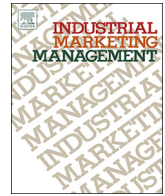




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Target and position article

Relational factors and performance of agrifood chains in Kenya

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1. Introduction

There is an increasing emphasis on the importance of relational factors such as fairness, trust, closeness, and communication quality for the performance of agrifood supply chains. This is the result of changes in agrifood supply chains associated with globalization, and demand for food quality and safety that require increased supply chain integration (Hartmann, Frohberg, & Fischer, 2010; Swinnen & Maertens, 2007). Supply chain integration ensures that whole chains are linked and coordinated to reduce chain inefficiencies, increase productivity, and profitability. Moreover, integration also contributes to business partners' mutual satisfaction and the competitiveness of the supply chain (Zailani & Rajagopal, 2005). As a consequence of these developments in global value chains, the concept of supply chain integration has become widely promoted in developing countries, both to reduce problems of chain inefficiencies and to promote suppliers' market access (Webber & Labaste, 2010).

Supply chain integration also means that different partners in the supply chain become more reliant on each other. In this context, especially inter-personal trust is an important relational dimension. Trust is defined as the willingness to rely on an exchange partner (Moorman, Zaltman, & Deshpande, 1992). Trust between business partners contributes to the establishment of long-term relationships (Geyskens, Steenkamp, & Kumar, 1998) and is a prerequisite for achieving the benefits of such relationships (Villena, Revilla, & Choi, 2011). Moreover, trust is found to foster cooperation and, thereby, reduce transaction costs (Claro, Hagelaar, & Omta, 2003; Palmatier, Dant, Grewal, & Evans, 2006), thus improving business performance. Previous research shows that relationship factors such as trust are important in improving business performance (Ghosh & Fedorowicz, 2008; Zaefarian, Najafi-Tavani, Henneberg, & Naudé, 2016). Business performance refers to both the financial and non-financial performance and outcomes of a buyer-supplier relationship (O'Toole & Donaldson, 2000; O'Toole & Donaldson, 2002). However, a review of the literature shows mixed findings of the role of trust in improving business performance. Some studies have shown that trust can have a positive impact on financial performance (e.g., Gulati & Nickerson, 2008; Lobo, Leckie, & Li, 2013; Masuku & Kirsten, 2004; Mohr & Spekman, 1994). Whereas Lu, Feng, Trienekens, and Omta (2008) show that the level of trust has no direct impact on supplier profitability. Gundlach and

Cannon (2010) find that the effect of trust on business performance depends on the level of trust in the relationship. Other studies indicate that trust alone may not lead to improved business performance (Kale & Singh, 2009; Palmatier et al., 2006; Smets, Oorschot, & Langerak, 2013). This implies that trust needs to be combined with other factors and that the role of trust in business relationships might be to moderate the effect of other factors. This proposition is supported by Dirks and Ferrin (2001) who argue that in addition to a direct effect of trust, trust may also facilitate (i.e., moderate) the effects of other organizational behaviour determinants on outcomes. Dirks and Ferrin (2001) suggest two distinct processes through which trust fosters or inhibits positive outcomes in relationships: "first trust affects how one assesses the future behaviour of another party with whom one is interdependent (or whom may take action that affects oneself). Second, trust also affects how one interprets the past (or present) actions of the other party and the motives underlying the actions." (Dirks & Ferrin, 2001, p. 456). Thus, trust can be seen as an underlying psychological condition of the relationship between two parties (Rousseau, Sitkin, Burt, & Camerer, 1998) that moderates the effect of primary determinants on outcomes by influencing to what extent a party will accept vulnerability depending upon the positive expectations of the behaviour or intentions of the other party (Mayer, Davis, & Schoorman, 1995). The mixed evidence observed in the supply chain literature on the relationship between trust and performance suggests that there is a need for a better understanding of how both the direct role of trust as well as the interaction between trust and other relationship variables influence performance outcomes. This is what we set out to study in this paper.

Prior research emphasizes fairness, closeness, and communication as three additional relational factors that in addition to trust influence business performance. First, communication enhances business performance by increasing the coordination of activities between supply chain partners. Communication can be defined as formal and informal sharing of meaningful and timely information between organizations (Anderson & Narus, 1990). Good communication reduces conflicts, uncertainty, and opportunistic behaviour because timely, accurate, complete, and reliable communication between the supply chain partners creates an effective flow of information and products (Fischer, 2013). Second, perceptions of fairness, i.e., an organization's perception of the fairness of treatment received from other organizations influence business performance (Hornibrook, Fearn, & Lazzarin, 2009; Liu,

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Huang, Luo, & Zhao, 2012; Wu & Niederhoff, 2014) because fairness affects information exchange between supply chain partners and reduces opportunistic behaviour and conflict (Samaha, Palmatier, & Dant, 2011). Third, closeness is found to lower the buyers' perception of risks and improve the credibility of the supplier (Bennett & Gabriel, 2001), thus affecting performance outcomes. Closeness refers to the degree to which contact and relationship have been established in a given buyer-supplier relationship (Nielson, 1998). Despite the importance of closeness and fairness in supply chain relationships, these variables have been overlooked in most studies of agrifood chains that have focused on communication quality, relationship quality and competitiveness (Gracia, de Magistris, & Albisu, 2010). Tallontire and Vorley (2005) provide one of the few studies addressing agrifood supply chain buyer-supplier relationships and they show that fairness plays a positive role in achieving sustainable agrifood systems.

The effects on the supplier's performance of a) the supplier's perception of the buyer's fairness, b) the degree of closeness between supplier and buyer, c) the level of communication between supplier and buyer, and d) the level supplier's trust in the buyer have been tested separately and in different contexts (Ferguson, Paulin, & Bergeron, 2005; Griffith, Harvey, & Lusch, 2006; Liu et al., 2012; Lobo et al., 2013; Paulraf, Lado, & Chen, 2008), but comparing the effects of these constructs across a common setting is lacking. Such comparison is needed because it enables us to understand the relative importance of the different relationship factors in a given context. Moreover, the investigation of the combined effect of these relational variables can provide a more in-depth understanding of how each factor contributes to the relationship quality and their effect on performance. Therefore, the aim of this study is, from the supplier's perspective, to investigate the direct effect of trust and other relationship factors (i.e., communication, fairness, and closeness) on financial performance as well as the potential moderating effect of trust on the link between communication, fairness, and closeness and financial performance. Against this backdrop, we address two research questions: 1) what is the effect of fairness, closeness, communication quality, and trust on supplier's financial performance? And, 2) does trust have a moderating effect on the relationships between fairness, closeness, and communication quality and supplier's financial performance?

Our study addresses these research questions in the Kenyan mango supply chain. This context is particularly interesting because the majority of the transactions in this sector are based on informal contracts and promises. The sector is characterized by institutional voids including limited transparency among the supply chain partners, especially between suppliers and traders, as well as a lack of mechanisms for assuring accountability. Mango is highly perishable and bulk, and the success of mango business requires the building of close relationships between suppliers and traders. Thus, the mango case is ideal for studying relational factors and their effect on supplier performance because these factors are more salient here than in supply chain contexts where formal contracts are applied. Mango production is growing in developing countries such as Indonesia, Philippines, Bangladesh, and Nigeria (FAO, 2017); and the Kenyan context is representative of the large majority of developing country supply chains that are part of the domestic, regional markets, and international markets.

2. Conceptual framework and hypotheses

Successful business performance is influenced by the degree of fairness, closeness, communication quality, and trust in the exchange relationships between the supply chain partners (see Fig. 1).

We base the explanation of these relationships on different theoretical perspectives. Exchange relationships involve transactions. According to transaction cost economics (TCE) (Williamson, 1985), transactions are considered as discrete events regulated by governance structures based on the nature of the exchange partners behavioral attributes and specific attributes of the transaction. In contrast to this

view, relational contracting theory (Macneil, 2000) argues that transactions are not just discrete events and expands on TCE's notion of classical and neoclassical contracts by introducing the concept of contracts as including relationships between people who share norms and values. These norms include distributive justice and procedural justice (hereafter referred to as fairness), information sharing, and trust. Relational exchanges have also been explained based on both social exchange theory (Blau, 1964; Lambe, Wittmann, & Spekman, 2001) and equity theory (Adams, 1965). These theories provide insights into the mechanisms that influence the relationships between fairness, closeness, communication, and trust and the financial performance of suppliers. Business relationship performance has been conceptualized in agrifood literature using both financial and non-financial measures (see, e.g., Gyau & Spiller, 2007; Boniface, Gyau, & Stringer, 2012; Lobo et al., 2013). Successful inter-firm relationships refer to the extent to which a relationship is perceived to be productive and rewarding both non-financially and financially (Gyau & Spiller, 2007). Financial performance has been conceptualized as relating to economic rewards that accrue from a buyer-supplier relationship. It refers to a composite measure of sales and profit growth and overall profitability obtained from a relationship (Beugelsdijk, Koen, & Noorderhaven, 2006; Geyskens, Steenkamp, & Kumar, 1999; Palmatier, Scheer, & Steenkamp, 2007).

