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Relationship Quality in Business to Business Relationships – Reviewing the Current Literatures and Proposing a New Measurement Model

Abstract

Relationship quality is a central theme in business to business relationships, and it is becoming increasingly important from a theoretical as well as practical perspective to understand and monitor relationship quality. Despite its pivotal role, measurement issues of relationship quality have not been systematically investigated, confounded by a lack of consensus on the dimensions and contents of this construct. This paper presents a comprehensive review on the measures of relationship quality, and proposes the CLOSES scale as a new monitoring tool. This higher-order, multidimensional scale reflects the intensity of communication (C), long-term orientation (LO), and social and economic satisfaction (SES) of a focal actor in a business relationship. Tested with data collected from 404 construction companies and cross-checked with a second round of data collection from 201 companies in other various industries, using partially multiple respondents, this new scale shows good reliability, convergent, discriminant and nomological validity, as well as cross-industry transferability. Thus, future academic research as well as practical management of business relationships is enriched by providing a valid and reliable tool that is not tied to a specific industry setting, to capture the important construct of relationship quality.

Key Words

Relationship quality; Business to business Relationship; Measurement model

Introduction

The significance of relationship quality between the parties involved in business to business exchange has been widely acknowledged (Griffith & Harvey, 2001; Hewett, Money & Sharma, 2002; Johnson, 1999; Smith, 1998). Relationship quality represents a construct reflecting the strength of interorganizational relationships which stimulate strong and more intimate partnerships that increase the effectiveness of the network of organizations (Griffith & Harvey, 2001). The relationship marketing literature generally views the quality of the relationship between exchange partners as an important determinant of the permanence and intensity of this relationship (Hennig-Thurau, 2000). Furthermore, relationship quality has also been linked to relationship performance as well as firm performance (Crosby, Evans & Cowles, 1990; Hewett et al., 2002; Palmatier, Scheer, Houston, Evans & Gopalakrishna, 2007).

Despite the important role of relationship quality, measures for this construct have not been systematically investigated (Hennig-Thurau, 2000; Roberts, Varki & Brodie, 2003). As yet, there is a lack of consensus on the structural nature of this construct (Shabbir, Palihawadana and Thwaites 2007), which leads to the ongoing academic standoff regarding the dimensions that should be chosen for measuring the construct (Caceres & Paparoidamis, 2007; Dorsch, Swanson & Kelley, 1998; Kumar, Scheer & Steenkamp, 1995; Naudé & Buttle, 2000; Smith, 1998; Van Bruggen, Kacker & Nieuwlaat, 2005). Furthermore, the unit of analysis is also unclear: does relationship quality relate to characteristics of one actor within a relationship (*monadic* perspective) or is it meant to represent characteristics of the relationship itself (*dyadic* perspective)? As Hennig-Thurau (2000) observed, researchers tend to assume that the measure of relationship quality varies with the intuitive understanding of what it involves.

Although many authors only loosely define the relationship quality construct, in most studies it is considered to be a higher-order, multidimensional construct with varying contents, often operationalized in a monadic manner (Naudé & Buttle, 2000; Smith, 1998). A review of the literature revealed that a great number of studies consider trust and commitment as the main indicators or domains of relationship quality (Dorsch et al., 1998; Ivens & Pardo, 2007; Johnson, Sohi & Grewal, 2004; Phan, Styles & Patterson, 2005; Skarmeas, Katsikeas, Spyropoulou & Salehi-Sangari, 2008; Smith, 1998). This is problematic because whereas they are somewhat associated with the quality of relationship, trust and commitment are generally deemed as the key mediating variables in relationships rather than the relational outcome or the ingredients of relationship quality (Anderson & Narus, 1990; Doney & Cannon, 1997; Ganesan, 1994; Morgan & Hunt, 1994; Siguaw, Simpson & Baker, 1998). Thus, often antecedents have been confounded with indicators of the relationship quality construct resulting in tautological assumptions (Selnes, 1998; Wilson, 1995; Shabbir, Palihawadana and Thwaites 2007; Lahiri and Kedia 2011).

In this paper, we address the challenge of systematically defining the core components of relationship quality, as well as the issue of how to measure such a multi-dimensional construct. Finding better operationalization measures for relationship marketing in business to business environments has recently received renewed interest (Lages, Lancastre & Lages, 2008). We propose a new scale (CLOSES) for relationship quality for this purpose. This scale embraces the constructs of communication, long-term orientation, social satisfaction and economic satisfaction which have received substantial attention and research in various settings. We develop a measurement model based on a higher-order operationalization of relationship quality, and subsequently test this model with the main survey data from

the construction industry and then with the repetition survey data from other various industries. The paper is organized as follows: we start by presenting a detailed literature review for research relating to relationship quality. The next section describes the components of the CLOSES scale. Our research method to develop a measurement model and test the new scale is then discussed. We present the data analysis and findings, and conclude our paper with a discussion of implications and directions of future research.

Relationship Quality

The role of relationship quality

Relationship quality is an outcome or performance variable that has emerged as a central construct in the relationship marketing literature (Smith, 1998). It reflects the overall depth, closeness, and climate in interorganizational relationships (Johnson, 1999), as well as the extent to which the business relationships meet the needs and expectations of the parties (Smith, 1998). Perceptions of relationship quality act as the impetus to drive the ongoing relationship between the members involved. In the buyer-supplier context, the buyer will aim to maintain the relationship with considerable efforts when he/she perceives the overall quality of the relationship to be high, and vice versa. As Ivens and Pardo (2007) suggest, relationship quality is a central indicator of long-term success in key account management, i.e. the organizational manifestation of business relationships. High relationship quality can enhance relationship building effectiveness (Sheth & Parvatlyar, 1995), and foster long-term and more stable exchanges in which both parties can benefit (Ford, 1980). Therefore, relationship quality can be posited as an antecedent of relationship

continuity (Lai, Bao & Li, 2008; Wong, Leung, Hung & Ngai, 2007), which plays an important role in long-term business success (Sheth & Parvatlyar, 1995).

Relationships characterized by high quality can generate favourable financial outcomes (De Wulf, Odekerken-Schröder & Iacobucci, 2001; Palmatier et al., 2007). High-quality relationships can bind the buyer-supplier together to achieve mutual benefits beyond the mere exchange of goods and services (Jap, Manolis & Weitz, 1999; Macneil, 1980). The linkage between relationship quality on the one hand, and business performance on the other has been corroborated in many studies, for example, Leuthesser (1997) provides empirical evidence for supplier relationships regarding the connection between relationship quality and business performance. In addition, Crosby et al. (1990) found a link between relational quality and sales effectiveness which results from successful client relationships in service exchange settings. Nyaga and Whipple (2011) found that for both buyers and suppliers, relationship quality is significantly and positively linked to supply chain operational performance as well as to overall satisfaction with strategic performance. In a study of buyer-seller close relationships, Hewett et al. (2002) identified a strong relationship between buyers' repurchase intentions and their perceptions of relationship quality. This finding is supported by Rauyruen and Miller (2007) who contend that relationship quality is a reliable predictor of purchase intentions and attitudinal loyalty of business customers. As Sarkar, Echambadi, Cavusgil and Aulakh (2001) argue, performance can be enhanced when firms make conscious efforts to create relationship capital through an interaction process designed to specifically improve the quality of the relationship. These studies all point in the direction of relationship quality being an important indicator of firm performance, and therefore underline the importance of this construct for academic theory as well as managerial practice.

