Building Stronger Channel Relationships Through Information Sharing

An Experimental Study

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Building Stronger Channel Relationships through Information Sharing

An Experimental Study

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Building Stronger Channel Relationships through Information Sharing: An Experimental Study

ABSTRACT

Does sharing market information help channel partners to build stronger mutual relationships? Is low initial trust really an impediment for further relationship development by means of information sharing? How do connections with other competing channel partners affect the relationship building process? To address these questions, we conducted an experimental study.

Our findings show that retailer information sharing helps to develop higher quality supplier relationships. Interestingly, even if the initial level of trust in the retailer is low, the relationship quality substantially improves. In a more competitive situation the suppliers respond more favorably to the retailer's information-sharing initiative.

Keywords: marketing channels, information-sharing, interfirm collaboration, experimental design

1 INTRODUCTION

The use of marketing information has proven to be critical for the development of a sustainable competitive advantage. Especially, the utilization of information *within* firm boundaries is known to enhance organizational performance (e.g., Maltz and Kohli, 1996). However, the relatively new business practice of *sharing marketing information* with channel partners can also contribute to a firm's competitive position through the development of close and responsive channel relationships. Inter-firm relationships are increasingly recognized as a source for building unique company competences (e.g. Dyer and Singh, 1999; Jap, 2001).

Successful examples of *information sharing* can be found in contemporary retailing. Companies like Wal-Mart in the US, and the UK-based supermarket chain Tesco do not only capitalize on their position "close to the consumer" for their own sake, but they have also recognized the benefits of sharing the information about customers and their buying behavior with their upstream channel partners. Sharing real-time marketing information with these partners has helped them to create a responsive supplier network.

Wal-Mart's recent announcement to stop selling its data to market-research companies (such as A.C.Nielsen) and to give emphasis to sharing its data with channel partners (*CBS.MarketWatch.com, May 12, 2001*) demonstrates the strategic value of point-of-sale information. Wal-Mart's collaboration with Procter and Gamble features the privileged exchange of individual store data. Exchange of micro-level data enabled P&G to optimize its logistic operations and to respond to Wal-Mart's specific needs. Wal-Mart has now expanded this partnership-cooperation model, using Internet protocols, to other suppliers (*InformationWeek.com, March 26, 2001)*. Tesco has also developed an Extranet-portal for its suppliers that provides these suppliers with real-time POS-data, information about service and stock levels, and which also allows them do collaborative planning and forecasting, and manage sales promotions.

Next to anecdotal evidence from practice, normative research also shows that sharing information improves supplier-reseller coordination. Improved coordination reduces supply chain costs in terms of shorter lead times (Lee, et.al, 2000), lower inventory costs (Gavirneni, et.al., 1999), and improved demand forecasts (Iyer and Bergen, 1997). Benefits become even greater when production capacity is limited (Gavirneni et.al., 1999), order batches are larger, lead times longer (Cachon and Fisher, 2000), and consumer demand volatile (Iyer and Bergen, 1997). Nowadays many retailers face such conditions: a turbulent market environment combined with production and logistics complexities.

Despite the anecdotal evidence and the benefits predicted by normative research, many retail companies refrain from sharing their marketing information with their suppliers. The industry-wide platform for manufacturers and retailers, *Efficient Consumer Response* (ECR), has been promoting stronger collaboration between suppliers and retailers for many years. So far, only the willingness to share *logistic* information materialized into rapid-replenishment partnerships. Sharing *marketing* information as needed for category management is still rarely undertaken. A recent study among 375 managers shows that only 13% of the surveyed companies share their real-time market data with suppliers (*InformationWeek, May 7, 2001)*.

The literature offers several explanations for the hesitance of companies to share *marketing* information with channel partners. First, game-theorists argue that even if information sharing causes total channel profit to rise, the results for individual parties within the channel may very well be negative (Chu and Messinger, 1997). The asymmetric division of incremental earnings can result from a retailer's loss of bargaining power if too much demand information is revealed (Desiraju and Moorthy, 1997). Retailers realize that preserving the threat to share information with a competing supplier strengthens their bargaining power. Actually sharing information with a specific channel partner would imply the loss of a powerful and rewarding threat (Seidmann and Sundararajan, 1997).

A second explanation for not passing on marketing information to channel partners may lie in the climate of many channel relationships. Business press articles suggest low levels of trust and commitment in relationships between retailers and suppliers. IT-enabled inter-firm coordination with a more open exchange of information was being "met with distrust, ambivalence, and in some cases, open resistance by many players" (Clemons and Row, 1993: p. 73). These conditions hamper information sharing in marketing channels. Only under good relational circumstances more intense *information sharing* will take place. Favorable relational circumstances are characterized by high levels of inter-organizational commitment (Anderson and Weitz, 1992), by trust between parties (Morgan and Hunt, 1994), and by high rates of satisfaction about their relationships (Cannon and Perreault jr., 1999). All of these channel characteristics pay off in better performance (Kalwani and Narayanda, 1995; Cannon and Perreault jr. 1999). It is interesting to see if firms can break-out of a situation of low-quality-poor-performing relationships by rewarding channel parties with valuable market information in order to build high-quality high-performing relationships.

In this study we examine the *effect* of information sharing by a retailer on the development and quality of its relationships with suppliers. We also address two related issues. First, whether supplier trust in the retailer is necessary for information sharing to have a positive impact on relationship development? Specifically, we are interested in finding out whether the impact from information sharing is larger when the supplier-relationship is founded in a solid trust-base. A second issue refers to the fact that a retailer is often dealing with multiple suppliers. Exclusive information sharing arrangements make the retailer's decision more complicated when the relationship *portfolio* contains competing suppliers. In competitive supplier markets, market information is especially valuable (Raju and Roy, 2000). Therefore, it is reasonable to expect that suppliers will especially appreciate

information that is provided on an exclusive basis. We study how competition between suppliers affects the relationship development potency of retailer information sharing.

The remainder of this paper proceeds as follows. First, we present a typology of information sharing arrangements. Second, we develop our research model on relationship development through information sharing. Third, we describe our methodology. Fourth, the results are described. Finally, we discuss the implications of our findings.

2 INFORMATION SHARING ARRANGEMENTS

Before we take a closer look at the effect of retailer information sharing on the development and quality of supplier relationships, we clarify what we mean with information sharing arrangements and how we can discern the different forms of arrangements. We define information sharing in marketing channels as *an arrangement between channel members to share marketing information with the intention to strengthen the other's performance and thereby the performance of the channel as a whole.* An information sharing arrangement can be one-sided or two-sided. In this study we look at one-sided arrangements, i.e., where the retailer shares information with its suppliers.

We distinguish two important dimensions of information sharing arrangements: content and exclusivity. The *content* of information that is being shared refers to the strategic nature of the information (e.g., Seidmann and Sundararajan, 1997). Going from low to high strategic nature we classify, on one side, *logistic* information (e.g., transaction-level information, like order-quantities and prices, inventory information) and on the other side *market* information (e.g., sales promotion-performance information of the supplier's own SKU's, performance of the whole product category). *Exclusivity* is the second dimension of information sharing and refers to the number of parties involved in the arrangement. It ranges from sharing with all suppliers (no exclusivity) to sharing with only one party (highly exclusive).

Please Insert Figure 1 about here

Using these two dimensions we distinguish three main types of information sharing arrangements in marketing channels (see Figure 1). First, in order to improve logistic operations, a retailer and a supplier can (electronically) exchange order information in EDI arrangements or through Internet protocols. Such *Continuous Replenishment* (CRP) arrangements involve low impact transaction-level information and are seldom on an exclusive basis. Usually the retailer encourages its whole supplier base to participate in these initiatives to streamline operations and product flows. A logical extension of this type of collaboration is to allow the supplier to supervise the retailer's stock level in a *Vendor Managed Inventory* (VMI) arrangement. The retailer shares its aggregate inventory data (at distribution centers) with a supplier for that supplier's own stock-keeping units.

A second and more advanced form of information sharing is a *Joint Marketing Tactics Planning* (JMTP) arrangement in which the retailer passes on actual sales-performance information on supplier's brands and where both parties jointly plan sales promotions. The previously mentioned Wal-Mart - Procter and Gamble partnership falls into this category. It features the privileged exchange of continuous individual store data. These (disaggregated) micro-level data cover sales, inventory and prices for each SKU P&G sells. Both parties coordinate sales promotional activities.

The most far-reaching type of information sharing arrangement is *Category Management* (CM), where the retailer gives a supplier access to comprehensive marketing information. This information includes point-of-sale information of the brands of competitors in order to provide the full picture of the retailer's market developments in the entire product category. Receiving this kind of information provides the supplier with an advantage over competing suppliers, because it is provided on an exclusive basis.

Typically, the degree of exclusivity is correlated with the strategic nature of the information (contents). Information that has a higher impact on operations is often shared on a more exclusive basis. Less strategic information is regularly passed on to many suppliers.

Sharing marketing information with the highest strategic nature will cause the largest change in the relationship and is expected to have the biggest impact on supplier relationship development. Hence, our emphasis in this paper lies on this type of information sharing arrangement, that is *Category Management*.

3 RESEARCH MODEL

Our research model aims at describing the effect of the retailer's information sharing activities on the development of its relationships with suppliers. Relationship development is defined here as the change in the quality of the relationship as perceived by the receiving party (i.e., the supplier). Our research model is graphically presented in Figure 2 and shows the influence of information sharing on the development of the relationship. We expect that the relational effect of information sharing will be moderated by two variables.

The first moderating variable is the amount of trust in the retailer-supplier relationship before market information is being shared (initial trust). The second moderator is the extent to which relationships with various suppliers in the retailer's portfolio of supplier-relationships are being connected, i.e., compete with each other.

Please Insert Figure 2 here

Relationship Quality

In building a market-responsive supplier network, it is important for retailers to develop strong relationships with their suppliers. Suppliers in strong relationships are less prone to

leave the network and perform better (e.g., Kumar, Scheer and Stern, 1992; Morgan and Hunt, 1994; Cannon and Perreault, jr, 1999).

The construct relationship quality characterizes the state of the retailer-supplier relationship. The evaluation of the relationship quality is characterized here by two measures: the amount of satisfaction, and the level of commitment in the relationship. Whereas satisfaction predominantly evaluates the past performance of the relationship and measures its state *retrospectively*, commitment takes on a *prospective* perspective. Most frequently a channel member's (i.c. supplier) *satisfaction* is defined as a positive state resulting from the appraisal of all the aspects of a firm's working relationship with another form (in this case, the *sharing* retailer) (e.g., Frazier, Gill, and Kale, 1983; Gaski and Nevin, 1985). Two types of satisfaction can be distinguished: economic and social satisfaction (Geyskens, Steenkamp and Kumar, 1999; Geyskens and Steenkamp, 2000). *Economic satisfaction* is defined as a channel member's evaluation of economic outcomes that flow from the relationship with its partner such as sales volume, margins, and discounts (Geyskens and Steenkamp, 2000). It concerns the evaluation of a relationship with respect to goal attainment. *Social satisfaction* is defined as a channel member's evaluation of psycho-social aspects of the relationship, in that interactions within the exchange are fulfilling, gratifying, and facile. It concerns the satisfaction with the social outcomes of the relationship.

Commitment is viewed as a critical indicator for future interactions in the relationship and has been defined as "an implicit and or explicit pledge of relational continuity between exchange partners" (Dwyer, Schurr and Oh, 1987). Different forms of commitment have been distinguished. First, when organizations want to continue relationships because they like and identify with the other, it is called affective commitment (e.g., Anderson and Weitz, 1992). Second, calculative commitment exists when a firm continues a relationship because of high switching costs (Kumar, Hibbard and Stern, 1994).

Relationship Development

Relationship quality is not a static construct. The nature of a relationship between two parties usually changes over time. The following phases in this process have been distinguished: (1) awareness, (2) exploration, (3) expansion, (4) commitment, and (5) dissolution (e.g., Dwyer, Schurr and Oh, 1987). In this study, we consider underdeveloped (exploration) and developed stages in relationships (expansion and commitment).

During *exploration,* when each party gauges and tests the goal compatibility, integrity, and performance of the other, the interactions are aimed at meeting immediate business expectations of the partner and on establishing trust. The overall relationship quality is not high in this stage and a solid base of trust has not developed yet (This corresponds to the condition of *low initial trust* in our study).