2.1. Factors that influence business performance in supply chain relationships

2.1.1. Fairness

Fairness is important for achieving superior performance in supply chain relationships (Griffith et al., 2006; Liu et al., 2012). Fairness in business relationships entails many facets with distributive and procedural fairness being two examples (Duffy, Fearn, Hornibrook, Hutchinson, & Reid, 2013; Narasimhan, Narayanan, & Srinivasan, 2013; Zaefarian et al., 2016). *Distributive fairness* refers to the supplier's perception of the fairness of the level of earnings and other outcomes that are obtained from the relationship with the buyer (Patterson, Cowley, & Prasongsukarn, 2006; Yi & Gong, 2008). *Procedural fairness* refers to the supplier's perception of the fairness of the procedures and processes influencing how the outcome is achieved (Kumar, Scheer, & Steenkamp, 1995).

Fairness improves business performance by positively influencing commitment and expectations to continue the relationship (Kumar et al., 1995; Zaefarian et al., 2016), for example, by reducing opportunism in the exchange relationship (Anderson & Weitz, 1989; Dwyer, Schurr, & Oh, 1987; Samaha et al., 2011). This, in turn, reduces conflicts between supply chain partners and increases information sharing (Koza & Dant, 2007), which leads to the development and maintenance of the partners' satisfaction and increased financial outcomes (Wu & Niederhoff, 2014; Yilmaz, Sezen, & Kabadayi, 2004). Therefore, we hypothesize that:

H1. The supplier's perception of the fairness of the buyer in the business relationship is positively associated with the supplier's financial performance.

2.1.2. Closeness

Closeness is a somewhat elusive concept. Nielson (1998, p. 443) defines it as "the degree to which person-to-person contact and close personal and working relationships have been established in a supplier-buyer relationship". Closeness characterizes the relational environment or atmosphere (Woo & Ennew, 2004) and involves the building of social emotional bonds and positive affective ties between the supply chain partners, which enhance their mutual commitment in the supply chain relationship (Barnes, 1997). Closeness can have a significant influence on performance (Ferguson et al., 2005) as it increases information sharing, which leads to increased transparency and mutual

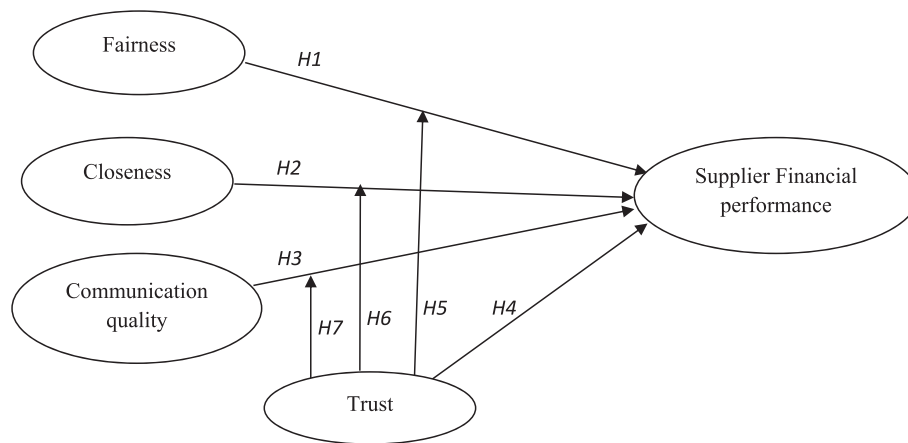


Fig. 1. Conceptual model of relational factors and supplier financial performance.

understanding of difficulties. This, in turn, leads to a better understanding of exchange partners' needs, engagement in joint problem solving and conflict resolution and reduction of search costs (Bennett & Gabriel, 2001). Moreover, closeness reduces uncertainty as well as buyer's perceived risk and, thus, improves the credibility of the supplier (Mojo, Fischer, & Degefa, 2015). Consequently, closeness contributes to building and engendering long-term relationships and improvement of performance. Hence, we hypothesize that:

H2. The supplier's perception of closeness with the buyer is positively associated with the supplier's financial performance.

2.1.3. Communication quality

Communication is defined as “the formal as well as informal sharing of meaningful and timely information between firms” (Anderson & Narus, 1990, p. 44). The quality of communication, information sharing, and participation (joint planning and goal setting) are all significant predictors of successful supply chain relationships (Mohr & Spekman, 1994) and business performance is enhanced when chain activities are coordinated in a highly integrated information-sharing environment (da Silveira & Cagliano, 2006; Ghosh & Fedorowicz, 2008). Information sharing leads to effective management of the collaboration, which enhances the competitive advantage and business performance by lowering the transaction costs. Further, information sharing improves transparency as well as signals the desire to cooperate and collaborate (Batt, 2003). Moreover, information sharing helps to reduce slack, stock outs, safety stocks, and inventory levels in the supply chain, which contributes to maximizing, supply chain profitability (Lee, Padmanabhan, & Whang, 1997; Yang, Wong, Lai, & Ntoko, 2008). Information sharing is influenced by communication quality, or effectiveness, which is a function of aspects such as timeliness, accuracy, completeness, reliability, and suitability of information shared (Fischer, 2013; Mohr & Sohi, 1996). Effective communication provides relevant information to suppliers helping them to assess what buyers do, thus increasing transparency and reducing information asymmetry (Fischer, 2013; Heide & Miner, 1992) which, in turn, affects business outcomes. Continuous and open (honest) communication will minimize uncertainty and/or misunderstandings between supply chain partners (Moorman et al., 1992) whereas the lack of relevant information may create uncertainty among the trading partners and can lead to opportunistic behaviour (Kwon & Suh, 2005). Therefore, effective communication assists in creating superior business performance as it allows supply chain partners to work as an entity (Li, Hong Yan, Wang, & Xia, 2005). Therefore, we hypothesize that:

H3. The supplier's perception of the quality of the communication with the buyer is positively associated with the supplier's financial

performance.

2.1.4. Trust

Trust plays an important role in the building and maintenance of supply chain relationships and influences cooperative behaviours (Geyskens et al., 1998). Trust is defined as “the willingness to rely on an exchange partner in whom one has confidence” (Moorman et al., 1992, p. 315). According to Macneil's relational exchange theory, trust is widely recognized as the social norm for managing and coordinating inter-organizational exchange (Jap, 2001). Trust is associated with the willingness to endure the risk and uncertainty involved in entering business relationships (Mayer et al., 1995). Generally, the strength and quality of a relationship rely on the level of trust; the higher the level of trust, the stronger the relationship will be.

Development of a fully functioning supply chain arrangement requires trust among the partners (Leat & Revoredo-Giha, 2008). There are four main reasons for this. First, trust counterbalances the need for costly safeguard mechanisms against opportunism (Claro et al., 2003). Second, trust reduces search and monitoring costs and economizes on information costs. Third, trust encourages problem solving and flexible adjustment to change (Lorenz, 1991). Lastly, the existence of trust between exchange partners reduces uncertainty and facilitates the flow of crucial resources such as information and product flows (Schiefer & Hartmann, 2008). For these reasons, trust has a direct impact on the suppliers' financial performance (Kim, 2013) and, thus, we hypothesize that:

H4. The supplier's trust in the buyer is positively associated with the supplier's financial performance.

2.2. Trust as a moderating factor

Most studies that examine the relationship between interorganizational relations and trust rests on the premise that one party's beliefs (i.e., trust) about another party influence how they behave in the interaction with the object of this belief (Dirks & Ferrin, 2001). Extending this thinking to the buyer-supplier dyads would imply that trust should have a moderating influence on relationship factors such as fairness, closeness, and communication quality and financial performance.

