

The Relative Effects of Relationship Quality and Exchange Satisfaction on Customer Loyalty

Seigyoung Auh
Chuan-Fong Shih

ABSTRACT. This paper addresses two key questions on how supplier firms can better manage industrial buyers to create higher loyalty. The first involves whether to focus on relationship quality or exchange satisfaction. This dual route model towards enhancing loyalty in essence is concerned with comparing the relative strengths of the effect from relationship quality to loyalty and from exchange satisfaction to loyalty. The second point of interest pertains to whether the effects from relationship quality and exchange satisfaction to loyalty are moderated by environmental conditions such as switching barriers and viable alternatives. Using data on business customers' ratings of a major information technology provider, we find that the effect of exchange satisfaction on loyalty is significantly greater than the effect of relationship quality on loyalty. We also find that the impact of exchange satisfaction on loyalty is less sensitive and more stable across different levels of switching barriers and viable alternatives. Conversely, the effect of relationship qual-

Seigyoung Auh is Assistant Professor, Department of Marketing, International Business, and Strategy, Brock University, Canada.

Chuan-Fong Shih is Assistant Professor, Babcock Graduate School of Management, Wake Forest University, Winston-Salem, NC 27109.

Address correspondence to: Seigyoung Auh, Department of Marketing International Business, and Strategy, Brock University, 500 Glenridge Avenue, St. Catharines, Ontario L2S 3A1, Canada (E-mail: sauh@brocku.ca).

Journal of Business-to-Business Marketing, Vol. 12(2) 2005
Available online at <http://www.haworthpress.com/web/JBBM>

© 2005 by The Haworth Press, Inc. All rights reserved.

Digital Object Identifier: 10.1300/J033v12n02_03

ity on loyalty is more pronounced to such moderating variables in that the effect of relationship quality on loyalty was greater when switching barriers were low and many viable alternatives existed. Implications for marketing theory and practice are discussed. [Article copies available for a fee from *The Haworth Document Delivery Service*: 1-800-HAWORTH. E-mail address: <docdeUveiy@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2005 by *The Haworth Press, Inc.* All rights reserved.]

KEYWORDS. Relationship quality, exchange satisfaction, relative effects

INTRODUCTION

Building enduring relationships in channel partnerships has been a mantra of modern marketing theory and practice (Frazier 1999). The importance of relationships in many industries such as the high-technology industry is of utmost importance considering the high degree of product turnover, acceleration of new introductions, and threats posed by the growing number of new entrants with the next killer application. In order to fend off these difficult challenges and retain existing customers, suppliers and vendors are focusing more attention on building lasting relationships with customers to be the sole supplier by providing increasing levels of services and forming strategic partnerships (Dusters, Kok, and Vaadrager 1999). Consequently, vendors who do not effectively manage their customer relationships are strong candidates for removal from the supplier's lists.

The literature is rich with analysis of the dynamics of business relationships (Anderson, Hakansson and Johanson 1994), its formation (Anderson and Narus 1984, 1990), power dependence (Anderson and Weitz 1989, 1992; Frasier and Summers 1986; Frasier and Antia 1995; Kumar, Scheer, and Steenkamp 1995), and conflict resolution (Alter 1990; Rosenberg and Stern 1971; Stern, Sternthal, and Craig 1973). While it is generally established that high relationship quality is associated with customer retention and loyalty, prior studies have not firmly established the durability of such links under various market conditions. Clearly, building and maintaining quality relationship with customers is a noble endeavour. However, relationship building initiatives are often costly and may not be necessary or a sound business practice if generally and broadly applied (Han, Wilson, and Dant 1993). Furthermore, relationships, once commenced, do not always endure despite quality delivery (Young and Denize 1995). It may well be that there are certain environmental

circumstances under which having high quality relationships with business customers may payoff in the form of high customer loyalty, while in others efforts at relationship building may not have its desired effects.

Aside from establishing lasting quality relationships with customers, suppliers may retain existing customers by providing higher exchange satisfaction. That is, suppliers may strive to satisfy their customers regarding the nature of exchange by impressing upon the customers that they are providing low prices, quality products, and good customer support (Anderson and Sullivan 1993). While most prior research on the linkage between satisfaction and customer loyalty are conducted in a business-to-consumer context, the findings can be generalized and applicable to a business-to-business marketing as well.

Although exchange satisfaction and relationship quality are sometimes correlated in empirical studies, they are conceptually independent such that a customer may be satisfied with the value of exchange with their supplier, but feel so without any relational bond. This raises an intriguing question of which effect is relatively more important when suppliers are trying to keep their customers loyal? In this paper, we argue that exchange satisfaction is the stronger of the two in maintaining customer loyalty and that relationship quality plays a supplemental role. In addition, our empirical results will show that while the effect of relationship quality on customer loyalty will vary depending on environmental conditions, particularly the level of switching barriers and availability of alternative suppliers, exchange satisfaction's impact on customer loyalty is less sensitive to such conditions.

Lastly, it has been suggested that much empirical research contributing to the body of channel knowledge has been conducted from the point of view of sellers or suppliers and additional perspectives are needed to round out our understanding of channel relationships (Wathne, Biong, and Heide 2001). In contrast, our work addresses channel relationships from the perspective of customers by surveying customers of a major information technology provider. While the sample of our study is drawn from the technology sector, the conceptual model we developed can be generalized and we believe the findings are applicable to other industries as well.

CONCEPTUAL MODEL

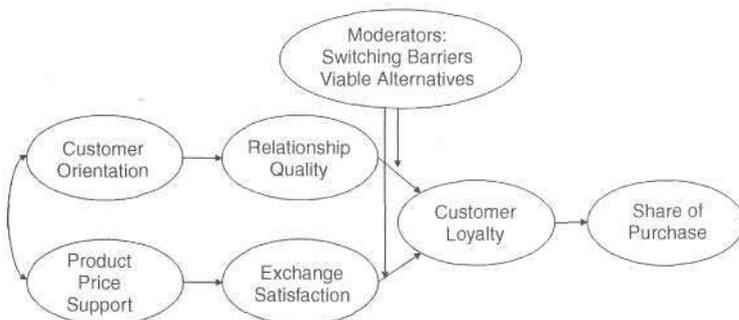
Our basic conceptual model has two major constructs, relationship quality, which is determined by the degree of customer orientation exhibited by the supplier and overall exchange satisfaction, which incorporates how satisfied customers are with their suppliers regarding price, product, and support attrib-

utes. Consistent with prior literature, we further posit that the relationship quality between suppliers and customers and the exchange satisfaction customers have with their suppliers jointly influence the degree of customer loyalty (De Wulf et al. 2001; Ping 1993; Crosby et al. 1990). In addition, customer loyalty can affect customer's expected share of future purchases from the supplier. We also propose that the effects of relationship quality and exchange satisfaction maybe moderated by environmental conditions. Two such conditions are examined here, level of barriers customers face when switching suppliers and the availability of alternative suppliers. Figure 1 depicts our conceptual model and below we discuss the relative effects of relationship quality and exchange satisfaction on customer loyalty.