In the more developed stages, *expansion* and *commitment,* the exchange parties increasingly obtain more benefits from the relationship. Owing to established trust and joint satisfaction in the previous phase, parties put effort in expanding the relationship by "increased risk-taking within the dyad" (Dwyer, et.al., 1987: p. 18) through applying bonding technology, mutually adapting to specific partner needs and making transaction-specific investments. The orientation in the relationship is changed towards a longer-term and mutual expectations increase. At a certain point, the parties implicitly or explicitly pledge commitment and the relationship is connoted by "solidarity" and "cohesion." Mutual goals are being set, and mutual adaptations and transaction-specific investments continue to take place. It means that the relationship quality has risen to a higher level, and a solid base of trust has developed (this corresponds to the *high initial trust* condition in our study).

The Impact of Information Sharing on Relationship Development

Sharing marketing information can support the development of relationships through three mechanisms: (1) as a form of improved channel communication, (2) as an exercise of non-coercive power, and (3) as a credible pledge for commitment.

As improved communication; "channel communication is the formal as well as informal sharing of meaningful and timely information between firms" (Anderson and Narus, 1990). Qualitatively good communication exists when the relationship is characterized by open communications and sharing of information (Anderson and Weitz, 1992), which occurs frequently, bi-directionally, formal, and non-coercive (Mohr and Nevin, 1990). Better communication and information sharing contribute to improved channel operations, satisfaction and commitment (e.g. Mohr, Fisher and Nevin, 1996). Improved communication indirectly reduces the level of conflict through trust. Firms that have developed strong trust in their partners are more likely to work out disagreements with these partners (Anderson and Narus, 1990, p. 45). Through its impact on trust, information sharing indirectly affects commitment. (Morgan and Hunt, 1994). Altogether, information sharing as a means of communication leads to less conflict, more trust, satisfaction, and commitment.

As an exercise of non-coercive power, information sharing contributes to the development of supplier relationships through a second mechanism. Because suppliers value real-time market intelligence, retailers who collect timely and detailed shopper information have created a base of power over their suppliers. Sharing marketing information with a supplier can be conceived of as exercising a non-coercive power base: giving reward and assistance (as an influence strategy, see Boyle et.al. 1992). As such, the bestowal of marketing information will be evaluated as desirable and leading to more satisfaction (Hunt and Nevin, 1974; Gaski and Nevin, 1985) and a reduction of the level of conflict (Lusch, 1976; Gaski and Nevin, 1985).

As a credible pledge for commitment: information sharing also supports relationship development because it can be regarded as a strong pledge of commitment of the retailer to the supplier. A pledge is an action undertaken by a channel member that demonstrates good faith and that binds it to the relationship (Anderson and Weitz, 1992). Interpreting marketing information as being of strategic value (as an asset) makes exclusive sharing comparable to an investment into the supplier relationship. The impact of such idiosyncratic investments in relationships is known to discourage abandoning each other and to increase commitment (Anderson and Weitz, 1992).

Based on these arguments described above we expect information sharing to improve relationship quality. Therefore, we hypothesize that:

H_1: Information Sharing leads a positive change in the relationship quality as perceived by the receiving channel member.

The Moderating Effect of Initial Trust

It is interesting to study how trust moderates the impact of retailer information sharing. The perception of the other party as unreliable has often been an impediment for making any substantial partnership investment, like an intangible asset as sharing critical market information is (Wilson and Mummalaneni, 1988). Moreover, trust defined as "the extent to which a firm believes that its exchange partner is honest and/or benevolent" (Geyskens, et.al., 1998) plays a central role in the development of relationships. It is generally considered as a "critical" (Wilson, 1995) or "key" variable (Morgan and Hunt, 1994) in the development of relationships. Only once trust is established, firms learn that joint efforts will lead to outcomes that exceed what the firm would achieve had it solely in its own interest (Anderson and Narus, 1990). Hence, we think of low trust as a barrier for further relationship

development. Earlier we have distinguished '*low initial trust'* relationships and relationships characterized by '*high initial trust*'.

Please Insert Table 1 about here

Table 1 presents the expected impact of information sharing under the two different channel conditions. If the retailer refrains from employing information sharing as a tool to develop supplier relationships, it is logical that no change in the relationship is expected, regardless of the level of initial trust in the retailer (Cell 1 and Cell 2 in Table 1).

If the retailer *does* decide to strengthen its supplier ties by sharing market information, it may encounter differential supplier responses, depending on the supplier's level of initial trust in the retailer. In the situation of high initial trust, a retailer's decision to start sharing information basically responds to expectations already formed by the partner, and therefore the impact of information sharing on the relationship development will be positive (Cell 3).

In low initial trust relationships the expectations of partners are short-term-oriented and focused at performance satisfaction. In such low initial trust circumstances, a retailer's decision to share information conflicts with the supplier's previously held ideas about the retailer. A proposition to start sharing information will not be perceived as a credible pledge for commitment, and is received with skepticism. Hence, it will hardly have any effect on the quality of the relationship (Cell 4).

In sum, we hypothesize the following moderating effect of initial trust on the impact of information sharing on relationship quality:

H_2: The positive impact of information sharing on the relationship quality is positively affected by the level of initial trust. When the level of initial trust is low, there is no impact of information sharing on the relationship quality. When the level of initial trust is high, the impact of information sharing will be high.

The Moderating Effect of the Connectedness between Supplier Relationships

A second factor that we expect to influence the impact of information sharing on relationship quality, is the extent to which supplier relationships of the retailer are connected (Anderson, Hakansson, and Johanson, 1994). Connectedness is defined as: "the degree to which the exchange in one relationship is contingent on the other."(Cook and Emerson, 1978). One specific form is negative connectedness, implying that the exchange in one relationship has negative consequences for the exchange in the other relationship (Ritter, 2000).

In making strategic channel decisions about information sharing, retailers realize that teaming-up with one supplier may have consequences for the relationships with other (competing) suppliers. Since marketing information is especially valuable in competitive markets (Raju and Roy, 2000) suppliers with a retailer relationship that is embedded in a network with other negatively connected (competing) retailer-supplier relationships, will especially appreciate receiving information. Since an information sharing-arrangement and associated efforts (retailer's dedication) represent a scarce resource, receiving channel partners will perceive exclusive information sharing as a privilege over their direct competitors. Therefore, retailer information sharing will have a larger impact on relationship quality if relationships with suppliers are more strongly (negatively) connected.

We hypothesize that:

H_3: The effect of information sharing is positively moderated by the level of (negative) connectedness of the dyadic relationship with other relationships. When the supplier-relationships are strongly negatively connected, the impact of information sharing on the relationship quality is higher. When the supplier-relationships are weakly negatively connected, the impact of information sharing on the relationship quality is lower.

4 RESEARCH METHOD

To test our hypotheses on the effects of retailer information sharing on the development of a supplier-relationship we conducted a laboratory experiment. The experimental methodology has been regularly used in research in marketing channels (e.g, Stern, et.al, 1973; Busch and Wilson, 1976; Roering, 1977; Dwyer and Walker, 1981; Schurr and Ozanne, 1985; Eliashberg, et.al., 1986; Scheer and Stern, 1992). We used the experimental approach because it enabled use to test the causal direction of relationships between our variables of interest.

Since our dependent variable is *change* in relationship quality, we had to be able to measure the quality of the relationship at different points in time with the same informants. Using a laboratory setting made this possible. The set-up of our experiment is comparable with experiments as designed by Andaleeb (1996) and Pilling et.al. (1994). Subjects had to solve a business case while adopting the role of a manager.

We systematically manipulated three experimental variables: information sharing (INFOSH) (no/yes), initial trust (ITR) (low/high), and connectedness (CNNC) (low/high). All three variables had two levels, resulting in a 2 (between) * 2 (between) * 2 (between) factorial design, with eight experimental groups.

4.1 Experimental Materials and Procedure

We developed a web-based presentation of a business case. The subjects were asked to adopt the role of an account-manage of a coffee roaster, called SMALSKO, and evaluated the quality of the relationship with a retailer, the supermarket chain SHOPHERE. By reading constructed company memo's, trade journals, and market reports (e.g., Andaleeb, 1996; Pilling et.al., 1994), the subjects understood that the coffee roaster distributed its brand to end consumers through a large supermarket chain (called SHOPHERE).

Please Insert Figure 3 about here

It was emphasized that the coffee roaster's marketing department values marketing information and that industry experts saw the supermarket chain as highly knowledgeable concerning consumer purchase behavior and shopping habits. The coffee roaster (SMALSKO) faced one major competitor (called NUTTREE) that also did business with the supermarket chain SHOPHERE (see Figure 3).

Please Insert Figure 4 about here

Figure 4 presents the sequential steps in the experimental procedure. At the start of the experiment, subjects received information about the focal company (the coffee roaster SMALSKO), its major competitor (NUTTREE), and the industry conditions (market size, growth, and distribution). Then, dependent on the experimental group they were in, they received information about the initial trust in the supermarket chain (low/high) and the connectedness (low/high).

The subjects' company's initial trust in the retailer (ITR) was manipulated through a memo from a colleague account manager that dealt with the supermarket in the past (see Appendix I for an example of the memos). In the low-trust condition the memo stated: "you should not trust SHOPHERE. I don't have many good things to say. I don't trust these people to be very 'up front' with us." An illustration of SHOPHERE's bad credibility from a former incident was also given. In the high trust condition the memo advised: "you should trust SHOPHERE. I have many good things to say. I trust these people to be very 'up front' with us." and gives an illustration of the SHOPHERE's good credibility from a former incident. The manipulation proved to be successful and subjects with a low initial trust scenario viewed the retailer's honesty and benevolence significantly lower than subjects with a high trust scenario (for honesty, $t = -13.73$; $p<0.01$ and for benevolence, $t= -9.65$; $p<0.01$).

Market reports and an article from a renowned trade journal were presented the subjects to manipulate connectedness (CNNC). For the high-connectedness condition, it was made clear that the positioning strategies of the focal coffee coaster and its competitor NUTTREE were similar and both coffee brands competed for the same consumers. Also, the habit of price wars was reported and as a consequence consumers displayed a brand-switching behavior. Furthermore, an article from a trade journal stated that joint sales promotion efforts by the competitor in cooperation with the retailer had shown to hurt SMALSKO's sale.

For the low-connectedness condition, a market report stated that the positioning strategies differed and SMALSKO and NUTTREE serve different consumer groups. Price wars were uncommon and consumers exhibited large brand-loyal behavior. This time, the article from the trade journal stated that joint sales promotion efforts by the competitor in cooperation with the retailer had shown *not* to hurt SMALSKO's sale (see Appendix II for the texts in each condition).

To determine whether our manipulation of the connectedness factor had been successful, subjects rated items from Anderson, Håkånsson and Johanson (1994)'s connectedness scale. This scale gauges the degree in which the exchange in one relationship is dependent on exchange of the partner with a third party. The connectedness manipulation proved to be successful: the respondents in the high-connected condition found their relationship with the retailer to be higher connected to the competitor-retailer relationship than the respondents in the low-connected condition ($t = -3.48$; $p<0.01$).

After reading the case materials, the subjects evaluated the quality of the relationship with the retailer; measure t=1 of relationship quality. To stimulate the processing of the business case information, the questionnaire began with a few open-ended questions (e.g., "In your opinion, what is the business problem that the coffee roaster faces?" and "What would be your course of action?").

In the second part of the business case information was provided about the retailer's decision whether or not to start sharing (no/yes) information with the coffee roaster. The information that was being shared was Category Management Information (see Figure 1). Whether information was provided depended on the manipulation of the third experimental variable (INFOSH). After reading this part of the business case, the subjects were again asked to evaluate the relationship quality of the coffee roaster with the retailer.

Finally, several control questions were posed in order to check whether the subjects had an idea about what the specific research goals were. Content analysis on the answers learned that this was not the case. Our web-based approach of administering the experiment provided us the opportunity to present our subjects high-quality stimulus materials (see Appendix I and II for examples of screens presented to the subjects). The business case was shown to 12 managers from the food industry and their average judgment score on a scale ranging from unrealistic (1) to realistic (7) was 5.1

4.2 Subjects

Eighty master-level students participated in the experiment. They had all followed several courses in marketing. Their average age was 23 years and 60% was male. The students were paid for participating in the study, and to stimulate their involvement they were told that the person with the best business solution would be given a prize. The subjects were randomly assigned to an experimental group and the task took them approximately half an hour to finish.

4.3 Measures

As mentioned earlier we used two evaluative measures of the relationship quality: satisfaction and commitment. In measuring channel member satisfaction, we used the two separate multiple item scales from Geyskens and Steenkamp (2000): one for economic and one for social satisfaction. To measure commitment the multiple-item scale of Kumar, et.al. (1995) was used. This scale makes a distinction between calculative and affective commitment. The anchors for all items were 1 = strongly disagree to 7 – strongly agree (see Appendix III for the list of items).