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Definition and measures

The conceptualization of relationship quality varies widely between different studies (Athanasopoulou 2009; Holmlund 2008; Huntley 2006). As Hennig-Thurau (2000) observed, most authors tend to assume they have their own intuitive understanding of what constitutes relationship quality, hence they freely provide conceptual definitions and proffer different content aspects for the construct in question. For example, Grönroos (2000) describes relationship quality as the "*dynamics of long-term quality formation in ongoing customer relationships*" (p. 20). Similarly but in an expanded form, Song et al. (2012) define relationship quality as "the degree to which the parties in a relationship are engaged in an active, long-term working relationship that includes cooperation and conflict resolution". Hennig-Thurau and Klee (1997) define relationship quality on the other hand as the "*degree of appropriateness of a relationship to fulfill the needs of the customer*" (p. 751). In addition, Smith (1998) considers relationship quality as "*the overall strength of a relationship and the extent to which it meets the needs and expectations of the parties* "(p. 4). Griffith and Harvey (2001) also again present another definition, referring to relationship quality as "*the strength of an interorganizational relationship and the potential for the relationship to continue the process of development*" (p. 94). In view of the lack of a formal definition of relationship quality, Woo and Ennew (2004) propose that, in order to advance our knowledge of conceptualization of relationship quality, we should accept a very general perspective on its meaning, as "an overall evaluation of the relationship between buyer and seller", and then can allow ourselves to focus on identifying the constructs that constitute relationship quality. Palmatier (2008) is of the same tone by defining relationship quality as the "overall caliber of

relationship ties and their overall impact on outcomes". This paper generally adopts this approach.

To assess the strength and quality of exchange relationships, researchers usually adopt subjective measures of relationship quality, rather than using the direct and objective measurement of relationship performance which can be confounded by environmental factors (Gladstein, 1984). While there exist certain aspects of relationship quality which are more commonly used in descriptions of the construct, no generally used or systematically derived definitions has been put forward. In fact, substantial and systematic discussion of these issues is rare (Hennig-Thurau, 2000; Roberts et al., 2003). We used an extensive search and critical review of the extant literature in marketing publications, and summarize an overview of the measures used for relationship quality in Table 1 below. Most of these 34 identified articles appear in the Journal of Marketing, Journal of Marketing Research, Journal of the Academy of Marketing Science, International Journal of Research in Marketing, Journal of Business Research, Industrial Marketing Management, European Journal of Marketing, Psychology & Marketing, Journal of Marketing Management, and Journal of International Marketing. We used the year 1990 as the cut-off date for publications included in this summary.

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Insert Table 1 about here.
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As Table 1 illustrates, most authors consider relationship quality as a *higher-order, multidimensional construct*, with the exception of a few authors who measure relationship quality via a single-item construct. However, a single dimension as underlying measures for complex buyer-seller relationships has been criticized (Lages et al., 2008; Yau, McFetridge, Chow, Lee, Sin & Tse, 2000). Furthermore, most

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authors adopt a *monadic view*, i.e. the constructs are operationalized via perceptional scales relating to a focal company perspective (i.e. respondents are asked to rate a construct, e.g. communication, as their company's communication activities within a relationship). An alternative dyadic operationalization (i.e. respondents are asked to rate a construct such as communication as the overall communication activities of all involved parties in the relationship) is rare (Weitz & Jap, 1995). However, the components (i.e. construct dimensions) of relationship quality in different research settings vary considerably, with 23 main dimensions being used which include trust, commitment, satisfaction, communication, adaptation, cooperation, etc.. This confirms the observations made by Naudé and Buttle (2000) as well as Smith (1998) that relationship quality often is generally considered to be a higher-order, multidimensional, and monadic construct, but with widely varying contents. Nyaga and Whipple's (2011) literature review on relationship quality measurement found that the number of dimensions for measuring relationship quality went from as few as two (Crosby et al. 1990; Hibbard et al. 2001; Autry et al. 2008) to as many as six (Dorsch et al. 1998). In this study, we will propose a four-dimensional construct of relationship quality and provide the rationales for each of these four dimensions.

Developing the CLOSES Scale of Relationship Quality

To measure relationship quality, some of these 35 papers in Table 1 use either or both of the constructs of trust and commitment, recognizing the pivotal role that trust and commitment have played in business research in general, and in relationship marketing in particular (Morgan & Hunt, 1994). However, most key studies consider these two constructs as the antecedents influencing relationship quality (Anderson &

Narus, 1990; Doney & Cannon, 1997; Ganesan, 1994; Morgan & Hunt, 1994; Siguaw et al., 1998), rather than as part of the dimensional contents representing relationship quality itself. Thus, often antecedents have been confounded with indicators of constructs (Selnes, 1998; Wilson, 1995). We therefore address this problem by developing a new measurement model, the CLOSES scale, which does not include these antecedents to avoid tautological modelling errors. Nevertheless we would still include the items of trust and commitment in the questionnaire used in the replication survey so that we would have the necessary data to calculative the discriminant validity between the dimensions of our new relationship quality measurement model on the one hand and trust and commitment on the other hand. We would also be able to test the hypothesized antecedent effect of trust and commitment on our proposed relationship quality scale.

In accordance with previous studies on relationship marketing, we use a higher-order, multidimensional operationalization, and define relationship quality as a construct which reflects the intensity of communication, long-term orientation, social satisfaction, and economic satisfaction perceived by a focal party involved in the relationship. As such, we adopt a monadic operationalization, in line with Lages et al. (2008). Termed as the CLOSES scale, this measure consists of four single constructs, specifically including communication (C), long-term orientation (LO), and satisfaction in both social and economic facets (SES), which feature a sound, successful and long-term exchange relationship.