Relationship Quality

Relationship quality is an overall assessment of the strength of a relationship. Previous research conceptualizes relationship quality as a higher-order construct consisting of several distinct, but related, dimensions (Dorsch, Swanson, and Kelly 1998; Kumar, Scheer, and Steenkamp 1995). Although there is no consensus as to what dimensions make up relationship quality, considerable overlap exists in the various conceptualizations. Discussions of relationship quality often centers on three primary dimensions: trust with exchange partners, satisfaction with exchange partners, and commitment to an ongoing relationship (Dwyer, Schurr, and Oh 1987; Dorsch et al. 1998). Instead, in this paper, we treat relationship quality at a more abstract level as oppose to its specific dimensions. We did so because although the various forms of attitudes that are combined to makeup relationship quality are conceptually distinct, consumers have difficulty making fine distinctions between them and

FIGURE 1. Conceptual Model



tend to lump them together (De Wulf et al. 2001). Our approach here treats relationship quality as customer's perception of the strength of relationship they have with their vendors that are formed after a period of communication and interactions.

In our conceptualization, relationship quality captures the strength of socially embedded interpersonal and interorganizational associations in an affective sense. A prominent antecedent to the relationship quality customers perceive they have with their suppliers is the degree to which they perceive suppliers exhibit customer orientation. Customer orientation is the behavior in which salespersons assist customers in making purchase decisions that will satisfy long-term wants and needs (Michaels and Day 1985; Saxe and Weitz 1992; Sigauw, Brown, and Widing 1994). Unlike market orientation (Kohli and Jaworski 1990; Jaworski and Kohli 1993), defined as the set of activities and behaviors implemented to reflect the extent to which the marketing concept has been adopted as a business philosophy, customer orientation is specifically targeted at the customer. Narver and Slater (1990) suggested that customer orientation is but only one of the components of market orientation, the others being competitor orientation and interfunctional coordination. To the customers, the dominant interface of concern is the customer orientation of the firm. This is because customer orientation has an immediate impact on the customers and therefore greater importance in relationship management. For example, customers often expect vendors to meet their unique needs irrespective of vendors' environmental concerns. But at times the competitor orientation of the firm may dictate a cost saving strategy in response to similar changes in the industry and thus customer orientation of the sales department can come in direct conflict with the overall strategy of the firm (Sigauw et al. 1994). Therefore, we argue here that since customers are more interested in vendor strategy that has a direct impact on them, it is customer orientation and not market orientation that influences their perception of relationship quality.

The economic sociology literature suggests that within an exchange relationship, a party derives utility from the products and services exchanged as well as from the interpersonal relationships (Wathne et al. 2001; Frenzen and Davis 1990). Thus, to the extent that suppliers make investments and efforts to show care and benevolence towards their customers, it fosters the creation of psychological bonds that are foundations for strong relationships (De Wulf et al. 2001; Crosby et al. 1990). When customers perceive that vendors are exerting efforts to meet their needs, they often reciprocate in kind with good will. Bagozzi (1995) argued that according to the principle of reciprocity, people should return good for good in proportion to what they receive, therefore the higher the vendor's effort to adopt customer orientation in their exchange with

customers, the more favorably customers view the vendor in their exchange relationship.

Models that theorize customer retention and loyalty as a behavioral outcome have strong precedence in relationship studies (Henning-Thurau and Klee 1997; Bolton 1998). This is because customers who are committed to a relationship, as exhibited in a high level of relationship quality, might have a greater propensity to act because of their need to remain consistent with their commitment. In a sense, customers are bound by their commitment to return to the same vendor or risk deterioration of the relationship, which may result in elimination of benefits such as credits, preferential pricing, and services. Accordingly, we build on the existing literature and suggest that the higher the level of relationship quality, the higher the likelihood of retaining customers.

The above discussion leads us to the following two hypotheses:

- H1: The higher the level of customer orientation that a customer perceives a supplier to practice in its selling efforts, the higher the level of relationship quality it has with the supplier.
- H2: The higher the perception of relationship quality a customer has with its supplier, the higher the loyalty towards the supplier.

Exchange Satisfaction

We conceptualize exchange satisfaction as the satisfaction customers have with the core processes of the exchange with their supplier. For example, customers' evaluation of suppliers on the ability to deliver lowest price, defect-free products, and superior technical support are elements contributing to exchange satisfaction. Unlike relationship quality, which is an affect laden judgment of the supplier's intangible attributes, exchange satisfaction is a value based evaluation that centers on tangible attributes of the exchange. As such, when purchasing managers consider their exchange satisfaction with a supplier, it may require objective criteria that are more cognitive in nature.

Similar to high relationship quality, satisfaction with products and prices has been shown to result in continued customer patronage (Wathne et al. 2001; Anderson and Sullivan 1993) and negatively associated with customer exits (Ping 1993). Although customer's exchange satisfaction is typically related to customer loyalty some empirical evidence suggests that satisfied customers sometimes do switch suppliers (Oliver 1999). However, we contend that overall, satisfied customers are more likely to remain loyal than dissatisfied customers and that customers who are satisfied with the exchange are more likely to repeat purchase from the same vendor instead of risking potential dissatis-

faction from another vendor. In the absence of incentives to abandon existing suppliers, satisfied customers will gravitate towards known suppliers instead of taking a risk with an unproven supplier. Dissatisfied customers, on the other hand, will find it in their best interest to seek alternatives.

Although the two constructs, relationship quality and exchange satisfaction, have similar effects, they are conceptually independent in that suppliers may be able to achieve exchange satisfaction without establishing relationships with their customers. This raises an interesting question of which effect then is more dominant in retaining existing customers. There are significant strategic implications to answering this question. Suppliers that overestimate the strength of their relationship quality with customers and its effect on customer loyalty may be vulnerable to competitive marketing programs. Furthermore, suppliers that over-rely on relationships may misallocate resources from developing marketing programs of lowering prices, building better and more diverse products, and providing enhanced technical supports and as a result lose customers in the long run, especially if the customers do not take a long-term perspective of relationships.

In general, it can be argued that business customers and purchasing managers are rational economic actors. Because purchasing managers' incentive system is typically contingent on meeting certain tangible goals such as securing lower prices and better quality input materials, it is in their best interest to seek suppliers that may provide the highest level of exchange satisfaction to maximize their compensation. Therefore, choosing suppliers that provide higher exchange satisfaction but lower quality relationship over suppliers with higher quality relationship but inadequate delivery of similar level of exchange satisfaction may make sense from a purchasing manager's perspective. In addition, the effect of relationship quality on firm performance is less tangible and long term in nature. In contrast, exchange satisfaction is easily observable in the short run and has measurable impact. From a cognitive psychological viewpoint, a purchasing managers' decision to either stay with a particular supplier or switch is more biased towards what is short term and discernible as opposed to long term and less observable (Doney and Cannon 1997). Furthermore, suppliers that can consistently provide exceptional exchange satisfaction are less prone to downswings in any relationships that eventually arise due to unpredictable changes. For example, if a particular purchasing manager has a strong interpersonal relationship with a particular salesperson, the relationship may be in jeopardy if the purchasing manager or salesperson changes jobs. Therefore, consistently providing high exchange satisfaction then becomes "insurance" for the supplier to prevent customer defection, and its effect can be more steady and predictable than relationship quality.