Altogether we measured four different relationship quality dimensions: economic satisfaction, social satisfaction, affective commitment, and calculative commitment.

4.4 Measurement Validation

Conform the approach recommended by Anderson and Gerbing (1988) we separated measurement validation from testing our hypotheses. We validated the measurements of the four latent relationship quality variables – economic and social satisfaction and calculative

and affective commitment – for the two points in time we measured them (t=1 and t=2; see Figure 4).

First, we looked at the factor loadings of each item on their respective construct by performing an exploratory factor analysis. One item for economic satisfaction and thee items for commitment were deleted from further analyses for having a lower factor loading score than the cut-off value of .6 (cf. Hair et.al., 1998) at one or both of the measurement times (t=1 and/or t=2).

Second, to confirm construct validity and reliability of the measurements of the constructs, we performed confirmatory factor analyses (CFA) on the covariances using LISREL 8.5. Consistent with our conceptualization, we estimated the measurement model of relationship quality consisting of the four-factors. The fit for each measurement time (t=1 and t=2) was good. The overall fit indices for t=1 were: χ^2 = 102.85, RMSEA = 0.074 and CFI=0.96 and for t=2: χ^2 = 130.16 and RMSEA = 0.10 and CFI=0.93. All items in the 4-factor model demonstrated adequate convergent validity: their loadings on the hypothesized construct were significant with t-values ranging from 4.86 to 12.57 (for t=1) and from 4.59 to 11.59 (for t=2) while no substantial cross-loadings were retained. Furthermore, when testing for discriminant validity, we looked at the constructs with the highest correlations (see Table 4), and checked whether they were significant different from unity. Assuming a perfect correlation between social satisfaction and affective commitment, the model gave a much worse model fit ($\Delta\chi^2$ (1) = +38.11 (t=1) and $\Delta\chi^2$ (1) = +47.08 (t=2)). Similar, when we assumed a perfect correlation between social satisfaction and calculative commitment, the model showed a worse fit ($\Delta\chi^2$ (1) = +74.13 (t=2) and $\Delta\chi^2$ (1) = +63.61(t=2)). All measures had a composite reliability (α) greater than the minimum recommended level of 0.60 and 6 out of 8 measures (i.e., 4 constructs measured twice) exceeded the preferred level of 0.70 (Churchill, 1979; Nunnally, 1978; see Appendix III for details).

Third, we also checked for alternative structures of the relationship quality construct, like the 1 overall-factor model and several 2-factor models. These models showed worse fits.

The fourth and last step in our measurement validation was to test whether the measurements at the different times (t=1 and t=2) were structurally comparable. For this purpose we assessed the metric equivalence between both measurement times (cf. Steenkamp and Baumgartner, 1998)[2]. Configural invariance between t=1 and t=2 is ascertained by showing that the 4-factor model fits best in both times (t=1 and t=2). Furthermore, multi-group CFA retrieves a good fit when invariant factor loadings, invariant factor correlations and invariant error are assumed (χ^2 = 276.62 (df = 162); RMSEA = 0.095; CFI = 0.93). These results provide evidence of metric equivalence across the two measurement times, and shows that a comparison between them can be made in further analysis.

Please Insert Table 2 about here

The values for all four relationship quality variables were developed by calculating the unweighted averages of the subject's ratings on the individual items belonging to these constructs. Table 2 contains descriptive statistics for the constructs and the correlations between them.

[2] Typical metric equivalence problems are related to cross-cultural comparisons (see Steenkamp and Baumgartner, 1998; an example in channel research is Cannon and Homburg, 2001). Rather than independent measures, this study has dependent samples, meaning that, the probability of having a comparable factor structure between the two measurements is higher.

5 RESULTS

The data were analyzed using four separate ANOVAs with two repeated measures for each of the four dependent variables. The tested model contains three main effects: information sharing (INFOSH), initial trust in the retailer (ITR), connectedness (CNNC), and the two interaction effects of information sharing with initial trust (INFOSH x ITR) and with connectedness (INFOSH x CNNC). As we are interested in the (intra-supplier) change in relationship quality caused by retailer information sharing, we report the significance tests for the within-subject-effects in Table 3. Tables 4, 5, and 6 describe the results of our experiments.

Please Insert Table 3 and Table 4 about here

5.1 The Impact of Information sharing on Satisfaction and Commitment

Consistent with the first hypothesis, the results in Table 4 show that information sharing increases the supplier's satisfaction with and commitment to the relationship with the retailer. Information sharing is instrumental in lifting supplier's satisfaction with the retailer relationship in economic as well as social aspects. It leads to an increase in economic satisfaction of +0.65 points on average ($F=8.13$; $p=0.01$; see Table 4 and Figure 5A); relative to a –0.06 point average decline when retailers do not share information.

Please Insert Figure 5A, 5B about here

Second, information sharing also leads to more social satisfaction, meaning that the supplier is more satisfied with *how* the retailer conducts business. On average, the level of social satisfaction grows +1.44 with an information-sharing retailer, in comparison with a

small decline of –0.14 for relationships where no information is shared. ($F=59.56$; $p<0.01$; see Table 4 and Figure 5A).

Additionally, information sharing leads to a greater willingness to make further investments in the relationship. A supplier becomes more calculative committed thanks to retailer information sharing; the rise in calculative commitment amounts to +1.04, when the retailer shares information, compared to a non-significant increase of +0.34 ($F=6.92$; $p=0.01$; see Table 4 and Figure 5B) for the situation where no information is being shared.

Furthermore, a supplier feels stronger associated with an information-sharing retailer and is more pleased being a business partner of that retailer; as indicated by a greater increase in affective commitment ($F=8.37$; $p<0.01$; see Table 4 and Figure 5B).

All in all, the results show that information sharing is good for building better supplier-relationships, and that out of the four different impacts, the supplier's social satisfaction experiences the strongest impulse from information sharing (eta squared = 0.45; see Table 3). Altogether, we accept hypothesis 1 for all four relationship quality dimensions.

Please Insert Table 5 and Figure 6 about here

5.2 The moderating impact of Initial Trust

Our second hypothesis is that the impact of information sharing on relationship quality is higher if the level of initial trust is high. The results in Table 5 and Figure 6 show that the increase in economic satisfaction caused by retailer information sharing is indeed greater when initial trust in the retailer is high (+0.99) relative to the low initial trust situations (+0.42). However, this interaction effect is not significant ($F=0.89$; $p=0.35$).

Contrary to our hypothesis, in situations where a supplier has low trust in the retailer, the impact of information sharing has a larger impact on social satisfaction (+1.54 versus +1.36),

on calculative commitment (+0.76 versus +0.65) as well as on affective commitment (+0.70 versus +0.49). These findings indicate that information sharing would be extra helpful in relationships with low initial trust, which even contradicts Hypothesis 2. Since none of reported effects are statistically significant (social satisfaction, $F=0.05$, $p=0.82$; calculative commitment, $F=0.02$, $p=0.89$; affective commitment, $F=0.25$, $p=0.62$; see Table 5), it appears that regardless the existing level of trust, retailer-supplier relationships quality always benefit from information sharing. Satisfaction and commitment are evenly lifted in low-trust as well as in high-trust relationships. We find no support for Hypothesis 2.

Additionally, we find an interesting effect for the effect on social satisfaction. Under high initial trust social satisfaction drops (-.62) (significantly different from zero; $t=-2.96$; $p<0.01$), when the retailer does not share information. It means that under these high initial trust circumstances, the retailer harms the relationship by withholding information. A possible explanation is that in high-trust relationships, strong relational norms (Heide and John, 1992) have developed. Often relational norms relate to expectations about information sharing; in high-trust relationships, channel partners count on each other to be timely and accurately informed. Withholding information might be regarded as a violation of that rule resulting in supplier disappointment and a lower social satisfaction with the relationship.

Please Insert Table 6 about here

Please Insert Figure 7 about here

5.3 The moderating impact of Connectedness

The third hypothesis states that retailer information sharing will have a larger impact in instances where the supplier faces fiercer competition. We find mixed effects. On the one

hand, the level of connectedness of the supplier relationship does augment the impact of information sharing in increasing economic and social satisfaction, and affective commitment (see Table 6 and Figure 7). On the other hand, the impact of information sharing on calculative commitment is similar for the two levels of connectedness (+0.65 versus +0.78).

As for economic satisfaction, in low-connected relationships information sharing is not viewed as economic attractive and economic satisfaction is hardly affected (-0.17) ($t = 0.73$; $p=0.48$). However, when supplier relationships are in strong competition (high-connected), suppliers much appreciate information sharing as economically desirable and consequently economic satisfaction is increased (+1.61) ($F=12.67$; $p<0.01$).

The impact of information on social satisfaction becomes even larger in high-connected relationships (+1.97), compared with a rise of +1.16 in low-connected relationships (+1.16) ($F=3.92$; $p=0.05$).

As for future commitments to the relationship, the impact of information sharing only changes affective commitment ($F=4.02$; $p=0.05$). With the help of information from the retailer, the supplier in high-connected relationships only creates an extra sense of association, yet no gain in commitment in a calculative way ($F=0.04$; $p=0.85$). A possible explanation for that might be the high scores of calculative commitment are already high, around six, which makes it difficult to raise them further (i.e., a ceiling effect).

In sum, we accept Hypothesis 3 for changes in economic and social satisfaction, and affective commitment. No support was found for calculative commitment.

Please Insert Table 7 about here

Table 7 summarizes the supported and the unsupported hypotheses in this study.

6 DISCUSSION AND IMPLICATIONS

Despite the promising benefits of information-intensive retailer-supplier collaboration in turbulent market environments, one frequently named obstacle why retailers refrain from extensive information sharing is that relationships between retailers and suppliers are often characterized by mistrust. Retailer information sharing can be helpful in building stronger supplier relationships because it may improve communication between the channel parties, it can signify a gift of a reward, and because it may serve as a pledge for commitment to the relationship. In this study we examined the effects of information sharing by a retailer on the development and quality of its relationships with suppliers.

The results show that retailer information sharing improves the supplier relationship quality. The receiving party not only becomes more economically and socially satisfied with the retailer dealings, but it also feels more committed (affective commitment) and it promises to put more effort in the relationship with the retailer (calculative commitment).

We expected that the positive impact caused by information sharing could only take place when initial trust in the relationship had been established. Our findings, however, show that the improvement in supplier-relationship quality is as large in low-trust relationships as in high-trust relationships. Clearly regardless of the level of initial trust in the retailer, the supplier appreciates the extra retailer's information.

With respect to the retailer portfolio of competing supplier relationships, we expected that the degree of connectedness between the relationships moderates the relationship-strengthening effect of information sharing. Our findings indeed show that the impact is dependent on the competitive situation in which the supplier finds itself. In more fierce competition with another supplier, reflected by negative connectedness, the positive impact of information sharing is amplified for economic satisfaction, social satisfaction, and affective commitment.

Our study responds to a number of calls in previous research. Myers et.al. (2000) suggested to conduct further research on how channel cooperation impacts relationship closeness. Instead of implementing an operational partnership, like *automated replenishment programs* (ARP) (in this paper referred to as CRP and VMI), we examined a more strategic form of interfirm partnerships (as mentioned in Mentzer, et.al., 2000), *category management,* which implies a relationship adaptation to a high degree. An important lesson from our study is that such strategic information sharing has an additional pay-off in improving the relationship quality. Our examination of relational effects of information sharing also meets Frazier (1999: p.229)'s call for research on the consequences of sharing intelligence.

Within the boundaries of our experimental setting, we conclude that our study encourages retailers to share information with suppliers because this improves the relationship quality. Furthermore, we find that information sharing works also in the case of low initial trust, which results in the recommendation to retail managers (e.g., category managers, buyers) to start sharing information already in the early stages of the relationship. Sharing information can accelerate the relationship development process. In high-trust relationships, the retail manager must be aware of possible disappointments in these supplier relationships. Not sharing in such relationships may even lead to a decline in social satisfaction, which may be an omen for further relationship decay. In a sense there is thus a need for "maintenance investments" in the relationship.

A final implication for retail managers concerns their dealings with competing suppliers. In competitive environments, suppliers appreciate receiving retailer information much more, and it would thus be interesting to pursue information sharing-strategies in these competitive product categories. However, in such cases retailer will be confronted with a dilemma. When engaging into an information sharing arrangement with one supplier and

enhancing that particular relationship, the retailer might damage the relationships with other competing suppliers. This latter effect was not included in this study.

