruency" used by Spreng, MacKenzie, and Olshavsky (1996), which has its roots in the notion of "value precept disparity" used by Westbrook and Reilly (1983). Based on this definition, perceived benefits is a comparison between "what is needed" (or desired) and "what is offered." Or, perceived benefits represents a comparison between perceived performance and desired performance.

The essence of this definition has been embraced by a few academic as well as business writers. One example is the work of Woodruff and Gardial (1996) which stressed that purchase is a means to accomplishing some preset goal, and that potential benefit obtains when a customer perceives the performance of an offering as fulfilling needs, wants, or desires (Cadotte, Woodruff, and Jenkins 1987).

Next, two more concepts are introduced tapping the notions of "what is offered" and what is desired," as inherent in the definition of perceived benefits.

2.3.2. Desired Performance

Desired performance, or the concept of "what is desired," represents a comparison standard similar to ones frequently used in the customer satisfaction (CS) literature (Oliver 1980; Cadotte, Woodruff, and Jenkins 1987). The customer's desired performance level may be shaped by their concrete purchase experiences with the focal brand or various other brands (Cadotte, Woodruff, and Jenkins 1987). But most importantly, desired performance is determined by the basic needs and specific objectives that customers hope the purchase to fulfill in the buying task at hand. It is thus different from the *best performance* obtainable in the

[1] Perceived benefits is different from customer satisfaction in two aspects. First, customer satisfaction is often used in marketing research as a construct related to the post-consumption perception process, while perceived benefits is typically used as a pre-choice perceptive construct. Second, perceived benefit is defined as being only related to the performance of an offering (i.e., the get aspect), while customer satisfaction has been related to both the performance aspects and costs aspects of an offering. Woodruff (1997) even goes one step further to propose a construct of "satisfaction with value."

market. In a sense, this construct is similar to that of consumption values introduced above. Like consumption values, desired performance spells out the purchase objectives. Yet, desired performance should be formed at a lower level of assessment than that at which consumption values are construed. While consumption values correspond to some desired consequences in use situation, desired performance is organized in terms of various specific tangible or intangible attributes (for more details, see Woodruff 1997).

Two major conceptualizations exist with regard to the way by which desired performance and perceived performance comprise perceived benefits. The first one is to view perceived benefits as the *additive difference* between what is offered and what is desired by the customer from this purchase. In this case, perceived benefits is what is offered minus what is desired. The higher the perceived performance, the higher the perceived benefits. The second formulation is to view perceived benefits as the *distance* between what is offered and what is desired. In this case, the closer (farther away) the perceived performance from the desired perceived performance, the higher (lower) the perceived benefits. If the desired performance level of a product attribute is at 5, an actual performance level of 8 would be considered as offering higher benefits by the first conceptualization. The opposite conclusion would be drawn if the second conceptualization is adopted, where 4 is considered as better than 8 since it is closer to the desired performance level – 5. As elaborated by Spreng, MacKenzie, and Olshavsky (1996), the first definition – the *additive difference* definition has some conceptual and operational advantages than the second one – the *ideal point* definition of perceived benefits (for more details, see the appendix of their article on pp. 29-30). The first formulation is adopted in this paper.

2.3.3 Perceived Performance

Perceived performance, or the concept tapping "what is offered," is the customer's pre-purchase perception of the most likely overall performance by the offer, based on what is already known about the product (Tolman 1932; Teas 1993; Olson and Dover 1979). It is the belief regarding the types of attributes, levels of attributes, and outcomes of accepting an offering (Cadotte, Woodruff, and Jenkins 1987; Spreng, MacKenzie, and Olshavsky 1996). Perceived performance is conceptually similar to perceived quality or the "will" type of performance

expectation (as contrasted with the "should" expectation, see Boulding, Kalra, Staelin, and Zeithaml 1993) used in the perceived quality (PQ) literature and the customer satisfaction (CS) literature. To illustrate, Zeithaml (1988) has defined perceived quality as the customer's subjective assessment about the superiority or excellence of a product. But note that the current use of perceived performance is intended to describe a pre-purchase judgment of the overall performance, while similar constructs used in the PQ and CS literatures often pertain to post-purchase and post-consumption judgments.

There is also a distinction between perceived performance and objective performance. All too often, researchers in disciplines other than marketing (e.g., the quality management and value engineering areas) define perceived benefits of a product in terms of what the product has to offer, which is based on the *objective* levels of product attributes – those that are determined by the engineers. In marketing, a universal agreement begins to emerge as to the difference between objective quality and perceived quality (Monroe 1979; Zeithaml 1988). This research stream sheds lights on our understanding of the difference between perceived performance and objective performance.

Perceived performance, the subjective judgment about the most likely performance of an offering, is first based on the objective offering itself. What lies between objective performance and perceived performance is, however, a perceptual transformation process. While objective performance is determined by the physical, technological, and engineering features of a product and remain the same regardless of which customer buys it, perceived performance is more subtle and individually different. The outcome of the perceived performance is shaped by several personal and situational factors (Dodds and Monroe 1985; Holbrook and Corfman 1985; Zeithaml 1988), such as prior exposure to this or similar offers, word of mouth, expert opinion, publicity, and company-controlled communication (Boulding, Kalra, Staelin, and Zeithaml 1993). Jointly, these factors determine the amount and the type of information, the level of expertise, the level of perceived uncertainty, and the degree of confidence that a customer has at the point of evaluation. Such influences are especially large in the pre-purchase performance perception process, as compared to the post-consumption judgment process.

Consistent with the above discussion, two observations are in order. First, customers may perceive the same objective offering as providing different levels of performance, due to individual and situational differences in the perceptual transformation process (e.g., caused by ability and information factors). Second, the same level of perceived performance may be perceived as providing different levels of benefits, due to further differences in customer needs for particular buying tasks. Hence, perceived benefits (i.e., a derivative of perceived performance when it is further compared against situational purchase needs) is customer and situation specific. This notion further implies that product features become customer benefits only when customers perceive and acknowledge them.

2.3.4 Types of Perceived Benefits

Researchers have proposed a number of typologies to organize types of perceived benefits or dimensions of perceived performance[2]. Consumer psychologists have used different terms to describe the benefits related to product quality, such as functional/economic benefits (Taylor 1974), utilitarian benefits (Gudeman and Whitten 1982), or material benefits (Richardson 1982). Other benefits that are not usually included in perceived quality include psycho/social (Taylor 1974), symbolic (Bagozzi 1975), and ritualistic (Beattie 1964) benefits.

On the basis of the five-dimensional typology of consumption values offered by Sheth et al. (1991), Lai (1995) points to eight types of product benefits: functional, social, affective, epistemic, aesthetic, hedonic, situational, and holistic. *Functional benefit* is the extent to which an alternative performs its functional, utilitarian, or physical purposes. *Social benefit* is the utility acquired by an alternative as a result of its association with one or more specific social groups. *Affective benefit* is the perceived utility of an alternative in arousing feeling or affective states. *Epistemic benefit* is the perceived utility of an alternative in arousing curiosity, providing novelty, and/or satisfying a desire for knowledge. *Aesthetic benefit* refers to the benefit acquired from a product's capacity to present a sense of beauty or enhance personal expression. *Hedonic benefit* refers to the benefit acquired from a product's capacity to meet a need for enjoyment, fun,

[2] This paper views perceived performance and perceived benefits as having identical dimensions. The only difference between the two concepts lies in the addition of individual needs in the perceived benefits concept. To reduce redundancy, in introducing these dimensions, only perceived benefits is mentioned.

pleasure, or distraction from work or anxiety. *Situational benefit* is attained when an alternative is associated with a specific situation or a particular context faced by the choice maker. *Holistic benefit* refers to the perceptual benefit acquired from the complementarity, coherence, compatibility, and consistency in a product constellation as a whole.

Previous research on organizational buying behaviors has noted that organizational purchasing decisions are characterized by group expert decisions guided by explicit choice criteria (Howard 1989; Qualls and Puto 1989). These criteria provide a number of specific dimensions or product attributes along which suppliers can offer benefits to their customers. Among these criteria are conformance to standards, reliability, durability, delivery, technical training, services, technology, compatibility, and professionalism. For example, Ellram (1990) used financial issues, organizational culture and strategy issues, technology issues, and other factors in her study of supplier selection criteria.

2.3.5. Perceived Purchase Episode Benefits and Perceived Relationship Benefits

In Ravald and Gronroos's (1996) terminology, the total benefits a customer could derive from an offering should include both the "episode benefits" and "relationship benefits." *Episode benefits* are all the benefits offered by the core product and surrounding services that a customer can acquire in a transaction (Ravald and Gronroos 1996). They are the more traditional types of benefits documented in the existing literature. The typology offered by Lai (1995) serves as a useful way to organize these benefits.

In this paper, all the benefits perceived by an organizational customer that only pertain to one particular purchase episode are dubbed as perceived purchase episode benefits (PPEB). Operationally defined, PPEB comprises the following 11 attributes:

- The extent to which the product specifications meet one's needs,
- Product reliability,
- Product durability,
- Product compatibility to your existing system,
- Allowance for future upgrading,
- Quality of services,
- Training and technical assistance,
- Availability of products,
- Delivery speed and lead time,

- Overall company reputation, and
- Brand image for this product.

Episode benefits, albeit very important, only pertain to one particular transaction episode. Ravald and Gronroos's (1996) noted that, in assessing the value of an offering, customers may not only include the traditional benefits of a discrete transaction, they may also take into consideration the benefits of a relationship which include a series of continuous transaction episodes. The whole offering, viewed from a relationship marketing perspective, should include the core product, surrounding services or goods, and the benefits associated with maintaining a mutually committed relationship. Following the tenets of Ravald and Gronroos's (1996), this paper defines r*elationship benefits* as those benefits perceived by the customer that may or may not be important for the focal transaction episode per se, but which become important if a long-term relationship is considered. This paper also conceptualizes relationship benefits as encompassing two dimensions: stability of supply and interpersonal goodwill.

The following formula is derived from the above conceptualizations:

Perceived episode benefits + Perceived relationship benefits = Total perceived benefits

2.4 Perceived Costs

2.4.1. Definition

Perceived costs of an offering is the customer's perceived sacrifice (or disutility) in the total expenses to be incurred in *getting* and *using* the purchase item to achieve purchase goals. Because of the inter-firm differences in the resource endowment or budget constraints surrounding a purchase decision, firms may likely have different perceptions of the disutility with regard to the same amount of actual costs (i.e., the costs in absolute dollar amounts). Like perceived benefits, perceived costs reflects a comparison between some observed characteristics of the offering with some desired characteristics along the same dimensions.

Note that firms may differ in information availability and previous purchase and use experience with regard to a particular product. As a result, their perceptions of the true total costs associated with the purchase and use of this particular product may differ. That is to say, although an absolute cost level exists, not all firms will be able to predict it in its totality, nor would their predictions tend to converge to one universal level. Upon forming a perception of

the total possible costs related to a purchase, an organizational buyer will attach a meaning to this perceived level of the actual costs (in absolute dollar amounts) – by comparing it with its budget constraints or some other reference level (e.g., the competitor's price). The result of this comparison is the formation of perceived costs or perceived sacrifice. To summarize, perceived costs, like perceived benefits, is an individual relative construct.

2.4.2. Perceived Episode Costs and Perceived Relationship Costs

Consistent with the insight of Ravald and Gronroos (1996), this paper distinguishes between two types of costs, episode costs and relationship costs. *Episode costs* are the more traditional cluster of costs documented in the existing literature. It is principally composed of purchase costs (i.e., the unit price multiplied by the purchase quantity), transportation costs, installation costs, operating costs, maintenance costs, and future replacement costs (cf. Best 1997; Cardozo 1980; Monczka and Trecha 1988). Episode costs is similar to the concept of production costs used by Williamson (1985) in transaction cost analysis theory, and the concept of the cost of the *deal* used by Shenkman (1992). These costs, albeit very important, only pertain to one particular transaction episode.

Relationship costs, on the other hand, may or may not be important for the focal transaction episode per se, but become important if a long-term relationship is considered. As defined in this paper, relationship costs are the costs of running a whole exchange relationship. It is conceptually similar to the notion of transaction costs used by Williamson (1985), but the term relationship costs is used to keep symmetry with other concepts in the model to be introduced in this study. In the context of organizational purchasing, relationship costs include two types: ex ante costs of initiating an exchange relationship (e.g., those spent on partner verification and contract negotiation), and ex post costs of managing (e.g., those spent on monitoring, disputing with, and punishing the partner) and terminating a relationship (cf. Williamson 1985).

The following formula is derived from the above conceptualizations:

Perceived episode costs + Perceived relationship costs = Total perceived costs

CHAPTER 3: LITERATURE REVIEW - CHARACTERISTICS OF A GOOD RELATIONSHIP

3.1 Overview

In synthesizing a diverse literature on exchange relationships, this study conceptualizes relationship quality as consisting of three dimensions: mutual trust, mutual commitment, and interdependence. *Trust* is the buyer's assessment of the supplier based on all the information the buyer receives about the offering as well as information about past behaviors of the supplier. It can be viewed in terms of three dimensions: competence, consistency, and benevolence (cf. Morgan and Hunt 1994; Gabarro 1987; Ganesan 1994). Relationship *commitment* is the enduring desire to maintain a valued relationship (Moorman, Zaltman, and Deshpande 1992; Morgan and Hunt 1994). There are two types of commitment: attitudinal and behavioral (Mowday, Steers, and Porter 1982). Attitudinal commitment refers to a long-term orientation to a relationship – a willingness to make short-term sacrifices to realize long-term benefits from the relationship (Anderson and Weitz 1992; Dwyer, Schurr, and Oh 1987). Behavioral commitment refers to the tendency to engage in specific actions to invest resources and to remain within a relationship (cf. Williamson 1983). As Dwyer, Schurr, and Oh (1987) have noted, a committed member should provide relatively high levels of inputs to make the relationship work. *Interdependence* in a relationship is the extent to which one party's behaviors, actions, or goals are dependent on the other party's behaviors, actions, or goals (Tedeschi, Schlenker, and Bonoma 1973). It represents the closeness and intensity of the linkage between a buyer and a supplier. In summary, trust is a *belief* about each other in terms of ability, consistence, and benevolence; commitment is an *intention to act* with regard to each other; while interdependence is the *condition or outcome* of mutual action.

Trust, commitment, and interdependence have received a considerable amount of attention among marketing scholars, especially in recent years, along with the emergence of the relationship paradigm in marketing (Brown, Lusch, and Nicholson 1995; Buchanan 1992; Ganesan 1994; Lusch and Brown 1996; Moorman, Zaltman, and Deshpande 1992; Morgan and Hunt 1994; Noordewier, John, and Nevin 1990; Sheth and Sharma 1997; Smith and Barclay 1997). Some researchers have used one or two of the above three dimensions to describe

relationship quality. For example, Crosby, Evans, and Cowles (1987) include trust as one dimension in their definition of relationship quality. Similarly, Kumar, Scheer, and Steenkamp (1995) categorize trust and commitment as dimensions of relationship quality. In particular, Han, Wilson, and Dant (1993) define trust as one dimension of industrial buyer and supplier relationships. Yet, no previous studies have used all three constructs to define relationship quality. And no published studies in marketing have incorporated interdependence as an aspect of relationship quality. Furthermore, except for Han, Wilson, and Dant (1993), no published studies have included the mutuality concept to define relationships quality – not even at a time when the marketing discipline witnessed a phenomenal level of popularity of the relationship concept.

This study differs from other conceptualizations of relationship quality, by explicitly defining the quality of an exchange relationship as having three dimensions: mutual trust, mutual commitment, and interdependence. On the one hand, trust and commitment are viewed by Morgan and Hunt (1994) as two key determinants of productive, effective, and relational exchanges. Without trust, firms will not enter into relationships that are inherently risky, especially those that require substantial resource and goal commitments. Without mutual commitment, a relationship can hardly be stable and long-lasting. Indeed, the literature on marriage views mutual social trust and resultant mutual commitment as the major differentiation of these exchange relationships from other types of relationships (McDonald 1981). On the other hand, interdependence has been categorized by social psychologists as the single most important factor characterizing a "close relationship" (Kelley et al. 1983; Braiker and Kelley 1979). Without a high degree of interdependence, a relationship can rarely be treated seriously by any partner, nor can it significantly contribute to the long-term sustained performance of any firm. While mutual trust and mutual commitment are two other key characteristics of the relationship quality, interdependence captures the strength, activity, and importance aspects of the relationship. Without concrete interactions between two partners, which are categorized by strength, frequency, diversity, and length, a relationship can best be descirbed as a "dormant friendship" (Davis and Todd 1985).

As mentioned above, another major difference between this paper and others lies in the current paper's inclusion of the mutuality aspect in conceptualizing relationship quality. This

position is based on the exchange theory principle of reciprocity (Blau 1964), namely, mutual perceptions of trustworthiness and mutual trusting behaviors (i.e., commitment) must exist for a relationship to become stable and long lasting (Anderson and Weitz 1992; Smith and Barclay 1997). Consistent with this principle, McDonald (1981) stated that in interpersonal relationships, "trust entails trust" and "mistrust breeds mistrust." Similarly, Anderson and Weitz (1992) noted that in channel relationships, one channel's commitment to the relationship would promote the partner's commitment. Lusch and Brown (1996) also noted that interdependence is the basis of many relational enhancing behaviors among channel members. Collectively, these and other studies suggest that the existence of *mutuality* in trust, commitment, and dependence is fundamental for a relationship to be called good.

The idea of viewing relationship quality in terms of three dimensions – trust, commitment, and interdependence – enjoys support from the research stream on relational exchange in marketing (Achrol 1991; Boyle et al. 1992; Dwyer, Schurr, and Oh 1987; John 1984; Heide and John 1988; Heide 1994; Shemwell, Cronin, and Bullard 1995). A similar tri-dimensional perspective on organizational purchasing relationships was used by Heide and John's (1990), who suggested that purchasing relationships differ in the following three dimensions: joint action, continuity, and verification of supplier. Joint action is the degree of interpenetration of organizational boundaries. Continuity is the perception of the bilateral expectation of future intention. Verification is defined as the scope of efforts undertaken by the buyer ex ante to verify the supplier's ability to perform as expected (Heide and John 1990). It appears that joint action captures what this paper means by interdependence, continuity is similar to mutual commitment, and verification partially overlaps with our concept of trust. In a study on service relationships, Shemwell, Cronin, and Bullard (1995) reviewed the relevant arguments by Boyle et al. (1992) and Achrol (1991). Boyle et al. (1992) held that mutual commitment and interdependence are central to the study of relational exchange, whereas Achrol (1991) argued that trust and its manifestations constitute the most critical aspect of an exchange relationship (cf. Shemwell, Cronin, and Bullard 1995).

The position of viewing trust, commitment, and interdependence as the three most important characteristics of a relationship quality enjoys additional support from Hakansson and

Snehota (1995). These authors suggest that the substance of a business relationship lies in three facets or layers: *activity* links, *resource* ties, and *actor* bonds. *Activity links* refer to the technical, administrative, commercial *activities* of a company that are connected to those of another company in a relationship. The number and depth of the activity links spell out the degree of interdependence between the two companies. *Resource ties* refers to the specific *resource* elements of two companies involved in the relationship. This construct is very similar to the behavioral dimension of mutual commitment that will be defined later. The commitment of a non-trivial amount of resource results from how the relationship has developed in the past and is, in itself, a measure of the mutual involvement of two parties. *Actor bonds* refers to the way the two *actors* perceive and act toward each other in the relationship. Hakansson and Snehota (1995) regard mutual orientation and identification as the essence of the social bond between the actors. This construct roughly corresponds to the notion of mutual trust and the attitudinal dimension of mutual commitment as used in this study. Therefore, the author believes that the levels of mutual trust, mutual commitment, and independence should be used jointly in defining relationship quality. And once used together, these three dimensions sufficiently reflect the essence of relationship quality between exchange partners.

The rest of this chapter will be devoted to a review of the conceptualizations of trust, commitment, and interdependence.

3.2 Mutual Trust

3.2.1 Definition and Dimensions

Following several social psychologists (Pruitt 1981; Rotter 1967) and marketing scholars (Morgan and Hunt 1994; Ganesan 1994; Kumar, Scheer, and Steenkamp 1995), this study defines trust as perceived reliability and integrity of an exchange partner. In the organizational buying context, trust is the buyer's assessment of the supplier based on all the information the buyer receives about the offering as well as information about past behaviors of the supplier.

In this study, the author proposes to view trust in terms of three dimensions: competence, consistency, and benevolence (cf. Morgan and Hunt 1994). Competence is the degree to which partners perceive each other as having the skills, abilities, and knowledge necessary for effective task performance (Gabarro 1987; Smith and Barclay 1997; Shamdasani and Sheth 1995).

Consistency is the extent to which the behavior and performance of the supplier is predictable throughout the process of procurement and use of the product (Doney and Cannon 1997). Benevolence is the extent to which the purchaser believes the supplier as having intentions and motives beneficial to the purchaser's best interests (Ganesan 1994). Based on the three aforementioned dimensions, trust is therefore conceptualized as the customer's belief that the supplier has proven ability and consistency to provide quality products/services and cares about the buyer's best interests.

Based on the exchange theory principle of reciprocity (Blau 1964), mutual trusting behaviors and perceptions of trustworthiness must exist for a relationship to become stable and long lasting (Anderson and Weitz 1992; Smith and Barclay 1997). This is because "trust entails trust" and "mistrust breeds mistrust" (cf. McDonald 1981). This paper adopts this position and suggests that the existence and extent of mutual trust between buyers and suppliers constitute a key indicator of the quality of the relationship. Similarly, Crosby et al. (1987) and Dwyer and Oh (1987) view trust as an important aspect of the quality of a relationship.