We propose that the level of trust in supply chain relationships moderates the effect of fairness on financial performance. At the individual level, people's general propensity to trust others (Mayer et al., 1995), i.e., the fact that actors will display different levels of expectations that the word and promises of others can be relied on, and that their expectations will influence their interpretation of the others' behaviour, is positively related to their perceptions of fairness (Bianchi &

Brockner, 2012). Extending this finding to the supply chain context, we expect that more trusting suppliers experience higher levels of fairness and respond with higher levels of commitment than less trusting individual. More generally, the lack of fairness, distributional as well as procedural, perceived by the supplier is likely to raise questions about the buyer's motives and commitment, which may motivate the supplier to initiate opportunistic behaviour and decrease cooperation and ultimately dissolve the relationship with the buyer (Kang, Oh, & Sivadas, 2012). On the other hand, trust in the exchange partner increases the willingness to rely on and have faith in a partner. Thus, trust may create a positive mind-set and reduce the supplier's perception of unfairness by making it appear transitory (Yang, Sivadas, Kang, & Oh, 2012), thus facilitating information sharing, problem solving and reducing the risk of dissolution and the likely negative impact on supplier performance due to increased uncertainty and transaction costs. Therefore, we hypothesize that:

H5. Trust positively moderates the relationship between fairness and financial performance.

Closeness in a relationship is positively correlated with commitment, information exchange, joint problem solving, and general cooperation (Bennett & Gabriel, 2001). Trust is found to be a significant component of commitment (Anderson, Lodish, & Weitz, 1987), and trust influences collaboration both directly and indirectly through relational commitment (Morgan & Hunt, 1994). For example, a supplier would be inclined to commit more easily to a buyer considered trustworthy hoping to extend the relationship into the future. Trust generates positive attitudes and expectations to a partner, which reduces feelings of uncertainty and perception of risk (Selnes, 1998), for example, fear of opportunistic behaviour on the part of the partner. Trust is also associated with greater understanding and familiarity between parties (Gulati, 1995) that enhances cognitive closeness, i.e., aligned mental models and ways of processing information (Thorgren & Wincent, 2011), which in turn facilitates constructive engagement in problem solving and conflict resolution. Thus, the presence of trust will reinforce the potential performance related benefits sustained by closeness. Therefore, low levels of trust in an exchange relationship will lower the closeness between the supply chain partners, which will affect the business performance, whereas a higher level of trust will increase the closeness between the exchange partners. Therefore, we hypothesize that:

H6. Trust positively moderates the relationship between closeness and financial performance.

Trust increases information sharing between the business partners because it breaks the barriers of risk and uncertainty. In order for effective information sharing to occur, a firm need to be confident in its partner's behaviour (Das & Teng, 1998) and trust has been found to have a positive effect on openness in communication in inter-organizational relationships (Smith & Barclay, 1997) and openness will increase the willingness to share information and thus enhance effectiveness of joint problem solving and decision making (Nielson, 1998). Moreover, trust in partners may have a positive effect on accuracy of information sharing and knowledge exchange between partners (Benton, Gelber, Kelly, & Liebling, 1969; Currall & Judge, 1995), for example, because trust creates familiarity and cognitive closeness that fosters shared mental models. Moreover, trust facilitates mutuality in goal setting and joint problem solving (Sahay, 2003), i.e., facilitates participation in decision making, for example, because the uncertainty associated with decision making is reduced when a partner is found trustworthy (Morgan & Hunt, 1994). Therefore, we hypothesize that:

H7. Trust positively moderates the relationship between communication quality and financial performance.

3. An overview of the mango sector in Kenya

The Kenyan mango industry growth and economic importance are not well exploited. During the last decade, mango production has grown and is now the second largest fruit sector in terms of area, production, and value in Kenya's horticultural industry. The economic importance of the mango sector is still growing; however, its potential has not been fully exploited (Kehlenbeck, Rohde, Njuguna, & Jamnadass, 2012). There has been a significant expansion in mango production with about 1.5 million trees established between 2010 and 2015 (FAO, 2016; USAID-KAVES, 2015). According to FAO (2016), in 2013, the annual production of mango was about 589,907 t and there is a growing demand for mango on domestic, regional, and international markets. The projected demand for fresh fruit was expected to increase from 591,000 to 621,000 metric tonnes (5%), for processed fruit from 100,000 to 125,000 metric tonnes (25%) and for exports from 19,200 to 22,600 metric tonnes (18%) by 2017 (USAID-KAVES, 2015).

Domestically, demand is being driven by a growing middle class demanding both fresh fruits and processed products (Tschirley, Reardon, Dolislager, & Snyder, 2015) and increased purchasing power (USAID-KAVES, 2015). The main actors along the mango supply chain include nursery operators, agro-chemical providers, other input suppliers, farmers, middlemen, traders, processors, exporters, retailers, and consumers. 98% of the mango production is sold on the domestic markets and 2% is sold on the export market (Msabeni, Muchai, Masinde, Mato, & Gathara, 2010). Mango exports contributed approximately 120 million USD in terms of gross domestic product (GDP) in 2013 (FAO, 2016).

The mango sector supports over 200,000 smallholders for their livelihoods (USAID-KAVES, 2015). In addition, many jobs are related to trading, processing, and logistics in the value chain. Previously, the trade was characterized by spot markets, little hybridization and no hierarchical governance structure, but due to the changes in agrifood chains, this situation is changing towards more hybrid governance structures. The tendency of farmers to organize themselves into producer organizations is mainly attributed to the need to increase their bargaining power in order to overcome the challenge of middlemen who tend to manipulate and control the price in the market. Mango is sold in local markets, wholesale markets, kiosks, roadside markets, roadside vendors, and supermarkets. Farmers can market their fruits through various channels; through middlemen; through traders or consumers in local or urban markets; through exporters or processors; or through producer organizations. The mango market is characterized by a large number of suppliers compared to the buyers. There is no standardized grading or pricing systems and prices received by farmers depend on the type of buyer, distance to roads, season, size, quality, and variety. Producer organizations and individual farmers face the challenge of accessing markets due to problems of vertical coordination and, as a result, they generally receive low prices for their products. Most transactions are based on informal contracts and oral agreements. Moreover, the mango business does not have any significant entry or exit barriers for traders who enter the trade in the domestic market. Thus, the study case provides an interesting context where relationship factors and their effect on supplier performance are amplified compared to more contract-based exchange environments. This type of supply chains is prevalent in many developing countries with a high level of institutional voids.

4. Methodology

4.1. Research approach

The study was based on a mixed methods approach (Teddle & Tashakkori, 2009) combining a household survey and semi-structured interviews (Bryman, 2015). We conducted the study in Kenya in the eastern province in the districts of Embu, Mbeere, Mwala, and

Kangundo. The districts were purposively selected as we were interested in areas where improved mango varieties were being grown and with good market access. A total of 600 farmers were randomly sampled based on lists of mango producers in the study area provided by TechnoServe, an international non-governmental organization. The semi-structured interviews were conducted in August and September 2013 and the survey was administered from February to April 2014.

4.2. Development of survey instrument and data collection

In this research, we applied the procedure followed by previous studies in agrifood and marketing (Espejel, Fandos, & Flavian, 2008; Spadoni, Lombardi, Canavari, & Hingley, 2013; Zhang & Hu, 2011). The data collection process was conducted in three phases. During the first phase, key informants were selected based on insights from the literature and district mango consultants. Semi-structured interviews were conducted with key informants, including ten mango producers, five traders, two brokers, three small-scale processors, and one input supplier. The purpose of the interviews was to deepen our understanding of the effects of the determinants and consequences of the relationships and interactions between mango producers and mango traders. In addition, consultations were carried out with agribusiness marketing researchers at the World Agroforestry Centre (ICRAF) in Nairobi and TechnoServe employees supporting mango producer groups in the districts. The sample was designed to ensure coverage of all relevant stakeholder categories in the mango value chain.

In the second phase, a questionnaire was developed based on the agribusiness and relationship marketing literature and insights from key informant interviews. Following this, a two-step pre-test procedure was followed. First, three agribusiness and marketing specialists reviewed the questionnaire and provided input on the design of the survey instrument. Second, the questionnaire was further revised based on input from five farmer group chairpersons. To check the face validity of the developed measures, the final questionnaire was pre-tested with a sample of 30 farmers, representative of the study population. Some questions were modified following this pre-test. Finally, 600 farmers were interviewed by six trained enumerators using face-to-face interviews. This allowed the questions to be asked in the local languages, which enhanced study reliability. Furthermore, this methodology was appropriate because most respondents could not be reached by post or mobile phone. The enumerators were monitored by one of the authors and completed questionnaires controlled on a daily basis. Despite this effort, 38 questionnaires had to be subsequently removed from the data set due to missing data and, therefore, the final sample included 562 farmers.