Managers need to take into consideration is that this study focuses on the *rosy view* of information sharing (cf. *interfirm-learning,* Mohr and Sengupta, 2002): eliciting favorable relationship responses with the intention to build better performing supplier relationships. Undeniably, there are notable risks associated with sharing market information. Not only leakage and misusage of the information, but also outlearning by the receiving info-partner can make the sharing firm to become obsolete in the (near) future. All these concerns reflect the *risky view* of information sharing and raise the issue of controlling the risk of opportunistic behavior by the partner firm. Further research is needed on how retail firms can safeguard these information sharing risks without restraining the supplier relationship development. Despite the fact that information sharing can improve the quality of a relationship it is thus not always advisable to actually pursue this activity. Organizations have to make a trade-off between the benefits and costs (i.e., loss of power and a possible negative impact on other channel relationships).

As with any laboratory study, it is important to be prudent in generalizing from the findings. However, the fact that that business managers from the food industry have judged the business case as realistic supports the external validity of the results from this first study on understanding the effect of information sharing. Future research in real-life settings should corroborate our findings.

Within our current research setting two issues call for additional research. First, retailers increasingly play the role of director in orchestrating the supply chain. Therefore, the aspect of exclusivity (or preferred supplier) has become of major interest in businesses today. Results from a large-scale qualitative research on future developments in the food supply

chain, *State of the Art in Food* by CGE&Y, states that manufacturers will increasingly face difficulties in becoming a preferred supplier to more than one large retailer. Flemming Lindeløv, former CEO Carlsberg Breweries, the world's fourth largest brewery, predicts: "If two retailers are competing against each other, the same supplier cannot maintain its [preferred] position with both. It's a power thing. […] I envisage a situation where main suppliers will be involved in the competition between the main retailers in a certain market. [A retailer] will not allow [a manufacturer] to service [his] main competitor in the same way as [a manufacturer] do[es] to [him]." (Grievink, et.al., 2002:p. 229). Therefore, it would be interesting to investigate the feature of partnership exclusivity in sharing to a greater extent. For instance, the inclusion of an experimental condition in which "the retailer starts sharing information with a competing supplier" might have strong negative consequences for the supplier relationships with whom the retailer does not choose to share: channel partners in competing channels (Ritter, 2000). A second interesting research issue is to investigate the added value of the exclusivity-feature of sharing market information itself by examining the effect of the retailer's decision "to share with all (competing) suppliers in the product category."

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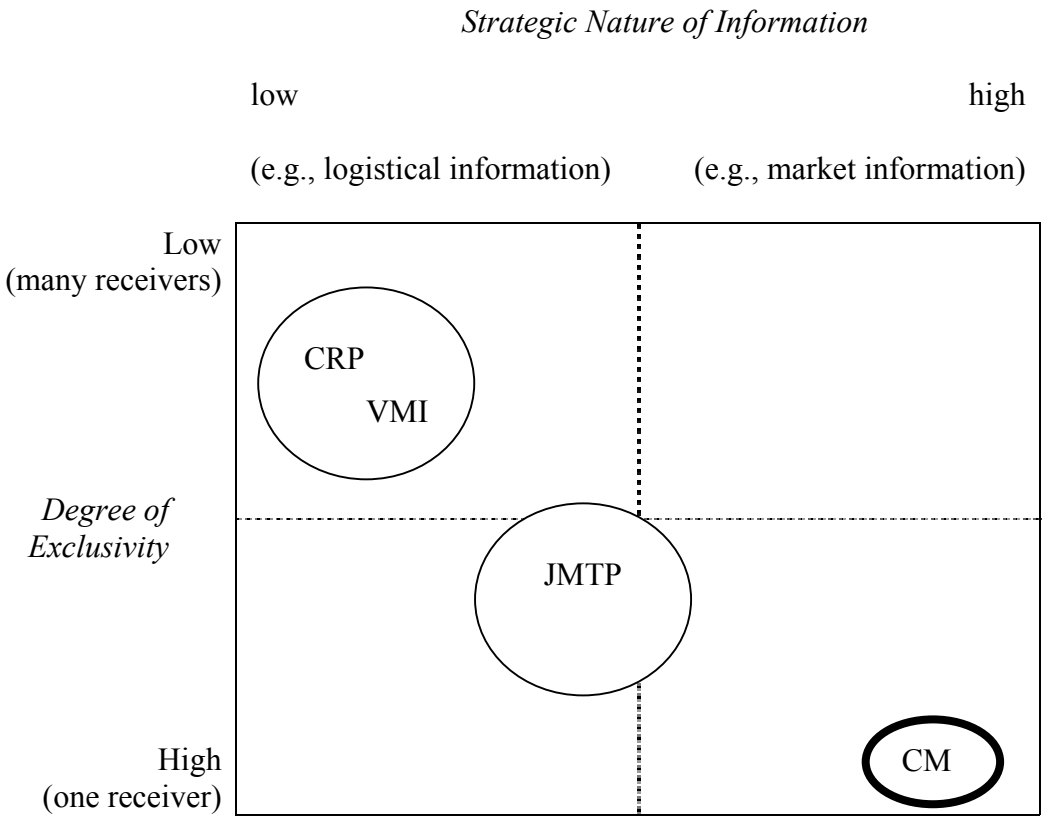
FIGURE 1 TYPES OF INFORMATION SHARING ARRANGEMENTS



CRP = Continuous Replenishment
VMI = Vendor Managed Inventory
JMTP = Joint Marketing Tactics Planning
CM = Category Management

FIGURE 2 RESEARCH MODEL

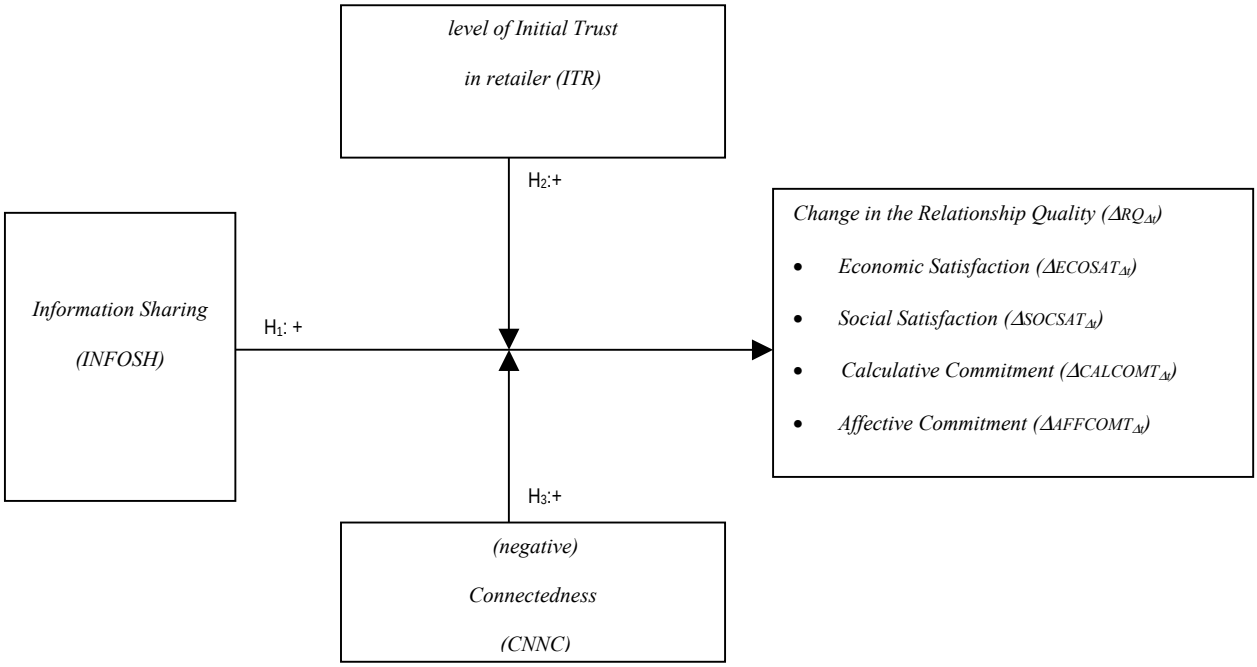


FIGURE 3 MARKETING CHANNEL SITUATION AS DEPICTED IN SCENARIO

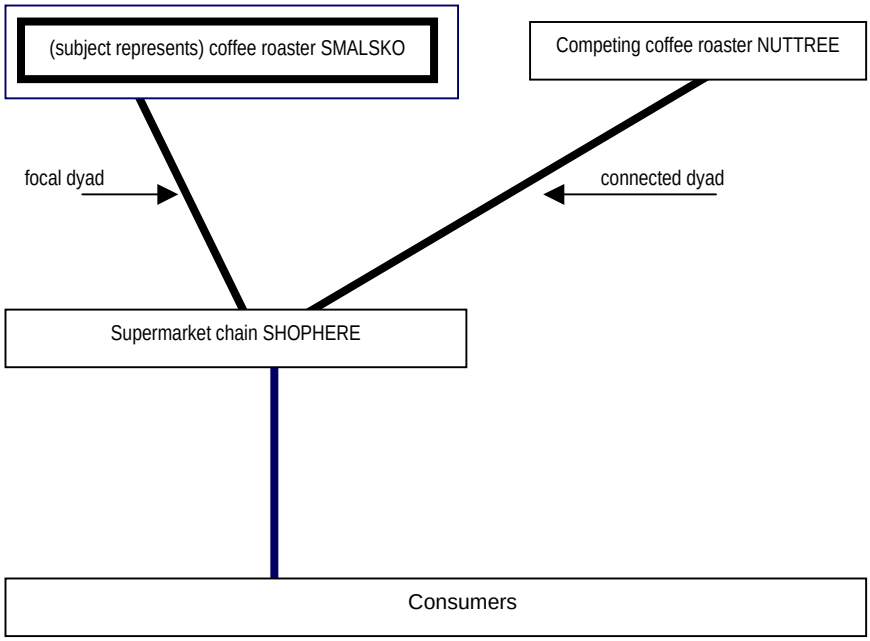


FIGURE 4 EXPERIMENTAL PROCEDURE

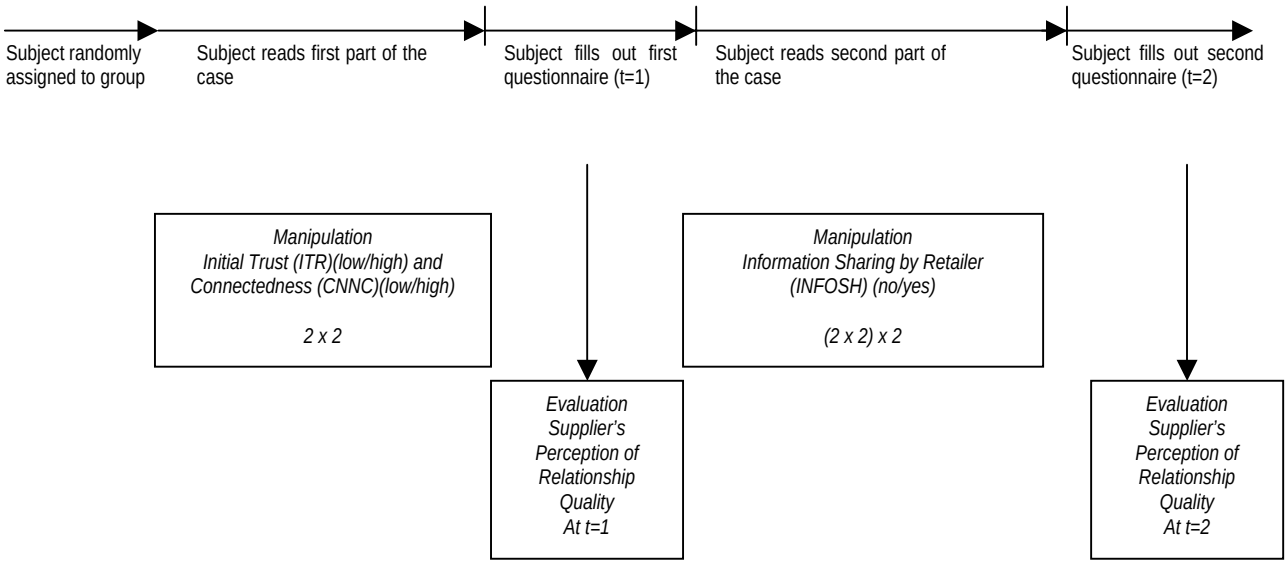
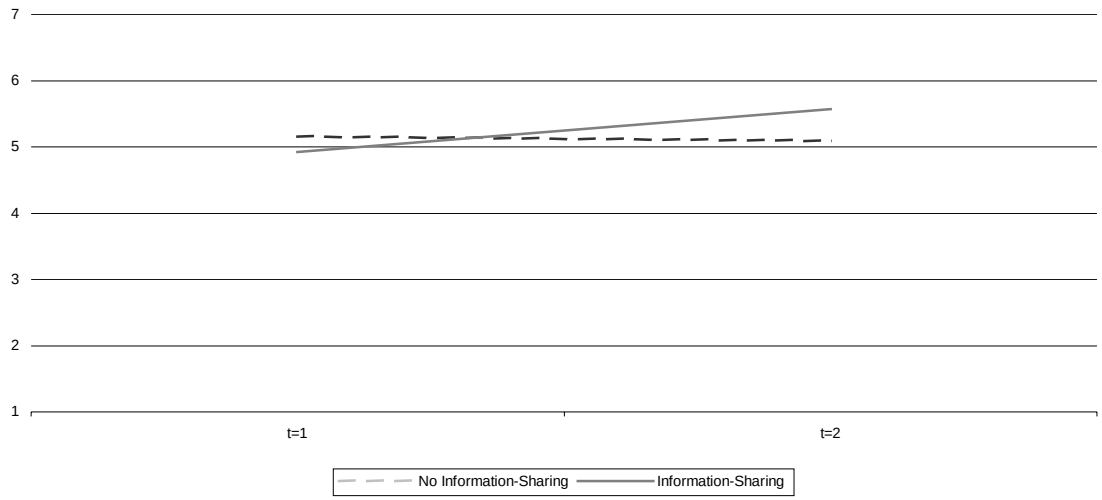