3.2.2 Determinants of Trust

Trust is affected by a number of factors. Bradach and Eccles (1989) have extensively examined how interorganizational trust is deeply rooted in social norms of obligation and cooperation and concrete personal relations. Smith and Barclay (1997) specifically identify five sources of trust in terms of the actions of trustee: relationship investment, influence acceptance, communication openness, control reduction, and forbearance from opportunism. Doney and Cannon (1997), in a study of organizational purchasers' trust in suppliers, found that supplier size, supplier's willingness to customize products, and trust in salespeople have a positive impact on a buying firm's trust in the supplier.

3.2.3 Information Sources of Trust

With regard to the sources of information, trust can also be experience - based or non-experience - based. While successful previous purchasing experience can greatly enhance customer trust, trust can develop without actual purchase and consumption experience. Marketer initiated communication, e.g., advertising, is one way a firm can enhance customer trust before or without actual purchase (Alford and Sherrell 1996). Interpersonal communication not initiated

by the marketer, e.g., word-of-mouth communication among friends, is another effective source of information affecting customer trust.

3.3 Mutual Commitment

3.3.1 Definition and Dimensions

Moorman, Zaltman, and Deshpande (1992) define relationship commitment as an enduring desire to maintain a valued relationship. Similarly, Morgan and Hunt (1994) conceptualize commitment to a relationship as a partner's believing in the importance of a relationship such that it warrants maximum efforts at maintaining it. Synthesizing these and other conceptualizations, one can identify two types of commitment: attitudinal and behavioral (Mowday, Steers, and Porter 1982). Attitudinal commitment refers to a long-term orientation to a relationship – a willingness to make short-term sacrifices to realize long-term benefits from the relationship (Anderson and Weitz 1992; Dwyer, Schurr, and Oh 1987). Research in organizational behaviors has uncovered three sources of attitudinal commitment: compliance, identification, and internalization (O'Reilly and Chatman 1986; Jaros et al. 1993; Mowday, Steers, and Porter 1979). Behavioral commitment refers to the tendency to engage in specific actions to invest resources and to remain within a relationship. As Dwyer, Schurr, and Oh (1987) have noted, a committed member should provide relatively high levels of inputs to make the relationship work.

3.3.2 Effects of Commitment on Organizational Behaviors

Relationship commitment is central to relationship marketing (Morgan and Hunt 1994). Williamson (1985) suggests that reciprocal or joint commitment can lead to stable long-term relationships through aligning participants' incentive structures and enhancing their confidence in each other (Gundlach, Achrol, and Mentzer 1995). Cook and Emerson (1978) characterize commitment as the principal variable in distinguishing social exchange from economic exchange. In the organization behavior literature, commitment is regarded as central because it leads to a variety of organizationally functional behaviors and outcomes, such as decreased turnover, higher motivation, increased citizenship behavior, job equity, and organizational support (Barnard 1938; Katz 1964; Smith, Organ, and Near 1983; Caldwell, Chatmen, and O'Reilly 1990). In the marketing channel literature, authors have found that

relationship commitment has a positive effect on relationship performance (Brown, Lusch, and Nicholson 1995; Anderson and Weitz 1992). Overall, mutual commitment is indeed important to relationship functioning. In that vein, Hakansson and Snehota (1995) defined a relationship as a "mutually oriented interaction between two reciprocally committed parties" (p. 25). Similarly, Berry and Parasuraman (1991) maintained that "Relationships are built on the foundation of mutual commitment" (p. 139).

3.4 Interdependence

3.4.1. Definition

Hakansson and Snehota (1995) state that a relationship often arises because of interdependence of outcomes. Interdependence in a relationship is the extent to which one party's behaviors, actions, or goals are dependent on the other party's behaviors, actions, or goals (Tedeschi, Schlenker, and Bonoma 1973). In channels research, Etgar and Valency (1983) define channel interdependence as the extent to which distributors and suppliers are committed to mutual exchange.

Interdependence between a buyer and seller is a key characteristic of the strength of the exchange relationship. Kelley and other social psychologists have extensively examined the closeness of interpersonal relationships (Kelley et al. 1983). Braiker and Kelley (1979) regard mutual dependence as the most obvious property of a dyadic close relationship. They operationally define a close relationship as "one of strong, frequent, and diverse interdependence that lasts over a considerable period of time" (Kelley et al. 1983, p. 38). Huston and Burgess (1979) even use interdependence as a synonym for relationship closeness. While mutual trust and mutual commitment are two other key characteristics of the relationship quality, interdependence captures the *activity* and *importance* aspects of the relationship. Without concrete interactions between two partners, which are categorized by strength, frequency, diversity, and length, a relationship can best be described as a "dormant friendship" (Davis and Todd 1985).

3.4.2. Dimensions of Interdependence

To better understand the concept of interdependence, let us explain the two components of unilateral dependence, namely purchase importance and number of alternatives (cf. Emerson

1962). *Purchase importance* is defined as the assessment of the stake in a decision based on perceptions of relative amount of the purchase and the decisiveness of the ends/goals mediated by this purchase (Alford and Sherrell 1996; Wilson 1971). The failure of an important purchase effort is likely to cause serious consequences for the purchasing firm or decision-makers. These consequences include both the specific costs of making the purchase and the likely adverse consequences to the organization as caused by the purchase failure. The other dimension of dependence, the number of alternatives, should not be simply equated to the number of total suppliers of the focal product. Rather, it refers to the availability of alternative suppliers that provide comparable product benefits. For example, in the channel context, Heide and John (1988) were able to demonstrate that a vulnerable and thus dependent channel member can decrease the number of competitors via improving its role performance. In the context of their study, the number of suppliers remained the same, but the balance of dependence shifted due to the changes in the partner's performance.

Gundlach and Cadotte (1994) examined the totality of the relationship interdependence in terms of two dimensions: magnitude and relative asymmetry. *Magnitude* of interdependence is defined as the sum of the dependence in an exchange and degree of cohesion. *Relative asymmetry* of interdependence refers to the comparative level of dependence in an exchange and parallels Emerson's (1962) "power advantage" notion. Thus, according to these authors, interdependence exists between a buyer and a supplier when they are mutually and highly dependent on each other. This two-component notion of interdependence is adopted by several other studies, such as Kumar, Scheer, and Steenkamp (1995). One problem of this conceptualization, however, is that it assigns equal weights to the magnitude dimension and asymmetry dimension. Then, according to this view, buyer A and seller B are interdependent on each other even when they have very asymmetric relationships. In this study, the use of interdependence is similar to Lusch and Brown's (1996) notion of bilateral dependency. Without symmetry, high magnitude per se does not constitute interdependence. Interdependence exists when both parties are highly and mutually dependent on each other. This term highlights the two-way nature of the influence (Vanzetti and Duck 1996). In essence, the view adopted here

assigns primary weight to the symmetry dimension and gives secondary weight to the magnitude dimension.

3.5. The Mutually Reinforcing Links Between Trust, Commitment, and Interdependence

3.5.1 Effects of Trust on Commitment and Interdependence

Morgan and Hunt (1994) convincingly argued and empirically found a positive effect of trust on commitment. First, because commitment increases risk exposure and entails vulnerability, parties will seek only trustworthy partners to engage with. Second, trust entails a willingness to accept vulnerability in the face of uncertainty (Morgan and Hunt 1994; Moorman, Deshpande, and Zaltman 1993). Moreover, a mutual trusting relationship is by itself highly valuable such that parties want to commit themselves to such relationships (Hrebiniak 1974; Mayer, Davis, and Schoorman 1995; McAllister 1995).

Trust also increases interdependence between partners. This is because rational trust denotes a strong belief about some of the most important qualities of an exchange partner: capability, consistency, and benevolence. In a business world where benevolent and opportunistic players coexist, a perception of trust should serve to distinguish between these two types of potential partners. In a sense, trust precludes alternatives. A purchaser is more willing to rely on trustworthy partners on certain recourses than on untrustworthy ones.

3.5.2 Effects of Commitment on Trust and Interdependence

Past research has indicated a positive effect of commitment on trust. In a channel setting, Ganesan (1994) found that perceptions of a vendor's specific investments increase a retailer's trust in the vendor. Willingness to make idiosyncratic investments provides evidence that a vendor can be believed, that s/he cares for the relationship, and that s/he is willing to make sacrifices (Ganesan 1994; Doney and Cannon 1997). In organizational purchasing relationships, the supplier's willingness to place itself at risk signals a desire to cooperate to the buyer. And such actions tend to show that the supplier's motives are benevolent (Lindskold 1978; Strub and Priest 1976; Doney and Cannon 1997). Therefore, the author speculates that mutual commitment between the supplier and the buying firm should promote mutual trust between them.

Similarly, mutual commitment positively affects interdependence. Recall that commitment is defined as the enduring desire to maintain an existing relationship. As one party

becomes committed to a relationship, a natural result is for it to make more resources available to this relationship, for example, in the forms of expanded work hours, more skilled personnel, and increased monetary expenditures. As Murray and Siehl (1989) and Shamdasani and Sheth (1995) have noted, a partner's commitment is manifested by the extent to which a partner is willing and able to commit resources to overcome barriers to entry. In the organizational purchasing context, a committed supplier is more likely to expend the time and resources needed to adapt to the specific requirements of the purchasing firm. On the other hand, a committed purchaser would like to buy from the supplier in larger amounts and in greater frequencies. These actions would make each committing party more dependent on the other. As long as mutual commitment exists, interdependence should be high.

3.5.3 Effects of Interdependence on Trust and Commitment

Several marketing scholars have also underscored the effects of interdependence on mutual commitment. Ganesan (1994) has argued and empirically found that the dependence of a retailer on a vendor is positively related to the retailer's long-term orientation. Lusch and Brown (1996) found a similar relationship in the wholesale-distributor channel relationships. Recall that long-term orientation is a key characteristic of attitudinal commitment: these findings essentially suggest a positive effect of dependence on commitment. Buchanan (1992) has pointed out that mutual dependence between channel members can create high stakes for either party in ensuring the relationship's success (Lusch and Brown 1996). In other words, both parties are motivated to commit themselves to the relationship and to make it work.

Interdependence also has a positive effect on mutual trust. This is because interdependence creates opportunities to understand each other and work together. Often, this means increased trust. In a transactional sense, minor relationships (i.e., low interdependence) warrant neither time, effort, nor opportunity costs for extensive interaction (Gundlach and Cadotte 1994; Anderson and Weitz 1992). As long as interaction is a major source of trust, low interdependence reduces the opportunity for the development of mutual trust between two exchange partners. In contrast, high interdependence relationships usually involve extensive personal interaction, information exchange, and resource integration. The opportunities for

intensive interactions in a balanced dependence relationship provide a field where mutual trust can emerge and develop.

CHAPTER 4: LITERATURE REVIEW – DECISION-MAKING UNCERTAINTY

This chapter introduces the concept of decision-making uncertainty and reviews its sources in the organizational buying context.

4.1 Definition

Decision-making uncertainty refers to the difficulty in predicting the outcomes of a purchase decision in terms of the likely performance and likely costs (cf. Heide and Weiss 1995; Collis 1992). Duncan (1972) operationally defined decision-making uncertainty as the level of three derived concepts: (1) the adequacy of available information from all sources for making a key decision; (2) the predictability of the consequences of the decision, i.e., the inability to assess the outcome of the decision in terms of how much the organization would lose/gain if the decision were incorrect/correct; and (3) the inability to assign probabilities to the occurrence of possible outcomes (Achrol and Stern 1988). The first two dimensions focus on the general lack of information; the third one focuses on the level of ambiguity in his/her probability estimates. As Achrol and Stern (1988) argues, this operational definition can be derived from more general definitions of uncertainty (e.g., Pfeffer and Salancik 1978).

According to theories of subjective probability, an individual's uncertainty about an event or variable can be represented probabilitically, i.e., by assigning a probability to an uncertain event and forming a belief about its chance of happening (Winkler 1991). The probability assessment places an important role in judgments on perceived benefits, perceived sacrifice, and ultimately, perceived value.

Stone and Gronhaug (1993) argue that situation confronted in buying situations is more that of "uncertainty" than that of "risk" as dealt with in other disciplines. In many "real" consumer and managerial decisions making situations, there is less predictability as to the outcome of events than under the conditions of risk as studied in decision theory. The decision theory is generally concerned with the effects of risky events under *known* probabilities. On the other hand, Oliver and Winer (1987) observed that the uncertainty surrounding consumer (and managerial) decision-making is better characterized by the degree of *ambiguity* about choice outcomes. Ambiguity in assessments has two dimensions: (1) the level of assigned probability of the occurrence of an outcome and (2) the certainty/uncertainty with which this probability is held.

Oliver and Winer (1987) noted that uncertainty would have dual effects on buyer judgments. First, in uncertain situations, customers would assign low probabilities to their performance beliefs; second, they tend to have lower certainty about their probability assignments.

4.2 Perceived Uncertainty Versus Objective Uncertainty

Decision outcomes are neither certain nor uncertain in themselves, but are simply perceived differently by different organizations (Achrol and Stern 1988; Pfeffer and Salancik 1978). Because different buyers have different access to information and different cognitive abilities, perceived uncertainty, again, is relative across individual firms (cf. Duncan 1972). Therefore, uncertainty may be thought of as an attribute of an individual firm's behavioral environment rather than an attribute of the physical environment (Downey, Hellriegel, and Slocum 1975).

Bauer (1960) uses arguments which are very similar to the notion of bounded rationality to introduce the perceived risk problem in consumer decision making. According to him, consumers have limited cognitive ability, are unable to consider more than a few of the possible consequences, and can seldom rationally compare among alternatives when facing a high degree of uncertainty (Bauer 1960). As Cunningham (1967) pointed out, true or actual probabilities are not relevant to the consumer's reaction to risk except insofar as past experience is the basis for present perception. Put differently, consumers can only react to the amount of risk they actually perceive and only in terms of their subjective interpretation of that risk. Yet, scholars have argued that the gap between perceived uncertainty and objective uncertainty (i.e., the actual rate of changes in the environment) is likely to determine the performance of a decision (Bourgeois 1985). That is, the failure of a party to detect the true level of uncertainty surrounding a decision may affect its ability to choose the best alternative of dealing with the hazards beneath the uncertainty.

4.3 Sources of Decision-Making Uncertainty

In organizational buying context, there are several well-documented sources of decision-making uncertainty. They include product-related factors, decision maker related factors, environments, and relationship factors. The author will briefly review some of the most studied

specific factors that affect uncertainty, focusing on the tacitness of product attributes, customer knowledge, environmental conditions, and behavioral propensities of exchange partners.

4.3.1 Tacitness of Product Attributes

Tacitness of product attributes is the degree to which the content of the product cannot be easily communicated and understood without the buyer using the product first and seller continuously helping in this application process. This construct is particularly important when the exchanged offering involve technology or management skills. This difficulty in communication is not caused by a buyer knowledge problem, but is inherent in the offering itself. One cannot expect the buyer to know something that is not available in the market; nor can the buyer comprehend its value until after actual usage.

In the marketing literature, two concepts bear similarity with the tacitness of product attributes: experience quality (Nelson 1970) and credence quality (Darby and Karni 1973). Experience qualities refer to attributes that consumers cannot evaluate before the purchase of a good, rather, they may only discern these attributes during or after purchase of the good. Credence qualities refer to attributes that consumers may not be able to evaluate even after purchase and consumption due to the level of knowledge required to understand what the good does (Darby and Karni 1973; Alford and Sherrell 1996). Both experience and credence qualities add to the level of uncertainty a purchaser may feel in a decision.

There is a similar concept to the tacitness of product attributes in the technology transfer and international business literatures: the tacitness of technology or knowledge. The tacitness of knowledge is the extent to which no standards or credible written descriptions exist in communicating the value of the knowledge (Polyani 1966). Transaction cost problems will often arise because of difficulties associated with disclosing value to buyers that is convincing and that does not destroy the basis for exchange (Teece 1986). Consequently, the seller of know-how cannot allow the buyer to become too well informed about its quality. The “fundamental paradox” of information (i.e., buyer uncertainty) arises (Casson 1985); that is, the value of the knowledge to the buyer is not known until it has the information, but then the buyer has in effect acquired it without costs.

It can thus be proposed that the lack of standards and lack of information associated with tacit product attributes combine to increase the perceived uncertainty about the outcome of the exchange.

4.3.2 Customer Expertise

Customer expertise is defined as a customer's general knowledge about the product and the ability to use it to achieve certain purchase goals (cf. Jacoby et al. 1980). It has two dimensions: knowledge and ability. Knowledge can be defined as the difference between what is known and what could be known. Knowledge is enhanced by information exposure, familiarity, and experience (Alba and Hutchinson 1987; Anderson, Engledow, and Becker 1979; Johnson and Russo 1984), and is diminished by not knowing relevant information that is typically available to or acquired by other customers. Yet, the level of customer knowledge is not affected by the amount of information not usually known to all customers. Thus, it is independent of the construct of tacitness of product attributes. The latter refers to the type of information that cannot be acquired without first using the product. It is also purchase specific in that the performance of product attributes may differ from purchase to purchase.

Customer ability (or skill) differs from customer knowledge because ability is associated with the actual use of this product in achieving certain purchasing goals, while knowledge refers to the amount of overall information (Jacoby et al. 1980; Alba and Hutchinson 1987; Brucks 1985). Customer ability also differs from the tacitness of product attributes because customer ability pertains to specific customers and differs across customers, while the later pertains to the difficulty experienced by any customer in predicting the offered performance.

Research has shown that consumers with higher knowledge levels tend to be more confident in their judgments about the assessed target, either a product or a brand, than low knowledge consumers (Laroche, Kim, and Zhou 1996; Park and Lessig 1981). Alternatively, the former may tend to search more information to increase the decision confidence than the latter, even when they do not feel very confident about their judgments. Typically, consumer researchers use confidence (equated to certainty in judgment) level as the opposite of decision-making uncertainty (Urbany, Dickson, and Wilkie 1989).

With regard to the other dimension of customer expertise, previous research demonstrates that customer skill or ability is closely related to task experience and knowledge level. As a matter of fact, types of customer ability can be dichotomized into specific task-performance improvement gained through repetition and the understanding and application of a product's potential, and a knowledge-based ability gained primarily through exploration and learning (Cordell 1997). Since customer ability may largely result from the accumulated customer knowledge, the presence of consumer ability can help enhance the level of confidence and decrease the level of uncertainty the consumer feels about the outcome of the purchasing decision. Extending this rationale to an organizational buying context, it is believed that the purchasing manager's own expertise or the aggregate expertise of the purchasing team would serve to reduce uncertainty about the decision outcome.

4.3.3 Environmental Determinants of Uncertainty

Whatever occurs in the environment of an organizational buyer is likely to affect the degree of uncertainty experienced by the buyer (cf. Achrol and Stern 1988). The marketing discipline, especially the channel literature, is rich in studies of firm external environments (Dwyer and Welsh 1985; Lusch and Brown 1982; Etgar 1977; Achrol, Reve, and Stern 1983; Achrol and Stern 1988; Heide and John 1990). Most typologies of external environments and uncertainty used in marketing, however, are borrowed from the strategic management and organizational behavior literatures. Organizational environments can typically be categorized into two dimensions: (1) the range of environmental activities, or the diversity or complexity of the environment, and (2) the rate of change among those activities, or dynamism of the environment (Leblebici and Salancik 1981). Decision-making uncertainty increases with both the diversity and volatility dimensions of environments. Furthermore, previous research has shown that the dynamism dimension is a more important contributor to decision-making uncertainty (Duncan 1972; Achrol and Stern 1988; Dev and Brown 1995).

Bourgeois (1985) identified five components of the external task environments of organizations: customer component, suppliers component, competitor component, socio-political component, and technological component (Duncan 1972). In marketing, Achrol, Reve, and Stern (1983) classified channel environments into four sectors: input sector, output sector, competitive

sector, and regulatory sector. Adapting to the organizational buying context, the input sector of the task environment refers to all direct or indirect suppliers of the purchasing firm. The output sector consists of all direct or indirect customers of the purchasing firm. The competitive sector primarily captures the actual and potential competitors of the purchasing firm in both input and output sectors. The regulatory sector includes governmental agencies, trade associations, interest organizations, and ad hoc regulatory groups. Apparently, disturbances in any environmental sector can potentially affect the level of uncertainty faced by the organizational buyer in a purchase decision.

4.3.4 Uncertainty Caused by Partner Opportunism

In many purchasing situations, especially those involving technology intensive products, the exchange does not end with the shipment of products. Rather, to a varying degree, the buyer may need continued technical assistance from the selling firm with regard to the proper application of the product to the attainment of preset purchasing goals.

Williamson (1979; 1985) has offered excellent accounts of the uncertainty caused by a partner's behavioral intention and the effect of this type of uncertainty on designing and managing exchange relationships. As he points out, economic agents may sometimes fail to disclose information and may in fact disguise and distort it. They may also adopt business strategies designed to create additional business uncertainty for their rivals. Following Williamson, it can be said that the most significant part of a buyer's perceived behavioral uncertainty in an exchange arises from the uncertainty about the supplier's opportunistic propensity or opportunism. Opportunism is defined as the seller's tendency to engage in self-interest seeking activities with guile or deception (Williamson 1985). Williamson admits that not all agents behave opportunistically under all circumstances. But he also implies that unless one has certain knowledge about its partner's behavioral intention, one had better prepare for the worst in dealing with the partner. Following this proposition, this paper will subsequently use behavioral uncertainty interchangeably with the threat of opportunism.