We summarize the above discussion in the following hypotheses:

- H3: Higher satisfaction with a supplier's price, product, and support results in higher exchange satisfaction with the supplier.
- H4: Higher exchange satisfaction results in higher customer loyalty.
- H5: The effect of exchange satisfaction on customer loyalty is stronger than the effect of relationship quality on customer loyalty.

To complete our base model, we propose that higher levels of customer loyalty developed as a result of higher customer satisfaction and relationship quality may encourage customers to reward vendors with a higher proportion of their purchases. Such a move may signal a higher degree of commitment on the part of the customer in the relationship and may provide additional cost savings because they purchase higher volumes. For buyers in high-technology industries, consolidating suppliers by reallocating purchases to a few key vendors are advantages because there are fewer problems with technology incompatibilities. It is more likely that the suppliers receiving the consolidation benefits will be the ones that the buyer has a quality relationship with and is loyal to. Thus we propose the following hypothesis:

- H6: Higher customer loyalty results in higher expected share of purchases from the same vendor.

Moderating Effects of Switching Barriers and Viable Alternatives

Switching barriers represent factors, which make it more difficult or costly for customers to change from an existing to a new supplier. Prior studies have extensively studied switching barriers in relation to repeat purchase intentions in a consumer marketing context (e.g., Ping 1993; Jones, Motherbaugh, and Beatty 2000) but is an area that is under-studied in channel management. Switching barriers are a significant issue in business-to-business relationships. Searching for new vendors requires enormous time and effort on the part of the buyer and with each new vendor the buyer also assumes risk involved in the quality of supply and consistency in delivery, all of which can impose a significant financial and operational burden. Companies often have substantial investments in a particular input process or technology that makes it unfeasible to switch vendors (Weiss and Heide 1993). For example, a company that has adopted a certain server software as part of its operational input may not easily switch to another software because data migration and employee retraining costs can be too substantial to be justified.

The effect of relationship quality on customer loyalty is contingent on the level of switching barriers that customers face (Oliver 1999; Jones et al. 2000).

When switching barriers are high, the effect of relationship quality on customer loyalty diminishes. Economic models of buyer behavior generally posit that customers weigh both the costs and benefits of a particular decision. One implication is that as perceived switching barriers increase, the cost of switching should eventually outweigh the perceived benefits of switching (Jones et al. 2000). Essentially, switching cost shifts the balance of channel power to the provider such that even dissatisfied customers will still exhibit some loyalty behavior (Butaney and Wortzel 1988). Thus, the role relationship quality plays in maintaining customer loyalty decreases in light of other factors that hold customers to the same vendor (cf. Wathne, Biong, and Heide 2001).

In situations where switching barriers are low, we should expect a stronger association between relationship quality and customer loyalty. This is because customers can replace vendors at minimal cost at anytime during the exchange relationship. What holds customers to a particular vendor then is the quality of relationship developed over time that can smooth out short-term variations in satisfaction or threat of alternative suppliers. In other words, customers are more likely to give a vendor a second chance if customers perceive that there exists a quality relationship and that they are committed to each other in an ongoing exchange. However, we suspect that if low relationship quality or customer dissatisfaction is persistent, it may turn customers to seek alternatives in the long run.

Unlike switching barriers, which deal with the cost and effort of switching suppliers, the number of viable alternatives deals with suppliers that are available to customers. Conceptually, these are two distinct concepts in that a firm may have many alternatives to turn to yet at the same time be faced with a significant amount of switching barriers. For example, many alternatives can exist in the market, but due to compatibility and learning cost issues involved, disassociating a firm's infrastructure to a once committed supplier may not come without considerable costs.

Although conceptually distinct, the moderating effect of viable alternatives on the association between relationship quality and customer loyalty is similar to that of switching barriers. The fewer the alternatives customers have to choose from, irrespective of the variation in the perceived relationship quality, the more difficult it would be for customers to switch to an alternative supplier. However, if the number of suppliers is abundant, then relationship quality plays an important factor in preventing switching behavior because it can effectively bind customers to the existing relationship.

While we hypothesize that switching barriers and the number of viable alternatives moderate the effect of relationship quality on customer loyalty, we suspect that such moderation will be less pronounced for the effects of exchange satisfaction on customer loyalty. This is because customers are look-

ing for the best deal they can find. When they are not satisfied with the value of the exchange partnership, they are more likely to switch to another supplier that can potentially meet their expectations (Ping 1993). Irrespective of switching barriers and number of alternatives, business customers' tendency is to gravitate towards suppliers with the best value proposition, and this could be attributed to the incentive systems for purchasing managers that rewards them for their performance. This is not to say that switching barriers and the number of alternatives have no effect on exchange satisfaction's effect on loyalty, but we suspect that the moderation effect is less pronounced than is the case of relationship quality. We therefore hypothesize:

- H7a: While the effect of exchange satisfaction on customer loyalty will be invariant under low and high switching barriers, the effect of relationship quality on customer loyalty will be greater under low switching barriers than high switching barriers.
- H7b: While the effect of exchange satisfaction on customer loyalty will be invariant under many and few viable alternatives, the effect of relationship quality on customer loyalty will be greater under many viable alternatives than few viable alternatives.

METHODOLOGY

Data

The data used for the study comes from clients for a major information technology provider. The name and exact nature of the firm is disguised here for confidentiality reasons. The personnel in charge of information technology management and acquisition responded to the survey over a telephone interview. Approximately 67% of the interview respondents' primary job function in their organization was to oversee the installation, maintenance, management, and support of their information technology systems. The other 33% of the interview respondents' major role in the organization was creating information strategies and making IT business or policy decisions. Therefore the sample consisted of personnel whose key duties were either IT support (two-thirds) or strategy development and implementation (one-third). Also, half of the respondents were in charge of having some type of influence over IT decisions for more than 150 PCs. More than half of the respondents worked for organizations that had 6 or more IT personnel. Approximately 450 usable responses were obtained from the interview.