FIGURE 5A MAIN EFFECT *INFORMATION SHARING* ON

Economic Satisfaction
(F=8.13; p=0.01)



Social Satisfaction
(F=59.56; p<0.01)

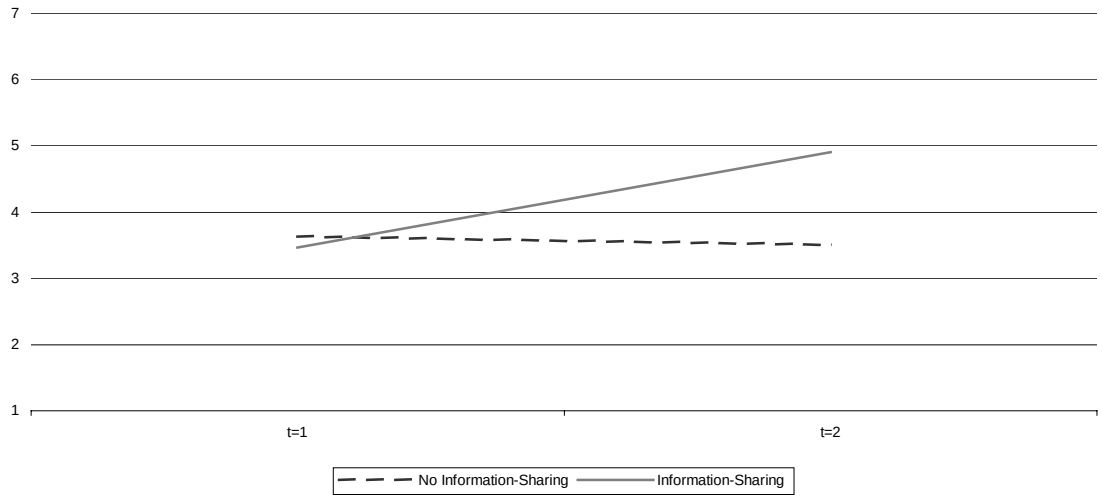
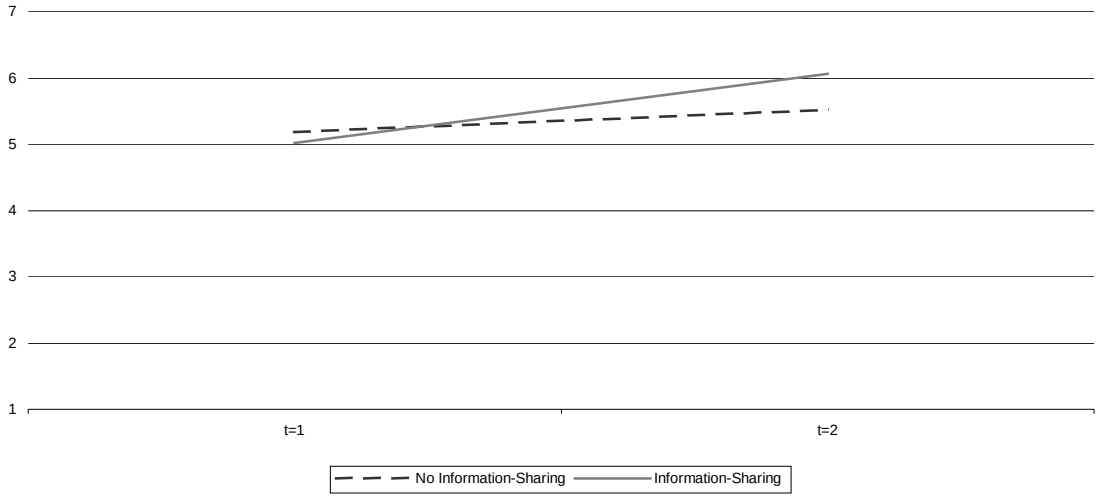


FIGURE 5B MAIN EFFECTS *INFORMATION SHARING* ON

Calculative Commitment
(F=6.92; p=0.01)



Affective Commitment
(F=8.37; p<0.01)

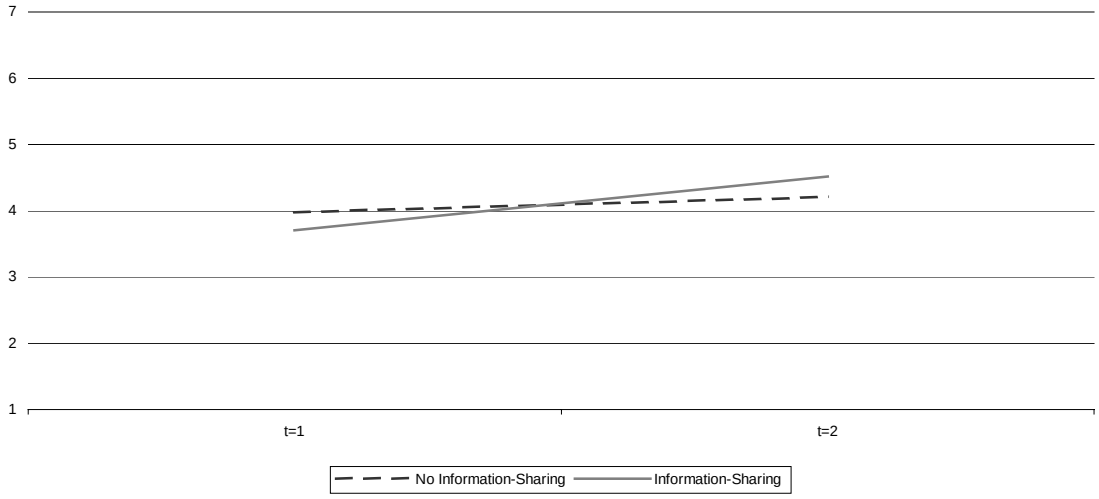
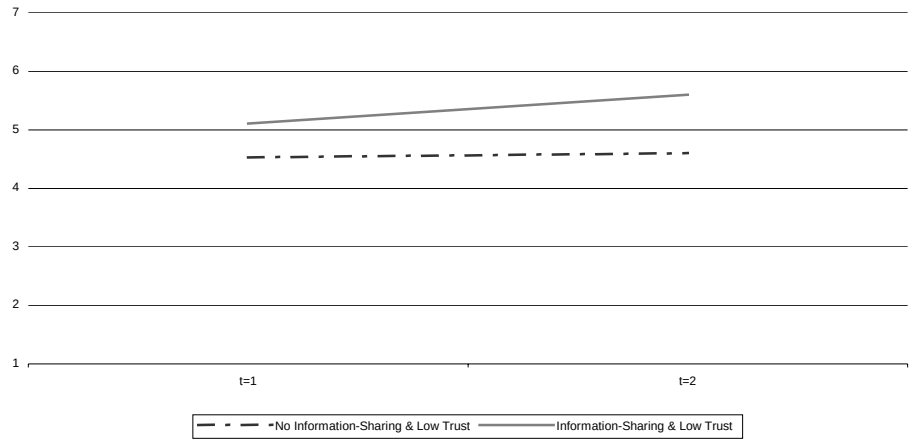


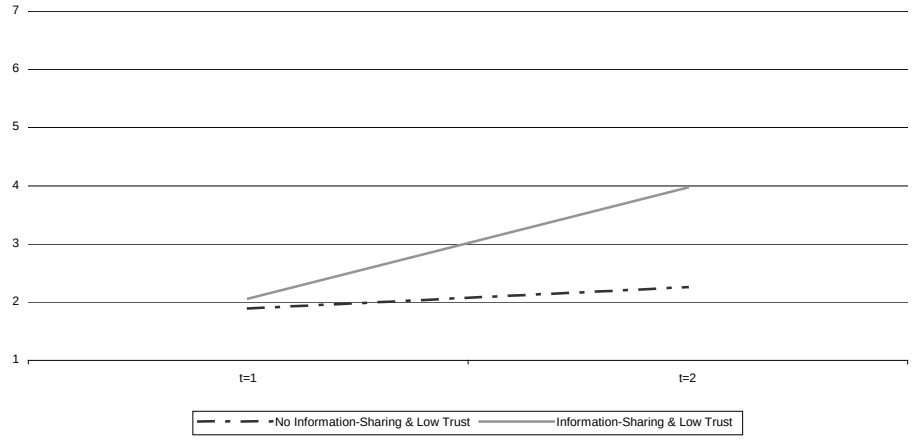
FIGURE 6A INTERACTION EFFECT INFORMATION SHARING AND INITIAL TRUST ON ECONOMIC AND SOCIAL SATISFACTION