Above, the author reviewed the definition and sources of decision-making uncertainty. In the next chapter, specific hypotheses will be established between relationship quality and uncertainty, and on how uncertainty affects buyer value perception.

CHAPTER 5: DVELOPMENT OF A CONCEPTUAL MODEL

This chapter first overviews the conceptual model of the effects of relationship quality on customer perceived value. Then, it presents the hypotheses and their respective rationales.

5.1 Introduction of the Model

Illustrated in Figure 1 is a conceptual model showing the effects of relationship quality on customer value perception. The proposed model articulates how a good relationship between a supplying firm and a purchasing firm affects the purchasing firm's perception of value of the supplier's new offering. These effects are proposed to be mediated by five constructs, namely, the perceived relationship benefits, perceived episode benefits, decision-making uncertainty, perceived relationship costs, and perceived episode costs associated with the acceptance of an offering. Specifically, the difference a good relationship can make is as follows:

First, it increases relationship benefits and reduces relationship costs which both increase buyer perceived value. Second, it reduces the buyer's decision-making uncertainty, especially when the buyer lacks expertise in purchasing and using the focal purchase item, faces uncertain external environments, and the purchase item involves high tacit technology contents. A good relationship, in terms of reduced decision-making uncertainty, increases the buyer's confidence in making judgments about the positive outcomes (i.e., benefits) and negative outcomes (i.e., costs) of the decision. A higher confidence in judgment will further increase the weights of perceived episode benefits and perceived episode costs in predicting buyer perceived value. That is, although a good relationship may not necessarily affect the buyer's perceived episode benefits and episode costs, it moderates the effects of these two variables on perceived overall perceived value. When the buyer-supplier relationship is poor and, as a result, when the decision-making uncertainty is high, these two variables may be less important in determining the buyer perceived value.

The proposed model also suggests the circumstances when relationship quality is more important in predicting perceived value. Specifically, relationship quality is more important when purchase outcomes are inherently uncertain, especially when the buyers lack expertise, face uncertain external environments, and buy products with highly tacit components.

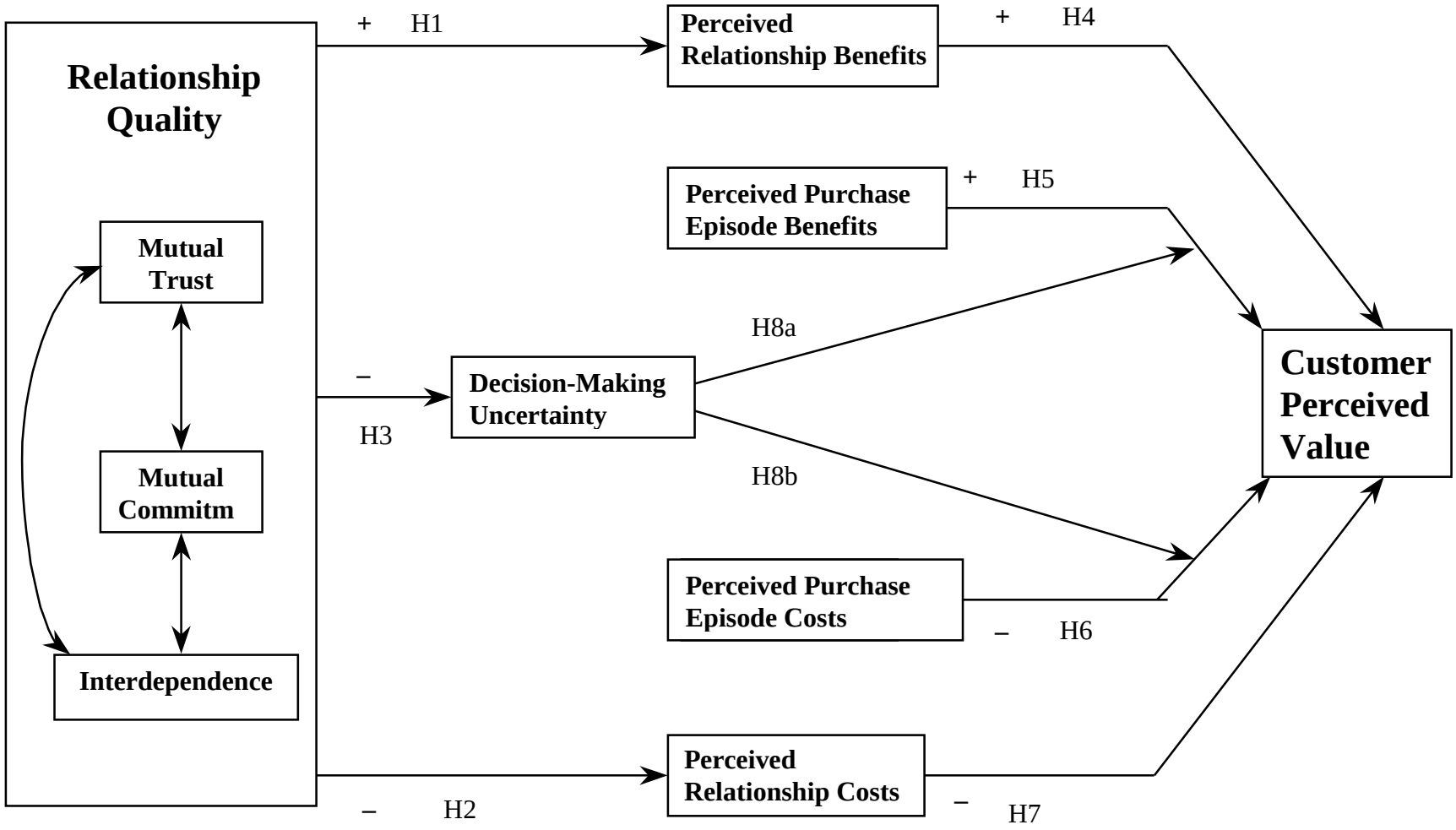


FIGURE1
A Model on the Effects of Relationship Quality on Customer Perceived Value in Organizational Purchasing

Next, I present each hypothesized relationship in the order as they appear in Figure 1, and provide the supporting arguments for each in detail.

5.2 Immediate Effects of Relationship Quality

5.2.1. Effects of Relationship Quality on Perceived Relationship Benefits

Following the work of Ravald and Gronroos's (1996), this paper defines relationship benefits as those benefits perceived by the customer that may or may not be important for the focal transaction episode per se, but become important if a long-term relationship is considered. Specifically, relationship benefits can be viewed as encompassing two dimensions: stability of supply and interpersonal goodwill.

The author expects a positive effect of relationship quality on customer perceived benefits for several reasons. First, the existence of mutual commitment makes it possible for either party to count on the consistent cooperation from its partner. Recall that commitment is defined as the enduring desire to maintain an existing relationship. As one party becomes committed to a relationship, a natural manifestation is its willingness to invest more resources in this relationship (Murray and Siehl 1989; Ganesan 1994). In an organizational purchasing context, a committed *supplier* is more likely to expend the time and resources needed to adapt to the specific requirements of the purchasing firm. Supplier attitudinal commitment and resource commitment in a purchasing relationship increase both its willingness and its ability to serve the needs of the buying firm. In summary, mutual commitment leads to long-term orientation by both parties, improves information flow, ensures security and stability of performance, and guarantees better timing of product delivery.

Second, the existence of symmetric dependence acts as a governance mechanism and makes interfirm behaviors more predictable. High mutual dependence also gives rise to the opportunities for the development of the bond between a buyer and a supplier. Dependence serves to align buyer's interests with that of seller's and promotes a joint motivation for "forbearance" (Buckley and Casson 1988; Williamson 1991) or willingness to be flexible to make the relationship work. A high level of flexibility enhances the potential performance of the relationship because it allows for more efficient adaptations to emerging disturbances in the external environments (Heide 1994). Also, high and symmetric interdependence usually implies

longer, broader, more frequent interactions between the purchasing and the supplying firms. More interactive opportunities in a balanced relationship give rise to the rapport between the representatives of the buyer and the supplier. With the development of mutual understanding and rapport between the parties, the use of explicit contracts may become unnecessary (Lusch and Brown 1996; Gundlach, Achrol, and Mentzer 1995).

The preceding discussion provides a rationale for the following hypothesis:

H1: When the quality of the relationship between a customer and a supplier is high, the customer perceived relationship benefits will be high.

5.2.2. Effects of Relationship Quality on Perceived Relationship Costs

Relationship costs, defined in this paper as the costs of running a whole exchange relationship, is conceptually similar to the notion of transaction costs used by Williamson (1985). This would involve two type of transaction costs: the ex ante costs of partner verification and contract negotiation, and the ex post costs of close monitoring and punishing the undesirable behaviors by the partner. Williamson (1979; 1985) attributes opportunism as the most important antecedent to transaction costs. When supplier opportunism exists, the purchaser has to carefully plan the governance of an exchange relationship (Heide 1994).

A mutually trusting relationship is characterized by harmonious cooperation at various stages of the exchange relationship (Doney and Canon 1997; Morgan and Hunt 1994). When mutual trust exists between an organizational buyer and a supplier, the costs incurred by either party in checking the other's credibility and contract negotiating will be greatly reduced (Dwyer, Schurr, and Oh 1987). This is possible because trust exists as a governance mechanism of exchange relationships (Bradach and Eccles 1989). With trust, it becomes unnecessary to cover all contingencies (Dwyer, Schurr, and Oh 1987, p. 23) in a formal contract for sustained cooperation. Rather, parties may intentionally leave some contract terms loosely stated, thus creating some uncertainty as to the outcome of the exchange. Similarly, because of the governance function of trust, the time and expenses spent on ex post relationship maintenance might also be conceivably shrunken (Bradach and Eccles 1989).

Similarly, mutual commitment between an organizational buyer and a supplier has a negative influence on buyer perceived supplier opportunism, for two reasons. First, when commitment to the exchange is disproportionate, the propensity for opportunistic behavior on the part of the less dependent party is higher (Gundlach, Achrol, and Mentzer 1995). On the other hand, mutual credible commitment reduces the likelihood of opportunistic behaviors by either party (Williamson 1983; Lusch and Brown 1996).

Finally, mutual and high dependence between an organizational buyer and a supplier also impact buyer perceived relationship costs. According to Emerson (1962), symmetric dependence generates balanced power between the buyer and the supplier. Balanced power then serves as a governance mechanism that keeps both parties' behaviors in check (Heide 1994). That is, high and symmetric interdependence reduces the opportunistic propensities of both parties (Kumar, Scheer, and Steenkamp 1995), because opportunism by one firm is likely to elicit retaliation from the other (Buchanan 1992; Lusch and Brown 1996). For the purpose of this study, a reduction in supplier opportunism decreases the magnitude of the customer's potential relationship costs, especially those incurred ex post. Furthermore, high mutual dependence signifies high stakes by both parties in ensuring the relationship's success (Buchanan 1992; Lusch and Brown 1996). Beyond refraining from engaging in opportunistic behaviors, parties may take initiatives to enhance both the benefits and decrease costs accruing to the partner.

To summarize the preceding discussion, a high relationship quality characterized by mutual trust, mutual commitment and interdependence reduces the tendency of both parties of the relationship to engage in opportunistic behavior. Less bilateral opportunism, or especially supplier opportunism, means lower relationship costs incurred on the part of the buyer. Thus,

> H2: When the quality of the relationship between customer and supplier is high, the customer perceived relationship costs will be low.

5.2.3. Effects of Relationship Quality on Decision-Making Uncertainty

This paper proposes that a high relationship quality characterized by mutual trust, mutual commitment and interdependence reduces buyer perceived decision-making uncertainty in accepting a supplier's offering.

The emerging literature on inter-firm trust in marketing suggests that trust both reduces perceived hazard of opportunism (Bradach and Eccles 1989; Zand 1972) and enhances the purchaser's certainty about the outcome of the exchange (Bord and O'Conner 1990; Johnston and Lewin 1996). As viewed by Gronroos (1994), Morgan and Hunt (1994), and Smith and Barclay (1997), trust has a behavioral dimension. That is, trusting reflects reliance on the other partner and involves uncertainty and vulnerability on the part of the trustor.

This author speculates that trust leads exchange partners to make "risky" decisions because they perceive the situation as having considerably less uncertainty of adverse consequences. Recall that one dimension of trust is the belief that the exchange partner's behavior is more consistent and reliable. This belief decreases perceived uncertainty with regard to the outcomes of an exchange and increases the customer's confidence in the supplier's behavior and performance. Also, a significant component of decision-making uncertainty in an exchange relationship may come from unpredictability of the partner's behavioral propensity. When one firm (e.g., the organizational buyer) perceives the other (e.g., supplier) as trustworthy, it worries less about the other's tendency to engage in opportunistic behavior, because a trusting party tends to believe in the benevolence of the other in dealing with itself. Furthermore, because the supplier is believed to have the capability to deliver capable, satisfying performance, the purchase outcome is likely to be more predictable and less uncertain.

Previous research also suggests that mutual commitment decreases an organizational buyer's decision-making uncertainty in purchase. A key characteristic of relationship commitment is that the parties purposefully and consistently engage resources to maintain the relationship over an extended period of time (Dwyer, Schurr, and Oh 1987; Scanzoni 1979). In the context of an organizational buying decision, this would mean that the buyer has less difficulty in predicting the outcomes of the purchase. Indeed, one major benefit accruing to mutually committed relationship partners is the certainty of mutually anticipated roles and goals (Dwyer, Schurr, and Oh 1987). Williamson (1985) further notes that reciprocal or joint commitment can lead to stable long-term relationships through aligning participants' incentive structures and enhancing their confidence in each other's behaviors (Gundlach, Achrol, and Mentzer 1995).

Similarly, interdependence is expected to impact an organizational buyer's perceived uncertainty perceived with regard to the purchase outcomes. When the interdependence is unilateral, the less dependent party is made vulnerable to the whims of the less dependent party (Etgar and Valancy 1983). In other words, dependence creates uncertainty for the weaker partner (Lusch and Brown 1996). However, in a mutually dependent relationship, each partner is made equally accountable for its behavior. In particular, when two firms have a high level of mutual dependence, they become mutually bound together by the high vested stakes in the relationship. Under such conditions, firms are more likely to develop understandings, both explicit and implicit, regarding obligations, rules, outcomes, contributions, and sanctions germane to their relationship (Ring and Van de Ven 1992; Lusch and Brown 1996). As a result, an organizational buyer who keeps a highly and mutually dependent relationship with a supplier will perceive less uncertainty in the outcome of an ongoing exchange episode.

Thus, consistent with existing research, the author presents the following hypothesis:

H3: When the quality of the customer - supplier relationship is high, the customer perceived decision-making uncertainty in the supplier's offering will be low.

5.3 Immediate Antecedents of Customer Perceived Value

Prior research, primarily in the consumer behavior literature, provides multiple accounts of the direct antecedents of perceived value and the formulation of their effects on the criterion variable. Monroe (1979) originally proposed that perceived value is a ratio of perceived quality to price. Later, he modified the composition of the two components to include all perceived benefits and all perceived sacrifices (Monroe 1991). Zeithaml (1988) adopted two similar components of perceived value: perceived benefits and perceived sacrifices. She also used different pairs of terms to describe these two components, such as the "get" component versus the "give" component, and "what is received" versus "what is given." But Zeithaml fell short of providing a version of the formula on how the "get" and "give" components combine to form value perception. Borrowing from the finance and economics literatures, Rust and Oliver (1994) noted that the economic assumption of utility offers insights to understand the value concept. Under this assumption, customers derive utility from quality but suffer disutility from price.

Consumers seek to maximize the ratio of quality to price, given a minimum performance level and a budget level. While accepting value as a ratio of quality to price, Rust and Oliver (1994) admit that exactly how quality and price components combine to comprise value is still ill-understood. They speculate that the two components' effects on value are both non-linear in nature.

Although largely limited in scope and depth, prior research on customer perceived value is suggestive of the following two general observations. First, customer perceived value has two immediate antecedents: perceived benefits and perceived sacrifice. Second, although the exact relationship between these two components and perceived value is still unclear, a positive effect of the benefit component and a negative effect of cost component on perceived value are plausible. In other words, perceived value will increase as a function of perceived benefits and decrease as a function of perceived sacrifice.

All previous studies reviewed above were conducted in consumer decision contexts. However, the findings from this research are applicable to organizational buying setting as well. The general assumption in studies of consumer perceived value – that buyers make rational comparisons between what is received and what is given out – should hold true for organizational buying behaviors. Typically acting in decision groups consisting of experts from many departments, organizational buyers are widely believed to be rational and possibly even more so than typical consumer decisions (Moriarty and Bateson 1983; Wilson 1971; Webster and Wind 1972; Sheth 1973; Johnston and Lewin 1996).

To the extent that perceived benefits positively influence customer perceived value, both perceived purchase episode benefits and perceived relationship benefits should enhance perceived value. This is because the two types of benefits add up to total perceived benefits. An increase in each component leads to higher perceived benefits. The same logic can be extended to the case of the two cost components – perceived purchase episode costs and perceived relationship costs such that both of them should have negative effects on customer perceived value.

Summarizing the above discussions, this paper proposes and empirically tests the following four hypotheses in an organizational buying context.

H4: When the customer perceived relationship benefits in the supplier's new offering is high, the customer perceived value of this offering will be high.

H5: When the customer perceived purchase episode benefits in the supplier's new offering is high, the customer perceived value of this offering will be high.

H6: When the customer perceived purchase episode costs in the supplier's new offering is high, the customer perceived value of this offering will be low.

H7: When the customer perceived relationship costs in the supplier's new offering is high, the customer perceived value of this offering will be low.

5.4 Moderating Effects of Decision-Making Uncertainty

Previous research in organizational as well as consumer decision-making has shown a close relationship between decision-making uncertainty and decision-making confidence in decisions (Howard 1989). With regard to the conceptualizations of decision-making confidence, two perspectives have appeared in the decision-making literatures (Howard 1989; Mizerski, Golden, and Kernan 1973). The first conceptualization pertains to the buyer's confidence about a brand or a supplier (Bennett and Harrell 1975; Howard and Sheth 1969). Urbany, Dickson, and Wilkie (1989) alternatively address this type of confidence as choice confidence. The second conceptualization deals with the buyer's confidence in judgments (Bennett and Harrell 1975; Howard and Sheth 1969; Berger and Mitchell 1989; Smith and Swinyard 1988; Dick and Basu 1995), which is also called knowledge confidence by Urbany, Dickson, and Wilkie (1989).

The first view is conceptually broader than the second view. It not only requires confidence in one's judgments, but also implies the direction of the judgment, namely, a *favorable* judgment in terms of high positive outcomes or low negative outcomes of an offering. This paper adopts the second conceptualization and defines an organizational buyer's decision-making confidence as the purchasing team's certainty in its judgments about the outcomes of a purchase decision. As implied in this definition, a high decision-making confidence does not necessarily specify the direction (i.e., the favorableness or unfavorableness) of the team's judgment of the offering. Rather, it only refers to the team's certainty about the soundness or the quality of this judgment, regardless of its favorableness.

Prior research, primarily in consumer decision-making contexts, has linked decision-making uncertainty to decision-making confidence. Typically, researchers either define confidence level (equated to certainty in judgment) as the opposite of decision-making uncertainty (Urbany, Dickson, and Wilkie 1989), or hypothesize uncertainty as a contributing factor of confidence (Laroche, Kim, and Zhou 1996; Park and Lessig 1981; Oliver and Winer 1987). With regard to the latter research path, Laroche, Kim, and Zhou (1996) have shown that buyers with higher knowledge level (which contributes to a lower uncertainty level) tend to be more confident in their judgments about the assessed target (e.g., a brand) than low knowledge consumers (Park and Lessig 1981). Oliver and Winer (1987) proposed that customers facing uncertain situations would first assign low probabilities to their performance beliefs, and then have lower certainty about their probability assignments (i.e., judgments).

Confidence in judgment has been frequently used in the multi-attribute attitude model research (Raden 1985; Laroche, Kim, and Zhou 1996). Specifically, confidence in judgment is equated to belief strength, or the strength of the association between an offering and a certain performance level (Raden 1985; Howard 1989; Wilkie and Pessemier 1973; Smith and Swinyard 1988). As such, the higher the confidence level, the higher the belief strength. Extending this rationale to the current study, it is expected that the higher the uncertainty with regard to the outcomes (i.e., performance and costs) of an offering, the lower the buyer's confidence in its judgments in both perceived performance and perceived costs. Other things being equal, this would mean a moderating effect of decision-making uncertainty on the main effects of perceived benefits on customer perceived value (CPV) and the main effect of perceived costs on CPV. Specifically, when decision-making uncertainty is high, perceived benefits and perceived costs will have relatively weaker effects on customer perceived value. In a similar vein, two former studies hypothesized and confirmed the moderating effect of confidence in judgment on the link between consumer attitude and purchase intention (Laroche, Kim, and Zhou 1996; Park and Lessig 1981).