The communication construct is chosen because it is fundamental and essential for establishing and maintaining any business relationship (Lages, Lages and Lages 2005; Guiltinan, Rejab and Rodgers 1980). On the other hand, the long-term orientation is selected because a successful and sustainable business relationship must have a long-

term horizon with strong emphasis on future performance and mutual benefits, rather than focusing on short-term calculative benefits (Lee and Dawes 2005; Monroy and Alzona 2005). While satisfaction, which can be reasonably classified into economic and social satisfaction (Geyskens, Steenkamp and Kumar 1999; Sanzo, Santos, Vazquez and Alvarez 2003), is central to understanding business relationships (Ruekert and Churchill 1984), it has understandably received a lot of research attention. As Table 1 shows, satisfaction is one of the most adopted dimensions of relationship quality in previous studies. On the whole, these four dimensions (communication, long-term orientation, economic satisfaction, social satisfaction) are all of central importance in our conceptualization of relationship quality. All these dimensions appeared to differing extents in previous literatures, although not in an integral and consistent manner. This study represents a good opportunity to integrate these four dimensions for formulating the new measurement model of relationship quality. Their inclusions are conceptually valid and supported by previous literatures. Later analysis of the data collected for this study produces all good fit statistics for the model, which correlates significantly and strongly to a single-item overall relationship quality variable. In short, the proposed model takes account of the conceptual essences of relationship quality (communication, long-term orientation as well as economic and social satisfaction), which are supported by previous literatures and further reinforced by the results of this study. In what follows, we will discuss each of these four proposed dimensions of relationship quality in a greater detail, as well as the inclusion of each of them in a second-order, monadic measurement model.

Communication

Communication is the human activity that establishes and sustains relationships between the different parties involved (Lages, Lages & Lages, 2005). It is a central

factor which enables the parties to coordinate their efforts to understand and achieve mutual goals (Guiltinan, Rejab & Rodgers, 1980). Communication can be defined broadly as "*the formal as well as informal sharing of meaningful and timely information between firms*" (Anderson & Narus, 1990, p.44). Information exchange is an important aspect of relationship quality which reflects "*a bilateral expectation that parties will proactively provide information useful to the partner*" (Heide & John, 1992, p.35). The buyer's willingness to share information represents a safeguard to the supplier in the sense that the buyer can be expected to provide unforeseen information that may affect the operations of the supplier, and vice versa (Wilson & Nielson, 2000). Past studies have consistently demonstrated the significance of communication in describing quality issues of dyadic business relationships. It is seen as "*the glue that holds together a channel of distribution*" (Mohr & Nevin, 1990, p. 36), the "*codes of behavior that reinforce meanings*" (Menon, Bharadwaj, Adidam & Edison, 1999, p. 25), and the "*determinant of relationship effectiveness*" (Coote, Forrest & Tam, 2003, p. 597). As Anderson and Weitz (1989) suggest, sustaining sufficient communication with the partner in a relationship can foster confidence in the continuity of the relationship and reduce dysfunctional conflict. Given the significance of communication, researchers have used it as one of the components measuring relationship quality (Fynes, de Búrca & Marshall, 2004; Lages et al., 2005; Leonidou, Barnes & Talias, 2006; Leonidou 2013).

Long-term Orientation

Past studies have shown long-term orientation as one of the key characteristics of relationship quality (Lee & Dawes, 2005). According to Ganesan (1994), long-term orientation refers to the perception of interdependence of outcomes in which both a supplier's outcome and joint outcomes are expected to benefit the buyer in the long

run. Long-term orientation is associated with the idea of expectation of relationship continuity (Anderson & Weitz, 1989; Noordewier, John & Nevin, 1990) which is argued to be extremely significant for firms in business relationships (Johnson, 1999; Ravald & Grönroos, 1996; Kumar Scheer and Steenkamp 1995). As Monroy and Alzola (2005) argue, whereas the emphasis on short-term business performance reflects transactional qualities, the building of good relationship quality is oriented towards the long run. That is, the buyer and supplier can achieve mutual benefits (Ford, 1980) and a competitive advantage (Ganesan, 1994) through long-term relationships with their partners. Despite the significance of long-term orientation in business relationships and relationship management, it has not been frequently specified as a core ingredient making up relationship quality in previous literatures. Nevertheless, we follow Lages et al. (2005) who introduce this construct in the measure of relationship quality and highlight its importance in shaping firms' common desire to achieve future goals instead of current period opportunities. As Song et al. (2012) argue, "short-term exchanges are not sufficient for its conceptualization, and long-term relationship behaviours are clearly relevant to the conceptualization of relationship quality".

Social satisfaction and economic satisfaction

According to Ruekert and Churchill (1984), the construct of satisfaction is of fundamental importance in understanding business relationships. Satisfaction is a function of performance to date (Gustafsson, Johnson & Roos, 2005), and a major driver of customer retention and loyalty in business relationships (Chiou & Droge, 2006). Past research has revealed that a firm's satisfaction increases its willingness to continue a relationship (Bolton, 1998; Ganesan, 1994) and reduces channel conflicts (Ganesan, 1993). A number of studies have used the construct of satisfaction as one of

the dimensions characterizing relationship quality (Crosby et al., 1990; Dorsch et al., 1998; Rauyruen & Miller, 2007; Skarmeas et al., 2008; Smith, 1998; Walter, Müller, Helfert & Ritter, 2003).

The satisfaction with a business relationship is defined most frequently as "the appraisal of all aspects of a firm's working relationship with another firm" (Anderson & Narus, 1984, p. 66). A distinction between economic and social satisfaction is relevant in this context since it allows separating the social context in which the market exchange is developed from the economic one (Geyskens, Steenkamp & Kumar, 1999; Sanzo, Santos, Vazquez & Álvarez, 2003). Economic satisfaction refers to "*a channel member's positive affective response to the economic rewards that flow from the relationship with its partner*" (Geyskens et al., 1999, p.224). An economically satisfied partner in a business relationship considers it to be a success with respect to its goal attainment. Social satisfaction on the other hand is defined as "a channel member's evaluation of the psychosocial aspects of its relationship, in that interactions with the exchange partner are fulfilling, gratifying, and facile" (Geyskens & Steenkamp, 2000, p.13). Social satisfaction thus refers to being satisfied with the social outcomes of the relationship such that one party appreciates the contacts with its exchange partners and personally likes working with them. Whereas most authors use overall satisfaction in their measure, Farrelly and Quester (2005), as well as Ivens and Pardo (2007), distinguish between the two facets of social and economic satisfaction, and consider them as two different components in the formation of relationship quality. Thus, considering the distinct meanings of these two constructs and following the suggestion of Geyskens and Steenkamp (2000), we measure satisfaction via the two separate constructs of social satisfaction and economic satisfaction.

Research Method

As we define relationship quality for the purpose of this study as a monadic concept, i.e. we have to determine a focal company perspective for our operationalization and testing of the concept. We chose to view the research setting from the buyer's perspective to examine a business to business relationship. This is in line with Lages et al's (2008) suggestions that buyer's perceptions are the primary factor in determining the development and performance of a business relationship (Cannon & Perreault, 1999). Our measurement model pivots on the higher-order, reflective scale (Diamantopoulos & Siguaw, 2006) of relationship quality defined by the four latent constructs of communication, long-term orientation, social satisfaction, and economic satisfaction. To assess this measurement model, we collected data in the UK construction industry which is a highly fragmented industry allowing us to have a large portfolio of companies with varying sizes and characteristics in our sample (Barlow & Jashapara, 1998). In order to assess the transferability of the results of this study to other industry settings, we additionally carried out a replication survey in various industries all of which are regarded as having a rather integrated buyer-supplier relationship.