Measures

We had a mix of multiple items and single item constructs for our model. Looking back at Figure 1, we calculated an index called exchange value by taking the average of three questions that were deemed important in delivering exchange value. These three items pertained to customers' perceptions of overall pricing, product quality, and performance of technical service and support. We believe that these three items are more formative than reflective in nature in determining exchange value (Diamantopoulos and Winklhofer 2001). Some variables used in our analysis, namely exchange satisfaction, relationship quality, expected purchase share, and viable alternatives, were measured by a single global item that captured the underlying dimension of interest. Although it is usually preferable to measure all variables with multiple item measures, the practical time constraint of telephone surveys makes this unfeasible. Therefore, for variables in which our interests are global or objective in nature, we used single items while all other variables were measured with multiple items.¹

With regard to customer loyalty, it was measured following the behavioral intention measures of Parasuraman, Berry, and Zeithaml (1991). This is a well accepted way of capturing the predisposition for repeat purchase (Dick and Basu 1994). In other words, we differentiate loyalty from actual retention. One of the drawbacks of using actual retention as opposed to behavioral intentions is that retention may mask the true intent and attitude of the buyers. That is spurious loyalty may be operative instead of true loyalty (Dick and Basu 1994). Our goal was to measure true loyalty by way of measuring behavioral intentions. The two measures of recommend and repurchase likelihood are standard measures adopted by several studies that have operationalized loyalty as behavioral intentions (Boulding, Kajra, Staelin, and Zeithaml 1993; Parasuraman, Berry, and Zeithaml 1991). Reicheld (1996) also supports the notion of recommendation and repurchase likelihood as component parts of loyalty in that he refers to referrals and revenue growth as two of the components that make up loyalty. Table 1 summarizes the items used in our model.

Analysis

We used LISREL 8.50 for all of the analyses unless specified otherwise. We first checked the measurement model followed by the structural model following the guidelines suggested by Anderson and Gerbing (1988). For the measurement model, we conducted reliability tests, convergent validity, and discriminant validity tests to confirm that our measurement model was appropriate. To validate convergent and discriminant validity, we performed confirmatory factor analysis. To ensure that the constructs of interest were distinct, discriminant validity was tested in three different ways. The first test was per-

TABLE 1. Items and Measurement Model Results

Construct	Items	Description	Loadings	t	Coef. α
Customer Orientation		1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree.			
	CO1	Understands and cares about your needs and interests.	0.66	13.94	0.78
	CO2		0.68	14.42	
	CO3	Proactively addresses your needs.	0.64	13.30	
	CO4	Is personal, warm and friendly.	0.56	11.19	
CO5	Recognizes and rewards your loyalty. Provides you with a feeling of security when using their products and services.	0.65	13.44		
Exchange Value ^a		1=Unacceptable/Poor to 9 = Outstanding/Extraordinary.			
	EV1	How would you rate XYZ's overall pricing?			
	EV2	How would you rate XYZ's overall product quality?			
	EV3	How would you rate XYZ's overall performance of technical support and service?			
Exchange Satisfaction		1 = Very dissatisfied, 2 = Somewhat dissatisfied, 3 = Somewhat satisfied, 4 = Very Satisfied.			
	CS1	Considering everything you know or have heard about the company, its products, its service and support organizations, would you say you are...?	1.00		
Overall Relationship Quality		1=Unacceptable/Poor to 9 = Outstanding/Extraordinary.			
	RQ1	How would you rate the overall quality of relationship you have with XYZ?	1.00		
Switching Barriers		1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree.			0.73
		The process of switching from XYZ to another IT service provider. . . .			
	SB1	Would require too much time and effort.	0.52	6.68	
	SB2	Would be risky.	0.67	13.17	
	SB3	Would be costly.	0.70	13.91	
	SB4	Would be difficult due to user or client demands.	0.63	12.33	
Viable Alternative		1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, 5 = Strongly agree.			
	VA1	The process of switching from XYZ to another IT service provider would be difficult due to a lack of viable alternatives.			
Customer Loyalty		1 = Definitely would not, 2 = Probably would not, 3 = Might or might not, 4 = Probably would, 5 = Definitely would.			0.75
	CL1	Considering everything, how likely would you be to recommend XYZ products to a friend or colleague?	0.82	17.04	
	CL2	If you had to do it all over again, how likely would you be to buy any product from XYZ again?	0.73	14.91	
Expected Purchase Share		1 = Decrease substantially, 2 = Decrease somewhat, 3 = Stay about the same, 4 = Increase somewhat, 5 = Increase substantially.			
	EPS1	Thinking about the split in current usage between XYZ and other software manufacturers, in the future, do you expect XYZ's share to. . . .	1.00		

Note: Indicates an index formed by taking the average of EV1-EV3.

formed by checking the correlation matrix to verify that no correlation between any of the constructs was close to unity. The second test involved building a 95% confidence interval around the correlation between any two constructs to ensure that 1 was not included in this interval. The third test corresponded to conducting chi-square difference tests between a constrained model (i.e., where the correlation between the constructs of interest was fixed to 1) and an unconstrained model (i.e., where the correlation between all constructs was freely estimated).

In order to test for the moderating effects of switching barriers and viable alternatives on the effects from relationship quality and exchange satisfaction to loyalty, multiple group comparison tests were used to test our hypothesis. This involved chi-square difference tests whereby the constrained model (i.e., the effect from relationship quality to loyalty is fixed to be identical between the low and high switching barrier groups and between the many and few alternative groups) was nested in the unconstrained model (i.e., the effect from relationship quality to loyalty is freely estimated between the two switching barrier groups and the two viable alternative groups). Likewise, chi-square difference tests were also employed to test the invariance of the effect from exchange satisfaction to loyalty between the low and high switching barrier groups and between the many and few alternative groups.

RESULTS

Measurement Model

The results of our confirmatory factor analysis along with reliability estimates are reported in Table 1. Our measurement model provided excellent fit to the data ($\chi^2_{(81)} = 138.29$, RMSEA = .042, CFI = .97, and GFI = .95).

Constructs with multiple items were assessed for reliability. All coefficient alphas were above the .70 level recommended by Nunally (1978). In terms of the factor loadings, all loadings were significant and loaded on the factor it was intended to measure (Bagozzi and Yi 1988). Thus, this provided support for convergent validity. As was mentioned earlier, discriminant validity was tested in three different ways. The first was by checking the correlation between any of the two constructs. This did not pose any problems as the highest correlations were between customer orientation and exchange satisfaction and between customer orientation and exchange value both at .67. The next test we conducted to assess discriminant validity involved constructing 95% confidence intervals around the correlation of any pair of constructs to determine if 1 was included in this interval. Our results confirmed that 1 was not included in any of the confidence intervals. Therefore, we found further support for

discriminant validity. Our last test involved a series of chi-square difference tests whereby the constrained model by fixing the correlation between any two constructs to 1 was deducted from the unconstrained model. As long as this difference is greater than 3.84 with 1 degree of freedom, we can conclude that the two constructs are distinct. The minimum chi-square difference in our model was 26.95 between customer orientation and relationship quality. Taken collectively, the results of our three different tests provided strong support for distinct constructs in our model.

Structural Model

Our conceptual model fit the data fairly well in that all of our fit statistics were above the recommended levels except for RMSEA ($\chi^2/4n = 164.51$, $p < .001$, RMSEA = .083, CFI = .91, GFI = .93, AGFI = .90). We first report HI-H6 as these pertain to our main effects. This is followed by our interaction hypothesis of H7a and H7b. Table 2 summarizes our findings.