The above logic could potentially be applied to the main effects of both episode benefits and relationship benefits, and, similarly, to the main effects of both episode costs and relationship costs. For the sake of parsimony, the current study only examines the possible

moderating roles of decision-making uncertainty on the main effects of episode benefits and episode costs. As described above, the focus of this paper is on how relationship quality affects customer perceived value, either directly or through mediating variables. This model has already established direct effects of relationship quality on perceived relationship benefits and perceived relationship costs. At issue, then, is whether relationship quality would affect perceived purchase episode benefits and perceived purchase episode costs. Previous research provides no guidance on this issue. However, the above literature review on decision-making confidence indicates possible moderating effects of relationship quality, via decision-making uncertainty, on the main effects of perceived purchase episode benefits and perceived purchase episode costs on customer perceived value.

Synthesizing the relevant literature on consumer decision-making and extending it to the organizational buying context, the author speculates on a particular way by which relationship quality relates to perceived episode benefits and perceived episode costs. Rather than directly affecting the perceptions of episode benefits and episode costs, relationship quality may moderate the main effects of these two constructs on perceived value.

The preceding discussions lend support to the following two hypotheses:

H8a: When the decision-making uncertainty (DMU) in the supplier's offering is high, the positive effect of perceived episode benefits on customer perceived value will be weaker than if the DMU is low.

H8b: When the decision-making uncertainty in the supplier's offering is high, the negative effect of perceived acquisition costs on customer perceived value will be weaker than if the DMU is low.

CHAPTER 6: METHODOLOGY

This chapter introduces the research context, measurement instruments for all the constructs, and analytical procedures to check instrument reliability and validity.

6.1 Research Setting

The primary purpose of this study is to gain an understanding of the process by which relationship quality affects an organizational customer's perceived value of a supplier's offering. To test the hypotheses, several considerations were in order in the design of the research context. First, the study focused on an important commodity purchase decision that has been made in the past twelve months by purchasing managers. A recent past decision was chosen because the study was interested in understanding the outcome and causes of a complete purchase decision process. This design also allows for an examination of the *actual* role of perceived value in the organizational buyer's purchase decision process.

Second, to ensure that the decision involved at least some amount of deliberation, informants were asked to select a decision in which no purchase option had been so superior as to be the obvious choice (Kohli 1989). Third, as an additional step to guarantee a certain degree of deliberation by the purchasing team before the actual decision was made, an important purchase decision was selected as the basis for answers. This design also helped ensure the quality of the respondents' answers that were based on memories. The assumption was that purchasing managers would have relatively clearer memories of important decisions relative to unimportant ones.

Fourth, in line with the recommendations of Patchen (1974), Silk and Kalwani (1982), and Kohli (1989), informants were only asked about the final evaluation and selection phase of the decision-making (rather than the entire process) to reduce their burden and thereby improve the accuracy of their reports. Fifth, to allow for changes in the levels of perceived value, the outcomes of the decision, and the levels of independent variables, the study asked half of the samples of purchasing managers to report on a supplier from which the final purchase had been made and another half to report on a supplier whose offer had been considered but rejected in the final stage. Sixth, the respondents were asked to choose one of two types of products: repetitively purchased items versus capital equipment. This would allow for an examination of

the moderating roles of product type on the main effects of perceived relationship quality and perceived relationship costs on customer perceived value. Finally, to ensure a relatively wide applicability of the performance attributes to different organization's decisions, only product purchase decisions were used, as contrasted to both product and service purchase decisions.

6.2 Sample and Data Collection

6.2.1. The Sample

The study involved a questionnaire survey of members of the National Association of Purchasing Management (NAPM). Assuming a conservative response rate of 10% and allowing for some screening-related attrition, the study drew a random sample of 2,000 purchasing managers from around the nation.

Existent studies of organizational purchasing behaviors favor examining the behaviors of the "buying center" rather than that of the purchasing agent (Spekman and Stern 1979; Sheth 1973; Johnston and Bonoma 1981). Consistent with this research tradition, this study focuses on the joint judgments of the purchasing team on various aspects of an offering. Specifically, the survey questions cover the purchasing team's perceptions of value, relationship benefits, episode benefits, relationship costs, episode costs of accepting a new offering from the supplier, the decision-making uncertainty involved in the decision, and the three dimensions of buyer-supplier relationship quality, namely mutual trust, mutual commitment, and interdependence.

To collect the required information, a single informant, the purchasing manager, was selected as the respondent. Prior research indicates that purchasing managers either exert primary influences on or have sufficient first-hand information about an organization's purchasing decisions (Cooley, Jackson, and Ostrom 1978; Jackson, Keith, and Burdick 1984; Patton, Puto, and King 1986). Recall that the key concern in the survey is whether the purchasing managers were actively and deliberately involved in, and possess sufficient information on various aspects of the focal decision-making process.

By using a single informant, it was not intended to get only the purchasing manager's view on the decision process. Rather, the purpose was to find a knowledgeable person who is able to report the aggregate thinking of the buying center as a group. All questions were intended to focus on the joint assessments of the purchasing team as a whole, rather than the purchasing

manager's individual judgment. Furthermore, the use of a single source is likely to generate relatively more candid responses from informants, given the political nature of the purchase decisions (Kohli 1989).

To insure that the purchasing manager responds with his or her purchasing team in mind, the following question is asked after each section: "Overall, with regard to these questions, how different were your personal views from those of other members of the decision team?" (1=Very different, 5=Very similar). On average, for the six sections with team agreement checks, only 2.42% of respondents reported 1 or 2, indicating negligible impact on the validity of the key informants' reports on team assessments. Several other questions were also included in the questionnaire for similar purposes, such those on the respondent's years spent with the firm, years spent on the current position, and the length of the business relationship with the focal supplier. An average respondent had worked for 11.03 years with the current organization; 5.66 in the current position; and 15.66 years in purchasing. Jointly, these indicators support the use of purchasing managers as a reliable source of the purchasing teams' judgments in various organizations.

6.2.2. Steps to Increase the Response Rate

The study used a multi-stage procedure to enhance response rate. First, the questionnaire was designed with the following factors in mind: brevity, clarity, courtesy, pertinence, and flexibility. A group of experts who are knowledgeable of the subject area was consulted about the appropriateness of survey items. Further, a pretest among 20 actual organizational buyers was conducted before the survey was printed. Second, the author sought help from a renowned researcher in the purchasing field to write a cover letter for this survey. In the cover letter, the sponsor introduced himself as a devoted scholar of purchasing and also a Certified Purchasing Manager for twenty-four years. It was hoped that this introduction would ingratiate the sponsor and the author to the respondents. Third, the sponsor and the author promised confidentiality of the respondents' identities. Fourth, an incentive was presented on the availability of a summary report based on this survey. Fifth, a business reply envelope was enclosed with the survey. Sixth, in case a recipient of the questionnaire is primarily involved in service purchasing

decisions, s/he was asked to find a colleague who has a product purchase background and is capable of answering the questions to fill out the survey.

6.2.3. Results of Data Collection Process

After six weeks of the survey mailing, 212 returned questionnaires were received, among which 188 contain complete data on all survey items. The author planned to test the conceptual model with the structural equation modeling (SEM) method using LISREL (Joreskog and Sorbom 1998). It has been recommended that a sample range of 150 would be adequate for testing a SEM model (Hair et al. 1992; Anderson and Gerbing 1988). Given that the number of usable questionnaires has satisfied the initial plan for this study, a second-round mailing was deemed unnecessary, and the survey was concluded. Overall, the data collection process generated a response rate of 9.9%. This response rate was not high, comparing with previous surveys of the same sample source (Fearon and Bales 1995; Kolchin 1990). But given the length of the questionnaire – six full pages in small font – and the fact that no pre-mailing notice and second-round mailing were made, it was judged to be acceptable. Possible non-response biases were examined by comparing characteristics of early and late respondents. No significant difference was found among early respondents and late respondents. Table 1 summarizes some general characteristics of the sample.

Thirty-seven states were represented in this national survey. About twenty percent (20.4%) of the respondents were in from either California or Pennsylvania, while no other states had a share of more than 5.5%. An average respondent in this study is a 40-50-year old male, who holds a bachelor's degree and works for an industrial firm. He has worked for 11.03 years with the current organization; 5.66 in the current position; and 15.66 years in purchasing. These sample characteristics were generally comparable to those of other studies using the same population (Kolchin 1986; 1990; Muller 1994).

For example, the respondents in the Muller (1994) study had an average of eight years with the employer and fourteen years in purchasing. Similarly, Kolchin (1986) reported that the

TABLE 1
The Sample Characteristics

	Percentage of Sample	
Type of organization		
Industrial	80.4	
Food		11.8
Construction		5.9
Chemical, petroleum		12.9
Metals		5.9
Transportation equipment		3.8
Other		59.7
Non-Industrial	18.5	
Age		
40-50	45.4	
50 and over	29.7	
Other	24.9	
Gender		
Female	20.7	
Male	78.8	
Education		
Bachelor's degree	61.6	
Master's degree	21.0	
Other	17.3	
State		
California	12.9	
Pennsylvania	7.5	
Ohio	5.4	
Illinois	4.8	
Texas	4.3	
North Carolina	4.8	
New York	4.3	
Other	55.0	
Product Type Chosen in Reporting		
Repetitively purchased items (Coded as 1)	63.4	
Capital products (Coded as 2)	36.6	
Outcome of Decisions		
Purchase was made (Coded as 1)	55.9	
Offer was rejected (Coded as 2)	43	
Average Number of Employees	12,817.14[a]	
Average Relationship Length with this Supplier	8.10[b]	
Average Amount of Sales (in 1996)	$2,959.485.80[c]	

a: The standard deviation was 61,300.00.
b: The standard deviation was 7.34.
c: The standard deviation was $8,509.448.60.

respondents in his study had an average of 12.8 years of purchasing experience. The number of purchasing experience reported in Kolchin (1990) was 12.7.

For another example, in the present study, 61.6% of the respondents has a four-year college degree, and 98.4% had at least some college. In comparison, the majority of Muller (1994) respondents (65.8%) held a four-year or higher college degree, and 94.2% had at least some college, while these figures for the Kolchin (1986) study were 64.4% and 94%, respectively. Kolchin (1990) report that the above two figures for the average NAPM membership were 62.1% and 92.6%, respectively.

6.3 Measures of the Dependent Variable

Customer perceived value, the dependent variable, is defined as an organizational buyer's overall assessment of worthiness or utility in a supplier's offering, based on what is to be received and what is to be given out. Measures of customer perceived value exist to some extent in the consumer behavior literature. For example, Bolton and Drew (1991, p. 382) measured customer value in telephone services as the "overall value of services provided ..., considering the amount paid for services received." A similar global measure of perceived value was used in Dodds and Monroe (1985). Grewal (1989, p. 443) measured customer perceived value in a 35mm Compact Camera using the scale: "This 35mm Compact Camera is a worthwhile offer."

Consistent with the conceptual definition and borrowing from available measures of consumer perceived value, four items were chosen as the reflective measures of an organizational buyer's perceived value of an offering. These items are: (1) At the time of decision-making, we (i.e., the organizational buyer) realized that this supplier's offer was worthwhile to accept, based on a comparison of what we could get with what it would cost us; (2) At the time of decision-making, we concluded that accepting this supplier's offer was justifiable, based on the overall benefits and overall costs of offering; (3) At the time of decision-making, we agreed that this supplier's offer had enough overall value to satisfy us; and (4) At the time of decision-making, we thought that, overall, this supplier's offer was a fair buy (1=strongly disagree, 5=strongly agree).

6.4 Measures for Independent Variables

6.4.1 Perceived Purchase Episode Benefits

Perceived benefits of a supplier's offering is defined as the customer's pre-purchase evaluation of the extent to which this offering would provide customer desired attributes in a consumption experience. Perceived purchase episode benefits are those benefits that are only or primarily related to the focal transaction episode at hand, with little implications for future purchases. Based on the idea of the multi-attribute attitude model used by Fishbein and Ajzen (1975), this study measured perceived purchase episode benefits with a set of 11 formative indicators comprising two dimensions. Each of the formative indicators is a multiplicative product of two components: the desirability of the performance level on attribute i and the relative importance of attribute i. The eleven attributes were selected based on a review of previous studies of organizational buying behavior (e.g., Moriarty 1983). They are: (1) specifications; (2) reliability; (3) durability; (4) compatibility; (5) allowance for future upgrading; (6) services; (7) training and technical assistance; (8) availability; (9) delivery speed and lead time; (10) overall company reputation; and (11) brand image for this product.

The above idea is clearly captured by the following multi-attribute-attitude-model like operational formula (Fishbein and Ajzen 1975),

$$PPEB = (\sum_{i=1}^{n} PPEB_i)/n = (\sum_{i=1}^{n} PERF_i * PIMP_i)/n$$

Where n (ranging from 1 to 11) is the number of attributes along which benefits are delivered,
PPEB is perceived purchase episode benefits of the offering,
$PPEB_i$ is the perceived episode benefit on attribute i.
$PERF_i$ is the customer's assessment of the desirability of the perceived product performance on attribute i,
$PIMP_i$ is the customer assigned importance weight of attribute i,

In developing measures for the first component, this study followed the *additive difference* formulation by Spreng, MacKenzie, and Olshavsky (1996). Perceived benefit in one particular attribute is based on a comparison between "what is to be received" and "what is desired" in that aspect. The first component was construed to overcome the problems associated with the use of difference scores (Spreng, MacKenzie, and Olshavsky 1996; Brown, Churchill, and Peter 1993). One difference between the measure designed in this study and those of Spreng, MacKenzie, and Olshavsky (1996) is that one component, instead of two, is used here. A sample

item is: “Before making the decision, how desirable were the product attributes of this supplier’s offer, as compared to your firm’s specific purchasing needs?” (1= Very undesirable; 5= Very desirable). While in Spreng, MacKenzie, and Olshavsky (1996), two components – the perceived difference between “what is to be received” and “what is needed” and the desirability of this difference – were used and multiplied to measure a similar construct. The author thought that one component would be sufficient to capture what was measured by the former study.

Importance weights of the eleven attributes were measured by a Likert scale using the following statement: “Please indicate the relative importance of the following criteria in relation to your team’s decision on this particular purchase (1=not important at all; 5=very important).” (cf. Hughes 1971, and Wilkie and Pessemier 1973 for excellent reviews of this research).

6.4.2 Perceived Relationship Benefits

Relationship benefits is defined as the benefits perceived by the customer that may or may not be important for the focal transaction episode per se, but become important if a long-term relationship is considered. This paper operationally defines relationship benefits as encompassing two dimensions: stability of supply and interpersonal goodwill. No previous studies were found with measures of similar constructs, so the author developed a set of six reflective indicators for relationship benefits. A sample indicator of the supply stability dimension is: “Buying from this supplier would guarantee us a stable supply from this firm in the future.” (There were three items altogether (1= strongly disagree; 5 = strongly agree)). A sample indicator of the interpersonal goodwill dimension is: “Over the years, we had established a very good personal relationship with the representatives of this supplier.” (There were three items altogether (1= strongly disagree; 5 = strongly agree)).

6.4.3 Perceived Purchase Episode Costs

Perceived costs is defined in this study as the customer’s perceived disutility in the costs incurred in *getting* and *using* the product to achieve purchase goals. *Perceived Purchase Episode Costs* are those costs that only or primarily pertain to the focal transaction episode with little implication for future transactions. It is principally composed of purchase costs (i.e., the unit price multiplied by the purchase quantity), transportation costs, installation costs, operating costs,

maintenance costs, and future replacement costs (cf. Best 1997; Cardozo 1980; Monczka and Trecha 1988).

In a similar way as in drafting measures for perceived benefits, the above composite measure of perceived purchase episode costs can be operationalized by the following formula:

$$PPEC = (\sum_{i=1}^{n} PPEC_i)/n$$

Where n (ranging from 1 to 6) is the number of cost categories that pertain to the purchase decision,
PPEC is perceived sacrifice of the offering,
$PPEC_i$ is the buyer's assessment of the acceptability of the offering in cost category i.

A sample item is: "At the time of decision-making, how did your purchase team rate this supplier's offering in terms of each of the following cost aspects? In other words, how did this supplier's offer score on these aspects?" (1= Very unacceptable; 5= Very acceptable). The specific cost categories surveyed include purchase price, transportation cost, installation cost, operating cost, future maintenance cost, and replacement cost. An additional option was included to capture the applicability of each cost category in the particular decision task chosen by the respondent.

6.4.4 Perceived Relationship Costs

Perceived Relationship Costs are the costs that may or may not be important for the focal transaction episode per se, but become important if a long-term relationship is considered. It is conceptually similar to the notion of transaction costs used by Williamson (1985). In the context of organizational purchasing, relationship costs faced by a buyer may include the costs of initiating (e.g., credit checking and negotiating), managing (e.g., monitoring and disputing), and terminating an exchange.

Perceived relationship costs was measured by a set of reflective indicators capturing the purchasing team's judgment of the acceptability of the offering with respect to several costs. Four cost categories were measured including the time and expenses spent in haggling with this supplier on contract terms, the time spent on checking the supplier's capability and credit, the cost spent on monitoring the supplier's performance, and possible cost of solving future disputes with this supplier. A sample item is: "At the time of decision-making, how did your purchase

team rate this supplier's offering in terms of each of the following cost aspects? In other words, how did this supplier's offer score on these aspects?" (1= Very unacceptable; 5 = Very acceptable). An additional option was included to capture the applicability of each cost category in the particular decision task chosen by the respondent.

6.4.5 Decision-Making Uncertainty

Decision-making uncertainty refers to the customer's perceptual state before choice and purchase that the outcomes (e.g., in terms of performance and cost levels) of a purchase are difficult to predict. In an organizational buying context, there are several well-documented factors affecting decision-making uncertainty. They include: product-related factors (e.g., the tacitness of product attributes), decision maker-related factors (e.g., customer knowledge), environments (e.g., external environmental conditions), and relationship factors (e.g., the behavioral propensities of exchange partners).

Following the studies by Duncan (1972), Tosi, Aldag, and Storey (1973), Achrol and Stern (1988), Morgan and Hunt (1994), and Heide and Weiss (1995), this study measures the overall assessment uncertainty surrounding a purchase decision with nine 5-point Likert style items. These items tap three dimensions of decision-making uncertainty: the organizational buyer's information sufficiency, ability to make judgment about the outcome of the focal purchase decision, and the confidence in its final decision. One sample item is: "We had limited amount of information about the likely outcomes of buying from this supplier" (1= strongly disagree; 5 = strongly agree).

6.4.6 Relationship Quality

Relationship quality is conceptualized as consisting of three dimensions: mutual trust, mutual commitment, and interdependence. Mutual Trust is defined trust as two firms' reciprocal belief that its exchange partner has the proven ability (i.e., competence) and consistency to provide quality product and services, and the intention (i.e., benevolence) to care about the buyer's best interests (Ganesan 1994; Morgan and Hunt 1994). Competence is the degree to which partners perceive each other as having the skills, abilities, and knowledge necessary for effective task performance (Gabarro 1987; Smith and Barclay 1997; Shamdasani and Sheth 1995). Consistency is the extent to which the behavior and performance of the supplier is

predictable throughout the process of procurement and use of the product (Doney and Cannon 1997). Benevolence is the extent to which the purchaser believes the supplier has intentions and motives beneficial to the purchaser's best interests (Ganesan 1994).

The instrument of mutual trust is based on the use of three reflective indicators based on four initial questions characterizing the symmetry dimension and the level of bilateral trust. Each question asks the extent to which the respondent agrees to an ensuing statement. The question statement goes like this: "This section contains questions about the overall state of your firm's or organization's relationship with this supplier at the time of decision-making. Please indicate the degree to which you agree that the following statements represent your team's judgments" (1 = strongly disagree; 5 = strongly agree). The four specific questions are (1) this supplier and we are mutually trusting of each other; (2) relatively speaking, this supplier trusts us more than we trust them; (3) relatively speaking, we trust this supplier more than they trust us; and (4) neither this supplier nor we trust each other. This measure was borrowed from Buchanan (1992), who measured the interdependence structure with four similar statements. The four statements are exclusive of each other, but, when combined, capture the totality of the mutual trust scenarios.

Three reflective indicators obtain on the basis of the four questions. The first two indicators directly comprise of the first question and the fourth question (in reversed order, or 6 - Item 4), respectively. The third indicator is based on the joint results of statements 2, 3, and 4, and is obtained by using the following formula: 6 - Maximum (Item 2, Item 3, Item 4). This formula was used because the level of mutual trust will likely be low if either of the statements 2, 3, and 4 is true. Similarly, mutual trust will likely be high if neither of these three statements is true, since the four statements are exclusive of each other and yet capture the totality of the mutual trust scenarios when used jointly.

Mutual Commitment

Mutual commitment is defined as the extent to which both firms have an enduring desire to maintain a valued relationship (Moorman, Zaltman, and Deshpande 1992). This construct has two dimensions: attitudinal commitment (Anderson and Weitz 1992; Dwyer, Schurr, and Oh 1987) and behavioral commitment (Mowday, Steers, and Porter 1982). Attitudinal commitment refers to a long-term orientation to a relationship – a willingness to make short-term sacrifices to

realize long-term benefits from the relationship commitment (Morgan and Hunt 1994). Behavioral commitment refers to the tendency to engage in specific actions to invest resources and to remain within a relationship.

As in the case of mutual trust, this study designed an overall measure of mutual commitment, based on four questions characterizing four combinations of the symmetry dimension and the level of bilateral commitment (cf. Buchanan 1992). Each item asks the extent to which the respondent agrees to an ensuing statement. One sample statement is: "This supplier and we are mutually committed toward each other (1 = strongly disagree; 5 = strongly agree). The four statements are exclusive of each other, but, when combined, capture the totality of the mutual commitment scenarios.