Low-trust relationships

Economic Satisfaction

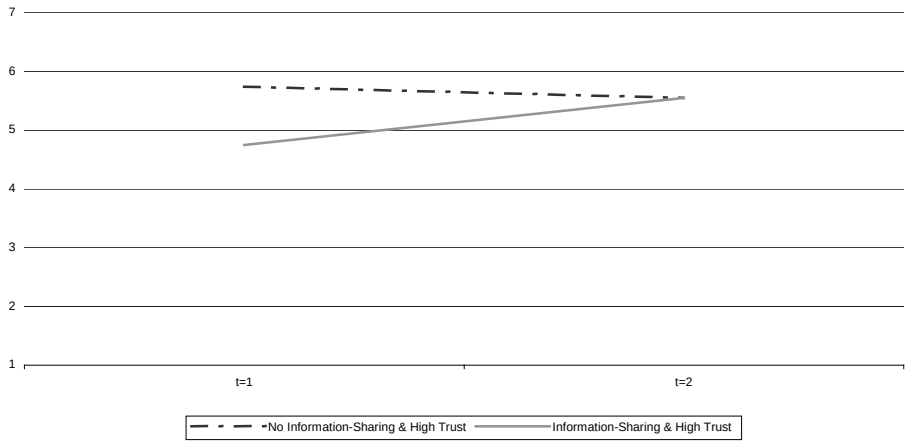


Social Satisfaction



High-trust relationships

Economic Satisfaction



Social Satisfaction

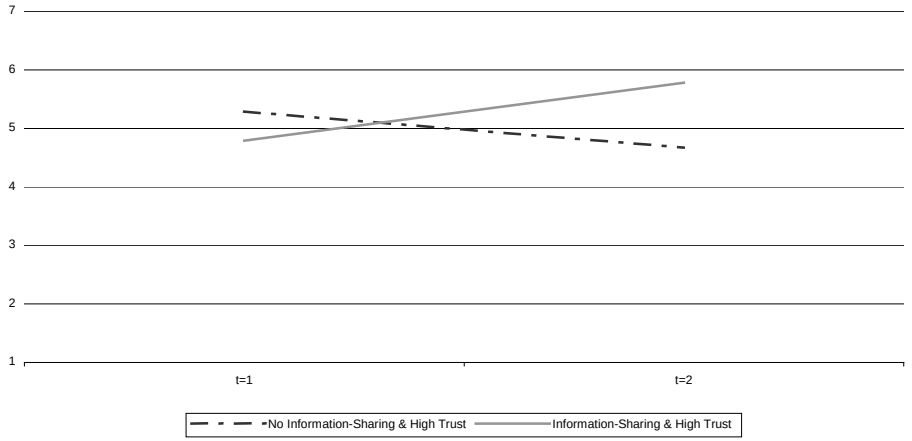
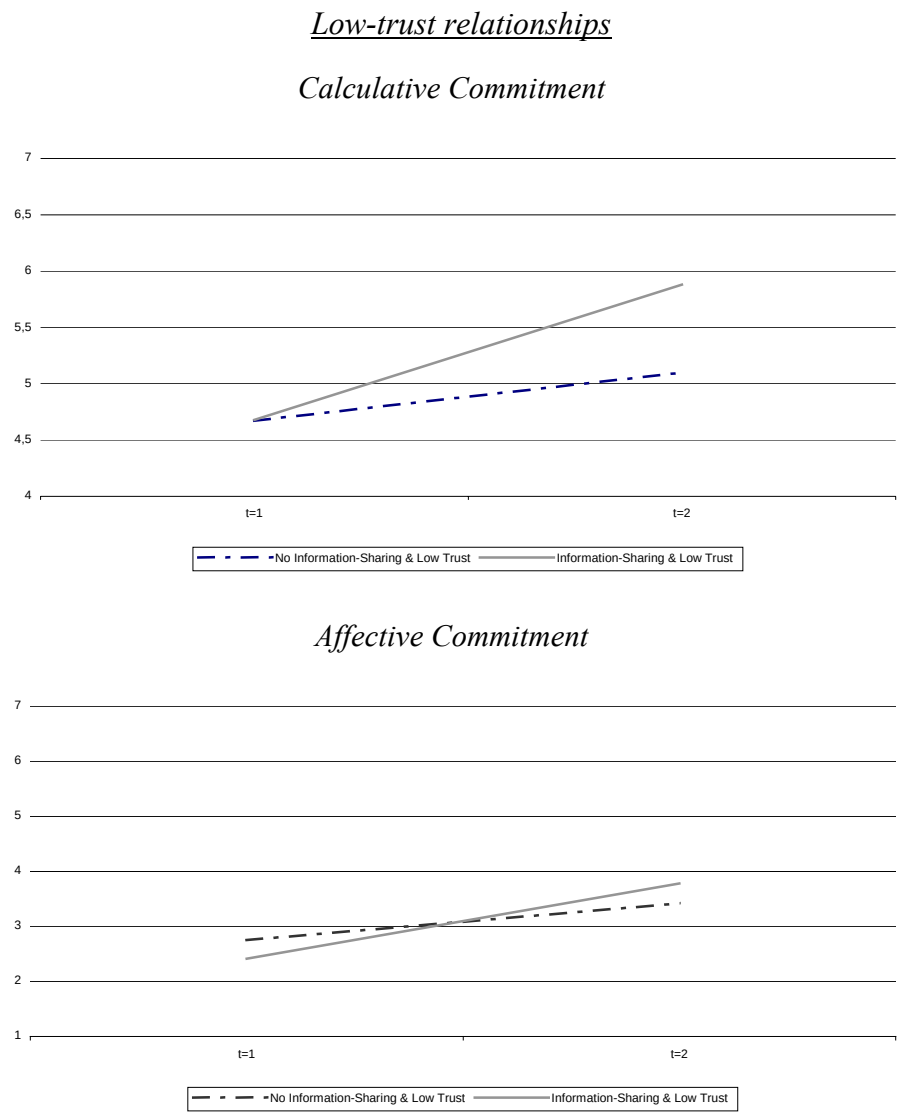


FIGURE 6B INTERACTION EFFECT INFORMATION SHARING AND INITIAL TRUST ON CALCULATIVE AND AFFECTIVE COMMITMENT



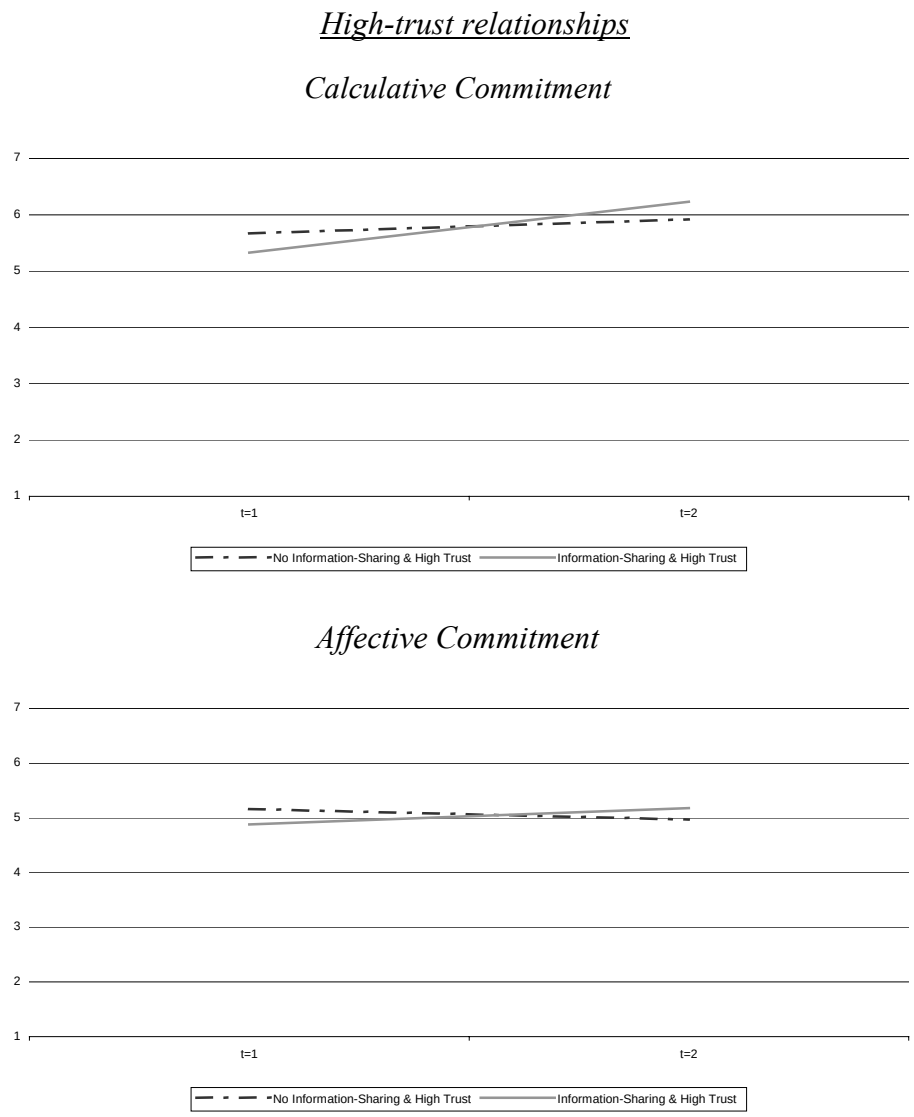
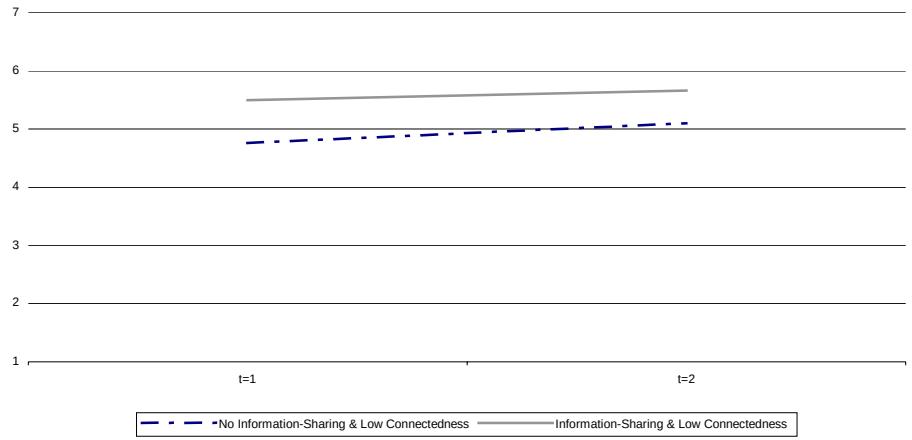