Instrument development and pre-test

We followed the traditional approach suggested by Churchill (1979) to develop the measures for our constructs. The measures for the four first-order constructs were reviewed and adapted from the literature. For each construct, multiple-item measurement models rather than single-item indicators were used to avoid item response bias (Frazier et al., 1989). Besides, to get an understanding of the meaning of the chosen constructs of communication, long-term orientation, social and economic satisfaction in business to business relationships, we conducted 20 in-depth interviews

with company buyers responsible for supply chain management, to check the appropriateness of existing scale items for each construct. After the development of the initial item pools, two steps were taken to pre-test the survey questionnaire. A first draft of the questionnaire was tested with a sample of 155 managers tasked with managing buyer-seller relationships. After that the revised questionnaire was delivered to 12 key buyers in construction companies to assess the nomological validity of the measures. After the final refinement of the questionnaire, we started our empirical data collection in the UK construction industry.

Survey procedure and sample

To test our measurement model we collected data in the construction industry in the year of 2009. The sampling frame was a list of over 2000 UK construction companies drawn from a commercial database. These companies were then screened and contacted by telephone with the purpose of identifying key informants with responsibility for supply chain management (e.g., purchasing director, supply-chain manager) and if possible getting their prior commitment to participate to enhance response rate (Johnson, 1999). As a result of the initial telephone contact, a total of 1133 companies provided contact details of at least one person responsible for supply chain management. Following this, we sent the identified key informants a standard email letter with a link to the online survey questionnaire. Respondents were assured of data confidentiality and our delivery of an executive summary of the survey results. We made as many as 4 follow-up contacts by telephone or email to encourage participation. We received a total of 636 usable responses from 404 firms (in some companies, multiple respondents were identified). This corresponds to a company response rate of 35.7 percent which is comparable to the response rates reported in other similar studies (Jap & Ganesan, 2000; McKee, Conant, Varadarajan & Mokwa,

1992). Among the responses, 226 companies provided two or more responses which enabled us to have data from multiple informants.

A total of 73 percent of the participating companies in our sample had revenues over £10million in 2007. The demographic characteristic of the respondents suggests that they are very knowledgeable about their suppliers, with an average of 14.3 years of purchase experience. We framed the study in terms of a specific buyer-supplier relationship which is consistent with other studies (Anderson & Narus, 1990; Selnes & Sallis, 2003). In order to avoid effects related to relationship characteristics of the most important and dominant supplier, buyers were asked to evaluate the relationship with their *third most important* supplier in terms of annual purchase value. Results showed that the average length of the business relationships between construction companies and their third most important supplier is 13.3 years, which indicates well-formed and established relationships.

The above survey procedure was replicated in the second round of survey data collection, which was carried out during the two-month period from mid-July to mid-September of 2014. This replicated survey was conducted on firms in various industries including logistics, IT services, healthcare, telecommunications, retail, energy, and leisure. There are subsequently 201 usable responses from this wave of survey. We posit that if the analysis results from responses in these industries closely resemble what we found in the responses from the construction industry, the cross-industry transferability of the results (i.e. the CLOSES measurement model of relationship quality) is established. In the questionnaire used for the replication survey, we added items for measuring trust and commitment. We combined the two trust items of Ganesan (1994) and the three trust items of (Kumar and Scheer 1995) to

form our trust construct. We borrowed the three items of commitment (Kumar and Scheer 1995) for our commitment construct.

Measures

7-point Likert-type perceptual measures were used for operationalizing all four construct of relationship quality, with anchors ranging from 1 = strongly disagree, to 7 = strongly agree. The adoption of a 7-point scale reflects the fact that larger number of scale points increases the reliability of the measure (Churchill & Peter, 1984). After pre-tests and reliability tests to identify items for deletion, Table 2 below presents the final items for each dimension of relationship quality as well as the standardized factor loadings from the confirmatory factor analysis. Reflective measurement models were used for all constructs (Diamantopoulos & Siguaw, 2006; Jarvis, MacKenzie & Podsakoff, 2003).

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Communication. This is defined as the formal and informal sharing of meaningful and timely information between the buyer and the supplier, as perceived by the buyer. The construct of communication is measured via a three-item scale adapted from Young-Ybarra and Wiersema (1999).

Long-term orientation. In line with Ganesan (1994), long-term orientation in our study refers to the perception of interdependence of outcomes in which both a supplier's outcomes and joint outcomes are expected to benefit the buyer in the long run. This study adopts a three-item scale adapted from Ganesan (1993) to evaluate the buyer's long-term orientation with the supplier, which has already been used and validated in other studies (Lages et al., 2005; Lee & Dawes, 2005; Wong, Tjosvold & Zhang, 2005).

Satisfaction. Buyer's satisfaction is posited to be the positive affective state resulting from the appraisal of all aspects of the relationship with the supplier (Anderson & Narus, 1990). This study distinguishes between social satisfaction and economic satisfaction, and employs two different measurement models for their capture. For social satisfaction, we used four items adapted from Geyskens and Steenkamp (2000) and Lee, Sirgy, Brown and Bird (2004) to measure the buyer's satisfaction with the social outcomes of the relationship with the supplier. The measure for economic satisfaction was adapted from Selnes and Sallis (2003), Chatterjee (2004) and Lin and Germain (1998), given that there is no single accepted scale available in the literature for its measure. The measure of economic satisfaction indicates the extent to which the buyer is satisfied with the economic rewards that flow from the relationship with the supplier.

Trust. We combined Ganesan's (1994) two items and Kumar and Scheer's (1995) three items both of which are separately as a measure of the trust into our five-item trust construct.

Commitment. We adopted Kumar and Scheer's (1995) as our three-item commitment construct.

Control variables

In this study, we control for the length of business relationship, as well as the supply chain management experience of the respondents. Relationship length was measured in years, as was the respondents' supply chain management experience. The moderating effects of these variables were tested and will be discussed in a later section.

Data Analysis and Results

Non-response bias

To examine non-response bias, we conducted a telephone survey with a random sample of contacts who did not respond to the survey, rather than using the Armstrong and Overton's (1977) method since essentially this method does not measure non-response bias but merely the differences between early and late-responses. In the telephone survey, respondents were briefly asked about a subset of the full questionnaire. We obtained a sample of 100 responses which was compared to the original data sample with regard to the subset of variables captured. Statistical t-test showed that these two samples have no significance differences. Thus, non-response bias is assumed not to be a problem in our data.