Three reflective indicators of relationship commitment obtain on the basis of the above four questions. The first two indicators directly comprise the first question and the fourth question (in reversed order, or 6 - Item 4), respectively. The third indicator is obtained by the following formula: 6 - Maximum (Item 2, Item 3, Item 4). Again, this formula was used because the level of mutual commitment will likely be low if either of statements 2, 3, and 4 is true. Similarly, mutual commitment will likely be high if neither of the these three statements is true, since the four statements are exclusive of each other; yet they capture the totality of the mutual commitment scenarios when used together.

Interdependence

Interdependence in a relationship is the extent to which each party's behaviors, actions, or goals are contingent on the other party's behaviors, actions, or goals (Tedeschi, Schlenker, and Bonoma 1973). Following Buchanan (1992) and Lusch and Brown (1996), this study designed three reflective indicators of interdependence using the following three questions: (1) "we are equally dependent on each other;" (2) "it is difficult for both the supplier and us to replace each other;" and (3) "we are highly dependent on each other."

6.5 Treatment of Missing Values

It is common in survey research to have missing data for certain respondents and certain questions, so some remedial methods are necessary to treat the missing values. In this study, certain missing values occurred, by survey design, in the scales of perceived purchase episode

costs (PPEC) and perceived relationship costs (PRC). Some cost aspects were not applicable in certain purchase tasks and the respondents were purposefully asked to acknowledge this. This design was deemed as appropriate because the respondents would otherwise be forced into making non-applicable judgments about their purchase decisions; this would either reduce response reliability or lead to a lower response rate.

Pairwise and listwise deletions of missing values are common ways to deal with this problem. But both have been criticized for their dubious assumption that the data are missing randomly (Cohen & Cohen 1983; Little & Rubin 1987; Tabachnick & Fidell 1983). In addition, list-wise deletion often results in omitting a substantial portion of usable data and, as a result, reduces statistical power considerably (Cohen & Cohen 1983). Following Becker, Randall, & Riegel (1995), this study used the series means method to substitute all missing values of only one scale measured with a set of reflective indicators, namely, PRC. On the other hand, the missing values did not a problem for the calculation PPEC, which was designed as the mean of a set of formative indicators. In all 188 cases, at least two cost categories were applicable for PPEC, so those non-applicable, missing cost categories were simply omitted in calculating PPEC. Also, occasional missing values of the dependent variable and other variables were not replaced.

While other techniques exist, the series means method is simple and least biased for the present study (Cohen & Cohen 1983). In this method, a case with a missing value on a particular variable is assigned the mean of all the existing cases for the same variable. This method was deemed appropriate because assigning an extremely high or low score to a cost aspect would indicate that the supplier is extremely poor or extremely good in this dimension – something we do not know without a clear response from the respondent.

6.6 Construct Validation

Reliability of a measuring instrument is the extent to which it yields consistent results over repeated observations (Eagly and Chaiken 1993). Cronbach's (1951) *alpha* (α) is the current standard statistic for assessing the reliability of a scale composed of multiple items, especially for Likert and semantic scales. Because the alpha coefficient considers the degree to which items on a scale intercorrelate with one another, it is often referred to as a measure of

internal consistency. Therefore, to test the reliability or internal consistency of all the scales that are based on reflective indicators, Cronbach's *alpha* was computed for each first-order factor and for each scale comprising more one dimension. The results are reported in Table 2 and Table 3, respectively. On all occasions, Cronbach's *alpha* was close or higher than the suggested minimum acceptable level for early-stage studies, 0.70 (Nunnally 1978).

Confirmatory factor analysis is another analytical method frequently used to test the unidimensionality and reliability of scales consisting of several subdimensions or factors consisting of several reflective indicators (Bentler 1989). Sample size permitting, a whole measurement model would be desirable for simultaneous testing of both convergent and discriminant validities (Gerbing and Anderson 1988) of all factors or constructs. In this study, customer perceived value (CPV), perceived relationship costs (PRC) were measured as a unidimentional scale, each consisting of four reflective indicators. On the other hand, decision-making uncertainty (DMU), perceived relationship benefits (PRB), and relationship quality (RQ) were each measured with a scale containing two or more dimensions. For instance, relationship quality was measured with a nine-item scale covering three dimensions: mutual trust, mutual commitment, and interdependence. For these latter constructs, there was a need to test both the unidimensionality of each dimension (i.e., the first order factors such as supply stability in perceived relationship benefits) and the unidimensionality of the overall scale.

Two specific steps were designed in the present study to conduct the confirmatory factor analysis. The first step allowed for a test of the convergent and discriminant validities on the first-order factor level while the second step examined the convergent and discriminant validities at the construct level (cf. Anderson and Gerbing 1988). Specifically, the author first tested an overall measurement model consisting of all first-order factors involved in the study. For constructs measured with only one dimension, the entire construct scale was included in the analysis, while for constructs with two or more dimensions, only first-order dimension scales were included. Second, on the basis of the above test, an overall construct-level measurement model was estimated which only included construct-level scales. In this measurement model, constructs with second-order factor structures (namely, DMU, PRB, and RQ) were measured with their dimension composites. The second model also kept all the constructs that were based

on a single first-order factor design (namely CPV, PRC, PPEC, and PPEB). For single dimensional constructs, a refined set of reflective indicators was included, based on the results of the factor-level confirmatory factor analysis.

The above design was based on two considerations. First, the sample size in this study – 188 – was relatively small for the fitting of a comprehensive model involving too many parameters (Anderson and Gerbing 1988; Dahlstrom, McNeilly, and Speh 1996). Second, while some studies did perform second-order factor analyses (Weeks 1980; Noordewier, John, and Nevin 1990), little guidance was available from published studies on testing more than one second-order factor analysis simultaneously in one measurement model, which also includes several first-order factors (Bollen 1989; Anderson and Gerbing 1988). Note that this study involved three second-order constructs, namely, PRB, DMU, and RQ, and four first-order constructs, namely CPV, PRC, PPEB, and PPEC.

The first-order factors involved in the factor-level measurement model were:

- Customer perceived value (CPV),
- perceived relationship costs (PRC),
- supply stability (STAB, i.e., the first dimension of PRB),
- interpersonal goodwill (GW, i.e., the second dimension of PRB),
- information sufficiency (INFO, i.e., the first dimension of DMU),
- ability to make judgments (JUDG, i.e., the second dimension of DMU),
- confidence in judgments (CONF, i.e., the second dimension of DMU),
- mutual trust (MST, i.e., the first dimension of RQ),
- mutual commitment (MCT, i.e., the second dimension of RQ),
- and interdependence (MDEP, i.e., the second dimension of RQ).

Also included in the above measurement model were two formative composites for perceived purchase episode benefits (PPEB) and perceived purchase episode (PPEC), respectively. These two composites were each obtained by calculating the mean of a set of causal indicators. While the literature suggests several approaches to error estimation for single indicators (Gerbing and Anderson 1988; Joreskog and Sorbom 1993; Crosby, Evans, and Cowles 1990), it would be too simplistic to assume zero measurement errors for single indicators (Fornell 1983). In the study, a conservative level of .15 was used to fix the error variances of

PPEB and PPEC, assuming measure reliabilities at the .85 level (Joreskog and Sorbom 1993). The factor loadings (i.e., the λ's) were fixed at 1 in both cases.

The above factor-level measurement model was fit with LISREL 8.20, developed by Joreskog and Sorbom (1998), and the results were listed in Table 2. Several raw indicators were found to be problematic (e.g., potentially loading on more than one factor) and subsequently were excluded from further tests. The fit indices for the resultant model are as follows: the χ^2 is 287.06 with 260 degrees of freedom at $p = .12$, the Root Mean Square Error of Approximation (RMSEA) is .024, the Goodness of Fit Index (GFI) is .90, the Adjusted Goodness of Fit Index (AGFI) is .90, the Normed Fit Index (NFI) is .88, the Non-Normed Fit Index (NFI) is .97, the Root Mean Square Residual (RMR) is .05, the Comparative Fit Index (CFI) is .98, and the Incremental Fit Index (IFI) is .98. Collectively, these indices suggest a satisfactory fit between the model and the data.

Within the measurement model, all path coefficients from latent constructs to their corresponding indicators were high (ranging from .53 to 1 for standardized coefficients) and significant at $p<.05$ (i.e., $t > 2.0$), evidencing convergent validity on the first-order factor level (cf. Anderson and Gerbing 1988). This paper also assessed the discriminant validity among the first-order factors by examining inter-factor correlations. In all cases, the correlation coefficients between two factors were significantly different from 1 (the correlation coefficients plus two times of standard errors were smaller than 1), providing evidence of discriminant validity (Anderson and Gerbing 1988). Further information on inter-factor correlation coefficients, their standrad deviations, and t-values was provided in Table 3, while more specific information on the correlations, means, and standard deviations of all raw indicators was given in Table 4.

The next overall measurement model included all second-order factor scales, namely DMU, PRB, and RQ, and scales consisting of single factors, namely CPV, PRC, PPEB, and PPEC. This model would allow for a test of the convergent and discriminant validities on the construct level. In this model, relationship quality (RQ) was measured with three composite indicators: MST, MCT, and MDEP, each being formed by summing up its three first-order indicators, respectively. For example, MST was obtained by summing up the scores of MST1 and MST2.

The fit indices for the resultant construct-level model were as follows: the χ^2 is 113.57 with 83 degrees of freedom at $p = .015$, RMSEA = .044, GFI = .93, AGFI = .88, NFI = .90, NFI = .95, Standardized RMR = .06, CFI = .97, and IFI = .97. Jointly, these indices suggest a good fit between the model and the data. On the parameter level, all path coefficients from latent constructs to their corresponding indicators or composites were significant at $p<.05$ (i.e., $t > 2.0$), partially evidencing convergent validity of the measures (cf. Anderson and Gerbing 1988). However, further scrutiny of factor loadings revealed a problem with the specification of construct RQ. The factor loading from MDEP on RQ was only .44, as compared to .86 for MST and 1.00 for MCT, indicating low convergent validity among these three dimensions. Moreover, the squared multiple correlation (R^2) for MDEP was only .06, while for all other factors R^2 was higher than .27. This was a sign of low reliability of MDEP. Another problem associated with RQ is the high correlation between PRB and RQ were .996, showing that discriminant validity between these two constructs was not established.

All of these validity problems with the relationship quality construct (RQ) were probably caused by the reflective formulation of the RQ factor structure, whereby RQ was measured with three reflective indicators tapping its three dimensions – MST, MCT, and MDEP. In the marketing literature, some previous studies have measured relationship quality with reflective indicators (e.g., Dwyer and Oh 1987; Kumar et al. 1995). In each case, trust and commitment (or some of its components) were included as dimensions of RQ. Yet, the current study differs from the previous ones in that it specifically included interdependence as the third dimension of RQ.

Recall that mutual trust, mutual commitment, and interdependence represent three *different* dimensions of relationship quality. Trust is a *belief* about each other in terms of ability, consistence, and benevolence; commitment is an *intention to act* with regard to each other; while interdependence s the *condition or outcome* of mutual action. Although these three dimensions tend to mutually reinforce each other in the long run, MDEP may not always coexist with MST and MCT at a given time. As such, it might be more appropriate to conceptualize MST, MCT, and MDEP as causal or formative indicators of RQ.

According to Bollen and Lennox (1991), with effect (reflective) indicators of a unidimensional construct, equally reliable indicators are essentially interchangeable. This is not

exactly the case in RQ factor structure specification, as illustrated above. Bollen and Lennox (1991) also states that if many facets mean many dimensions, then each dimension should be treated separately with its own set of effect indicators, and each dimension, as a causal indicator, is important to include. The current study did measure each dimension with multiple reflective indicators, but the author believes that each dimension is important to include.

With regard to formative measurement design, Bollen and Lennox (1991) further suggests that it is important to include all possible dimensions of a construct. In this paper, the tri-dimensional views of relationship by Heide and John (1990) and Hakansson and Snehota (1995) provide support to the author's conceptualization of RQ as consisting of three dimensions – MST, MCT, and MDEP (please see pp. 20 - 21 of the dissertation). It has been the author's position that mutual trust and mutual commitment, together with interdependence, are sufficient components of relationship quality.

For the aforementioned reasons, the author modified the construct-level measurement model with a formative design for RQ, where MST, MCT, and MDEP were specified as three formative indicators of RQ[3]. The instructions set by Bollen (1989, p. 312) were carefully followed in specifying formative indicators in the confirmatory factor analysis model. Specifically, the instructions were (1) to specify each factor loading as one and (2) to set the error variances of the causal indicators to zero.

The revised construct-level model was re-estimated with LISREL and the results were given in Table 5. The fit indices for the resultant model were as follows: the χ^2 is 156.75 with 87 degrees of freedom at $p < .01$, RMSEA = .07, GFI = .91, AGFI = .85, NFI = .86, NFI = .90, Standardized RMR = .08, CFI = .92, and IFI = .93. Jointly these indices showed adequate fit between the model and data.

[3] The author also tried to solve the low discriminant validity problem (between PRB and RQ) without changing the reflective design, in order to keep consistence with previous studies (e.g., Dwyer and Oh 1987). Additional methods (such as exploratory factor analysis) were used to further purify the raw indicators of MST, MCT, and MDEP. However, the discriminant validity problem remained and it was not solved until mutual trust was deleted as a dimension of relationship quality. This deletion would only further deviate this paper from previous studies. To the extent that a formative design is substantively justifiable and methodologically viable, it was selected as the final solution. Please see Appendix B for further details of these alternative analyses.

On the parameter level, all path coefficients from latent constructs to their corresponding indicators were high (ranging from .51 to .99 for standardized coefficients) and all significant at $p < .05$ (i.e., $t > 2.0$), evidencing convergent validity among all the constructs (cf. Anderson and Gerbing 1988). The discriminant validities among the constructs were assessed by examining inter-factor correlations (the Φ Matrix). In all cases, the correlation coefficients between two factors were significantly different from 1 (the correlation coefficients plus two times of standard errors were smaller than 1), providing evidence of discriminant validity (Anderson and Gerbing 1988). In particular, the correlation between PRB and RQ in the revised model was .575 which is significantly lower than 1. Hence, the problem associated with the low discriminant validity between PRB and RQ in the original reflective measurement model has been solved with the re-specification of RQ as consisting of three formative indicators. In the meantime, all the satisfactory signs of construct validities in the reflective model remained in the formative model. Further information on inter-construct correlation coefficients, their standard deviations, and t-values was provided in Table 6.

Collectively, the above procedures ensured the reliability, convergent validity, and discriminant validity of all the construct scales. Some additional steps were taken to enhance several other types of construct validity (Eagly and Chaiken 1993). Face validity measures the logic and reasonableness related to constructs. This paper tested the face validity of the measures by consulting a selected group of experienced researchers knowledgeable of the subject area. All the instruments were also subjected to a pretest with a sample of 20 organizational purchasing managers. This was to ensure that these measures have content validity, i.e., they are representative of sample characteristics (cf. Kerlinger 1986). Several changes were made to accommodate the suggestions from the participants in these tests.

TABLE 2
Factor-Level Confirmatory Factor Analysis[a]

Indicator	Unstandardized Loading[b]	Standardized Loading[b]	Cronbach's *Alpha*
Customer Perceived Value (CPV)			.91
VAL1	.87	.82	
VAL2[c]			
VAL3	1.00[d]	.94	
VAL4	.94	.88	
Perceived Relationship Benefits (PRB)			
Supply Stability (STAB)			.67
STAB1	1.00[c]	.71	
STAB2	.74	.53	
STAB3	.89	.64	
Interpersonal Goodwill (GW)			.83
GW1[c]			
GW2	.85	.78	
GW3	1.00[d]	.92	
Relationship Quality (RQ)			
Mutual Trust (MST)			.71
MST1	1.00[d]	.85	
MST2	.75	.64	
MST3[c]			
Mutual Commitment (MCT)			.86
MCT1	1.00[d]	.97	
MCT2	.82	.79	
MCT3[c]			
Interdependence (MDEP)			.75
MDEP1	.84	.69	
MDEP2	.73	.60	
MDEP3	1.00[d]	.83	
Perceived Relationship Costs (PRC)			.76
PRC1	.73	.59	
PRC2[c]			
PRC3	1.00[d]	.81	
PRC4	1.00	.81	
Decision-Making Uncertainty (DMU)			
Information (INFO)			.72
INFO1	.84	.63	
INFO2	1.00[c]	.75	
INFO3	.72	.54	
Judgment (JUDG)			.83
JUDG1	.93	.81	
JUDG2	1.00[d]	.88	
JUDG3[c]			
Confidence (CONF)			.83
CONF1[c]			
CONF2	1.00[d]	.91	
CONF3	.85	.77	
Perceived Purchase Episode Benefits (PPEB)			
PPEB	1.00[d]	1.00	
Perceived Purchase Episode Costs (PPEC)			
PPEC	1.00[d+]	1.00	

Measurement Model Fit Indices:

χ^2 = 287.06	df = 260	p = .12	RMSEA = .02	GFI = .90	AGFI = .85
NFI = .88	NNFI = .97	CFI = .98	IFI = 98	Standardized RMR = .07	

a: Please see Appendix A for more information on the scales.

b: All factor loadings are significant at p = .05 (i.e., t > 2.0 **or t < -2.0**).

c: This item was deleted from the scale for further analysis.

d: This factor loading was fixed at 1.00.

TABLE 3
Φ Matrix for Factor-Level CFA – with Standard Deviations and t-Values

	INFO	JUDG	CONF	CPV	STAB	GW	MST	MCT	MDEP	PPEB	PPEC	PRC
INFO	1.000											
JUDG	0.861[a] (0.050)[b] 17.319[c]	1.000										
CONF	0.536 (0.076) 7.017	0.530 (0.068) 7.841	1.000									
CPV	-0.084 (0.090) -0.931	-0.189 (0.080) -2.362	-0.193 (0.079) -2.441	1.000								
STAB	-0.136 (0.105) -1.293	-0.197 (0.094) -2.088	-0.013 (0.096) -0.136	0.443 (0.079) 5.608	1.000							
GW	-0.457 (0.080) -5.693	-0.403 (0.074) -5.407	-0.287 (0.079) -3.630	0.302 (0.075) 4.031	0.490 (0.080) 6.120	1.000						
MST	-0.319 (0.093) -3.420	-0.384 (0.081) -4.713	-0.251 (0.086) -2.919	0.242 (0.082) 2.933	0.633 (0.078) 8.091	0.639 (0.066) 9.747	1.000					
MCT	-0.301 (0.084) -3.576	-0.387 (0.072) -5.366	-0.225 (0.078) -2.880	0.333 (0.071) 4.709	0.582 (0.071) 8.231	0.499 (0.065) 7.676	0.586 (0.066) 8.874	1.000				
MDEP	0.145 (0.097) 1.492	0.082 (0.090) 0.911	0.036 (0.089) 0.409	0.179 (0.083) 2.142	0.379 (0.091) 4.156	0.212 (0.085) 2.481	0.232 (0.091) 2.562	0.339 (0.078) 4.364	1.000			
PPEB	-0.240 (0.083) -2.878	-0.434 (0.066) -6.560	-0.293 (0.073) -4.021	0.137 (0.074) 1.837	0.341 (0.081) 4.217	0.291 (0.073) 4.012	0.372 (0.074) 5.014	0.351 (0.067) 5.240	0.058 (0.082) 0.703	1.000		
PPEC	0.147 (0.086) 1.710	0.083 (0.079) 1.044	0.208 (0.076) 2.741	-0.331 (0.068) -4.889	-0.399 (0.078) -5.107	-0.180 (0.076) -2.363	-0.219 (0.080) -2.732	-0.248 (0.071) -3.475	-0.102 (0.082) -1.249	-0.391 (0.062) -6.312	1.000	
PRC	0.283 (0.092) 3.093	0.361 (0.079) 4.556	0.362 (0.079) 4.603	-0.313 (0.077) -4.068	-0.484 (0.083) -5.819	-0.394 (0.076) -5.163	-0.525 (0.075) -6.991	-0.504 (0.067) -7.560	-0.079 (0.091) -0.864	-0.415 (0.069) -6.043	0.411 (0.069) 5.965	1.000

a: Inter-factor correlation coefficients.
b: Numbers in parentheses are standard deviations.
c: Numbers below standard deviations are t-values.