FIGURE 7A INTERACTION EFFECT INFORMATION SHARING AND CONNECTEDNESS ON ECONOMIC AND SOCIAL SATISFACTION

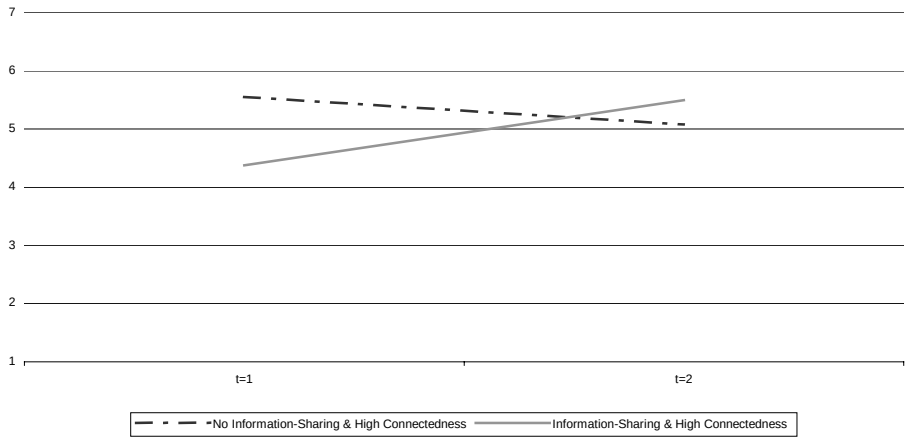
Low-connected relationships

Economic Satisfaction

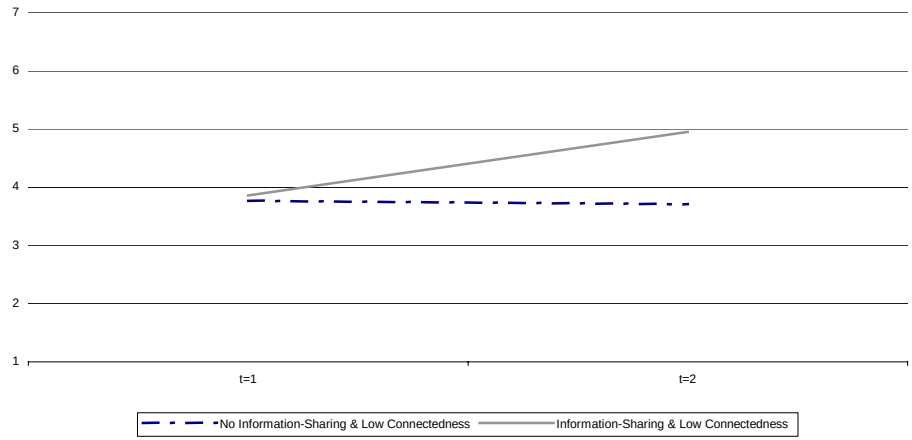


High-connected relationships

Economic Satisfaction



Social Satisfaction



Social Satisfaction

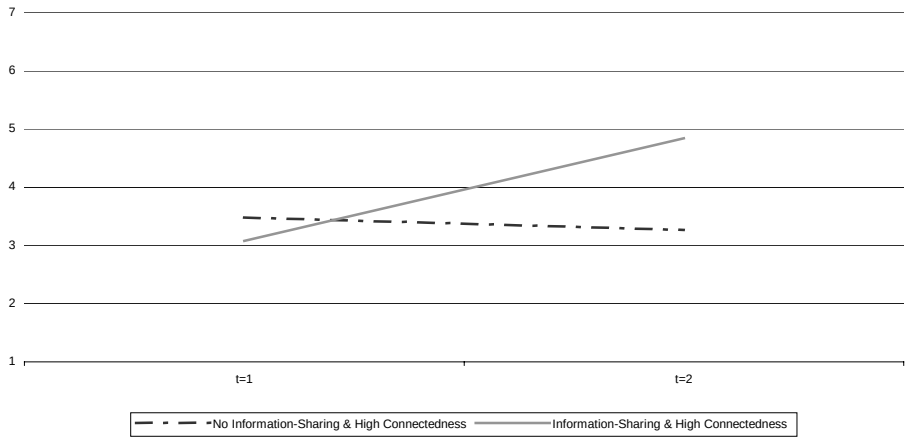


FIGURE 7B INTERACTION EFFECT INFORMATION SHARING AND CONNECTEDNESS ON CALCULATIVE AND AFFECTIVE COMMITMENT

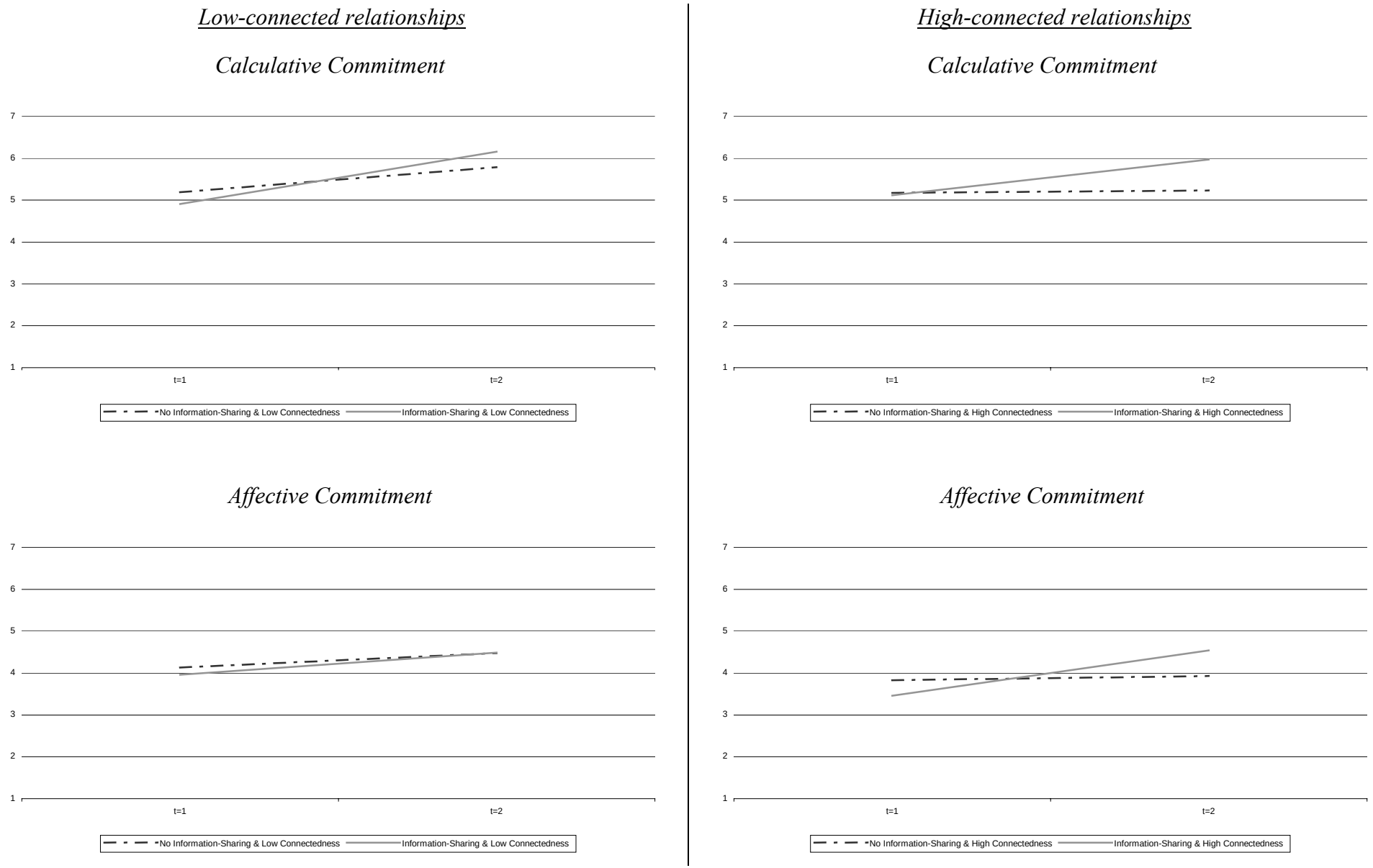


TABLE 1 INFORMATION SHARING UNDER DIFFERENT CHANNEL CONDITIONS

	Low Initial Trust Channel Relationships	*High Initial Trust Channel Relationships*
No Information sharing	No change in relationship quality ($\Delta RQ = 0$) (1)	No change in relationship quality ($\Delta RQ = 0$) (2)
Information sharing	Information sharing has no effect on relationship development ($\Delta RQ = 0$) (4)	Improvement in relationship development ($\Delta RQ = +$) (3)

TABLE 2 MEANS, STANDARD DEVIATIONS, AND CORRELATIONS

	Means	*Std. Dev.*	*Correlations*		
t=1			*Economic Satisfaction*	*Social Satisfaction*	*Calculative Commitment*
Economic Satisfaction (ES_1)	5.04	1.48			
Social Satisfaction (SS_1)	3.55	1.81	.227 (.043)		
Calculative Commitment (CC_1)	5.10	1.13	.355 (.001)	.433 (<.001)	
Affective Commitment (AC_1)	3.85	1.64	.266 (.018)	.761 (<.001)	.439 (<.001)
t=2					
Economic Satisfaction (ES_2)	5.33	1.06			
Social Satisfaction (SS_2)	4.18	1.57	.348 (.002)		
Calculative Commitment (CC_2)	5.78	0.97	.468 (<.001)	.556 (<.001)	
Affective Commitment (AC_2)	4.36	1.34	.161 (.153)	.710 (<.001)	.349 (.002)

N.B. Two-tailed probability stands between brackets.

TABLE 3 THE EFFECT OF INFORMATION SHARING ON SATISFACTION AND COMMITMENT

RESULTS OF ANALYSIS OF VARIANCE

Dependent variable: Change in Relationship Quality	*Degrees of freedom*	*Mean Square*	*F Value*	*p-value*	η^2
Economic Satisfaction					
- Constant	1	3.84	5.50	0.02	0.07
- Information sharing (INFOSH)	1	5.67	8.13	0.01	0.10
- Initial Trust in Retailer (ITR)	1	0.01	0.02	0.90	<0.01
- Connectedness (CNNC)	1	0.17	0.25	0.62	<0.01
- INFOSH x ITR	1	0.62	0.89	0.35	0.01
- INFOSH x CNNC	1	8.84	12.67	<0.01	0.15
- Error	73	0.70			
Social Satisfaction					
- Constant	1	16.71	41.58	<0.01	0.36
- Information sharing (INFOSH)	1	23.94	59.56	<0.01	0.45
- Initial Trust in Retailer (ITR)	1	8.75	21.78	<0.01	0.23
- Connectedness (CNNC)	1	0.49	1.22	0.27	0.02
- INFOSH x ITR	1	0.02	0.05	0.82	<0.01
- INFOSH x CNNC	1	1.58	3.92	0.05	0.05
- Error	73	0.40			
Calculative Commitment					
- Constant	1	18.49	26.83	<0.01	0.30
- Information sharing (INFOSH)	1	4.77	6.92	0.01	0.09
- Initial Trust in Retailer (ITR)	1	0.52	0.75	0.39	0.01
- Connectedness (CNNC)	1	2.37	3.43	0.07	0.05
- INFOSH x ITR	1	0.01	0.02	0.89	<0.01
- INFOSH x CNNC	1	0.03	0.04	0.85	<0.01
- Error	73	0.69			
Affective Commitment					
- Constant	1	11.27	26.58	<0.01	0.27
- Information sharing (INFOSH)	1	3.55	8.37	<0.01	0.10
- Initial Trust in Retailer (ITR)	1	9.20	21.71	<0.01	0.23
- Connectedness (CNNC)	1	0.21	0.49	0.48	<0.01
- INFOSH x ITR	1	0.11	0.25	0.62	<0.01
- INFOSH x CNNC	1	1.70	4.02	0.05	0.05
- Error	73	0.42			

* $p < 0.05$; ** $p < 0.01$

TABLE 4 THE EFFECT OF INFORMATION SHARING ON SATISFACTION AND COMMITMENT

MEANS AND STANDARD DEVIATION

	t=1	*t=2*		*Change{ (t=2) – (t=1) }*	
	Mean (std. dev)	*Mean (std. dev)*		*Mean (std. dev)*	
Economic Satisfaction					
No information sharing	5.15 (1.45)	5.09 (1.07)	*	- 0.06 (1.24)	*
Information sharing	4.92 (1.52)	5.58 (1.00)		+ 0.65* (1.28)	
Social Satisfaction					
No information sharing	3.63 (1.91)	3.50 (1.49)	**	- 0.14 (1.00)	**
Information sharing	3.46 (1.71)	4.90 (1.31)		+ 1.44** (1.05)	
Calculative Commitment					
No information sharing	5.18 (1.03)	5.52 (1.15)	*	+ 0.34 (1.22)	**
Information sharing	5.02 (1.23)	6.06 (0.64)		+ 1.04** (1.12)	
Affective Commitment					
No information sharing	3.98 (1.59)	4.21 (1.38)		+ 0.22 (1.02)	*
Information sharing	3.71 (1.69)	4.52 (1.28)		+0.81* (1.08)	

* $p < 0.05$; ** $p < 0.01$

TABLE 5 EFFECT OF INFORMATION SHARING ON SATISFACTION AND COMMITMENT IN LOW-TRUST AND HIGH-TRUST RELATIONSHIPS

	t=1	*t=2*	*Change { (t=2) – (t=1) }*	
	Mean (std.dev)	*Mean (std.dev)*	*Mean (std.dev)*	
Economic Satisfaction				
- Low Initial Trust Relationships				
No information sharing	4.53 (1.57)	4.60 (1.14)	+ 0.08 (1.57)	+0.42
Information sharing	5.11 (1.67)	5.61 (0.98)	+ 0.50 (1.67)*	
- High Initial Trust Relationships				
No information sharing	5.74 (1.04)	5.55 (0.77)	- 0.19 (1.04)	+0.99
Information sharing	4.75 (1.37)	5.55 (1.05)	+ 0.80 (1.37)*	
Social Satisfaction				
- Low Initial Trust Relationships				
No information sharing	1.89 (0.72)	2.26 (0.85)	+ 0.37 (0.78)*	+1.54
Information sharing	2.06 (0.62)	3.97 (1.09)	+ 1.91 (0.89)**	
- High Initial Trust Relationships				
No information sharing	5.29 (0.94)	4.67 (0.87)	- 0.62 (0.96)**	+1.36
Information sharing	4.79 (1.30)	5.78 (0.81)	+ 0.98 (1.00)**	
Calculative Commitment				
- Low Initial Trust Relationships				
No information sharing	4.67 (1.10)	5.10 (1.15)	+ 0.43 (1.41)	+0.76
Information sharing	4.68 (1.39)	5.88 (0.68)	+ 1.19 (1.24)**	
- High Initial Trust Relationships				
No information sharing	5.66 (0.67)	5.92 (1.03)	+0.25 (1.02)	+0.65
Information sharing	5.33 (0.99)	6.23 (0.56)	+0.90 (1.00)**	
Affective Commitment				
- Low Initial Trust Relationships				
No information sharing	2.75 (0.88)	3.42 (1.09)	+ 0.67 (0.64)**	+0.70
Information sharing	2.41 (1.12)	3.79 (1.10)	+ 1.37 (0.83)**	
- High Initial Trust Relationships				
No information sharing	5.16 (1.17)	4.97 (1.21)	- 0.19 (1.14)	+0.49
Information sharing	4.88 (1.19)	5.18 (1.05)	+ 0.30 (1.03)	