Measurement models

Exploratory factor analysis

After item purification, we retained the final pool of items which was first subjected to an exploratory factor analysis (EFA). Four factors resulted from the EFA using principal component analysis and oblique rotation (see Table 3), with all the measurement indicators loading on their related construct. All the factor loadings are significant with values considerably larger than the normal cut-off value of 0.50 (Hair, Tatham & Anderson, 2006). There is no cross-loading problem as no cross-loading figure exceeds the suggested threshold value of 0.40 (Hair, Tatham & Anderson, 2006).. These four factors explain 79 per cent of the total variance in the data.

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Confirmatory factor analysis

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Before examining the measurement model with confirmatory factor analysis (CFA) to assess the scale measurement properties, we excluded a few outlier cases which violate the assumption of multivariate normality (Hair et al., 2006). Our final sample therefore contains 606 responses from 391 firms, of which 210 firms provided two or more responses. Our measurement model, restricting each item to load onto its pre-specified factor, suggests a good fit with the data, according to Marsh, Balla and Hau (1996). Goodness-of-fit statistics are: $\chi^2_{(71)} = 189.26$, Comparative Fit Index (CFI) = 0.993, Non-Normed Fit Index (NNFI) = 0.991, Root Mean Square Error of Approximation (RMSEA) = 0.054.

Construct reliability

Using Cronbach's alpha to measure the reliability of the measurement model indicates that all the four single constructs have good internal reliability. As shown in Table 2, the reliability for the constructs is estimated as 0.881 for communication, 0.912 for long-term orientation, 0.880 for social satisfaction, and 0.898 for economic satisfaction. All these values notably exceed the minimum acceptable criterion of 0.70 (Peter, 1979).

Construct validity

Convergent validity, discriminant validity, and nomological validity were examined as part of assessing construct validity. Table 4 presents the average variance extracted (AVE) for each scale (diagonal elements) and the squared correlation between all pairs of scales (off-diagonal values). Convergent validity is supported due to all diagonal values being greater than 0.5 (Shook, Ketchen, Hult & Kacmar, 2004). Furthermore, all AVEs are greater than the off-diagonal values (squared correlations), as is necessary for discriminant validity for each of the construct measures (Peter, 1979). To assess nomological validity, this study added a single item in the survey

questionnaire which represents overall relationship quality as a first-order construct. We compared the two measures of relationship quality, one as a second-order latent variable and the other measured directly with the single item indicating overall relationship quality. The Spearman correlation test (Sheskin, 2004) showed that these two variables are strongly related, with a correlation coefficient of 0.710. Therefore nomological validity is supported. Based on all the above validity tests, construct validity of the measurement model is not in doubt.

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Relationship quality as a higher-order construct

Relationship quality in this study is conceptualized as a higher-order, reflective construct delineated by the four single latent variables of communication, long-term orientation, social satisfaction, and economic satisfaction. Using confirmatory factor analysis via LISREL 8.70 (Jöreskog & Sörbom, 2004), we specified relationship quality as a second-order factor reflecting the four first-order variables (see Figure 1). This proposition is supported by the good fit statistics: $\chi^2_{(73)} = 205.22$, CFI = 0.992, RMSEA = 0.057. All the factor loadings (standardized) between the first and second order factors are significant based on the 5% significance level (communication 0.73, long-term orientation: 0.83, social satisfaction: 0.90, economic satisfaction: 0.88), indicating convergence of the factors on a common underlying construct (Cadogan, Diamantopoulos & Mortanges, 1999). Here, the variance for the second-order construct of relationship quality for this analysis was constrained to 1.0.

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Moderating effects of the control variables

This study controlled for supply management experience of the respondents as well as length of business relationship. To examine the potential moderating effects of these two control variables, we used multi-group analysis to test the invariance of the measurement model with relationship quality specified as a second-order factor.

To examine supply chain management experience, we split the original survey data into two samples based on the supply chain management experience of the respondents. The first sample contains data from 202 senior respondents who have at least 20 years of such experience, and the second sample includes data from 379 junior respondents with their supply chain management experience being less than 20 years. The tight replication strategy in LISREL was used to test the assumption that all the parameters in the model are the same across these two samples (Diamantopoulos & Siguaw, 2000). The fit statistics for both two samples, individually and as a whole, suggests a good fit for the data (sample 1: $\chi^2_{(73)} = 157.86$, CFI = 0.983, RMSEA = 0.076; sample 2: $\chi^2_{(73)} = 169.48$, CFI = 0.991, RMSEA = 0.061; overall fit statistics for both samples: $\chi^2_{(174)} = 382.91$, CFI = 0.986, RMSEA = 0.066). This suggests that the measurement model with relationship quality acting as a higher-order factor does not change significantly given the large differences in the experience of the respondents, indicating there is no strong moderating effect of the control variable of supply chain management experience.

Similarly, to evaluate the effect of relationship length we created two samples. The first sample contains data from 174 firms with a relationship length over 10 years, while the second sample includes data from 202 firms with a relationship length below 10 years. Using again tight replication strategy, we found that the measurement model with relationship quality as the higher-order construct is invariant across the

two samples with good fit statistics (sample 1: $\chi^2_{(73)}$ = 112.86, CFI = 0.993, RMSEA = 0.054; sample 2: $\chi^2_{(73)}$ = 111.90, CFI = 0.991, RMSEA = 0.045; overall fit statistics for both samples: $\chi^2_{(174)}$ = 297.45, CFI = 0.987, RMSEA = 0.057).

Assessment of cross-industry transferability

We carried out confirmatory factor analysis on the 201 responses collected from the replicated survey. We found that the fit statistics and the factor loadings (goodness-of-fit statistics: $\chi^2_{(71)}$ = 122.12, CFI = 0.966, RMSEA = 0.061) support relationship quality as a higher-order construct. In other words, we have derived the same CLOSEs measurement model from both the main survey and the replicated survey. Therefore the cross-industry transferability of the CLOSEs measurement model developed in this study is established.

Assessment of the decision to exclude trust and commitment

We excluded trust and commitment when developing our measurement model of relationship quality. This is because although the two constructs were treated as dimensions in some literatures, they were regarded as antecedents in most of the key literatures on relationship quality (Anderson and Narus 1990; Doney and Cannon 1997; Ganesan 1994; Morgan and Hunt 1994; Siguaw, Simpson and Baker 1998). Including them in our measurement model would bring the risk of tautological error. In order to further prove our stance on this important decision, we added the items measuring trust and commitment in the questionnaire for the replication survey. We did exploratory factor analysis on all the items measuring the four dimensions chosen in this study as well as the trust and commitment constructs. Results, which are not shown in this paper for the purpose of not overloading with too many tables, indicate that items are loaded correctly onto their related constructs without significant cross-

loadings. This supports the discriminant validity between the four dimensions of our measurement model and the trust and commitment constructs.