TABLE 4
Correlations, Means, and Standard Deviations of Raw Indicators

VAL1	1.00																																				
VAL2	.85	1.00																																			
VAL3	.77	.87	1.00																																		
VAL4	.73	.82	.83	1.00																																	
STAB1	.26	.31	.31	.29	1.00																																
STAB2	.13	.16	.19	.12	.45	1.00																															
STAB3	.17	.23	.31	.26	.39	.35	1.00																														
GW1	.14	.15	.19	.18	.18	.06	.38	1.00																													
GW2	.17	.20	.23	.21	.26	.15	.41	.80	1.00																												
GW3	.20	.21	.26	.25	.27	.12	.39	.69	.71	1.00																											
MST1	.10	.17	.19	.15	.44	.17	.38	.45	.43	.50	1.00																										
MST2	.18	.17	.22	.19	.34	.04	.21	.21	.28	.38	.55	1.00																									
MST3	-.10	-.08	-.08	-.08	.15	.00	.01	.09	.11	.15	.29	.33	1.00																								
MCT1	.24	.27	.33	.27	.36	.27	.44	.39	.38	.45	.48	.34	.12	1.00																							
MCT2	.16	.14	.20	.17	.32	.15	.34	.24	.28	.31	.43	.39	.16	.76	1.00																						
MCT3	.09	.04	.08	.02	.23	.12	.12	.06	.11	.13	.27	.28	.46	.37	.52	1.00																					
MDEP1	.10	.08	.08	.05	.17	.14	.14	.13	.14	.17	.19	.08	.01	.24	.24	.25	1.00																				
MDEP2	.12	.17	.18	.09	.06	.16	.22	.05	.08	.04	.04	-.04	-.05	.17	.10	-.01	.42	1.00																			
MDEP3	.11	.12	.14	.13	.20	.18	.26	.12	.19	.15	.21	.06	-.04	.27	.24	.11	.57	.50	1.00																		
PRC1	-.06	-.13	-.14	-.20	-.33	-.16	-.21	-.25	-.27	-.29	-.38	-.38	-.19	-.32	-.30	-.11	-.03	.03	-.11	1.00																	
PRC2	-.13	-.07	-.11	-.14	-.23	-.05	-.24	-.19	-.15	-.27	-.30	-.21	-.14	-.35	-.33	-.13	-.05	.06	-.09	.32	1.00																
PRC3	-.24	-.21	-.24	-.26	-.28	-.08	-.24	-.23	-.20	-.26	-.32	-.34	-.14	-.41	-.36	-.16	-.09	.07	-.05	.43	.50	1.00															
PRC4	-.20	-.25	-.23	-.24	-.29	-.12	-.31	-.22	-.28	-.29	-.30	-.32	-.14	-.37	-.31	-.13	-.03	.02	-.08	.48	.34	.67	1.00														
INFO1	-.05	-.05	.01	.01	-.06	.06	-.12	-.33	-.20	-.26	-.15	-.11	-.13	-.19	-.13	-.11	.12	.10	.10	.07	.25	.17	.06	1.00													
INFO2	-.12	-.08	-.10	-.12	-.08	.06	-.14	-.44	-.29	-.35	-.22	-.26	-.15	-.24	-.15	-.07	.02	.05	.06	.23	.30	.20	.16	.45	1.00												
INFO3	.01	.03	.02	-.01	-.05	.01	-.06	-.25	-.16	-.16	-.04	-.15	-.01	-.11	-.10	-.01	.09	.09	.09	.03	.17	.11	.12	.40	.39	1.00											
JUDG1	-.10	-.10	-.10	-.16	-.14	.04	-.18	-.34	-.31	-.25	-.25	-.19	-.05	-.29	-.24	-.12	.06	.08	.08	.21	.26	.25	.23	.43	.51	.38	1.00										
JUDG2	-.13	-.13	-.18	-.16	-.12	.12	-.24	-.39	-.30	-.34	-.28	-.28	-.16	-.34	-.27	-.12	.03	.06	.03	.22	.35	.26	.23	.47	.61	.35	.71	1.00									
JUDG3	-.09	-.06	-.14	-.10	-.10	.14	-.19	-.38	-.32	-.40	-.30	-.25	-.17	-.31	-.24	-.15	-.07	.06	-.04	.28	.35	.29	.27	.26	.42	.25	.45	.54	1.00							
CONF1	-.10	-.18	-.24	-.25	-.16	-.02	-.10	-.28	-.17	-.21	-.31	-.32	-.15	-.22	-.16	-.03	.00	.10	.03	.29	.25	.25	.22	.24	.51	.37	.34	.52	.44	1.00						
CONF2	-.07	-.07	-.18	-.15	-.03	.15	-.04	-.20	-.14	-.24	-.17	-.23	-.14	-.19	-.15	-.12	-.06	.10	.04	.12	.33	.28	.25	.31	.33	.32	.36	.44	.68	.40	1.00					
CONF3	-.03	-.03	-.19	-.15	-.07	.04	-.07	-.21	-.13	-.27	-.13	-.23	-.11	-.18	-.15	-.13	-.02	.09	.01	.19	.32	.30	.23	.28	.28	.26	.30	.39	.60	.38	.70	1.00				
PPEB	.09	.16	.14	.11	.25	.12	.23	.26	.26	.25	.31	.25	.14	.33	.25	.07	.02	-.02	.05	-.26	-.21	-.36	-.28	-.29	-.14	-.05	-.39	-.37	-.30	-.19	-.30	-.23	1.00			
PPEC	-.31	-.40	-.31	-.32	-.36	-.19	-.16	-.05	-.08	-.10	-.17	-.08	-.02	-.19	-.14	-.05	-.02	.05	-.09	.37	.18	.30	.31	.13	.05	-.02	.06	.05	.10	.05	.16	.14	-.38	1.00	
Mean	3.74	3.77	3.84	3.79	3.59	3.10	3.93	3.56	3.47	3.36	3.84	4.26	2.89	3.61	3.93	2.78	3.01	2.65	2.54	2.44	2.03	2.23	2.40	1.68	2.01	2.42	2.22	2.12	1.74	2.05	1.68	1.49	17.24	2.04	
STD.	1.20	1.31	1.26	1.24	1.05	1.08	.98	1.25	1.32	1.14	1.01	1.02	.96	1.09	1.22	1.15	1.14	1.13	1.14	1.03	.72	.88	.95	1.05	1.14	1.31	1.20	1.24	.85	1.21	.85	.84	4.10	.82	

TABLE 5
Construct-Level Confirmatory Factor Analysis

Indicator	Unstandardized Loadings[a]	Standardized Loadings[a]	Cronbach's *Alpha*
Customer Perceived Value (CPV)			**.91**
VAL1	**.88**	**.83**	
VAL3	**1.00**[b]	**.93**	
VAL4	**.95**	**.89**	
Perceived Relationship Benefits (PRB)			**.73**
Supply Stability (STAB)	**1.00**[b]	**.61**	
Interpersonal Goodwill (GW)	**1.00**	**.61**	
Relationship Quality (RQ)			**.75**
Mutual Trust (MST)	**1.00**[b]	**.99**	
Mutual Commitment (MCT)	**1.00**[b]	**.99**	
Interdependence (MDEP)	**1.00**[b]	**.99**	
Perceived Relationship Costs (PRC)			**.76**
PRC1	**.73**	**.60**	
PRC3	**.98**	**.80**	
PRC4	**1.00**[b]	**.82**	
Decision-Making Uncertainty (DMU)			**.73**
Information (INFO)	**.75**	**.69**	
Judgment (JUDG)	**1.00**[b]	**.91**	
Confidence (CONF)	**.56**	**.51**	
Perceived Purchase Episode Benefits (PPEB)			
PPEB	**1.00**[b]	**.92**	
Perceived Purchase Episode Costs (PPEC)			
PPEC	**1.00**[b]	**.92**	

Measurement Model Fit Indices:

χ^2 = 156.75	**df = 87**	**p < .01**	**RMSEA = .07**
GFI = .91	**AGFI = .85**	**NFI = .86**	**NNFI = .90**
CFI = .92	**IFI = .93**	**Standardized RMR = .08**	

a: All factor loadings are significant at p = .05 (i.e., t > 2.0 or t < -2.0).
b: This factor loading was fixed at 1.00.

TABLE 6
Φ Matrix for Construct-Level CFA – with Standard Deviations and t-Values

	CPV	PRC	PPEB	PPEC	DMU	RQ	PRB
CPV	1.000						
PRC	-0.315 [a] (0.077)[b] -4.077[c]	1.000					
PPEB	0.142 (0.081) 1.749	-0.447 (0.074) -6.054	1.000				
PPEC	-0.377 (0.072) -5.225	0.446 (0.074) 6.035	-0.438 (0.072) -6.058	1.000			
DMU	-0.178 (0.080) -2.229	0.376 (0.078) 4.787	-0.461 (0.072) -6.415	0.090 (0.085) 1.061	1.000		
RQ	0.218 (0.052) 4.198	-0.320 (0.052) -6.181	0.223 (0.054) 4.118	-0.112 (0.057) -1.973	-0.181 (0.055) -3.267	1.000	
PRB	0.510 (0.090) 5.683	-0.604 (0.092) -6.561	0.478 (0.096) 4.981	-0.361 (0.101) -3.570	-0.424 (0.099) -4.287	0.575 (0.057) 10.116	1.000

a: Inter-construct correlation coefficients.
b: Numbers in parentheses are standard deviations.
c: Numbers below standard deviations are t-values.

CHAPTER 7: ANALYSIS

The conceptual model was analyzed with the software program of LISREL 8.20 (maximum likelihood estimation) developed by Joreskog and Sorbom (1998). This method allows for simultaneous testing of all hypothesized relationships and provides coefficients representing both direct effects and indirect effects. It also minimizes the impact of measurement errors on the estimation of model parameters. Additional methods such as regression and ANOVA were used to further test the two hypotheses on interaction effects – H8a and H8b. Specifically, three steps were taken to test the hypothesized relationships between relationship quality and customer perceived value in organizational purchasing. First, the overall conceptual model with all hypotheses and respective construct measures was specified as an overall latent structural model, and the LISREL program was used in its estimation. This step allowed for a simultaneous estimation of both direct and indirect effects in the model, and it controlled for measurement errors. Because hypotheses H8a and H8b involved interaction effects, Ping (1995)'s technique for estimating interaction effects using LISREL was adopted in dealing with that part of the model. Second, the right part of the model (H4 – H8b), with interaction effects, was further tested with regression analysis. After that, a pure structural model (containing only paths) was estimated using LISREL to confirm results of the all-around latent structural model and the regression analysis. Third, the two interaction effects (H8a and H8b) were further estimated with ANOVA.

The first step involved estimating the overall model with ten latent variables and their respective measures. These variables were relationship quality (RQ), perceived relationship benefits (PRB), decision-making uncertainty (DMU), perceived relationship costs (PRC), perceived purchase episode benefits (PPEB), perceived purchase episode costs (PPEC), perceived relationship costs (PRC), customer perceived value (CPV), and two interaction terms DMU*PPEB and DMU*PPEC.

In the model, PRB was measured with two composite indicators tapping two dimensions, supply stability (STAB) and interpersonal goodwill (GW). Similarly, DMU was measured with three composite indicators capturing information (INFO), judgment (JUDG), and confidence (CONF) dimensions. Both PRC and CPV were measured with their respective reflective

indicators, since these two variables were treated as unidimensional constructs. On the other hand, PPEB and PPEC were each measured with a composite measure, based on their respective sets of formative indicators. RQ was also measured with a composite which was formed by summing up its three dimensions: mutual trust (MST), mutual commitment (MCT), and interdependence (MDEP).

Besides all the structural equations hypothesized in the study, the path from DMU to CPV was also added as a main effect to the latent model. This was statistically necessary to properly analyze the interaction effects between DMU and PPEB and between DMU PPEC (Jaccard and Wan 1990; Cohen and Cohen 1983). Following the method suggested by Ping (1995), each of the two interaction terms, DMU*PPEB and DMU*PPEC, was measured with a single multiplicative product of the observed variables of its components (Kenny and Judd 1984; Cohen and Cohen 1983). For instance, the single indicator for DMU*PPEB was formed by multiplying the composite of DMU and the composite of PPEB, where the composite of DMU was obtained by calculating the mean of INFO, JUDG, and CONF. In creating the two interaction terms, the involved variables, DMU, PPEB, and PPEC were first mean-centered. The purpose of this step was to mitigate the potential problems caused by multicollinearity.

The parameter from DMU*PPEB to its single indicator and the error variance of the indicator were calculated using the method suggested in Ping (1995). Essentially, based on the previous works of Benny and Judd (1984), Hayduk (1987), and Anderson and Gerbing (1988), Ping (1995) suggests that the path coefficient from an interaction term to its indicator and the error variance of the indicator can be calculated from a measurement model excluding the interaction term. The involved variables should be mean-centered in both the measurement model and the latent structural model. The formulas are given in equations 4 and 5 on page 338 of Ping (1995). Following these suggestions, the author calculated the coefficient from DMU*PPEB to its indicator as 2.31, while the error variance of this indicator was 160.41. The two figures for DMU*PPEC were 2.31 and 6.32, respectively. In both the pure measurement model and the latent structural model, a conservative level of .15 was used to fix the error variances of PPEB, PPEC, and RQ, assuming measure reliabilities of these constructs at the .85

level (Joreskog and Sorbom 1993). The factor loadings (i.e., the λ's) for PPEB, PPEC, and RQ were, as usual, fixed at 1 in both models.

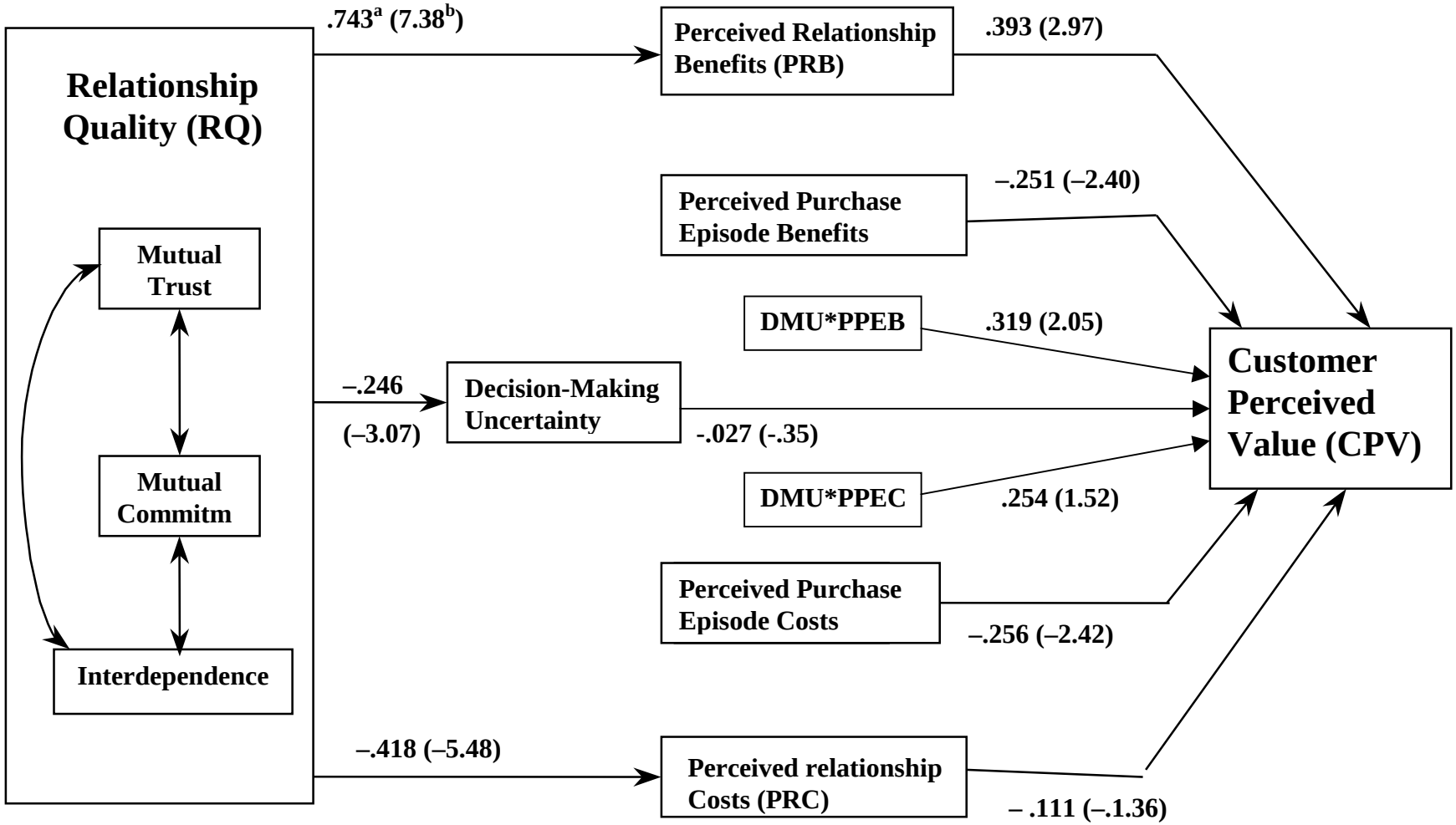
The LISREL test yielded acceptable fit indices for the model (the completely standardized results are provided in Figure 2): χ^2 = 187.76 (df = 87), $p < .01$, RMSEA = .08, GFI = .89, AGFI = .83, NFI = .84, NFI = .86, Standardized RMR = .10, CFI = .90, and IFI = .90. Collectively, these indices suggest satisfactory fit between the model and the data.

The path coefficients from RQ → PRB (H1, $\beta = .743$, $t = 7.38$), RQ → PRC (H2, $\beta = -.418$, $t = -5.48$), and RQ → DMU (H3, $\beta = -.246$, $t = -3.07$) have expected signs and are all significant at $p = .05$. As a result, it was concluded that this estimation provided support for H1, H2, and H3. Therefore, in an organizational buying context, relationship quality does have a positive impact on perceived relationship benefits (H1), a negative impact on perceived relationship costs (H2), and a negative impact on decision-making uncertainty (H3).

The path coefficients from PRB → CPV (H4, $\beta = .393$, $t = 2.97$), PPEC → CPV (H6, $\beta = -.254$, $t = -2.42$) have expected signs and are all significant at $p = .05$. Taken collectively, these results suggested that H4, H6 were supported by the data. Therefore, in an organizational buying context, customer perceived value is positively affected by relationship benefits but negatively affected by perceived purchase episode costs.

On the other hand, the proposed positive effect of perceived purchase episode benefits (PPEB) on perceived value (CPV) (H5, $\beta = -.182$, $t = -2.148$) was not supported. The path coefficient had the wrong sign and was significant. The path coefficient from PRC → CPV (H7, $\beta = -.111$, $t = -1.36$) has the expected sign but was not significant. So, like H7, H5 was not supported.

Both interaction terms were found to have the correct signs, which were different from the signs of the respective main effects DMU was supposed to moderate. The path coefficient of DMU*PPEC → CPV was positive and significant at $p < .1$ ($\beta = .254$, $t = 1.52$). Decomposing the interaction effects following the method reported in Jaccard, Turrisi, and Wan (1990) and Lusch and Brown (1996), the main effect of PPEC on CPV becomes smaller as DMU increases, partially supporting H8b (see Table 7). This result, although non-significant at $p < .05$, suggests



Model fit indices: χ^2 **= 187.76 (df = 87),** $p < .01$**, RMSEA = .08, GFI = .89, AGFI = .83, NFI = .84, NFI = .86, Standardized RMR = .10, CFI = .90, IFI = .90.**

a: Completely standardized path coefficients.

b: Numbers in parentheses are t-values

FIGURE2
A *LISREL* Testing of the Overall Latent Model on Relationship Quality and Customer Perceived Value

than a higher decision-making uncertainty (DMU) does decrease the role of perceived purchase episode benefits (PPEC) on customer perceived value perception (CPV) in organizational purchasing.

There is an interesting aspect with regard to the confirmation of H8a, the moderating effect of DMU on path PPEB $\rightarrow$ CPV. The path coefficients of DMU*PPEB $\rightarrow$ CPV was .319, significant at $p < .05$ level ($t = 2.05$). The sign and significance level of the path coefficient suggests a counteracting effect of DMU on negative impact of PPEB on CPV, lending some support to the hypothesis. Yet, although both the sign and the t - value of the interaction term were satisfactory, the main effect (H5) on which DMU moderates was found to be non-significant. Taken together, H8a was not supported by the data.

The proposed conceptual model does not have a direct link between relationship quality (RQ) and customer perceived value (CPV); however, the LISREL testing of the overall model suggested that relationship does have a significant, positive impact on customer perceived value. This is indicated by the total effect of RQ on CPV (unstandardized coefficient $\beta = .082$, $t = 3.80$, standardized $\beta = .345$) generated by the estimation. Since no direct relationship between RQ and CPV was proposed, the LISREL generated indirect effect from RQ on CPV was the same as the total effect.

Although the LISREL estimation of the overall latent model yielded good fit between the model and the data, it is possible to enhance the model fit by introducing some new paths. The modification indices given in the LISREL output provided some directions for further model refinement (Joreskog and Sorbom 1993). As such, the information on modification indices from the overall latent model testing was given in Table 8.

The two interaction effects were further tested with regressing analysis, where the dependent variable was CPV, and independent variables were PRB, PPEB, PPEC, PRC, DMU*PPEB, and DMU*PPEC. Each variable was a composite based on its observed indicators. For instance, PRB was calculated as the sum of its two composite indicators, STAB and GW. PRC was calculated as the sum of its three observed indicators, VAL1, VAL3, and VAL4. In calculating DMU*PPEB and DMU*PPEC, variables DMU, PPEB, and PPEC were first mean-centered. Like in the case of the

TABLE 7
Decomposing the Effects of Purchase Episode Benefits and Purchase Episode Costs on Customer Perceived Value

	Number of Standard Deviations for DMU	Parameter Estimates for PPEB	PPEC
DMU at			
High DMU	1	.017	.018
Moderate DMU	0	-.081[a]	-.383[a]
Low DMU	-1	-.179	-.784

DMU standard deviation = 5.42
a: Unstandardized path coefficients.

TABLE 8
Modification Indices for the Overall Latent Structural Model

Add Path To	From	Decrease in χ^2	New Estimate
PRC	DMU	11.5	0.12
PRC	PRB	10.6	-0.32
PRC	CPV	10.0	-0.38
DMU	PRC	11.5	0.78
PRB	PRC	10.6	-0.63
PRC	PPEC	21.2	0.37
PRB	PPEC	8.0	-0.49

overall latent model, the link from DMU to CPV was added for statistical considerations. Two control variables, outcome of purchase decision and product type, were also included in the regression analysis. The decision outcome was coded as 1 = actual decision and 2 = no purchase. The product type was coded as 1 = repetitively purchased items and 2 = capital items. The standardized results of the regression analysis were provided in Table 9.