4.3. Operationalization of constructs

The constructs were developed based on the literature and modified to suit the Kenyan context. In this study, we focus on business relationship performance based on financial performance. Survey questions on supplier financial performance questions were based on Rauyruen and Miller (2007) and Boniface et al. (2012); fairness questions were based on Kumar et al. (1995) and Jambulingam, Kathuria, and Nevin (2011); closeness questions were based on Guenzi and Pelloni (2004); communication quality questions were based on Mohr and Spekman (1994) and Swaid and Wigand (2009); and questions on trust were based on Batt (2003). Following this literature, a five point Likert-scale with questions ranging from 1 = 'strongly disagree' to 5 = 'strongly agree' was used to measure the latent constructs of trust, business performance, communication quality, and closeness.

4.4. Factor analysis

Factor analysis was conducted using varimax rotation (Abdi, 2003) to generate the factors which were used in estimating the econometric

model. All factors with eigenvalues above one were extracted. Since the explanatory variables were latent variables, factor analysis was conducted to predict the factor scores, which were later used in the regression model. The factor loadings for the latent variables (financial performance, fairness, closeness, communication quality, and trust) were above 0.50; these were above the 0.40 cut-off representing practical significance suggested by Hair, Anderson, Tatham, and Black (1995), although the preferred value is ≥ 0.6 (Bagozzi, Yi, & Phillips, 1991). See the factor loadings in Appendix B. We tested for the appropriateness of the factor analysis scale using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970), which was above 0.7 for all the variables. The recommended value is above 0.5 for factor analysis (Hair et al., 1995). We then tested for reliability of the measurement scale using the Cronbach alpha and the values were above the recommended threshold of 0.7 for all measures (Nunnally, 1978). We conducted a confirmatory factor analysis using AMOS 25, and discriminant validity was calculated based on the average variance extracted (AVE) for each construct (Fornell & Larcker, 1981).

We tested for common method bias since the rater for the predictor and the response variable was the same. The principal component factor analysis revealed the presence of 4 distinct factors with eigenvalue > 1.0 , rather than a single factor. The 4 factors together accounted for 63% of the total variance; the first (largest) factor did not account for a majority of the variance (27%). Thus, no general factor is apparent.

4.5. Model estimation

Fairness, closeness, and communication quality were hypothesized to positively influence suppliers' financial performance. We specified Eq. (1) which included both the direct effects of relational factors and the interaction effects on supplier financial performance. We estimated this relationship using ordinary least squares (OLS) regression following Samaha et al. (2011). In the first part, we estimated the direct effects of the relational variables on financial performance and in the second part, we analysed the interaction effects between trust and fairness, trust and closeness, and trust and communication quality on financial performance. We tested for the moderation effect of trust by including the product of independent variables, i.e., fairness, closeness, and communication quality and the moderator, i.e., trust as an additional predictor in the model (Eq. (1)).

In this second part of the estimations, we used log of fairness instead of fairness. The reason is that fairness is highly left skewed (33% of the observations are located at the minimum value), and this influence the interaction, but not the direct effect model. A moderator variable influences the nature (e.g., magnitude and/direction) of the effect of the antecedent on an outcome variable (Aguinis, Edwards, & Bradley, 2016; Hayes & Mathes, 2009). In moderation, the moderator variable will influence the path relating the independent variable and outcome variable. Moderators affect the direction and or strength of the relation between an independent or predictor variable and the dependent variable (Baron & Kenny, 1986). Statistically, the nature of the moderator will determine the analysis to be conducted. For example, when the moderator is categorical, the traditional data-analytical approach is sub-grouping analysis, which consists of comparing correlation or regression coefficients across the various sub-groups or categories (Aguinis & Pierce, 1998; Boyd, Bergh, Ireland, & Ketchen, 2013). When the moderator is continuous, studies typically depend on moderated multiple regression (Aiken & West, 1991). Multiple regressions are suitable for analysis moderation involving a continuous moderator variable (Aguinis et al., 2016; Baron & Kenny, 1986). Since trust was a continuous variable the suitable method was moderated multiple regressions instead of sub-group analysis. All the predictors and their interactions were centered before running the regression. This provides a better interpretation of the regression coefficients (Fairchild & Mackinnon, 2009).

Table 1
Descriptive statistics and correlations.

Correlations																		
Variables	M	SD	Min	Max	α	AVE	1	2	3	4	5	6	7	8	9	10	11	12
1. Performance	1.79	1.00	1.00	5.00	0.83	0.58	0.76											
2. Fairness	1.56	1.00	1.00	5.00	0.75	0.57	0.62*	0.75										
3. Closeness	1.76	1.00	1.00	5.00	0.88	0.53	0.41*	0.54*	0.73									
4. Communication qual.	1.61	1.00	1.00	5.00	0.78	0.66	0.45*	0.68*	0.47*	0.81								
5. Trust	1.79	1.00	1.00	5.00	0.84	0.56	0.58*	0.59*	0.46*	0.54*	0.75							
6. Mango variety	2.35	1.42	1.00	4.00	–	–	0.23*	0.19*	–0.06	0.13*	0.06	1.00						
7. Log of no. trees	4.32	1.00	1.09	8.85	–	–	–0.06	0.00	0.08	–0.00	0.00	–0.24*	1.00					
8. Education	9.84	4.34	0.00	18.00	–	–	–0.01	–0.01	0.04	0.05	0.03	0.09	0.18*	1.00				
9. Experience	22.87	9.78	5.00	60.00	–	–	–0.06	–0.02	0.03	–0.03	–0.07	–0.17*	0.16*	0.04	1.00			
10. Group participation	0.32	0.47	0.00	1.00	–	–	0.01	0.06	–0.03	0.04	0.02	0.01	0.08	0.01	0.05	1.00		
11. Age	52.0	14.0	18.0	90.0	–	–	–0.02	–0.05	–0.09	–0.06	–0.09	–0.04	0.01	–0.19*	0.23*	0.22*	1.00	
12. Gender	0.41	0.49	0.00	1.00	–	–	–0.02	0.01	–0.00	0.00	0.01	0.00	0.11*	0.11*	–0.08	–0.11	–0.24*	1.00

Note: Significance level at *10%. The bold numbers in the diagonal shows the square root of the average variance extracted (AVE).
Source: Own calculation based on survey data.

We included control variables focusing on two types of potentially confounding factors, first those that influence the financial performance and those related to the underlying unobserved heterogeneity of mangoes and individuals. We controlled for the number of trees (which was used as a proxy for farm size) and group participation because participation in producer groups increases farmer's access to inputs which may improve the quality of the mangoes or enable the farmer to attract better prices. Mango variety may affect the price offered by the buyer, and we controlled for the household age, which again could be determining the financial performance. At the individual level, we used education, the producer's experience in mango growing, and gender as these variables may affect the farmer's perceptions towards mango growing. Previous research suggested that performance might vary by supplier size and experience (Narasimhan et al., 2013; Stern, El-Ansary, & Coughlan, 1996). Therefore, we include demographic characteristics, such as the education of the supplier, in the model.

$$Y_i = \beta_0 + \beta_1 T_i + \beta_2 F_i + \beta_3 CLO_i + \beta_4 COM_i + \beta_5 T*F + \beta_6 T*COM_i + \beta_7 T*CLO_i + \beta_8 T*F_i + \varepsilon_i \quad (1)$$

Where Y_i = financial performance of individual i , T = trust, F = fairness, CLO = closeness, COM = communication quality. Interactions: $T*COM$ = trust * communication, $T*F$ = trust * fairness, $T*CLO$ = trust * closeness, and ε_i = error term or controls.

To test the robustness of our results we employed a number of robustness tests (tables not included here but available from authors). First, we tested the robustness of the model by comparing with a Tobit model due to several observations located at both the upper and lower limit of the distribution. Our main results were confirmed. Also, as we changed the specification of the independent variable, i.e., fairness to log fairness in the estimations in Table 3, we ran additional tests using log fairness in Table 2. The results remain the same as in Table 2. We also tested for endogeneity by conducting two-stage least squares (2SLS) regression and no endogeneity was detected. Endogeneity occurs when one of the independent variables is correlated with the model error term. The use of instrumental variables is useful for correcting detected endogeneity in the model. An instrumental variable is a variable which is correlated with the endogenous predictor but is not correlated with the error term by assumption or construction.

Due to the high correlation between the independent variables, the presence of multicollinearity was a possibility. Multicollinearity occurs when the independent variables are highly correlated with each other such that the dependent variable does not explain much variation, which leads to biased estimates. Multicollinearity is detected in multiple linear regressions using variance inflated factor (VIF). We checked for multicollinearity between the independent variables, the variance inflated factors (VIF) and the values were below 2.45. It is

recommended that the model should be investigated further if the VIFs are 4.0. If the VIFs exceed 10, which indicates the presence of serious multicollinearity, the model needs to be corrected (Neter, Wasserman, & Kutner, 2004). To ensure that there was no specification bias, different variables were added to the model until a stable model was obtained.