Hypothesis 1 posited that when customers perceive higher customer orientation from their vendors, this should lead to higher relationship quality with their vendors. The path coefficient between customer orientation and relation-

TABLE 2. Summary of Structural Model^a

Hypothesis	Standardized Path Coefficients
H1: CO→RQ (+)	.66 ^b
H2: RQ→CL (+)	.19 ^b
H3: EV→ES (+)	.68 ^b
H4: ES→CL (+)	.49 ^b
H5: ES→CL (+) > RQ→CL (+)	.49 ^b > .19 ^b
H6: CL→EPS (+)	
H7a: RQ→CL _{Low SB} (+) > RQ→CL _{High SB} (+) and ES→CL _{Low SB} (+) = ES→CL _{High SB} (+)	.26 ^b Low SB > .09 ^c High SB .42 ^b Low SB = .53 ^b High SB
H7b: RQ→CL _{Many VA} (+) > RQ→CL _{Few VA} (+) and ES→CL _{Many VA} (+) = ES→CL _{Few VA} (+)	.27 ^b Many VA = .16 ^b Few VA .45 ^b Many VA = .52 ^b Few VA

Note: CO: Customer Orientation, RQ: Relationship Quality, EV: Exchange Value, ES: Exchange Satisfaction, CL: Customer Loyalty, SB: Switching Barrier, VA: Viable Alternatives, EPS: Expected Purchase Share.

^a $\chi^2_{(41)} = 164.51$, $p < 0.001$, RMSEA = 0.082, CFI = 0.91, GFI = 0.93, AGFI = 0.91 for main effects (H1-H6) $\chi^2_{(22)} = 208.2$ for the unconstrained model and $\chi^2_{(23)} = 213.79$ (RQ→CL) and $\chi^2_{(23)} = 208.88$ (ES→CL) for the constrained models (H7a), $\chi^2_{(23)} = 215.53$ for the unconstrained model and $\chi^2_{(23)} = 217.77$ (RQ→CL) and $\chi^2_{(23)} = 215.67$ (ES→CL) for the constrained models (H7b).

^b $p < .01$

^c $p > .10$

ship quality was .66 ($p < .01$). Thus, this provided support for hypothesis 1. Hypothesis 2 argued that higher relationship quality that a customer has with the vendor results in greater customer loyalty. Our results provided strong support for this prediction in that the path coefficient between relationship quality and customer loyalty was .19 ($p < .01$). Hypothesis 3 stated that as customers are more pleased with the exchange value provided from its vendors in the form of better price, higher quality products, and superior technical support and service, the greater the exchange satisfaction. This expectation was strongly supported as the path coefficient was .68 ($p < .01$). Hypothesis 4 which suggests a positive association between exchange satisfaction and loyalty was also supported in a channels context involving a business-to-business relationship. The path coefficient between exchange satisfaction and customer loyalty was .49 ($p < .01$) extending the well accepted association from a consumer-to-business to a business-to-business context. We report the results of hypothesis 6 before 5 because the essence and contribution of our research, we believe, stems from comparing the relative strengths of the paths from relationship quality to loyalty and from exchange satisfaction to loyalty.

Hypothesis 6 involved the consequences of loyalty by taking this construct a step further and tested whether greater loyalty led to higher purchase share from the same vendor compared to its competitors. If supported this would imply that higher customer loyalty is expected to increase the purchase share of the information technology vendor compared to other information technology manufacturers. Our results provided strong support for this contention in that the path coefficient between customer loyalty and expected purchase share was .33 ($p < .01$).

We now turn our attention to comparing the path coefficients between relationship quality and loyalty and between exchange satisfaction and loyalty. Hypothesis 5 posited that the effect from exchange satisfaction to loyalty would be greater than the effect from relationship quality to loyalty. We tested this prediction by constraining the two paths to be equal. If this constrained model provides a fit that is worse than the unconstrained model by a difference of 3.84 or more with 1 degree of freedom, we can conclude that the two paths are not invariant. Accordingly, when the constrained model was estimated, the fit of the constrained model deteriorated significantly compared to the unconstrained model ($X^2_{(49)} = 203.44$). Therefore, the difference in chi-square between the unconstrained and constrained models was significant ($\Delta\chi^2_{(1)} = 38.93$, $p < .001$) lending strong support for the fact that the path from exchange satisfaction to loyalty is greater than the path from relationship quality to loyalty.

We further analyzed this differential size in path coefficients at each of the two levels of the moderating variables. In other words, we compared the path coefficients between relationship quality and loyalty and between exchange satisfaction and loyalty at low and high switching barriers and few and many viable alternatives. Results at this finer-grained level also provided strong support for hypothesis 5 in that regardless of the level of the moderating variables, the path from exchange satisfaction to loyalty was uniformly greater than the path from relationship quality to loyalty ($\Delta\chi^2_{(1)} = 1.03$ to 26.38).

Our last hypotheses, 7a and 7b, concerned the moderating role that switching barriers and viable alternatives had on the paths from relationship quality to loyalty and from exchange satisfaction to loyalty. Here, the focal interest was in comparing the above paths at different levels of the moderating variable. Thus, the attention was on comparing paths between multiple groups (e.g., low and high switching barrier groups and few and many viable alternatives groups). To test H7a and H7b, we ran an unconstrained model that simultaneously fit both the low and high switching barrier groups and the few and many viable alternatives groups. Then we fixed the path of interest to be invariant in both groups to arrive at a constrained model. This was then followed by a chi-square difference to test whether the path of interest was equal across the different groups of the moderating variables. We first report the results of the paths from relationship quality to loyalty and from exchange satisfaction to loyalty across the low and high switching barrier groups followed by the few and many viable alternatives groups.

We first estimated the unconstrained model whereby the path from relationship quality to loyalty was simultaneously estimated in the low and high switching barrier groups ($\chi^2_{(82)} = 208.21$). Subsequently, the constrained model was fit to the data whereby the above path was set to be invariant across the two groups. This constrained model resulted in a much poorer fit ($\chi^2_{(83)} = 213.79$). Therefore the chi-square difference between the unconstrained and constrained models was significant ($\Delta\chi^2_{(1)} = 5.58$, $p < .01$) suggesting that the effect of relationship quality to loyalty is not the same for the low and high switching barrier groups. Conversely, the other constrained model whereby the path from exchange satisfaction to loyalty was fixed to be invariant across the low and high switching barrier groups did not result in a significantly poorer fit ($\chi^2_{(83)} = 208.88$). As a result, the chi-square difference was not significantly different between the unconstrained and constrained models ($\Delta\chi^2_{(1)} = .67$, $p > .10$) implying that the effect of exchange satisfaction on loyalty is the same across low and high switching barrier groups. Therefore hypothesis 7a was strongly supported.