* $p < 0.05$; ** $p < 0.01$

TABLE 6 EFFECT OF INFORMATION SHARING ON SATISFACTION AND COMMITMENT IN LOW-CONNECTED AND HIGH-CONNECTED RELATIONSHIPS

	t=1	*t=2*	*Change { (t=2) – (t=1) }*		
	Mean (std.dev)	*Mean (std.dev)*	*Mean (std.dev)*		
Economic Satisfaction					
- Low-Connected Relationships					
No information sharing	4.76 (1.63)	5.10 (1.21)	+0.33 (1.29)	-0.17	
Information sharing	5.50 (1.07)	5.66 (1.09)	+0.16 (0.94)		**
- High-Connected Relationships					
No information sharing	5.55 (1.13)	5.08 (0.94)	-0.48 (1.07)	+1.61	
Information sharing	4.38 (1.69)	5.50 (0.93)	+1.13 (1.39)**		
Social Satisfaction					
- Low-Connected Relationships					
No information sharing	3.78 (2.05)	3.71 (1.60)	-0.06 (1.14)	+1.16	
Information sharing	3.86 (2.11)	4.96 (1.58)	+1.10 (1.11)**		*
- High-Connected Relationships					
No information sharing	3.48 (1.79)	3.27 (1.37)	-0.22 (0.84)	+1.97	
Information sharing	3.08 (1.15)	4.84 (1.04)	+1.75 (0.90)**		
Calculative Commitment					
- Low-Connected Relationships					
No information sharing	5.19 (1.04)	5.79 (0.95)	+0.60 (1.24)*	+0.65	
Information sharing	4.91 (1.43)	6.16 (0.66)	+1.25 (1.38)**		
- High-Connected Relationships					
No information sharing	5.17 (1.05)	5.23 (1.30)	+0.07 (1.16)	+0.78	
Information sharing	5.12 (1.04)	5.97 (0.62)	+0.85 (0.78)**		
Affective Commitment					
- Low-Connected Relationships					
No information sharing	4.13 (1.58)	4.48 (1.24)	+0.35 (1.05)	+0.18	
Information sharing	3.96 (1.83)	4.49 (1.42)	+0.53 (1.00)*		*
- High-Connected Relationships					
No information sharing	3.83 (1.63)	3.93 (1.49)	+0.10 (0.99)	+0.99	
Information sharing	3.46 (1.56)	4.52 (1.14)	+1.09 (1.10)**		

* $p < 0.05$; ** $p < 0.01$

TABLE 7 SIGNIFICANCE AND DIRECTION TESTED EFFECTS

	INFOSH (H_1)	*INFOSH*ITR* (H_2)	*INFOSH* CNNC* (H_3)
Change in …			
Economic Satisfaction	+	n.s.	+
Social Satisfaction	+	n.s.	+
Calculative Commitment	+	n.s.	n.s.
Affective Commitment	+	n.s.	+

n.s. = not significant

APPENDIX I SAMPLE SCREENS WEB-BASED PRESENTATION BUSINESS CASE

Low Initial Trust

Smalsko MEMO

From: **M. Jansen**
CC: **W. Teunisse, CEO**
Concerning: **Important issues of your new position**
Date: **April 28, 2000**

Dear Successor:

Due to the sudden hectic of changing jobs - my promotion to OtherCo. and you coming from another company to fulfill my previous position - I was not able to properly inform you on all details of the job. I still regret that.

Therefore, I wish to underline some subjects by means of this memo. First, the password for the personal computer on your desk is 'cup'.

Second, your appointment with our Market Research Department is scheduled at 9:00 am May 2nd.

Third, as a supplier of coffee to supermarket chains it is crucial to develop good working relationships. I wish to make some comments on one of our working relationships: supermarket chain 'SHOPHERE'.

You should **not trust 'SHOP HERE'**. I don't have many good things to say. I don't feel we can trust these people to be very 'up front' with us. They sometimes play games or give us misleading cues.

Once we put ourselves in the position of having to ask 'SHOP HERE' to keep a trade secret away from competitors, though it was in SHOPHERE's best interest to spread the news. The secret spread like wildfire. I am convinced that we can not trust them.

Wishing you success with your new and challenging job,

Mark Jansen

High Initial Trust

Smalsko MEMO

From: **M. Jansen**
CC: **W. Teunisse, CEO**
Concerning: **Important issues of your new position**
Date: **April 28, 2000**

Dear Successor:

Due to the sudden hectic of changing jobs - my promotion to OtherCo. and you coming from another company to fulfill my previous position - I was not able to properly inform you on all details of the job. I still regret that.

Therefore, I wish to underline some important topics by means of this memo. First, the password for the personal computer on your desk is 'cup'.

Second, your appointment with the Market Research Department is scheduled at 9:00 am May 2nd.

Third, as a supplier of coffee to supermarket chains it is crucial to develop good working relationships. I wish to make some comments on one of our working relationships: supermarket chain 'SHOPHERE'.

You should **trust** '**SHOPHERE**'. I have many good things to say. I feel we can trust these people to be very 'up front' with us. They will not play games or give us misleading cues.

Once we put ourselves in the position of having to ask 'SHOP HERE' to keep a trade secret away from competitors, though it was in SHOPHERE's best interest to spread the news. The secret never got out. I am convinced that we can trust them.

Wishing you success with your new challenging job,

Mark Jansen

APPENDIX II SAMPLE SCREENS WEB-BASED PRESENTATION BUSINESS CASE (2)

Low Connectedness

Smalsko **Department of Market Research**

Concerning: **Positioning SMALKSO versus NUTTREE**

It is also known that

- SMALSKO and NUTTREE have **never** been strong rivals.
- Traditionally, the positioning of both companies' brands has **very distinct** and is aimed to keep their own consumers.
- SMALSKO and NUTTREE have always **avoided price wars** and have educated consumers to appreciate brand image in their choice of coffee brands.
- As a result, consumers have developed a habit of **brand loyalty.**
- Not surprisingly, decisions from SHOPHERE favoring your biggest competitor NUTTREE will NOT have **any impact** on SMALSKO's sales and profit figures.

SMALSKO Market Research Department, February 2000

High Connectedness

Smalsko **Department of Market Research**

Concerning: **Positioning SMALKSO versus NUTTREE**

It is also known that

- SMALSKO and NUTTREE have **always** been strong rivals.
- Traditionally, the positioning of both companies' brands has **very similar** and is aimed to attract each other's consumers.
- Many times, SMALSKO and NUTTREE have **begun price wars**, which conditioned consumers to be price-sensitive in their choice of coffee brands.
- As a result, consumers have developed a habit **of brand switching.**
- Not surprisingly, decisions from SHOPHERE favoring your biggest competitor NUTTREE will have **a major negative impact** on SMALSKO's sales and profit figures.

SMALSKO Market Research Department, February 2000

APPENDIX III MEASURES OF CONSTRUCTS

RELATIONSHIP QUALITY MEASURES

Economic Satisfaction (Adapted from Geyskens and Steenkamp, 2000)

SAT1	Its relationship with {SUPERMARKET S} has provided *{YOUR COMPANY}* with a dominant and profitable market position.
SAT2	*{YOUR COMPANY}*'s relationship with {SUPERMARKET S} is a very attractive one in economic terms.
SAT3*	*{YOUR COMPANY}* is very pleased with the high distribution coverage that SHOPHERE provides.

Cronbach's alpha (t_1, t_2): 0.67 , 0.63
Mean (t_1, t_2): 5.04 , 5.33
Standard deviation (t_1, t_2): 1.48 , 1.06
Range (t_1, t_2): 1 to 7 , 2 to 7

Social Satisfaction (Adapted from Geyskens and Steenkamp, 2000)

SAT4	Interaction between {SUPERMARKET S} and *{YOUR COMPANY}* are characterized by mutual respect.
SAT5	{SUPERMARKET S} is very open towards *{YOUR COMPANY}* about things that *{YOUR COMPANY}* ought to know.
SAT6	*{YOUR COMPANY}*'s relationship with {SUPERMARKET S} reflects a happy situation.
SAT7	The relationship between the two companies is very positive.
SAT8	*{YOUR COMPANY}* is very satisfied with {SUPERMARKET S}.
SAT9	In general, *{YOUR COMPANY}* is pretty happy with its dealing with {SUPERMARKET S}.

Cronbach's alpha (t_1, t_2): 0.96 , 0.97
Mean (t_1, t_2): 3.55 , 4.18
Standard deviation (t_1, t_2): 1.81 , 1.57
Range (t_1, t_2): 1 to 7 , 1 to 7

* These items were deleted from further analysis

Calculative Commtiment (Adapted from Kumar, Steenkamp and Scheer, 1995)

COM7	If {SUPERMARKET S} requested it, *{YOUR COMPANY}* is willing to make further investment in supporting {SUPERMARKET S}'s coffee assortment.
COM8	*{YOUR COMPANY}* is willing to put more effort and investment in building their business with {SUPERMARKET S}.
COM9	In the future *{YOUR COMPANY}* will work to link their firm with {SUPERMARKET S}'s in order to serve the consumer better.

Cronbach's alpha (t_1, t_2): 0.84 , 0.84
Mean (t_1, t_2): 3.85 , 1.64
Standard deviation (t_1, t_2): 1.64 , 1.33
Range (t_1, t_2): 1 to 7 , 1 to 7

Affective Commitment (Adapted from Kumar, Steenkamp and Scheer, 1995)

COM1	Even if *{YOUR COMPANY}* could, they would not drop {SUPERMARKET S} because they like being associated with them.
COM2	*{YOUR COMPANY}* wants to remain a member of the {SUPERMARKET S}'s network, because they genuinely enjoy their relationship with them.
COM3	*{YOUR COMPANY}*'s positive feelings towards {SUPERMARKET S} are a major reason they continue working with them.
COM4*	*{YOUR COMPANY}* expects their relationship with {SUPERMARKET S} to continue for a long time.
COM5*	Renewal of the relationship with {SUPERMARKET S} is virtually automatic.
COM6*	It is likely that *{YOUR COMPANY}* will continue doing business with {SUPERMARKET S} during the following 2 years.

Cronbach's alpha (t_1, t_2): 0.84 , 0.84
Mean (t_1, t_2): 3.85 , 4.35
Standard deviation (t_1, t_2): 1.64 , 1.32
Range (t_1, t_2): 1 to 7 , 1 to 7

APPENDIX IV MEASURES OF CONSTRUCTS

MANIPULATION CHECKS

Honesty as part of Trust (Adapted from Kumar, Steenkamp and Scheer, 1995)	
HON1	Even when {SUPERMARKET S} gives *{YOUR COMPANY}* a rather unlikely explanation, *{YOUR COMPANY}* is confident that they are telling them the truth.
HON2	{SUPERMARKET S} often provides *{YOUR COMPANY}* information, which later proves to be inaccurate **(r)**
HON3	{SUPERMARKET S} usually keeps the promises they make to *{YOUR COMPANY}*.
HON4	Whenever {SUPERMARKET S} gives *{YOUR COMPANY}* advice on their business operations, we know they are sharing their best judgment.
HON5	*{YOUR COMPANY}* can count on {SUPERMARKET S} to be sincere.
Cronbach's alpha (t_1): 0.87 Mean (t_1): 4.22 Standard deviation (t_1): 1.60 Range (t_1): 2 to 7	

Connectedness (Adapted from Hakansson, Anderson and Johanson, 1994)	
CNC1	If supermarket chain {SUPERMARKET S} starts cooperating with competitor *{YOUR COMPETITOR}*, {SUPERMARKET S} makes it difficult to work together with *{YOUR COMPANY}*.
CNC2	Too close a relationship between {SUPERMARKET S} and *{YOUR COMPETITOR}* will destroy the balance between *{YOUR COMPANY}* and {SUPERMARKET S}.
CNC3	Collaboration of {SUPERMARKET S} with *{YOUR COMPETITOR}* is harmful to {SUPERMARKET S}'s relationship with *{YOUR COMPANY}*.
CNC4	Although {SUPERMARKET S}'s working together with *{YOUR COMPETITOR}* will likely provide some benefits to them, *{YOUR COMPANY}* may not be happy about this.
Cronbach's alpha (t_1): 0.78 Mean (t_1): 5.1 Standard deviation (t_1): 1.12 Range (t_1): 2 to 7	

Benevolence as part of Trust (Adapted from Kumar, Steenkamp and Scheer, 1995)	
BEN1	Though circumstances change, *{YOUR COMPANY}* believes that {SUPERMARKET S} will be ready and willing to offer them assistance and support.
BEN2	When making important decisions, {SUPERMARKET S} is concerned about *{YOUR COMPANY}*'s welfare.
BEN3	When *{YOUR COMPANY}* shares their problems with {SUPERMARKET S}, they know that {SUPERMARKET S} will respond with understanding.
BEN4	In the future *{YOUR COMPANY}* can count on {SUPERMARKET S} to consider how its decisions and actions will affect them.
BEN5	When it comes to things, which are important to *{YOUR COMPANY}*, they can depend on the {SUPERMARKET S}'s support.
Cronbach's alpha (t_1): 0.90 Mean (t_1): 3.48 Standard deviation (t_1): 1.36 Range (t_1): 1 to 7	

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