5. Results

5.1. Descriptive statistics

Table 1 show the mean values and the correlations for the variables used in the regression model, in bold the average variance extracted (AVE) for each construct is presented and it shows that the square root of AVE was higher than the inter-correlations for all possible pairs of constructs (Fornell & Larcker, 1981).

The Cronbach's alpha value was above 0.7 for the relational variables trust, financial performance, fairness, communication, closeness, and trust. The KMO values were above 0.7 and the factor loadings for the indicators for the latent variables were above 0.5 (Appendix B). Appendix A presents sample characteristics. Most of the interviewed producers were in the age range 51–71 years (49%). The producers had substantial experience in growing mangoes. About 93% of the farmers had been growing mangoes for 6 years or more.

5.2. Effect of relational factors on financial performance

Five nested models were estimated in order to investigate the effect of relational factors on suppliers' financial performance. Table 2 presents the OLS estimates. The first model shows the controls of farmers' experience, education, the number of trees and mango variety grown by the farmer. Among the controls, the results show that financial performance may be influenced by the mango variety grown by farmers. In the next 4 models, we introduce fairness, closeness, communication quality, and trust, respectively. In model 5, we present the full model that includes both the controls and the relational variables.

The direct effect of trust, fairness, and closeness is statistically significant in model 5. The R-squared for model 5 was 0.479, i.e., fairness, trust, and closeness explained 47% variance in supplier financial performance. Further examination of the coefficients shows that fairness was the most important factor in determining financial performance followed by trust and closeness to the business partner. However, we found no statistical significance between communication quality and financial performance of the producers. Of the four hypotheses that we investigated, the relationship between relational factors and supplier financial performance, H1, H2, and H4 were supported, whereas H3 was not supported (Table 2).

Table 2
Ordinary least square (OLS) regression using financial performance as a dependent variable.

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/se	b/se	b/se	b/se	b/se
Fairness		0.607*** [0.041]	0.530*** [0.046]	0.512*** [0.059]	0.396*** [0.058]
Closeness			0.135*** [0.039]	0.130*** [0.040]	0.079** [0.038]
Communication quality				0.03* [0.057]	−0.038 [0.054]
Trust					0.318*** [0.041]
Mango variety	0.158*** [0.031]	0.073*** [0.026]	0.088*** [0.026]	0.087*** [0.026]	0.096*** [0.025]
Log of number of trees	−0.005 [0.043]	−0.034 [0.035]	−0.04 [0.035]	−0.039 [0.035]	−0.036 [0.032]
Education (years)	0.002 [0.009]	0.003 [0.008]	0.003 [0.008]	0.003 [0.008]	0.002 [0.007]
Experience (years)	−0.002 [0.005]	−0.003 [0.003]	−0.004 [0.003]	−0.004 [0.003]	−0.001 [0.003]
Group participation	0.008 [0.094]	−0.072 [0.073]	−0.057 [0.072]	−0.058 [0.072]	−0.067 [0.068]
Age of household (years)	−0.002 [0.004]	0.001 [0.003]	0.001 [0.003]	0.001 [0.003]	0.002 [0.003]
Gender	−0.055 [0.088]	−0.069 [0.071]	−0.063 [0.070]	−0.062 [0.071]	−0.06 [0.067]
Constant	−0.207 [0.314]	0.033 [0.257]	−0.008 [0.255]	−0.006 [0.254]	−0.129 [0.243]
R-squared	0.055	0.407	0.420	0.420	0.479
Adjusted R-squared	0.043	0.399	0.410	0.409	0.469
Incremental R-squared		0.352	0.365	0.365	0.424
Number of obs.	562	562	562	562	562
F test	4.565***	34.490***	35.311***	31.904***	45.631***

Notes: Significance levels are reported as follows: ***1%, **5%, *10%.

Source: Own calculation based on survey data.

5.3. Effect of interactions on financial performance

Next, we included three interactions, i.e., between trust and fairness, trust and communication, and trust and closeness (Table 3). The results in Table 3 indicate that the interaction between trust and fairness, closeness and communication, respectively, was positive and statistically significant at the 1% significance level when only one factor was introduced at a time in the model (model 2, 3, 4). When all three factors were introduced simultaneously in model 5, only the interaction between trust and fairness remained statistically significant (1% significant level). Therefore, only hypothesis H5 was supported, whereas H6 and H7 were rejected. To identify the nature of the interaction between fairness and trust we also plot the interaction (see Fig. 2). The red line is when trust is high, and the blue line when trust is low. We used the median split method, all the values below the median were referred to as low levels of trust and above the median as high levels of trust. Fig. 2. shows that at higher levels of trust and fairness the financial performance is high while at lower levels of trust and fairness the financial performance is low. The graph plot shows that for low values of fairness (i.e. below −1) the interaction is not significant.

6. Discussion

6.1. Contributions to the literature

The study examines the direct effect on the supplier's financial performance of four relational factors in the supplier-buyer relationship (fairness, closeness, communication quality, and trust) as perceived by the supplier. Moreover, the study investigates the moderating effect of trust on the relationship between the first three dimensions and financial performance. With reference to the commitment-trust theory

(Morgan & Hunt, 1994), trust is often considered a key mediating variable for relationship quality in relationship marketing models. But several authors have called for more nuanced studies of trust, recognizing the complex nature of the construct (Seppänen, Blomqvist, & Sundqvist, 2007). In our study we introduce a complementary perspective and contribute to the literature on supplier-buyer relationships by investigating the potential moderating effect of trust (Dirks & Ferrin, 2001). Moreover, we contribute by introducing the notion of trust propensity adopted from applied sociology (Colquitt, Scott, & LePine, 2007). Thus, we contribute to a growing recognition and conceptualization of the dynamic nature of trust in supply chain dyads (Seppänen et al., 2007). Moreover, the study is based on an agrifood supply chain in a developing country, a rarely studied context. Thereby, this study also contributes to a growing literature on supply chain management beyond the traditional western context (e.g., Dries, Gorton, Urutyay & White, 2014; Fischer, 2013).

Several theoretical implications can be drawn from this study. We found a strong significant effect of fairness, closeness, and trust on financial performance, which is in line with previous studies (e.g., Dirks & Ferrin, 2001; Ferguson et al., 2005; Kumar et al., 1995; Samaha et al., 2011; Zaefarian et al., 2016). However, the effect of communication quality on supplier performance was found to be non-significant. This result is in contrast to the general importance attributed in previous studies to communication in effective supplier-buyer relations (e.g., Anderson & Narus, 1990; Mohr & Spekman, 1994). The explanation for this finding may be highly contextual. In the Kenyan context, the information provided by buyers is often inadequate. For instance, farmers may be told that there only is a limited demand for mangoes, and they will therefore only be offered low price. Information exchange is often incomplete and too inaccurate to significantly affect the suppliers' financial performance. It is likely that suppliers are offsetting their vulnerability with verification strategies to become less dependent of information from buyers, for example, by seeking out information externally to the exchange relationship for evaluating the conduct of the buyer (Gundlach & Cannon, 2010). For example, by relying on publicly or NGO-established information platforms that provide market information. Another probable explanation could be that the presence of trust, fairness, and closeness suppresses the effect of communication quality.

We also examined the moderating effect of trust on fairness, closeness, and communication quality. While it has long been recognized that fairness is closely related to trust (e.g., Cohen-Charash & Spector, 2001), previous studies have mainly treated trust as a relational quality component hypothesized to exercise a direct effect on performance (similar to our H4), and have failed to adequately consider the effect of trust on the link between other relationship factors and performance in supplier-buyer relationships. We addressed this gap and found that trust in the buyer had a positively moderating effect for fairness on financial performance, however, not for the lowest levels of fairness. By investigating the suppliers' perspective on fairness, our study addresses a lacuna in the supply chain literature where most studies approached fairness from the buyer's side (Zaefarian et al., 2016). Our findings support the findings by Zaefarian et al. (2016) from the Iranian car manufacturing industry that showed that suppliers' perception of the buyers' fairness can increase the suppliers' financial performance. In their study, they argued that suppliers' that exhibit trust and commitment to the buyers' become more attractive as supply chain partners. We contend that a similar mechanism is at play in the Kenyan mango sector. But contrary to the Iranian suppliers, Kenyan farmers have little bargaining power and they are likely to be highly dependent on the buyers' trustworthiness due to the perishability of fresh fruit (i.e., the risk associated with defective behaviour by the buyer). This establishes an asymmetric dependency relation between supplier and buyer. This vulnerable condition is likely to explain the observed significant effect of trust as a moderating factor of the fairness-performance relationship where high-trust suppliers are obtaining significantly better outcomes.