When viable alternatives was the moderating variable, the constrained model whereby the path from relationship quality to loyalty was fixed to be invariant resulted in a slightly worse fit compared to the unconstrained model ($X^2(83) = 217.77$ vs. $X^2_{(82)} = 215.53$). The difference in chi-square, although in the expected direction, did not reach the conventional significant level ($\Delta X^2_{(1)} = 2.22$, $p < .15$). Therefore the first half of H7b is not supported. Conversely, when the path from exchange satisfaction to loyalty was set to be invariant, this constrained model did not significantly deteriorate in fit ($X^2(83) = 215.67$). Hence, the chi-square difference was also not significantly different between the two models ($\Delta X^2_{(1)} = .14$, $p > .10$) suggesting that exchange satisfaction is less sensitive to the number of viable alternatives which, in turn, supports the latter part of H7b. Taken together, when viable alternatives is the moderating variable, H7b is partially supported.

DISCUSSION

Theoretical Contributions

The goal of this paper was to address a pressing question on the relative strengths of relationship quality versus exchange satisfaction on loyalty and also examine under what conditions these relative strengths would vary if at all. We hypothesized that exchange satisfaction compared to relationship quality would have a stronger effect on loyalty for various reasons mentioned previously. As expected, we found strong support for this prediction in that the impact of exchange satisfaction on loyalty was significantly greater than that of relationship quality on loyalty. This finding suggests that business managers who are more prone to behave as cognitive and economic rationalizers tend to reveal patronage towards suppliers who provide a high level of satisfaction reflected in best price, high quality products, and superior technical support and service compared to good quality relationships.

Although relationship quality has been an area of in-depth inquiry especially in the service marketing literature, no research to date has empirically investigated whether investing a firm's resources in building quality relationships or in enhancing exchange satisfaction pays off more in retaining customers. The findings from our study shed light into this question by suggesting that at least in a business-to-business channel context, exchange satisfaction contributes to greater loyalty than does relationship quality.

We argued earlier that this might result from the incentive or reward systems that most industrial buying organizations have in place. Less incentive is

systematically operative to reward purchasing managers for developing and maintaining a high quality relationship. Moreover, such relationships can take years to form and develop and is less objective, making such an investment a risky decision. Therefore, according to our empirical results, when firms are faced with limited and scarce resources, it may be more productive to invest in lowering prices, developing high quality products, and providing satisfactory technical support and service than to invest in building and maintaining quality relationships.

In addition to the above main effect of exchange satisfaction taking on a stronger effect on loyalty than relationship quality, our results also suggest that the positive effect of exchange satisfaction on loyalty is relatively stable across different moderating variables such as switching barriers and viable alternatives. On the contrary, the effect of relationship quality on loyalty was more sensitive to different levels of switching barriers and viable alternatives. The effect of relationship quality on loyalty was stronger when switching barriers were low and many viable alternatives existed. When high switching barriers were present and only a few viable alternatives were available, the effect of relationship quality on loyalty was significantly attenuated to a point where it was negligible. These results are intriguing in the midst of all the attention that relationship quality is receiving in the academic and business press. Conversely, the effect of exchange satisfaction on loyalty is fairly consistent and is less affected by market conditions. This provides another strong impetus to favor and invest in exchange satisfaction over relationship quality when faced with an *either or* decision. In absence of such constraints, our data showed that investment in both are important and necessary, particularly when the competitive landscape is volatile.

Another point that deserves attention is the antecedents that drive relationship quality and exchange satisfaction. Whereas customer orientation positively affected relationship quality, exchange value positively influenced exchange satisfaction. In other words, how customers felt they were being treated in a customer oriented manner impacted how they perceived the quality of the relationship with their suppliers while the performance of the suppliers in terms of price, product, and technical support affected how satisfied they were with the suppliers. This sends the message of creating loyalty by two very different routes, one by investing in creating a high sense of customer orientation which works its way to loyalty via relationship quality and the other by investing in the core products and services that a firm competes in to generate high exchange satisfaction. At least in the high-technology industry which this study pertained to, it seems wiser to take the latter route of improving the performance of core products and services.

Limitations

This study is not without limitations. From a measurement standpoint, some of the key constructs such as relationship quality and exchange satisfaction were measured with a single item. Although concise, single items may not have been able to capture the rich content of such constructs. Future studies may need to incorporate multiple items to tap into some of the constructs used in this study. Our results suggest a strong preference for investing in improving exchange satisfaction over relationship quality in affecting loyalty. This maybe a finding unique to the high-technology industry and may not be generalizable to other industries where human interaction and social bonding may play a more significant role. This raises an interesting question as to what is the core product/service in a given industry. Is it the physical product and service per se or is it the relationships formed and developed with numerous and close interactions with customers? Both may be necessary but it would be interesting to pursue inquiries into which has precedence in what industries and under what conditions.

Managerial Implications

The importance of relationship quality and its benefits in marketing has been proposed for quite sometime now (Bejou, Wray, and Ingram 1996; Crosby et al. 1990; Gwinner, Gremler, and Bitner 1998; Hennig-Thurau, Gwinner, and Gremler 2002; Lagace, Dahlstrom, and Gassenheimer 1991). However, we have very little understanding to date about the boundary conditions under which this concept would be more or less effective. Our research sheds light to managers in this respect, especially to those in the high-technology industry to reconsider the relevance of this concept under different switching barrier conditions. Specifically, when customers perceive switching to be less costly in terms of time, effort, and risk, it is essential that the vendor establishes and nurtures this relationship quality if it is expected to create loyal behavior among its customers.

Conversely, for exchange satisfaction, our data revealed a strong main effect on loyalty in that the association between exchange satisfaction and loyalty was not moderated by environmental conditions such as switching barriers and availability of alternative suppliers. This implies that in turbulent industries or environments where (a) the availability of suppliers is difficult to predict due to instability and frequent turnover and when (b) a business relationship once commenced makes it difficult to switch, it might be better off to focus on exchange satisfaction than on relationship quality as a mechanism to improve loyalty.

Learning something new can be a time and effort-consuming task. Considering the fact that people tend to insist on habit driven behavior and inertia, learning a new technology can impose a formidable problem for a vast majority of people. In particular, when an organization decides to adopt a certain information technology or support system from its vendor, this in effect locks in the firm to the vendor. As a result, dependence of one party on the other will increase and calculative commitment on the part of the dependent party will be realized (Geyskens, Steenkamp, Scheer, and Kumar 1996). In such a scenario, the relationship will be based on not because I want to but because I have to (Bendapudi and Berry 1997). Relationship continuance under such circumstances will be a function of the economic losses experienced if the relationship were to terminate rather than from an affective desire. Our results indicate that under these types of situations, the effect of relationship quality on loyalty will be significantly attenuated.

This has significant implications for both information technology and marketing managers who at times need to work hand in hand to make informative decisions. Quite often, high-technology firms such as those in the information technology industry tend to be more product focused than customer focused. More often than not, a general consensus is that a sophisticated product will sell by itself (Virden 1995). As our model has suggested, a customer centric philosophy affects the quality of the relationship formed between the vendor and the business adopting such a technology. We observe such a customer centric focus for firms such as Dell Computers where the emphasis is not so much on the physical product per se but on the total solution package that they deliver. Similarly, Microsoft is taking steps to reengage its customers with a new initiative called Customer Focus 2000, which is dedicated to customer relationship management (Barrett 2000). Such a move towards a solution oriented business model and customer relationship management underscores the fact that vendors just don't hand over the product when the transaction is completed but extend the transaction to an ongoing relationship that tries to provide solutions as they arise.