Wherever applicable, the regression results were highly consistent with the preceding estimation of the overall model estimation using LISREL. Specifically, hypotheses on main effects PRB → CPV (H4) and PPEC → CPV (H6) were fully supported with correct parameter signs and significant parameter size. Hypothesis H7 (PRC → CPV) H5 (PPEB → CPV) again were not supported. With regard to the two interaction effects, the path DMU*PPEC → CPV (H8b) had the expected sign and was significant at around $t < .05$. Similarly, path DMU*PPEB → CPV (H8a) had a sign opposite to that of path PPEB → CPV and the size was significant. But the significant moderating effect of DMU on path PPEB → CPV is not very meaningful, given that the main effect (PPEB → CPV, H5) received no support from the data.

The regression analysis also included two control variables: decision outcome and product type. Specifically, decision outcome was found to have a significant effect on CPV while the effect of product type was found non-significant. This was consistent with the survey design whereby the variance of CPV was set larger by way of dichotomizing the sample into two groups – successful (decision outcome = 1) versus failed (decision outcome = 2) purchases.

In addition to the regression analysis, a path analytical model was estimated with LISREL to confirm the preceding findings on the interaction effects as well as other hypothesized relationships. Compared to regression analysis, path analysis allows for the testing of several relationships simultaneously, thus controlling for other variables and paths. In the case at hand, nine variables and all hypothesized relationships plus the path from DMU to CPV were included in the path structural model. As in the regression analysis, only observed variables were used in the path analysis.

The initial LISREL run generated adequate fit indices: the χ^2 is 76.41 with 15 degrees of freedom at $p < .001$, RMSEA = .157, GFI = .92, Standardized RMR = .10. And the parameter

estimates were highly consistent with the overall latent structural model analysis and the regression analysis of hypotheses H4 through H8b. The modification indices suggested adding two new paths: PRC $\rightarrow$ PRB and PPEC $\rightarrow$ PRC. To the extent that these two relationships were substantively interpretable and no significant changes to parameter estimates were found, these two paths were added.

The completely standardized LISREL results were provided in Table 9. The fit indices for the resultant model were as follows: the χ^2 is 41.04 with 12 degrees of freedom at $p < .001$, RMSEA = .12, GFI = .95, AGFI = .83, NFI = .89, NFI = .73, Standardized RMR = .07, CFI = .91, and IFI = .92. As a whole, these indices suggest a satisfactory fit between the analytical path model and the data. As one can see, all the findings in the overall latent structural model were reconfirmed. Further, with regard to hypotheses H5 through H8b, the results of the path analysis were highly consistent with those of the regression analysis. The path model analysis also yielded a highly significant total effect of relationship quality (RQ) on customer perceived value (CPV) (unstandardized coefficient $\beta = .124$, $t = 4.15$, standardized $\beta = .176$). Again, the indirect effect from RQ on CPV was the same as the total effect, at $\beta = .124$ and $t = 4.15$, respectively.

Up to now, the series of testing has lent considerable support to the conceptual model. But additional evidence regarding the two interaction effects is still needed to verify both the direction and the size of the moderating effects. A multi-group LISREL analysis was considered as an alternative but was not chosen in this study, due to the sensitivity of this technique to sample size (Ping 1995; Jaccard and Wan 1996; Jaccard, Turrisi, and Choi 1990). After splitting the sample into two groups with high decision-making uncertainty (DMU) and low DMU, the group sample sizes would be 111 and 77, respectively. It was thought that the relatively group sample sizes would severely reduce the statistical power of this technique in particular, and any structural equations model technique in general (Anderson and Gerbing 1988). Thus the multi-group method was not chosen.

On the other hand, the ANOVA method, albeit criticized for its simplicity and information loss, could offer useful visual illustration on the existence and the direction of an interaction effect (Jaccard, Turrisi, and Choi 1990). It was for this reason that this method was adopted as the last

TABLE 9

Comparing the Results of Regression Analysis and Path Structural Analysis

	Dependent Variables				
	Regression Analysis	Overall Path Analytical Model			
	CPV	PRB	PRC	DMU	CPV
Independent Variables					
RQ		.343[a] (3.847)[b]	-.348 (-5.413)	-.183 (-2.511)	
PRB	.255[a] (3.384)[b]				.258 (3.561)
PRC	-.075 (-.981)				-.086 (-1.115)
PPEB	-.163 (-2.179)				-.126 (-1.782)
PPEC	-.156 (-2.005)				-.238 (-3.100)
DMU	-.064 (-.927)				-.043 (-.632)
DMU×PPEB	.245 (3.340)				.206 (2.750)
DMU×PPEC	.165 (2.187)				.139 (1.811)
PRODUCT TYPE	.091 (1.413)				
DECISION OUTCOME	-.250 (-3.571)				
Fit Indices	R^2 = .319		χ^2 = 40.77	df = 12	
			p < 0.00	RMSEA = 0.12	
			GFI = .95	AGFI = .83	
			NFI = .89	NNFI = .73	
			CFI = .91	IFI = .92	
			Standardized RMR = .07		

a: Standardized path coefficients.
b: Numbers in parentheses are t-values.

step of the model testing series. Two ANOVA analyses were conducted for the interaction effect DMU*PPEB and DMU*PPEC, respectively. To do so, the author first did a mean-split of the sample based on each of the three involved independent variables, DMU, PPEB, and PPEC. Although neither of the two interaction effects, DMU*PPEB ($p = .60$) and DMU*PPEC ($p = .79$), was found to be significant at $p = .05$, the mean plots given in Figure 3 provide some useful information on the directions of the two interaction effects.

In the case of DMU*PPEC, the direction of the interaction effect was consistent with the previous findings in the current study. That is, as decision-making uncertainty (DMU) increases, the negative effect of PPEC on CPV will be smaller. In the case of DMU*PPEB, an interaction effect seems to be present, but the main effect, PPEB $\rightarrow$ CPV, is virtually non-existent. It can be said that when DMU increases, the predicting effect of PPEB on CPV becomes larger. This is contrary to the prediction of the model. To summarize, the ANOVA analysis provided a result consistent with the previous analyses on DMU*PPEC, but rendered a different result from the ones found before in the case of DMU*PPEB.

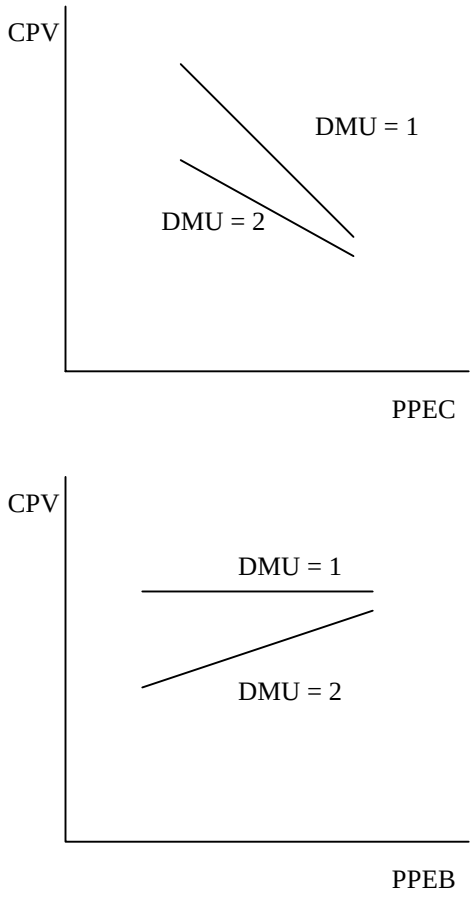


FIGURE 3
Plotting the Moderating Effects of Decision-Making Uncertainty Based on ANOVA

CHAPTER 8: DISCUSSION

8.1. Summary of Findings

Both the concepts of relationship marketing and customer value have gained prominence in marketing today. It is well recognized that customer value plays a central role in initiating and managing marketing relationships. However, remarkably little research has been done on the predictive effects of relationship marketing constructs in relation to customer perceived value. As a result, we still know little about the *mechanism* through which a good relationship or relationship promoting practices enhance customer perceived value.

This study set out to develop a conceptual model that explains how the relationship quality can affect customer value perception in an organizational buying context. The data collected from a national sample of organizational purchasing managers generally supported the conceptual model. Table 10 provides an overview of the study findings in the latent model (LISREL) analysis, regression analysis, and path model (LISREL) analysis. In general, Five out of the nine hypotheses modeled (i.e., H1, H2, H3, H4, and H6) received full support from the data. One hypothesis, H8b, received full support in the regression analysis and partial support in path model analysis (significant at $p < .1$). But it was not supported in the latent model analysis. Another hypothesis, H7 (PRC CPV) was not found to be non-significant in every analysis but it always had the correct sign. Hypothesis H5 – the main effect of PPEB on CPV – received no support from the data. As a result, the moderation effect of DMU on this main effect (H8a) was not supported, although it was statistically significant at all three analyses.

One possible explanation for the lack of support for H5 (PPEB $\rightarrow$CPV) might lie in the low variance of the two components of PPEB obtained in this survey: performance and importance. The means of performance ratings and importance ratings were 4.04 and 4.11, respectively. The standard deviations for these two variables were .98 and .95, respectively. The skewness and kurtosis ratios for these two variables, as a whole, were –1.50 and 3.14, respectively. After the transformation, the independent variable, PPEB, scores better on these aspects. For example, the skewness and kurtosis ratios for PPEB were –.66 and .93, respectively, suggesting generally adequate normality in variable distribution. But the low variances in performance and importance ratings may have created some difficulties in interpreting results related to PPEB. That is, although

the purchase episode benefits are very important in organizational buying decision-making (as indicated by the respondents' answers on the importance of the 11 performance attributes), different suppliers may have had very similar abilities to satisfy the buyer's basic performance needs. Collectively, the presence of these patterns makes the crucial variable of PPEB (perceived purchase episode benefits) unimportant in determining the final value judgment. Also, the low interpretability surrounding the results related to PPEB created a similar problem in the analysis of an interaction effect – DMU*PPEB (H8a).

As a whole, however, the conceptual model developed in the study received adequate support from the empirical study. The study suggests that in organizational purchasing, relationship quality does have a significant effect on customer perceived value. The study also presented an explanation for the mechanism through which a good buyer-supplier relationship enhances customer perceived value. To summarize, there are two general ways through which relationship quality affects customer perceived value in an organizational buying context.

First, relationship quality increases perceived relationship benefits (H1) and reduces perceived relationship costs (H2). As long as perceived relationship benefits increases perceived value (H4) and perceived relationship costs reduces perceived value (H7), relationship quality has double-barreled positive effects on buyer perceived value.

Second, relationship quality reduces the buyer's decision-making uncertainty and increases the buyer's confidence in its judgments about both the positive outcomes (i.e., benefits) and negative outcomes (i.e., costs) of the decision. A higher confidence in judgment will further increase the weight perceived episode costs (H8b) in predicting buyer perceived value. That is, although a good relationship may not necessarily affect the buyer's perceived episode costs, it moderates the effects of this variable on perceived overall perceived value. When the buyer-supplier relationship is poor and, as a result, when the decision-making uncertainty is high, this variable may be less important in determining buyer perceived value.

TABLE 10
Summary of Findings

Hypothesis	Latent Model		Regression Analysis		Path Model	
	Sign[a]	Significance at P < .05	Sign[a]	Significance at P < .05	Sign[a]	Significance at P < .05
H1 (RQ→PRB)	Correct	Yes			Correct	Yes
H2 (RQ→PRC)	Correct	Yes			Correct	Yes
H3 (RQ→DMU)	Correct	Yes			Correct	Yes
H4 (PRB→CPV)	Correct	Yes	Correct	Yes	Correct	Yes
H5 (PPEB→CPV)	Wrong	Yes	Wrong	Yes	Wrong	Yes
H6 (PPEC→CPV)	Correct	Yes	Correct	Yes	Correct	Yes
H7 (PRC→CPV)	Correct	No	Correct	No	Correct	No
H8a (DMU Moderates Path PPEB→CPV)	Correct	Yes	Correct	Yes	Correct	Yes
H8b (DMU Moderates Path PPEC→CPV)	Correct	No	Correct	Yes	Correct	No[b]
Total Effect of RQ on CPV	Correct	Yes			Correct	Yes

a: The sign of the path coefficient corresponding to the hypothesis.
b: Significant at *p* < *.1*.

8.2 Conceptual Implications

This study is likely to make several conceptual contributions to the literature. First, it potentially adds to a better understanding of the formation of organizational customers' perceived value. Specifically, it helps specify the mechanism by which relationship quality determines customer value perception in organizational purchasing. As summarized, there are two general ways through which relationship quality affects customer perceived value in an organizational buying context: (1) Relationship quality directly increases perceived relationship benefits and reduces perceived relationship costs and has double-barreled positive effects on buyer perceived value; and (2) relationship quality reduces the buyer's decision-making uncertainty and increases the buyer's confidence in its judgments, which further increases the weights of perceived episode costs (H8b) in predicting buyer perceived value. This latter finding suggests that relationship quality becomes more important in predicting customer perceived value when the decision-making uncertainty is high. More importantly, the analyses confirmed a significant total effect of relationship quality on customer perceived value. The initial findings reported in this paper on the relationship quality – perceived value link may prove useful to a better understanding of the two central constructs – perceived value and relationship quality – and the relationship between them.

Second, this study attempted to offer a relatively complete definition of relationship quality that has three dimensions: mutual trust, mutual commitment, and interdependence. This conceptual definition clearly captures the mutuality aspect of a buyer-seller relationship, something missing from most existing studies. The measures for this construct performed acceptably on reliability and validity tests. Further validity of this construct and its scale was indicated by the fact that all paths emitting from this construct were supported.

Third, the current study elaborates on the concepts of relationship benefits and relationship costs. These two concepts are inherent in many organizational firms' purchasing decisions; however, the existing research has not captured them conceptually. Ravald and Gronroos (1996) provided an important insight in this regard. On the basis of their work, the current paper attempted to build causal links between relationship quality and these constructs. This effort, aided with adequate empirical support, may shed some light on a better understanding of organizational buyers' value perception process.

Fourth, by examining the effects of relationship factors on customer perceived value in an organizational buying context, the model developed here can be adapted to help explain individual consumer purchase decision-making and the international buying behaviors. A common thread of all these purchasing contexts is that buyers face uncertainty problems that arise from a set of product related factors, external environmental conditions, customer characteristics, and buyer-seller relationship factors.

8.3 Managerial Implications

This study also may have important practical implications for successful organizational marketing efforts. Because customer perceived value is likely to be the basis for business success, organizational marketers have a stake in knowing how they can, through their own marketing practices, enhance customer perceived value. And because relationship marketing is usually touted as a major tool for creating customer value, organizational marketers may want to understand exactly how relationships ultimately influence the level of value perceived by buyers. By hypothesizing and empirically testing how relationship factors affect organizational buyers' value perception, this study provides useful answers to all these questions.

The model further implies that a bilateral relationship becomes important when decision-making uncertainty and perceived risks (given that the purchase is important) perplex customer decision-making. Decision-making uncertainty is caused by low customer expertise, high tacitness in product attributes, and unpredictability inherent in the external environment. Perceived risk is high when high uncertainty is coupled with high purchase importance (Bettman 1973; Cunningham 1967; Kohli 1989; Peter and Tarpey 1975). Previous research has identified six major facets or types of perceived risk. They are financial, performance, physical, psychological, social, and time risks (Jacoby and Kaplan 1972; Peter and Tarpey 1975; Zikmund and Scott 1973).

As traditionally held, starting and keeping a relationship can also mean more risks. This fact leads financial analysts to argue that to obtain high returns, firms have to accept high risks as well. In this vein, relationship marketing becomes a choice that involves both high return and high risks. The current model shows a promising picture of investing in long-term customer relationships. If the investment is made rationally – e.g., with the right customers and in the right situations – low risk and high returns can be generated. Balance between the two aspects is likely to be determined

by the level of mutual trust, mutual commitment, and the degree of interdependence between the two partners.

The above idea is further illustrated in Figure 4. While previous research (Ravald and Gronroos 1996) has focused on creating value by either increasing perceived benefits (i.e., Cell I) or decreasing perceived sacrifice (i.e., Cell II), this current study stress the potential role of relationship marketing practices in both enhancing perceived benefits and reducing perceived sacrifice (i.e., Cell IV). Ultimately, given the importance of customer value perception in a new era of business competition, a good customer relationship serves to counter competition and enhances supplier competitive advantage.

Notwithstanding the possible measurement problems associated with construct PPEB (perceived purchase episode benefits), the model is suggestive of a picture in which four variables vie for determining customer perceived value (CPV). These variables are perceived relationship benefits (PRB), PPEB, perceived purchase episode costs (PPEC), and perceived relationship costs (PRC). The empirical findings reveal that customer perceived value (CPV) is determined by these factors in the following order. First, perceived relationship benefits (PRB) has the largest effect on CPV, which is positive and significant. Second, perceived purchase episode costs (PPEC) has the second largest effect on CPV, which is negative and significant. Third, perceived purchase episode benefits (PPEB) has the next largest effect on CPV, which is also negative. Lastly, perceived relationship costs (PRC) has a relatively negligible negative impact on CPV. Collectively, these results suggest areas where organizational marketers should focus on enhancing customer value. One note is in order with regard to the negative impact of perceived purchase episode benefits (PPEB) on customer perceived value. Enhancing episode-related benefits is still important, but, since many suppliers may have very similar abilities to satisfy the basic performance requirements, more attention should be devoted to other more effective areas of customer value creation. Those areas include enhancing perceived relationship benefits (PRB) wherever possible and trying to decrease perceived purchase episode costs.

8.4 Limitations

Several potential limitations of this study should be noted. First, the author defined and measured the perceived purchase episode benefits as the difference between what is offered and

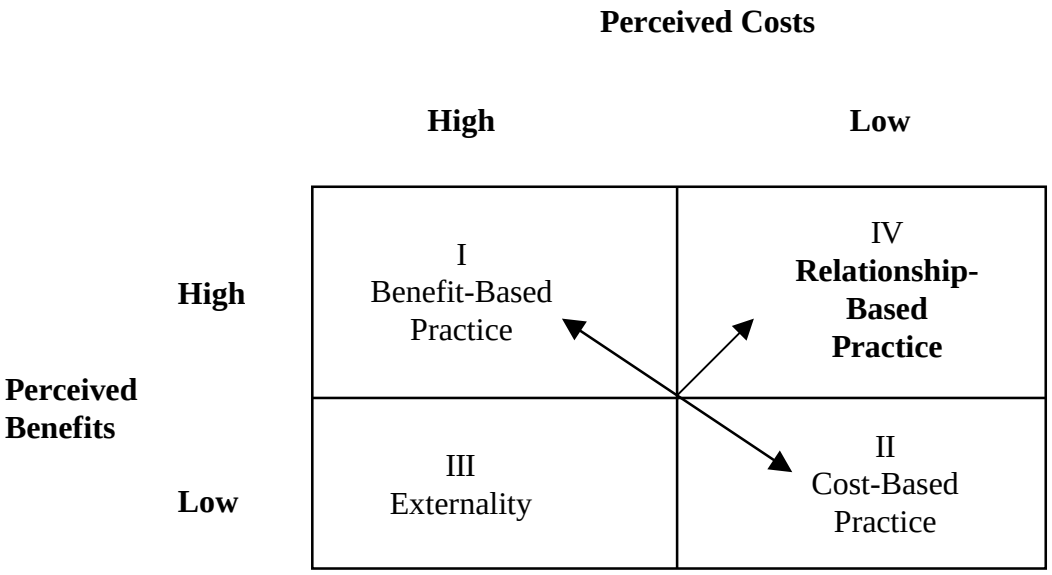


FIGURE4

Four Ways of Increasing Customer Perceived Value

what is needed. This definition has some conceptual and operational advantages than the other popular one – the *ideal point* definition of perceived benefits (Spreng, MacKenzie, and Olshavsky 1996). However, an additional aspect should be incorporated into the definition, that is the relative comparison of the supplier's offer with that of the competition.

Second, the author collected data from only one side of the dyad. To what extent supplier's and buyer's perceptions of relationship quality would be converged is unknown. Furthermore, it should be noted that inter-organizational relationship is a bilateral concept, where both parties are marketers and customers at the same time. While it is always useful to address the customer value issue from the perspective of organizational suppliers, some supplying relationships are initiated and principally managed by organizational buyers. After all, it takes two parties for a long-lasting relationship to be developed and maintained. Therefore, it would be desirable to further investigate the bilateral value perception process and how buyer's value perception and supplier's value perception are related.

Third, relationship quality (RQ) was measured in this study with a formative design, whereby it consisted of three formative dimensions: MST, MCT, and MDEP. This design, while consistent with the conceptualization of this construct, was different from some previous studies in the literature which measured RQ with reflective indicators (Dwyer and OH 1987; Kumar et al. 1995). Future efforts are necessary to compare these two approaches and see which is more appropriate and when it is.