Table 3
OLS regression estimate for the effect of interactions on financial performance.

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/se	b/se	b/se	b/se	b/se
Log of fairness	0.229*** [0.033]	0.271*** [0.034]	0.248*** [0.033]	0.253*** [0.033]	0.272*** [0.034]
Closeness	0.120*** [0.040]	0.083** [0.039]	0.086** [0.038]	0.099** [0.039]	0.076** [0.037]
Communication quality	0.031* [0.052]	-0.018 [0.051]	-0.005 [0.052]	-0.039 [0.051]	-0.025 [0.049]
Trust	0.359*** [0.042]	0.295*** [0.040]	0.313*** [0.040]	0.332*** [0.041]	0.287*** [0.040]
Trust × Log of fairness		0.151*** [0.027]			0.127*** [0.036]
Trust × Closeness			0.096*** [0.023]		0.036 [0.030]
Trust × Communication				0.084*** [0.024]	0.002 [0.035]
Mango variety	0.088*** [0.026]	0.091*** [0.025]	0.092*** [0.026]	0.095*** [0.025]	0.092*** [0.025]
Log of number of trees	-0.041 [0.032]	-0.034 [0.032]	-0.037 [0.033]	-0.033 [0.032]	-0.033 [0.032]
Education (years)	0.002 [0.007]	0.002 [0.007]	0.004 [0.007]	0.003 [0.007]	0.002 [0.007]
Experience (years)	-0.001 [0.003]	-0.001 [0.003]	-0.001 [0.003]	-0.001 [0.003]	-0.001 [0.003]
Group participation	-0.053 [0.069]	-0.063 [0.068]	-0.053 [0.068]	-0.052 [0.068]	-0.062 [0.068]
Age of household (years)	0.002 [0.003]	0.002 [0.003]	0.002 [0.003]	0.002 [0.003]	0.002 [0.003]
Gender	-0.058 [0.069]	-0.089 [0.068]	-0.065 [0.068]	-0.059 [0.068]	-0.087 [0.068]
Constant	-0.122 [0.248]	-0.173 [0.244]	-0.17 [0.247]	-0.206 [0.245]	-0.185 [0.245]
R-squared	0.455	0.481	0.469	0.468	0.482
Adjusted R-squared	0.444	0.470	0.458	0.456	0.469
Incremental R-squared		0.026	0.014	0.013	0.028
Number of obs.	562	562	562	562	562
F test	39.664***	41.028***	42.491***	39.234***	38.300***

Notes: Significance levels are reported as follows: ***1%, **5%, *10%.
Source: Own calculation based on survey data.

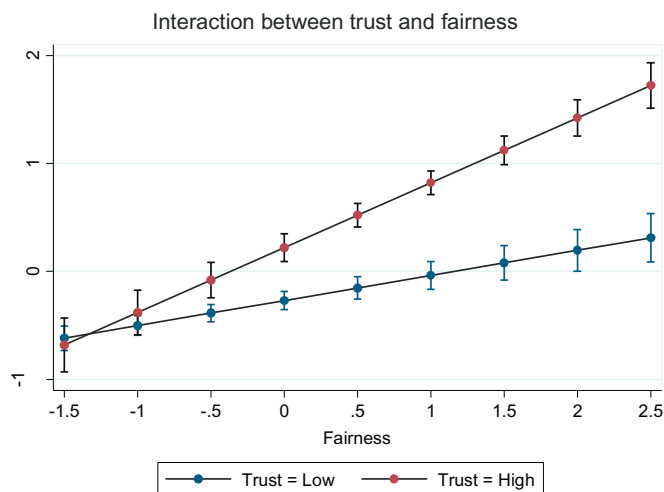


Fig. 2. Trust and log fairness.

Our study extends on the observations made by Zaefarian et al. (2016) by suggesting an explanation for the differences in supplier trust levels. Suppliers with higher levels of trust propensity are more likely to interpret the relationship with the buyer more positively (than low-trust suppliers), and thus approach the exchange relationship more constructively, engaging more easily in information sharing and problem solving, and refraining from opportunistic behaviours, which is in

turn reciprocated by buyers. Thus, this study contributes to the supplier-buyer relationship literature by drawing attention to how the effect of suppliers' fairness perceptions on performance is moderated by suppliers' propensity to trust their buyers.

6.2. Managerial implications

Our findings have direct implications for suppliers, buyers, and private and public organizations supporting market efficiency in fresh fruit value chains in the development country context. The supply chain actors should understand that fairness, closeness, and trust are important relational drivers that influence suppliers' financial performance. Suppliers that aim to enhance their profitability should aim to influence their business relationship with buyers. Zaefarian et al. (2016) suggests a strategy where the present behaviour of the buyer is considered unfair. The supplier can try to influence the relationship proactively with regard to the dimensions of fairness, closeness, and trust to (hope to) foster the buyer's reciprocal behaviours. In the Kenyan mango sector case, the suppliers are vulnerable due to perishability and limited storage time of fresh fruit. Inefficient supply chain management is associated with significant risk of post-harvest losses for both suppliers and buyers. Therefore, suppliers can, for example, aim to add value to the relationship by clearly signalling their effort to meet buyers' quality and delivery requirements and thereby reduce the buyers' post-harvest losses and in turn facilitate buyer reciprocity.

We find that a supplier's trust in buyers is crucial. Trusting the buyer is positively associated with the supplier's financial performance.

Therefore, buyers aiming to improve their business performance through stable supplier relations should primarily aim to establish trustful relations with these. Trusting relations emerge out of sustained interaction based on transparent behaviour and the sharing of relevant information. When, as in the Kenyan context, business-related information from agents outside established relationships is, in general, not perceived by farmers as very trustworthy, trust becomes a significant factor influencing the supplier's transaction decisions. This is a distinguishing feature of the study context compared to more information-rich, transparent and formally regulated institutional business environments. This implies that strong farmer-buyer links and networks are key elements in strategies for enhancing supplier performance in less vertically integrated developing country agrifood supply chains.

Moreover, in a business environment characterized by institutional voids, imperfect markets, and value chains where the suppliers are often small-scale enterprises facing an asymmetric relation to the buyers, it is important to acknowledge that supplier commitment entails vulnerability and attention should be given to the 'dark side of trust' (cf. Delbufalo, 2012; Thorgren & Wincen, 2011), i.e., the risk that showing trust may be misused or that trust leads to undesired rigidities and limits suppliers' flexibility. Under these circumstances, it seems that both suppliers and buyers could obtain more long-term gains from involving NGOs and public authorities as value chain brokers providing neutral market intelligence, for example, updated commodity market prices and production forecasts that could help supply chain partners establish a transparent and relatively objective basis for reaching distributive fairness. Moreover, farmer producer groups or cooperatives, with the support of NGOs and public agencies, could play an important role in establishing and communicating the necessary information and frameworks for supporting distributive as well as procedural fairness.

6.3. Limitations and further research

Despite the contributions of the study, it has some limitations. Measuring the relational factors between partners was based on perceptions, but these can change with the changes in the business relationship and broader environment. Therefore, future research should apply longitudinal studies to capture the changes in supply chain partners' perceptions over time. Moreover, trust is a complex phenomenon that may exhibit interrelationship between, for example, cooperation, communication, and performance. Longitudinal research designs are also needed to identify causal effects as well as to capture

the nature of reciprocity mechanisms influencing the development in long-term supplier-buyer relationships. Longitudinal studies aiming to establish causal relations between major relational factors and trust could also contribute to sorting out the present conceptual confusion related to trust research in the supply chains context because "causality could be seen as a major reason for ambiguity and confusing in defining the antecedents, dimensions and consequences of the trust construct." (Seppänen et al., 2007, p. 256).

Furthermore, this study was limited to the perspective of the suppliers. Future studies should complement our findings by capturing the perspectives of supplier-buyer dyads. This would enable further scrutinizing of the suggested effect of the propensity to trust mechanism. We hypothesized that buyers reciprocate trust induced collaborative behaviours, but this should be tested in future studies that include both buyers and their suppliers. Ideally, such studies should aim to go beyond simple causality as seen in the majority of the present literature, but rather aim to apply multi-stage approaches that allow capturing circular or reciprocal causality and feedback loops (see, e.g., Akrouf & Diallo, 2017).