We further tested the hypothesized antecedent effects of trust and commitment on our second-order relationship quality construct. Individual scale items were aggregated using simple average to create factor scores for trust, commitment, and relationship quality. Regression results as shown in Table 5 indicate that trust and commitment are strongly significant in affecting relationship quality. This supports our decision to exclude trust and commitment from the new measurement model.

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Insert Table 5 about here.
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Discussion

Our new measure of relationship quality as a monadic higher-order, multidimensional construct is supported by the good fit statistics of the confirmatory factor analysis. We argue that a successful and long-term business to business relationship from the perspective of the customer should be grounded in good relationship quality which is characterized by the intensity of communication, long-term orientation, social satisfaction, and economic satisfaction. Consistent with the study conducted by Lages et al. (2005), our research design assumes that this new measure is based on a reflective scale. This is supported by the significant and comparable factor loadings between the higher-order construct of relationship quality and its first-order indicating factors, with values ranging from 0.73 to 0.90. A higher-order, reflective scale is based on the assumption that the second-order latent

construct cause the first-order factors, compared to the formative scale in which the first-order factors cause the second-order construct (Diamantopoulos & Winklhofer, 2001). A reflective model allows for some correlation between the different factors. Using this reflective scale, our measurement model of relationship quality reflects the amount of communication, long-term orientation, social and economic satisfaction in business exchange relationships.

The nomological validity of this new scale was tested. A single item indicating overall relationship quality, as used in other studies (Auh & Shih, 2005; Lee, Pae & Wong, 2001), was introduced in our study. The comparison between this single item indicator and the latent second-order construct of relationship quality revealed that they are strongly related, underlined by a significant Spearman correlation coefficient of 0.710. This indicates that the measure of relationship quality with four single constructs indeed captures the essence of the construct in question.

We also investigated the problem of common method bias, which is often a concern and potential limitation in other studies of scale development (Lages et al., 2005). Common method bias is an underlying problem in behavioural research as discussed by Podsakoff, MacKenzie, Lee and Podsakoff (2003), as some respondents may answer the survey questions inadvertently without necessary discretion. Our research design measures relationship quality with a reflective scale defined by four single constructs which are assumed to be correlated. Therefore, to inspect common method bias, we did not use Harman's single-factor test (Podsakoff et al., 2003) which rests upon the assumption that no single factor can explain all the variance in the data if the problem of common method bias is unfounded. In this study, we used multi-group analysis to examine common method bias. The measurement model was cross-validated with two data samples (split-half method) from the 210 companies

which provided two or more survey responses. Using a tight replication strategy (Bentler, 1980), we specify that all the parameters estimated in the model are constrained to be equal in both samples. The goodness-of-fit indexes show that we do not have a problem with common method bias in our data (sample 1: $\chi^2_{(73)} = 216.89$, CFI = 0.985, RMSEA = 0.071; sample 2: $\chi^2_{(73)} = 164.63$, CFI = 0.984, RMSEA = 0.077; overall fit statistics for both samples: $\chi^2_{(174)} = 495.69$, CFI = 0.980, RMSEA = 0.078).

Limitations and future research

This study has four main limitations. First, relationship quality is measured through the buyer's perception, rather than through the responses from both the buyer and the seller. As academics generally agree, collecting dyadic data is very difficult with daunting practical problems arising (Weitz & Jap, 1995). Nevertheless, our study managed to have 226 companies which provided two or more responses. The data from multiple informants allowed us to examine the effect of common method bias which is an underlying problem in behavioural research. In addition, our large sample size made it possible for us to investigate the potential moderating effects of the control variables including relationship length and respondent's supply chain management experience. Second, although this research collected survey data from different industries at two different times and comparisons of results between industries support the cross-industry transferability of our derived model, all the survey data collected were from UK industries. Therefore our derived model might be country or culture sensitive. Third, this study asked the buyers to assess the relationship with their third most important supplier based on annual purchase value. Although there are valid reasons as shown earlier in this paper to focus on the third

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most important supplier, obviously this relationship cannot tell the whole picture of a buyer's relationships with all its suppliers. Fourth, as this study focused on the building up of a conceptually and statistically valid measurement model of relationship quality, exploring the link between this measurement model and selected performance indicators was beyond the scope of this study.

Acknowledging the above limitations leads to the identification of four future research directions. First, the measure of relationship quality can be extended to the supplier's side, with data collected from the supplier's perception of supplier-buyer relationship. Thus, the new scale developed in this study can be re-assessed, with comparisons to be drawn between the measurement models that are tested with data collected from different perspectives. Second, this new scale can be tested in other country or cultural contexts and the resulting adaptations are likely and welcome. Third, in future similar studies, buyers can be asked to answer the questionnaire based on the whole picture of relationships with all their suppliers. Fourth, future surveys can include items that constitute different performance indictors so that the effect of our next measurement model on these indicators can be assessed. In this study, performance indicators are not covered we were reluctant to dilute our focus on developing and validating the new measure of relationship quality. Apart from the above limitations-inspired research directions, our last suggestion for future researchers is that whereas our research setting is based on the business to business relationship, our measure of relationship quality is not restrictive and exclusive. The new scale can be adapted for a wide range of research streams on relationship quality. One popular research stream is identifying new antecedents of relationship quality. In this study, we argue that trust and commitment are antecedents, not dimensions or indicators, of relationship quality. Trust and commitment, among others, are

established concepts that have attracted research attention for decades. Future research on new antecedents of relationship quality could focus on new but promising concepts that could affect relationship quality. For example, Paulssen (2009) successfully applied the concepts of personal and business attachment orientations and linked them to satisfaction, one of the key dimensions of relationship quality. Ndubishi (2014) focused on the concept of mindfulness, which has been found to have a significant impact on satisfaction at the consumer level. Mindfulness is concerned with how individuals or organizations think: "how they gather information, how they perceive the world around them, and whether they are able to change their perspective to reflect the situation at hand" (Ndubisi 2014). Future research could hypothesize the effect of mindfulness at the organizational level on relationship quality via the satisfaction dimension and perhaps also via other dimensions validated in this study.

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Table 1
Chronological list of previous literatures on the definition and dimensions of relationship quality by order type

Relationship quality as 1st-order concept			
Source	**Definition**	**Dimensions**	**Research setting**
Leuthesser (1997)	Composite measure including both buyer satisfaction and buyer trust.	Trust **Satisfaction**	The effect of relational behaviour on relationship quality.
Johnson (1999)	Relationship quality reflects the overall depth and climate in the interfirm relationship based on the extent of trust and fairness in the	Trust Fairness	Buyer-seller relationship within the industrial machinery and equipment distribution industry.