As Hewlett Packard recently asserted in its annual industry analyst conference, HP is trying to address the needs of their customers into solution based realities by focusing on (1) solutions that address real problems, (2) access to relevant information whenever and wherever, (3) increased simplicity across a range of technologies and greater flexibility, and (4) dependable products, solutions, and services. These statements underscore the significance of a refined IT business value model that puts considerable importance on providing the best possible solution, exchanging necessary and relevant information on a as needed basis, and simply making technology easier to use for end customers and doing business with its partners simpler and easier.

We acknowledge the fact that building and maintaining quality relationships can be time consuming and a long term investment (Ganesan 1994). The results may not pay off immediately since relationship building takes patience and understanding from both parties to succeed. On the contrary, exchange satisfaction can be appreciated immediately as the outcomes are tangible and measurable. This suggests that firms can take a consultative selling or a transactional selling approach depending on whether the focus is on quality relationships or on exchange satisfaction. Our empirical results indicated that the effect of relationship quality on loyalty is significantly attenuated when switching barriers are high.

However, our results should not be taken to imply that relationship quality is unimportant as a driver to retention. Rather, we propose that relationship quality is very important in building customer loyalty and firms should actively build quality relationships with their customers; just that such effect should not come at the expense of relaxing marketing programs that foster exchange satisfaction. For example, Taiwan Semiconductor Manufacturing Co. (TSMC), one of the world's largest dedicated integrated circuit foundries that prided itself for delivering low priced quality technology components, has recently constructed its virtual fabrication to strengthen bonds with customers. Customers are able to access directly to TSMC's and its strategic alliance partners' information system and thereby receive immediate status reports of their orders or some other feedback. These new customer oriented initiatives aimed at relationship building were started because TSMC found that they could no longer compete with emerging competitors in other developing countries in the long run unless they also cultivated stronger relationships to complement their core value propositions (Hsieh, Lin, and Chiu 2002). Ultimately, businesses are made up of a network of relationships (relationships with customers, employees, suppliers and partners) which constitute their most valuable store of capital and most important intangible assets. The ability to create and sustain maximum market value would require careful leverage and balance of these relationships along with their core business offerings.

NOTE

1. Naudé and Buttle (2000), using conjoint analysis, showed that relationship quality in a business context consists of five attributes such as trust, needs fulfilment, supply chain integration, power, and profit. However, more importantly, they concluded "As our results show, there is not one explanation of the construct: rather, there are different views of what determine a good relationship ..." (p. 360). Furthermore, their cluster analysis revealed four different clusters whereby each cluster placed the most focus on trust, profit, integration, and power. These results imply that the meaning of

relationship quality varies depending on the nature of the segment. Hence, it may be very difficult to operationalize relationship quality at a concrete level due to the variation in what it means to different customers. Therefore, we rely on measuring relationship quality at a general level that is less susceptible to these interrelational differences.

REFERENCES

- Alter, Catherine (1990), "An Exploratory Study of Conflict and Coordination in Interorganizational Service Delivery Systems," *Academy of Management Journal*, 33 (September), 478-502.
- Anderson, Erin and Barton Weitz (1989). "Determinants of Continuity in Conventional Industrial Channel Dyads," *Marketing Science*. 8 (Fall), 310-323.
- Anderson, Erin and Barton Weitz (1992), "The Use of Pledges to Build and Sustain Commitment in Distribution Channels," *Journal of Marketing Research*, 29 (February), 18-34.
- Anderson, Eugene W. and May W. Sullivan (1993), "The Antecedents and Consequences of Customer Satisfaction for Firms," *Marketing Science*, 12 (2), 125-143.
- Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach." *Psychological Bulletin*, 103(3). 411-423.
- Anderson, James C., Hakan Hakansson, and Jan Johanson (1994), "Dyadic Business Relationships Within a Business Network Context," *Journal of Marketing*. 58 (October), 1-15.
- Anderson, James C. and James A. Narus (1984), "A Model of the Distributor's Perspective of Distributor-Manufacturer Working Relationships," *Journal of Marketing*, 48 (Fall), 62-74.
- Anderson, James C. and James A. Narus (1990) "A Model of Distributor Firm and Manufacturer Firm Working Partnerships," *Journal of Marketing*, 54 (January), 42-58.
- Bagozzi, Richard P. (1995). "Reflections on Relationship Marketing in Consumer Markets," *Journal of Academy of Marketing Science*, 23 (4), 272-277.
- Bagozzi, Richard P. and Youjae Yi (1988), "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, 16 (Winter). 74-94.
- Barrett, Lucy (2000), "Microsoft Attempts to be User-Friendly." *Marketing News*, 23 (May), 23.
- Bejou, David, Barry Wray, and Thomas N. Ingram (1996), "Determinants of Relationship Quality: An Artificial Neural Network Analysis," *Journal of Business Research*, 36 (2). 137-143.
- Bendapudi, Neeli and Leonard Berry (1997), "Customers' Motivation for Maintaining Relationships with Service Providers," *Journal of Retailing*. 73 (1). 15-37.
- Bolton, Ruth N. (1998), "A Dynamic Model of the Duration of the Customer's Relationship with a Continuous Service Provider: The Role of Satisfaction," *Marketing Science*, 17(1), 45-65.
- Boulding, William, Ajay Kalra, Richard Staelin, and Valarie A. Zeithaml (1993), "A Dynamic Process Model of Service Quality. From Expectations to Behavioral Intentions," *Journal of Marketing Research*, 30 (1), 7-27.