In our study we refrained from investigating the influence of the degree of dependency of supply chain partners on their performance. A study of supplier-buyer dyads could capture dependency effects and investigate the 'dark side of trust'. In this study we have focused on the positive aspects of trustful relations, but it is not unlikely that in highly uncertain environments characterized by institutional voids trust may also lead to negative performance effects for suppliers. In our study, non-financial performance measures were not taken into consideration due to the high multi-collinearity between trust and overall satisfaction encountered during the analysis. Future research focusing on both positive and negative aspects of trust should consider a broader conceptualization of supplier performance or satisfaction to ensure an adequate picture of the complex decision-making conditions of the developing country farmers.

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Appendix A. Demographic characteristics of respondents

Demographic characteristics	Frequency (n = 562)	Per cent
Sex of respondents		
Male	328	58.36
Female	234	41.64
Age of respondents (years)		
0–18	3	0.53
19–30	42	7.47
31–50	197	35.05
51–70	275	48.93
71–90	45	8.01
Education level		
No schooling	31	5.52
Primary school (1–4 year)	173	30.78
Standard 8 (5–8 year)	106	18.86
Secondary school (9–12 year)	177	31.49
Tertiary institutions	75	13.35
Farmer experience (years)		
0–5	39	6.94

6–20	420	74.73
21–40	96	17.08
41–60	7	1.25
Membership to producer groups		
Yes	185	32.92
No	377	67.08

Source: Survey data.

Appendix B. Factor loadings for relationship variables

Latent variables and indicators	Factor loadings
Financial performance (KMO = 0.79, α = 0.83)	
My relationship with the buyer has been a financial success	0.82
I have been able to achieve 100% of my goals by selling to my current buyer	0.71
I gain steady income and financial security from this relationship	0.76
Return on investment is higher in this relationship	0.68
Fairness (KMO = 0.80, α = 0.84)	
We have bilateral and frequent communication with my buyer	0.84
A high level of two-way communication exists between me and the buyer	0.84
We have agreed rules and terms in our business with the buyer concerning quality, quantity and price	0.51
The price paid by my buyer is better than what others buyers would offer	0.50
Sometimes when the buyer changes his objectives I alter my standards of production in response	0.52
Closeness (KMO = 0.75, α = 0.78)	
We seem to find plenty to talk about	0.85
This buyer knows a lot about me	0.43
We have developed a good rapport	0.74
There is friendship between us	0.73
Communication quality (KMO = 0.82, α = 0.88)	
I receive regular feedback from the buyer about the quality of my product	0.81
I receive regular feedback from the buyer about market developments	0.78
I receive information on how my production compares with others (e.g. on quality, price ...)	0.82
The information received from my buyer is useful for production and marketing of mangoes	0.89
Trust (KMO = 0.75, α = 0.75)	
My buyer does not make false claims	0.50
I believe in the information provided by my buyer (prices, quality, quantity)	0.72
My buyer always keeps his promises	0.67
My buyer cares about my welfare	0.67

Source: Survey data.

References

- Abdi, H. (2003). Factor rotations in factor analyses. In M. Lewis-Beck, A. Bryman, & T. Futing (Eds.). *Encyclopedia for research methods for the social sciences* (pp. 792–795). Thousand Oaks, CA: Sage Publications.
- Adams, J. S. (1965). Inequity in social exchange: In L. Berkowitz. *Advances in experimental social psychology* (pp. 267–299). London: Academic Press.
- Aguinis, H., Edwards, R. J., & Bradley, J. K. (2016). Improving our understanding of moderation and mediation in strategic management research. *Organizational Research Methods*, 27, 1–26.
- Aguinis, H., & Pierce, C. A. (1998). Heterogeneity of error variance and assessment of moderating effects of categorical variables: A conceptual review. *Organizational Research Methods*, 1, 296–314.
- Aiken, L. A., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage Publications.
- Akrout, H., & Diallo, M. F. (2017). Fundamental transformations of trust and its drivers: A multi-stage approach of business-to-business relationships. *Industrial Marketing Management*, 66, 159–171.
- Anderson, E., Lodish, L. M., & Weitz, B. A. (1987). Resource allocation behavior in conventional channels. *Journal of Marketing Research*, 24(1), 85–97.
- Anderson, E., & Weitz, B. (1989). Determinants of continuity in conventional industrial channel dyads. *Marketing Science*, 8(4), 310–323.
- Anderson, J. C., & Narus, J. A. (1990). A model of distributor firm and manufacturer firm working partnerships. *Journal of Marketing*, 54(1), 42–58.
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36(3), 421–458.
- Barnes, J. G. (1997). Closeness, strength, and satisfaction: Examining the nature of relationships between providers of financial services and their retail customers. *Psychology & Marketing*, 14(8), 765–790.
- Baron, M. R., & Kenny, A. D. (1986). The moderator-mediator variable distribution in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Batt, P. J. (2003). Building trust between growers and market agents. *Supply Chain Management: An International Journal*, 8(1), 65–78.
- Bennett, R., & Gabriel, H. (2001). Reputation, trust and supplier commitment: The case of shipping company/airport relations. *Journal of Business & Industrial Marketing*, 16(6), 424–438.
- Benton, A. A., Gelber, E. R., Kelly, H. H., & Liebling, B. A. (1969). Reactions to various degrees of deceit in a mixed-motive relationship. *Journal of Personality and Social Psychology*, 12(2), 170–180.
- Beugelsdijk, S., Koen, C. I., & Noorderhaven, N. G. (2006). Organizational culture and relationship skills. *Organization Studies*, 27(6), 833–854.
- Bianchi, E. C., & Brockner, J. (2012). In the eyes of the beholder? The role of dispositional trust in judgments of procedural and interactional fairness. *Organizational Behavior and Human Decision Processes*, 118(1), 46–59.
- Blau, P. M. (1964). *Exchange and power in social life*. New York, NY: John Wiley & Sons Inc.
- Boniface, B., Gyau, A., & Stringer, R. (2012). Linking price satisfaction and business performance in Malaysia's dairy industry. *Asia Pacific Journal of Marketing and Logistics*, 24(2), 288–304.
- Boyd, B. K., Bergh, D. D., Ireland, R. D., & Ketchen, D. J. (2013). Constructs in strategic management. *Organizational Research Methods*, 13, 3–14.
- Bryman, A. (2015). *Social research methods*. Oxford, UK: Oxford University Press.
- Claro, D. P., Hagelaar, G., & Omta, O. (2003). The determinants of relational governance and performance: How to manage business relationships? *Industrial Marketing Management*, 32(8), 703–716.
- Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, 86(2), 278–321.
- Colquitt, J. A., Scott, B. A., & LePine, J. A. (2007). Trust, trustworthiness, and trust