8.5 Future Research

In addition to the potential areas of research delineated in the preceding section, this study is suggestive of several more future research paths. First, as both customer value and customer satisfaction compete for attention (Rust and Oliver 1994) in relationship marketing, it is imperative to fully delineate the relationship between these two primary concepts. Butz and Goodstein (1996) proposed to view customer satisfaction as a primarily *attitudinal* concept, but customer value as a *behavior*-oriented concept. While there is further need to delineate the relationship between customer value and satisfaction, one may speculate that customer value has a role potentially comparable to that of satisfaction in relationship marketing (Rust and Oliver 1994). Some scholars even suggest that customer loyalty is most directly determined by perceived value (Flint, Woodruff,

and Gardial 1997; Reichheld 1993), as compared to a possible indirect effect through satisfaction. In view of this research, it can be concluded that the role of customer value creation in relationship marketing has received, and is receiving, a great amount of attention among marketing researchers and practitioners alike.

Second, customer perceived value is an attitude-like concept that captures both the positive outcomes and negative outcomes inherent in a purchase decision. And the major components of customer perceived value, perceived benefits and perceived sacrifice, are, like attitude, both belief-based constructs. Some questions arise. Is customer value an attitude per se? If so, why do we need to separate the positive and negative outcomes from an attitude perception and form a value perception? Further research may be helpful for a better understanding of both constructs.

Third, the effects of perceived benefits and perceived sacrifice are likely subject to the influence of perceived risks in the purchase. Prior research has compared how benefit-type factors (e.g., quality, service, and delivery) are weighted against each other and against cost-type factors (e.g., price) (Wilson 1994; Lehmann and O'Shaughnessy 1974; 1982; Evans 1982). Further research is necessary to investigate how these relative customer-assigned weights differ from case to case.

To the author, it is intuitive that perceived benefits play an increasing role in value perception as perceived risks increases. As a result, perceived costs play a decreasing role in determining customer value. Future research is needed to specify these moderating effects. These efforts, in turn, will enhance our understanding of how benefits and sacrifice components combine to form value perception. Research in this area also potentially sheds light on the reason why perceived value, which is based on the benefits (positive outcomes) and costs (negative outcomes) should be superior than an attitude concept, which does not treat all benefits and sacrifice as two distinct groups of variables.

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APPENDIX A: CONSTRUCT MEASURES AND SURVEY COVER LETTER[4]

Customer Perceived Value

This section contains questions about your team's overall assessments of this particular supplier's offering. Please indicate the degree to which you agree or disagree with the following statements by circling the number best reflecting your team's judgments.

1. At the time of decision-making, we realized that this supplier's offer was worthwhile to accept, based on a comparison of what we could get with what it would cost us. (VAL1)

2. At the time of decision-making, we concluded that accepting this supplier's offer was justifiable, based on the overall benefits and overall costs of offering. (VAL2)

3. At the time of decision-making, we agreed that this supplier's offer had enough overall value to satisfy us. (VAL3)

4. At the time of decision-making, we thought that, overall, this supplier's offer was a fair buy. (VAL4)

(1 = Strongly Disagree; 5 = Strongly Agree)

Perceived Purchase Episode Benefits

Desirability
Before making the decision, how desirable were the product attributes of this supplier's offer, as compared to your firm's specific purchasing needs?

(1) The extent to which the product specifications meet your needs. (PERF1)
(2) Product reliability. (PERF2)
(3) Product durability. (PERF3)
(4) Product compatibility to your existing system. (PERF4)
(5) Allowance for future upgrading. (PERF5)
(6) Quality of services. (PERF6)
(7) Training and technical assistance. (PERF7)
(8) Availability of products. (PERF8)
(9) Delivery speed and lead time. (PERF9)
(10) Overall company reputation. (PERF10)
(11) Brand image for this product. (PERF11)

(1 = Very Undesirable; 5 = Very Desirable)

[4] The questions are listed in the original order as appeared in the questionnaire.

Importance
Please indicate the relative importance of the following criteria in relation to your team's decision on this particular purchase:

(1) Product specifications. (PIMP1)
(2) Product reliability. (PIMP2)
(3) Product durability. (PIMP3)
(4) Product compatibility. (PIMP4)
(5) Allowance for future upgrading. (PIMP5)
(6) Quality of services. (PIMP6)
(7) Training and technical assistance. (PIMP7)
(8) Availability of products. (PIMP8)
(9) Delivery speed and lead time. (PIMP9)
(10) Overall company reputation. (PIMP10)
(11) Brand image for this product. (PIMP1)

(1 = Not Important At All; 5 = Very Important)

Perceived Relationship Benefits

Please indicate the degree to which you agree that the following statements represent your team's judgments at the time of decision:

Stability
(1) Buying from this supplier would guarantee us a stable supply from this firm in the future. (STAB1)

(2) Buying from this supplier this time would give us access to other special offers from this particular firm in the future. (STAB2)

(3) In the long-run, the continuity in our relationship with this supplier would be important. (STAB3)

Interpersonal Goodwill
(4) Before this particular purchase, we already had a truly cooperative relationship with the representatives of this supplier firm. (GW1)

(5) Over the years, we had established a very good personal relationship with the representatives of this supplier. (GW2)

(6) Working with the representatives from this supplier had been a really enjoyable experience in the past for many of us in the purchasing team. (GW3)

(1 = Strongly Disagree; 5 = Strongly Agree)

Perceived Purchase Episode Costs

At the time of decision-making, how did your purchase team rate this supplier's offering in terms of each of the following cost aspects? In other words, how did this supplier's offer score on these aspects? Please circle the number best reflecting your team's judgments. If a specified cost was not applicable, please circle the "X" corresponding to that cost item.

(1) Purchase price. (PPEC1)
(2) Transportation cost. (PPEC2)
(3) Installation cost. (PPEC3)
(4) Operating cost. (PPEC4)
(5) Future maintenance cost. (PPEC5)
(6) Replacement cost. (PPEC6)

(1 = Very Unacceptable; 5 = Very Acceptable; X = Not Applicable)

Perceived Relationship Costs

At the time of decision-making, how did your purchase team rate this supplier's offering in terms of each of the following cost aspects? In other words, how did this supplier's offer score on these aspects? Please circle the number best reflecting your team's judgments. If a specified cost was not applicable, please circle the "X" corresponding to that cost item.

(1) Time and expenses spent in haggling with this supplier on contract terms. (PRC1)
(2) Time spent on checking the supplier's capability and credit. (PRC2)
(3) Cost spent on monitoring the supplier's performance. (PRC3)
(4) Possible cost in solving future disputes with this supplier. (PRC4)

(1 = Very Unacceptable; 5 = Very Acceptable; X = Not Applicable)

Decision-Making Uncertainty

Please indicate the degree to which you agree that the following statements represent your team's judgments at the time of decision:

Information
(1) We knew little about the possible performance of this supplier's product and whether it would really meet our purchase goals. (INFO1)

(2) We had limited amount of information about the likely outcomes of buying from this supplier. (INFO2)

(3) We felt that the future performance of this product is hard to predict until one actually acquires it and uses it. (INFO3)

Judgment

(4) It was very hard to evaluate the future performance of this supplier's products. (JUDG1)

(5) It was very hard for us to make accurate judgments about the outcomes of buying from this supplier. (JUDG2)

(6) All in all, we were able to make sound judgments in the purchase of this supplier's product. (JUDG3)

Confidence

(7) At the time of decision, we felt that this purchase decision was hampered by a lot of uncertainty. (CONF1)

(8) We had a lot of confidence in our team's judgments of this supplier's offer. (CONF2)

(9) During the final selection of the supplier, I felt that we were making the right decision. (CONF3)

(1 = Strongly Disagree; 5 = Strongly Agree)

Relationship Quality

This section contains questions about the overall state of your firm's or organization's relationship with this supplier at the time of decision-making. Please indicate the degree to which you agree that the following statements represent your team's judgments.

Mutual Trust (Cronbach's α =.66)

(1) This supplier and we are mutually trusting of each other. (MST1)
(2) Relatively speaking, this supplier trusts us more than we trust them.
(3) Relatively speaking, we trust this supplier more than they trust us.
(4) Neither this supplier nor we trust each other. (MST2; reversed)

MST3 = 6 – Max (Item2, Item3, Item4)

(1 = Strongly Disagree; 5 = Strongly Agree)

Mutual Commitment

(1) This supplier and we are mutually committed to each other. (MCT1)
(2) Relatively speaking, we are more committed to this supplier than they are to us.
(3) Relatively speaking, this supplier is more committed to us than we are to them.
(4) Neither this supplier nor we are committed to each other. (MCT2; reversed)

MCT3 = 6 – Max (Item2, Item3, Item4)

(1 = Strongly Disagree; 5 = Strongly Agree)

Interdependence
(1) We are equally dependent on each other. (MDEP1)
(2) It is difficult for both the supplier and us to replace each other. (MDEP2)
(3) We are highly dependent on each other. (MDEP3)

(1 = Strongly Disagree; 5 = Strongly Agree)

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Department of Marketing
R. B. Pamplin College of Business
Blacksburg, Virginia 24061-0236
(540) 231-6949 Fax: (540) 231-3076

December 31, 1997

Dear Fellow NAPM Member:

Please let me introduce myself. I hold the NAPM Carolinas-Virginia endowed professorship at Virginia Tech. I teach and research in purchasing management and publish often in our **International Journal of Purchasing and Materials Management.** I have served two terms on the Educational Committee for NAPM-National and serve as an Associate Editor for the **International Journal of Purchasing and Materials Management.** I have been a C.P.M. since 1974.

I have a young Ph.D. candidate named Tao Gao. Tao is working on his dissertation research in purchasing management and needs your help. It will take you about 15 minutes to complete the enclosed questionnaire. Please return your complete questionnaire in the postage free envelope to the address below:

Professor Monroe Murphy Bird, C.P.M.
Department of Marketing 0236
Virginia Tech
P.O. Box 850
Blacksburg, Virginia 24063-9959

If you would like a copy of the final data report, please check the line at the end of the survey and I will see that you get it.

Also, I give you my word as a C.P.M. that your individual answers will never be divulged in any way that could be traced to you.

Thank you for helping Virginia Tech educate still another young Ph.D. who understands what you do for a living and wants to research and teach in the buying field.

Sincerely,

Monroe Murphy Bird, Ph.D., C.P.M.
NAPM C-V Professor of Purchasing

APPENDIX B: FURTHER FACTOR ANALYSES BASED ON THE REFLECTIVE FORMULATION OF RELATIONSHIP QUALITY

To further purify the measures of relationship quality (RQ), the author conducted an explanatory factor analysis (EFA) of the nine raw indicators of RQ. The rotated component matrix was given in Table B1. Four indicators, MST1, MST2, MCT1, and MCT2, were found to load highly on the first factor, while the three indicators of interdependence load highly on the second factor. Two other factors, MST3 and MCT3, had high loadings on the third factor. Taken collectively, the results of the EFA suggest that MDEP1, MDEP2, and MDEP3 were proper measures of the interdependence dimension of RQ, while MST1, MST2, MCT1, and MCT2 should be combined into one dimension. This later dimension, in essence, represented both the mutual trust and mutual commitment dimensions of RQ. These two factors explained 56.49% of the variances of the indicators as a whole. The third dimension consisted of one indicator of mutual trust (MST3) and one indicator of mutual commitment (MCT3). This third dimension was not considered further in the confirmatory factor analysis because it was difficult to assign a proper substantive meaning to this factor. Moreover, the third factor only explained 11.06% of the variances among the indicators.

TABLE B1
Rotated Component Matrix

	Component		
	1	2	3
MST1	715	.048	.237
MST2	.615	-.096	.358
MST3	.078	-.071	.901
MCT1	.854	.224	-.011
MCT2	.842	.185	.113
MCT3	.365	.140	.696
MDEP1	.138	.797	.147
MDEP2	-.016	.779	-.078
MDEP3	.179	.823	-.027

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Next, a confirmatory factor analysis (CFA) was run to confirm the factor structure suggested by the EFA. The fit indices generated by LISREL indicated a good fit between the new factor model and the data. Specifically, some fit indices were: $\chi^2 = 44.98$, df = 13, $p < 0$, RMSEA = 0.12, standardized RMR = 0.07, GFI = 0.94, AGFI = 0.86, NFI = 0.89, NNFI = 0.87, CFI = 0.92, IFI = 0.92.

Based on the new factor structure, the author estimated two rounds of construct-level confirmatory factor analyses. In one case, the author included a second-order measurement model which included two second-order constructs – RQ and PRB. Each of the two constructs was measured with two dimensions of first-level factors, and each first-order factor was further measured with its own set of raw indicators. This analysis yielded an acceptable fit, evidenced by the following indices: $\chi^2 = 163.91$, df = 60, $p < 0$, RMSEA = 0.09, standardized RMR = 0.08, GFI = 0.88, AGFI = 0.82, NFI = 0.85, NNFI = 0.86, CFI = 0.89, IFI = 0.90. Yet, the correlation between PRB and RQ remained high at .99, with a standard deviation of .126. Hence, the problem associated with low discriminant validity between PRB and RQ was not solved by this new analysis.

To further confirm the above results, the author estimated a new construct-level CFA model which included all the constructs. All second-order constructs were measured with dimension composites, while all first-order constructs were measured with their original raw indicators. The results of this test were provided in Table B2. As one may see, the model fit was again acceptable but the correlation between PRB and RQ remained high at .83, with a standard deviation of .14. Because this correlation coefficient was not significantly different from one (evidence by $.83 + 2 \times .14 = 1.11 > 1$), this new analysis still did not solve the problem associated with low discriminant validity between PRB and RQ.

TABLE B1
Φ Matrix of the Construct-Level CFA based on The New Factor Structure

	RQ	PRB	PPEB	PPEC	DMU	PRC	CPV
RQ	1.000						
PRB	0.833 (0.141) 5.892	1.000					
PPEB	0.399 (0.092) 4.352	0.478 (0.096) 4.984	1.000				
PPEC	-0.202 (0.084) -2.387	-0.356 (0.101) -3.511	-0.438 (0.072) -6.058	1.000			
DMU	-0.411 (0.093) -4.426	-0.432 (0.099) -4.372	-0.461 (0.072) -6.410	0.092 (0.085) 1.078	1.000		
PRC	-0.593 (0.105) -5.669	-0.604 (0.091) -6.611	-0.452 (0.073) -6.192	0.440 (0.074) 5.966	0.416 (0.076) 5.470	1.000	
CPV	0.283 (0.083) 3.424	0.472 (0.090) 5.245	0.166 (0.079) 2.098	-0.418 (0.068) -6.119	-0.152 (0.079) -1.913	-0.292 (0.076) -3.827	1.000

Model Fit Indices: χ^2 = 198.03, df = 100, p < 0, RMSEA = 0.07, standardized RMR = 0.06, GFI = 0.89, AGFI = 0.83, NFI = 0.87, NNFI = 0.90, CFI = 0.93, IFI = 0.93.

Curriculum Vita of Tao Gao

Office (Staring from Aug. 31, 1998)
Dept. of Marketing & International Business
Frank G. Zarb School of Business
Hofstra University
Hempstead, NY 11550
Phone: 516-463-5706
Fax: 516-463-4834
E-mail: mkttzg@hofstra.edu

Home (Until Aug. 20, 1998)
1815 Grayland St. Apt.4
Blacksburg, VA 24060
Home Phone: 540-961-4356
E-mail: tgao@vt.edu

CURRENT STATUS

Current Status: Doctoral Candidate, in my final (fourth) year in the Marketing Ph.D. Program at Virginia Tech. Will be joining the Marketing and International Business faculty at Hofstra University as an assistant professor in the fall of 1998.

EDUCATIONAL BACKGROUND

Virginia Polytechnic Institute and State University — August 1994 - August 1998
Ph. D., Marketing (Minor: Management)

Harbin Institute of Technology, Harbin, China — September 1985 - July 1988
M.E., Business Management (Concentrating on international business)

Hebei University of Technology, Tianjin, China — September 1981 - July 1985
B. E., Management Engineering

TEACHING INTERESTS

1. Courses focusing on the global dimension of marketing, such as international marketing, international business, international marketing strategies, and international trade practices.
2. Courses focusing on relationship aspects, such as channels, services, and industrial marketing.
3. Basic marketing courses, such as marketing principles, strategies, and marketing research.

RESEARCH INTERESTS

1. International marketing (e.g., international strategic formulation and implementation).
2. Buyer - seller relationship, customer value, customer satisfaction, and customer loyalty.
3. Governance of marketing relationships and strategic alliances (i.e., make-and/or-buy decisions in various contexts).

PUBLICATIONS

1. Gao, Tao and James R. Brown (*Forthcoming*), "Effects of International Market Entry Mode Decisions on Firm Global Performance: A Governance Perspective." In Manrai, Ajay and Lalita Manrai, editors, the SPECIAL ISSUE on Designing Competitive Global Marketing Strategies, *Research in Marketing* (Published annually by the JAI Press).

2. Gao, Tao and James R. Brown (1997), "Relational Citizenship Behavior and Opportunism in Marketing Channels: A Governance Perspective," in LeClair, Debbie T. and Michael Hartline, editors, *Marketing Theories and Applications* Vol. 8, 258-266.

3. Gao, Tao (1997), "The Relationship between Ownership and Control in Making Foreign Entry Modes Decisions: A Critique of the Literature and Propositions for Future Research." A detailed abstract published in Wilson, Elizabeth J. and Joseph F. Hair, Jr. editors, *Developments in Marketing Science* Vol. 20, 174-177.

4. Gao, Tao (1998), "Defensive Versus Offensive Opportunistic Behaviors in Marketing Channels: An Essay on Their Ethics." in Wilson, Elizabeth J. and Joseph F. Hair, Jr., editors, *Developments in Marketing Science* Vol. 21 (The Proceedings of the Academy of Marketing Science 1998 Annual Conference, Virginia Beach, Virginia).

REFERRED CONFERENCE PRESENTATIONS

1. Gao, Tao (1996), "Effects of International Market Entry Mode Decisions on Firm Global Performance." Presented at the Academy of International Business 1996 Annual Meetings, Banff, Canada.

2. Gao, Tao and James R. Brown (1997), "Relational Citizenship Behavior and Opportunism in Marketing Channels: A Governance Perspective." Presented at American Marketing Association 1997 Winter Conference, St. Petersburg, FL.

3. Gao, Tao (1997), "The Relationship between Ownership and Control in Making Foreign Entry Modes Decisions: A Critique of the Literature and Propositions for Future Research." Presented at the Academy of Marketing Science 1997 Annual Conference, Miami, FL.

4. Gao, Tao, Janet E. Keith, and Ron Hess (1997), "Consumers' Make-or-Buy Decisions in Service Contexts: Toward A Research Agenda." Presented at the American Marketing Association 1997 Winter Conference, St. Petersburg, FL.

RESEARCH IN PROGRESS

1. Gao, Tao (1997), "The Plural Forms of Governance for International Strategic Alliances: Toward an Integrated Framework," Work in progress. Targeted at the *Journal of International Business Studies*.

2. Lee, Dong-jin, M. Joseph Sirgy, Tao Gao, and Johar, J. S. (1997), "International Advertising Standardization VS. Adaptation decisions: The Roles of Positioning Strategy, Product Type, and Advertising Culture in A Country," Under review for *Journal of the Academy of Marketing Science*.

3. Gao, Tao (1997), "Revisiting Customer Satisfaction: The Moderating Role of Disconfirmation," work in progress.

TEACHING AND RESEARCH EXPERIENCES

I. In the School of Business Administration, <u>The College of William and Mary</u>, Williamsburg, VA.

12/97 -- 05/98: As visiting assistant professor, taught International Marketing (BUS 450) and the Principles of Marketing (BUS 311).

II. In the Department of Marketing, Pamplin College of Business, <u>Virginia Tech</u>, Blacksburg, VA.

06/97 -- 08/97: As instructor, independently taught International Marketing (MKTG 4704)

06/95 -- 08/95: As instructor, independently taught Marketing Management (MKTG 3104).

III. In the Department of Business Administration, <u>Hebei University of Technology</u>, Dingzigu, Tianjin, China. (HUT is among the top 100 of China's 1,000 plus universities).

08/88 -- 08/94: As Associate Director and Lecturer, The International Business Division.

Major Responsibilities: Taught a variety of marketing and non-marketing courses to undergraduates and business executives, including international marketing; marketing

management; international trade practices; joint venture management; engineering economics; and international commercial laws.

IV. In the Research Department, <u>The Office of Mechanical and Electronic Products Export</u>, <u>The State Council</u> (the national government), 397 Guangwai Avenue, Beijing, China.

05/87 -- 05/88: As Visiting Researcher.

Major Responsibilities: Did extensive research on the export competitiveness of China's mechanical and electronic products, and on the implementation of national export policies. Made in-depth investigations of producers/exporters of mechanical and electronic products in Guangdong (Canton) Province, among other regions of China.

MULTINATIONAL BUSINESS EXPERIENCE

Corporation: **<u>Mitsubishi Corporation Tianjin Office, China,</u>** 19th Floor, International Building, Nanjing Rd., Tianjin, China

08/93 -- 08/94: As Chief, The Chemical Products Department.

Major Responsibilities: Negotiated and implemented international trade contracts on a daily basis. Participated in negotiations and feasibility studies on several international joint venture projects, including one among Mitsubishi Corp., Kerry Group (Hong Kong), and Union Carbide (U. S.), in Tianjin Port.

HONORS

A 1998 awardee of the National Association of Purchasing Management (NAPM) Doctoral Dissertation Grant.

A recipient of University Outstanding Young Faculty Award in 1991, Hebei University of Technology, Tianjin, China.

PERSONAL DATA

Married to Sharon Zhou. Have two lovely children, Wendi and William.
Date of Birth: April 15, 1965.