Source	Definition	Dimensions	Research setting
	relationship.		
Lee et al. (2001)	Defined as overall relationship quality.	Overall quality	Business relationships in various settings.
Roberts et al. (2003)	Indicators of relationship quality are specified as trust, satisfaction, commitment and affective conflict.	Trust **Satisfaction** Commitment Affective conflict	Relationship between service firms and their customers.
Sriram and Stump (2004)	Defined as a construct with the features of trust, overall coordination, frequency of disputes and information sharing.	Trust Coordination Conflict Information sharing	Buyer-supplier relationship in various sectors.
Auh and Shih (2005)	Defined as overall relationship quality.	Overall quality	Relationship quality in the high-technology industry.
Lai et al. (2008)	The extent to which the channel relationship is stable and healthy.	Fairness Lack of opportunistic behaviour	Supplier-buyer relationship in the container port sector.
Lahiri and Kedia (2011)	Partners' overall evaluation of ongoing business relationships	Information sharing Understanding Commitment	Business relationships of Indian IT-enabled service providers

Relationship quality as 2nd-order concept

Source	Definition	Dimensions	Research setting
Crosby et al. (1990)	Viewed as a higher-order construct with the two dimensions of trust and satisfaction.	Trust **Satisfaction**	Examining key dimensions of relationship quality in a service context.
Kumar et al. (1995)	Conceptualized as a higher order construct comprising conflict, trust, commitment, willingness to invest and expectation of continuity.	Conflict Trust Commitment Willingness to invest Expectation of continuity	Dealer-supplier relationship in the automobile industry.
Bejou et al. (1996)	The extent to which the customer is able to rely on the salesperson's integrity and has confidence in the salesperson's future performance.	Trust **Satisfaction**	Assessing factors in developing a quality relationship in the financial services.
Dorsch et al. (1998)	Defined as a higher order construct composed of satisfaction, commitment, minimal opportunism, customer orientation and ethical profile.	Trust **Satisfaction** Commitment Minimal opportunism Customer Orientation Ethical profile	Examining the extent to which businesses use relationship quality perceptions to differentiate their suppliers.
Smith (1998)	Conceptualized as being manifest in three related constructs of trust, satisfaction and commitment.	Trust Commitment **Satisfaction**	Buyer-seller relationship in the public and private sectors.
Hennig-Thurau (2000)	Conceptualised as a three-dimensional construct including trust, commitment and the performance-related perception of quality by the customer.	Trust Commitment Perception of quality	Relationship quality between customer and manufacturer in the consumer goods sector.
De Wulf et al. (2001)	Conceptualized as a higher order construct with the elements of satisfaction, trust and commitment.	**Satisfaction** Trust Commitment	Cross-country and cross-industry study of retailer-consumer relationship.
Hibbard et al. (2001)	Specified as a second-order factor comprising the two first-order factors of trust and commitment.	Trust Affective commitment	Dealer-supplier relationship in the manufacturing industry of consumer durables.
Hewett et al. (2002)	A higher order factor comprising trust and commitment.	Trust Commitment	Buyer-seller relationship in the manufacturing industry.
Walter et al. (2003)	Defined as a higher order construct encompassing trust, commitment and satisfaction	Trust Commitment **Satisfaction**	Buyer-supplier relationship in the manufacturing industry.
Fynes et al. (2004)	Defined as a higher order factor including trust, adaptation, communication and cooperation.	Trust Adaptation **Communication** Cooperation	Supply chain relationship quality in the electronics sector in Ireland.

Johnson et al. (2004)	Defined as a higher order construct with the components of trust, commitment, and stability	Trust Commitment Stability	Examining the effects of relational knowledge stores on relationship quality and relationship portfolio effectiveness.
Farrelly and Quester (2005)	Defined as a higher order factor comprising trust, commitment, social satisfaction and economic satisfaction.	Trust Commitment **Social satisfaction** **Economic satisfaction**	Examining relationship quality constructs in the focal sponsorship exchange.
Lages et al. (2005)	Defined as a higher order construct with the dimensions of information sharing, communication quality, long-term orientation and satisfaction.	Information sharing Communication quality **Long-term orientation** **Satisfaction**	Exporter-importer relationship in the British exporting industry.
Monroy and Alzola (2005)	Trust between cooperation partners, mutual commitment and relationalism.	Trust Commitment Relationalism	Interorganizational collaboration in franchise networks.
Phan et al. (2005)	Defined as a higher order construct composed of trust, satisfaction, commitment and joint problem solving	Trust **Satisfaction** Commitment Joint problem solving	Southeast Asia business partnerships in diverse industries.
Van Bruggen et al. (2005)	Viewed as a higher order construct composed of satisfaction, trust, commitment and relationship conflict.	**Satisfaction** Trust Commitment Conflict	Buyer-seller relationship in Netherlands and Belgium painting industry.
Leonidou et al. (2006)	A multidimensional concept encompassing the behavioural parameters that help to maintain a smooth, stable, and productive working relationship	Adaptation Commitment **Communication** Cooperation **Satisfaction** Trust Understanding	Exporter-importer relationship quality in various industrial sectors.
Ulaga and Eggert (2006)	Characterized by three core constructs of trust, commitment and satisfaction.	Trust Commitment **Satisfaction**	Relationship quality in the chemical, mechanical, and electrical manufacturing industry.
Caceres and Paparoidamis (2007)	Defined as a high order factor with dimensions of trust, commitment and satisfaction.	Trust Commitment **Satisfaction**	Business loyalty of companies that buy adverting services.
Ivens and Pardo (2007)	Viewed as a higher order construct comprising trust, commitment, social satisfaction and economic satisfaction.	Trust Commitment **Social satisfaction** **Economic satisfaction**	Key account relationships and ordinary supplier-buyer dyads in two sectors.
Rauyruen and Miller (2007)	Defined as a higher order construct comprising trust, commitment, satisfaction and service quality.	Trust Commitment **Satisfaction** Service quality	Business-to-business relationships in the courier delivery service industry.
Palmatier et al. (2007)	Conceptualized as a higher order construct comprising trust, commitment, and satisfaction.	Trust Commitment **Satisfaction**	The study of relationship marketing programs in building customer–salesperson and customer–firm triadic relationships.
Skarmeas et al. (2008)	Viewed as a higher order construct composed of trust, commitment and satisfaction	Trust Commitment **Satisfaction**	Distributor-supplier relationship in four industrial sectors.
Cater and Cater (2010)	Defined as a higher order construct encompassing adaptation, knowledge transfers, trust, and cooperation	Adaptation Knowledge transfers Trust Cooperation	Buyer-supplier relationship in the manufacturing industry in Slovenia
Song, Su and Liu (2012)	A multidimensional concept encompassing cooperation, adaptation, and atmosphere	Cooperation Adaptation Atmosphere	Buyer-supplier relationship of manufacturing firms in three Chinese provinces
Leonidou et al.	A higher-order construct	Cooperation	The study of impacts of value

(2013)	comprising cooperation, commitment, trust, and communication	Commitment Trust **Communication**	differences on relationship quality and performance in export-import context.
Ndubisi (2014)	A multidimensional construct encompassing the three dimensions of trust, commitment, and satisfaction	Trust Commitment **Satisfaction**	The study of effects of mindfulness on relationship quality and loyalty at the consumer level; the same study can be replicated at the organizational level.