- Butaney, Gul and Lawrence H. Wortzel (1988), "Distributor Power versus Manufacturer Power, The Customer Role." *Journal of Marketing*, 52 (January), 52-63.
- Crosby, Lawrence A., Kenneth R. Evans, and Deborah Cowles (1990), "Relationship Quality in Services Selling: An Interpersonal Influence Perspective," *Journal of Marketing* 54 (July), 68-81.
- De Wulf, Kristof, Gaby Odekerken-Schroder, and Dawn Iacobucci (2001), "Investment in Customer Relationships: A Cross-Country and Cross-Industry Exploration," *Journal of Marketing*, 65 (October), 33-50.
- Diamantopoulos, Adamantios. and Heidi M. Winklhofer (2001), "Index Construction with Formative Indicators: An Alternative to Scale Development," *Journal of Marketing Research*, 38 (2), 269-277.
- Dick, Alan S. and Kunal Basu (1994), "Customer Loyalty: Toward an Integrated Conceptual Framework," *Journal of Academy Marketing Science*, 22 (2), 99-114.
- Doney, P. M. and Cannon, J. P. (1997), "An Examination of the Nature of Trust in Buyer-Seller Relationships." *Journal of Marketing*, 61 (April), 35-51.
- Dorsch, Michael J., Scott R. Swanson, and Scott W. Kelley (1998), "The Role of Relationship Quality in the Stratification of Vendors as Perceived by Customers." *Journal of the Academy of Marketing Science*, 26 (2), 128-142.
- Duysters, Geert, Gerard Kok, and Maaïke Vaandrager (1999), "Crafting Successful Strategic Technology Partnerships." *R&D Management*, 29 (4), 343-351.
- Dwyer, F. Robert, Paul Schurr, and Sejo Oh (1987), "Developing Buyer-Seller Relationships," *Journal of Marketing*, 51 (April), 11-27.
- Frazier, Gary (1999), "Organizing and Managing Channels of Distribution," *Journal of the Academy of Marketing Science*, 21 (Spring), 226-240.
- Frazier, Gary and John Summers (1986), "Perceptions of Interfirm Power and its Use Within a Franchise Channel of Distribution," *Journal of Marketing Research*, 23 (May), 169-176.
- Frazier, Gary and Kersi Antia (1995), "Exchange Relationships and Interfirm Power in Channels of Distribution," *Journal of the Academy of Marketing Science*, 23 (Fall), 321-326.
- Frenzen, Jonathan K. and Harry L. Davis (1990), "Purchasing Behavior in Embedded Markets," *Journal of Consumer Research*, 17 (1), 1-12.
- Ganesan, Sankar (1994), "Determinants of Long-Term Orientation in Buyer-Seller Relationships," *Journal of Marketing*, 58 (April), 1-19.
- Geyskens, Inge, Jan-Benedict E. M. Steenkamp, Lisa K. Scheer, and Nirmalya Kumar (1996), "The Effects of Trust and Interdependence on Relationship Commitment: A Trans-Atlantic Study," *International Journal of Research in Marketing*, 13 (4), 303-317.
- Gwinner, Kevin P., Dwayne D. Gremler, and Mary Jo Bitner (1998), "Relational Benefits in Services Industries: The Customer's Perspective," *Journal of the Academy of Marketing Science*, 26 (Spring), 101-114.
- Han, Sang-Lin, David T. Wilson, and Shirish P. Dant (1993), "Buyer-Supplier Relationships Today," *Industrial Marketing Management*, 22 (4), 331-338.
- Hennig-Thurau, Thorsten and Alexander Klee (1997), "The Impact of Customer Satisfaction and Relationship Quality on Customer Retention: A Critical Reassessment and Model Development." *Psychology & Marketing*, 14 (8), 737-764.

- Hennig-Thurau, Thorsten, Keven P. Gwinner, and Dwayne D. Gremler (2002). "Understanding Relationship Marketing Outcomes," *Journal of Service Research*, 4 (3), 230-247.
- Hsieh, Yi-Ching, Neng-Pai Lin, and Hung-Chang Chiu (2002). "Virtual Factory and Relationship Marketing-A Case Study of a Taiwan Semiconductor Manufacturing Company," *International Journal of Information Management*, 22 (April), 109-126.
- Jaworski, Bernard J. and Ajay K. Kohli (1993), "Market Orientation: Antecedents and Consequences," *Journal of Marketing*, 57 (July), 53-70.
- Jones, Michael A., David L. Mothersbaugh, and Sharon E. Beatty (2002), "Why Customers Stay: Measuring the Underlying Dimensions of Services Switching Costs and Managing Their Differential Strategic Outcomes," *Journal of Business Research*, 55 (6), 441-450.
- Kohli, Ajay K. and Bernard J. Jaworski (1990), "Market Orientation: The Construct, Research Propositions, and Managerial Implications," *Journal of Marketing*, 54 (April), 1-18.
- Kumar, Nirmalya, Lisa K. Scheer, and Jan-Benedict E. M. Steenkamp (1995), "The Effects of Perceived Interdependence on Dealer Attitudes," *Journal of Marketing Research*, 32 (August), 348-356.
- Legace, Rosemary R., Robert Dahlstrom, and Jule B. Gassenheimer (1991). "The Relevance of Ethical Salesperson Behavior on Relationship Quality: The Pharmaceutical Industry," *Journal of Personal Selling and Sales Management*, 11 (4), 39-47.
- Michaels, Roland E. and Ralph L. Day (1985), "Measuring Customer Orientation of Salespeople: A Replication with Industrial Buyer," *Journal of Marketing Research*, 22 (November), 443-446.
- Naude, Pete and Francis Buttle (2000), "Assessing Relationship Quality," *Industrial Marketing Management*, 29, 351-361.
- Naver, John C. and Stanley F. Slater (1990), "The Effect of a Market Orientation on Business Profitability," *Journal of Marketing*, 54 (October), 20-35.
- Nunnally, Jim C. (1978), *Psychometric Theory*. 2nd ed. New York: McGraw-Hill.
- Oliver, Richard L. (1999), "Whence Customer Loyalty?" *Journal of Marketing*, 63 (Special Issue), 33-44.
- Parasuraman, A., Leonard L. Berry, and Valarie A. Zeithmal (1991), "Refinement and Reassessment of the SERVQUAL Scale," *Journal of Retailing*, 67 (4), 420-450.
- Ping, Robert A., Jr. (1993), "The Effects of Satisfaction and Structural Constraints on Retailer Existing, Voice, Loyalty, Opportunism, and Neglect." *Journal of Retailing*, 69 (3), 320-352.
- Reicheld, Frederick F. (1996), *The Loyalty Effect: The Hidden Force Behind Growth, Profits, and Lasting Value*. Boston: Harvard Business School Press.
- Rosenburg, Larry and Louis Stern (1971), "Conflict Measurement in the Distribution Channel," *Journal of Marketing Research*, 8 (November), 437-442.
- Saxe, Robert and Barton A. Weitz (1982), "The SOCO Scale: A Measure of the Customer Orientation of Salespeople," *Journal of Marketing Research*, 19 (August), 343-351.
- Siguaw, Judy A., Gene Brown, and Robert E. Widing II (1994), "The Influence of the Market Orientation of the Firm on Sales Force Behavior and Attitudes," *Journal of Marketing Research*, 31 (February), 106-116.

- Stern, Louis, Brian Sternthal, and Samuel Craig (1973), "Managing Conflict in Distribution Channels: A Laboratory Study." *Journal of Marketing Research*, 10 (May), 169-179.
- Virden, Thomas W. (1995), "Can this High-Tech Product Sell Itself?" *Harvard Business Review*, 73 (November-December), 24-28.
- Wathne, Kenneth H., Harald Biong, and Jan B. Heide (2001), "Choice of Supplier in Embedded Markets: Relationship and Marketing Effects," *Journal of Marketing*, 65 (April), 53-66.
- Weiss, Allen M. and Jan B. Heide (1993), "The Nature of Organizational Search in High Technology Markets," *Journal of Marketing Research*, 30 (May), 220-233.
- Young, Louise and Sara Denize (1995), "A Concept of Commitment: Alternative Views of Relational Continuity in Business Service Relationships," *Journal of Business and Industrial Marketing*, 10 (5), 22-37.