Table 2
Items and measure characteristics

Constructs	Factor loadings [a]	t-values	Item reliability
Communication			
(α = 0.881, mean = 5.03, std error = 1.39, AVE = 0.716) [b]			
C1. We always keep the supplier informed about events or changes that may affect the supplier.	0.821	23.75	.851
C2. We share much information with this supplier if it can be of help.	0.902	27.36	.789
C3. We exchange information with this supplier frequently and informally, not only according to a pre-specified agreement.	0.813	23.39	.854
Long-term Orientation			
(α = 0.912, mean = 5.40, std error = 1.21, AVE = 0.781)			
LO1. Maintaining a long-term relationship with this supplier is important to us.	0.914	28.69	.852
LO2. We focus on long-term goals in this relationship.	0.828	24.50	.908
LO3. We expect this supplier to be working with us for a long time.	0.907	28.34	.863
Social Satisfaction			
(α = 0.880, mean = 5.08, std error = 1.18, AVE = 0.653)			
SS1. We are satisfied with the social aspects of the relationship with this supplier.	0.726	20.07	.873
SS2. Interactions between our firm and this supplier are characterized by mutual respect.	0.870	26.24	.822
SS3. The working relationship of our firm with this supplier is characterized by feelings of harmony.	0.832	24.46	.834
SS4. Our personal working relationship with this supplier is	0.797	22.95	.854

	satisfactory.		

Economic Satisfaction
(α = 0.898, mean = 5.10, std error = 1.10, AVE = 0.688)

ES1.	Our financial performance from the relationship with this supplier is satisfactory.	0.789	22.65	.881
ES2.	Our investments of resources in this relationship (e.g. time and money) have paid off well.	0.815	23.77	.875
ES3.	We are satisfied with the financial gains from our business relationship with this supplier.	0.837	24.77	.858
ES4.	The contribution of this relationship to our total business performance is pleasing.	0.875	26.58	.859

Notes.
[a] The factor loadings are standardized results.
[b] α: Cronbach's alpha, AVE: average variance extracted.

Table 3
Exploratory factor analysis*

	Component			
	1	2	3	4
C1	**0.858**	0.037	-0.006	0.017
C2	**0.878**	0.018	-0.070	-0.016
C3	**0.872**	-0.002	0.009	0.047
LO1	-0.014	**0.875**	-0.005	0.095
LO2	0.070	**0.928**	0.050	-0.039
LO3	-0.021	**0.875**	-0.098	0.003
SS1	0.067	-0.102	**-0.840**	0.004
SS2	0.068	0.062	**-0.839**	-0.036
SS3	0.002	0.051	**-0.857**	-0.019
SS4	-0.092	0.078	**-0.760**	0.128
ES1	-0.049	0.043	-0.054	**0.816**
ES2	0.184	-0.002	0.028	**0.782**
ES3	-0.039	-0.044	0.019	**0.966**
ES4	0.023	0.112	-0.083	**0.741**

*Numbers in bold are loadings of different measurement indictors on their respective factors. Numbers in grey are cross-loadings.

Table 4
Average variance extracted and
squared correlations among all scales.

Variables	1	2	3	4
1. Communication	0.716[1]			
2. Long-term Orientation	0.370[2]	0.781		
3. Social Satisfaction	0.430	0.557	0.653	
4. Economic Satisfaction	0.411	0.531	0.618	0.688

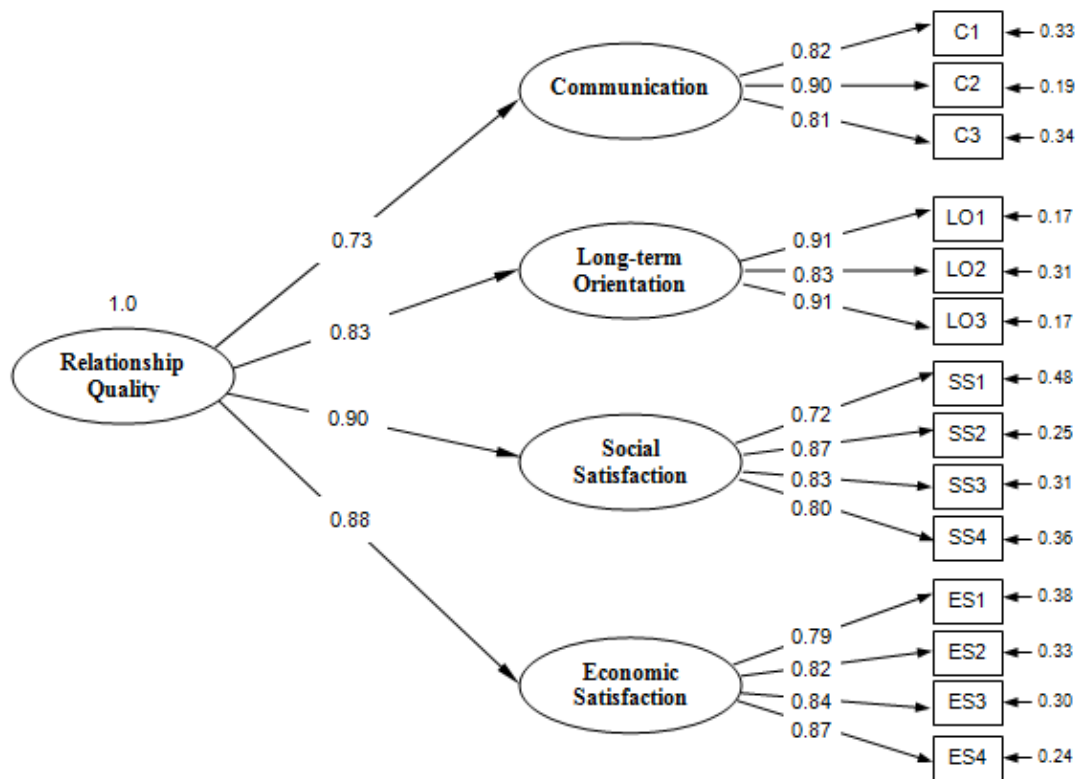[1]. The diagonal values are average variance extracted for the constructs.
[2]. The off-diagonal values are the squared correlations between pairs of constructs.

Table 5
Antecedent effects of trust and commitment on relationship quality

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.493	.280		8.916	.000
	Trust	.329	.064	.352	5.155	.000
	Commitment	.196	.043	.309	4.531	.000

a. Dependent Variable: RQ_Avg

Figure 1
Confirmatory factor analysis of the measurement model.

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