- propensity: A meta-analytic test of their unique relationships with risk taking and job performance. *Journal of Applied Psychology*, 92(4), 909–927.
- Currall, S. C., & Judge, T. A. (1995). Measuring trust between organizational boundary role persons. *Organizational Behavior and Human Decision Processes*, 64(2), 151–170.
- Das, T. K., & Teng, B. S. (1998). Between trust and control: Developing confidence in partner cooperation in alliances. *Academy of Management Review*, 23(3), 491–512.
- Delbufalo, E. (2012). Outcomes of inter-organizational trust in supply chain relationships: A systematic literature review and a meta-analysis of the empirical evidence. *Supply Chain Management: An International Journal*, 17(4), 377–402.
- Dirks, K. T., & Ferrin, D. L. (2001). The role of trust in organizational settings. *Organization Science*, 12(4), 450–467.
- Dries, L., Gorton, M., Urutyan, V., & White, J. (2014). Supply chain relationships, supplier support programmes, and stimulating investment: Evidence from the Armenian dairy sector. *Supply Chain Management: An International Journal*, 19(1), 98–107.
- Duffy, R., Fearn, A., Hornibrook, S., Hutchinson, K., & Reid, A. (2013). Engaging suppliers in CRM: The role of justice in buyer–supplier relationships. *International Journal of Information Management*, 33(1), 20–27.
- Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing buyer–seller relationships. *Journal of Marketing*, 51(2), 11–27.
- Espejel, J., Fandos, C., & Flavian, C. (2008). Consumer satisfaction: A key factor of consumer loyalty and buying intention of a PDO food product. *British Food Journal*, 110(9), 865–881.
- Fairchild, J. A., & MacKinnon, P. D. (2009). A general model for testing mediation and moderation effects. *Prevention Science*, 10(2), 87–99.
- FAO (2016). FAO statistics. www.fao.org/faostat/en/#data/QC.
- FAO (2017). FAO statistics. www.fao.org/faostat/en/#data/QC.
- Ferguson, R. J., Paulin, M., & Bergeron, J. (2005). Contractual governance, relational governance, and the performance of interfirm service exchanges: The influence of boundary-spanner closeness. *Journal of the Academy of Marketing Science*, 33(2), 217–234.
- Fischer, C. (2013). Trust and communication in European agri-food chains. *Supply Chain Management: An International Journal*, 18(2), 208–218.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382–388.
- Geyskens, I., Steenkamp, J., & Kumar, N. (1998). Generalizations about trust in marketing channel relationships using meta-analysis. *International Journal of Research in Marketing*, 15(3), 223–248.
- Geyskens, I., Steenkamp, J., & Kumar, N. (1999). A meta-analysis of satisfaction in marketing channel relationships. *Journal of Marketing Research*, 36(2), 223–238.
- Ghosh, A., & Fedorowicz, J. (2008). The role of trust in supply chain governance. *Business Process Management Journal*, 14(4), 453–470.
- Gracia, A., de Magistris, T., & Albisu, M. L. (2010). Inter-organizational relationships as determinants for competitiveness in the agri-food sector: The Spanish wheat-to-bread chain. In C. Fischer, & M. Hartmann (Eds.). *Agri-food chain relationships* (pp. 206–219). Oxford, UK: CABI.
- Griffith, D. A., Harvey, M. G., & Lusch, R. F. (2006). Social exchange in supply chain relationships: The resulting benefits of procedural and distributive justice. *Journal of Operations Management*, 24(2), 85–98.
- Guenzi, P., & Pelloni, O. (2004). The impact of interpersonal relationships on customer satisfaction and loyalty to the service provider. *International Journal of Service Industry Management*, 15(4), 365–384.
- Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 38(1), 85–112.
- Gulati, R., & Nickerson, A. J. (2008). Interorganizational trust, governance choice, and exchange performance. *Organizational Science, Article's in Advance*, Pp. 1–21.
- Gundlach, G. T., & Cannon, J. P. (2010). Trust but verify? The performance implications of verification strategies in trusting relationships. *Journal of the Academy of Marketing Science*, 38(4), 399–417.
- Gyau, A., & Spiller, A. (2007). The role of organizational culture in modeling buyer–seller relationships in the fresh fruit and vegetable trade between Ghana and Europe. *African Journal of Business Management*, 1(8), 218–229.
- Hair, J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis* (4th ed.). New Jersey: Prentice-Hall Inc.
- Hartmann, M., Froberg, K., & Fischer, C. (2010). Building sustainable relationships in agri-food chains: Challenges from farm to retail. In C. Fischer, & M. Hartmann (Eds.). *Agri-food chain relationships* (pp. 25–44). Oxford, UK: CABI.
- Hayes, F. A., & Mathes, J. (2009). Computational procedures for probing interactions in OLS and logistic regression: SPSS and SAS implementations. *Behavior Research Methods*, 41(3), 924–936.
- Heide, J. B., & Miner, A. S. (1992). The shadow of the future: Effects of anticipated interaction and frequency of contact on buyer–seller cooperation. *Academy of Management Journal*, 35(2), 265–291.
- Hornibrook, S., Fearn, A., & Lazzarin, M. (2009). Exploring the association between fairness and organisational outcomes in supply chain relationships. *International Journal of Retail & Distribution Management*, 37(9), 790–803.
- Jambulingam, T., Kathuria, R., & Nevin, J. R. (2011). Fairness-trust-loyalty relationship under varying conditions of supplier–buyer interdependence. *Journal of Marketing Theory and Practice*, 19(1), 39–56.
- Jap, S. D. (2001). The strategic role of the salesforce in developing customer satisfaction across the relationship lifecycle. *Journal of Personal Selling & Sales Management*, 21(2), 95–108.
- Kaiser, H. F. (1970). A second-generation little jiffy. *Psychometrika*, 35(4), 401–415.
- Kale, P., & Singh, H. (2009). Managing strategic alliances: What do we know now, and where do we go from here. *Academy of Management Perspectives*, 23(3), 45–62.
- Kang, B., Oh, S., & Sivadas, E. (2012). The effect of dissolution intention on buyer–seller relationships. *Journal of Marketing Channels*, 19, 250–271.
- Kehlenbeck, K., Rohde, E., Njuguna, K. J., & Jamnadas, R. (2012). Mango production in Kenya. In G. S. Valavi, K. Rajmohan, J. N. Govil, K. V. Peter, & G. Thottappilly (Eds.). *Mango cultivation in different countries* (pp. 186–207). Houston, TX: Studium Press LLC.
- Kim, D. Y. (2013). Relationship between supply chain integration and performance. *Operations Management Research*, 6(1–2), 74–90.
- Koza, K. L., & Dant, R. P. (2007). Effects of relationship climate, control mechanism, and communications on conflict resolution behavior and performance outcomes. *Journal of Retailing*, 83(3), 279–296.
- Kumar, N., Scheer, L. K., & Steenkamp, J. (1995). The effects of perceived interdependence on dealer attitudes. *Journal of Marketing Research*, 32(3), 348–356.
- Kwon, I. W. G., & Suh, T. (2005). Trust, commitment and relationships in supply chain management: A path analysis. *Supply Chain Management: An International Journal*, 10(1), 26–33.
- Lambe, C. J., Wittmann, C. M., & Spekman, R. E. (2001). Social exchange theory and research on business-to-business relational exchange. *Journal of Business-to-Business Marketing*, 8(3), 1–36.
- Leat, P., & Revoredo-Giha, C. (2008). Building collaborative Agri-food supply chains: The challenge of relationship development in the Scottish red meat chain. *British Food Journal*, 110(4/5), 395–411.
- Lee, H. L., Padmanabhan, V., & Whang, S. (1997). The bullwhip effect in supply chains. *Sloan Management Review*, 38(3), 93–102.
- Li, G., Hong Yan, H., Wang, S., & Xia, Y. (2005). Comparative analysis on value of information sharing in supply chains. *Supply Chain Management: An International Journal*, 10(1), 34–46.
- Liu, Y., Huang, Y., Luo, Y., & Zhao, Y. (2012). How does justice matter in achieving buyer–supplier relationship performance? *Journal of Operations Management*, 30(5), 355–367.
- Lobo, A., Leckie, C., & Li, C. (2013). The impact of guanxi, xinyong and buyer collaboration on the loyalty and financial performance of vegetable farmers in China. *Asia Pacific Journal of Marketing and Logistics*, 25(5), 745–764.
- Lorenz, E. H. (1991). Neither friends nor strangers: Informal networks of sub-contracting in French industry. In G. Thompson, J. Frances, R. Levačić, & J. Mitchell (Eds.). *Markets, hierarchies and networks: The coordination of social life* (pp. 183–191). London: Sage Publications.
- Lu, H., Feng, S., Trienekens, J. H., & Omta, S. W. F. O. (2008). Performance in vegetable supply chains: The role of Guanxi networks and buyer–seller relationships. *Agribusiness*, 24(2), 253–274.
- Macneil, I. R. (2000). Relational contract theory: Challenges and queries. *Northwestern University Law Review*, 94(3), 877–907.
- Masuku, M. B., & Kirsten, J. F. (2004). The role of trust in the performance of supply chains: A dyad analysis of smallholder farmers and processing firms in the sugar industry in Swaziland. *Agrekon*, 43(2), 147–161.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, 20(3), 709–734.
- Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: Partnership attributes, communication behavior, and conflict resolution techniques. *Strategic Management Journal*, 15(2), 135–152.
- Mohr, J. J., & Sohi, R. S. (1996). Communication flows in distribution channels: Impact on assessments of communication quality and satisfaction. *Journal of Retailing*, 71(4), 393–415.
- Mojo, D., Fischer, C., & Degefa, T. (2015). Social and environmental impacts of agricultural cooperatives: Evidence from Ethiopia. *International Journal of Sustainable Development and World Ecology*, 22(5), 388–400.
- Moorman, C., Zaltman, G., & Deshpande, R. (1992). Relationships between providers and users of market-research: The dynamics of trust within and between organizations. *Journal of Marketing Research*, 29(3), 314–328.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–38.
- Msabeni, A., Muchai, D., Masinde, G., Mato, S., & Gathara, V. (2010). *Sweetening the mango: Strengthening the value chain. An analysis of the organizational linkages along the mango value chain*. Nairobi, Kenya: Mbeere District Eastern Province.
- Narasimhan, R., Narayanan, S., & Srinivasan, R. (2013). An investigation of justice in supply chain relationships and their performance impact. *Journal of Operations Management*, 31(5), 236–247.
- Neter, J., Wasserman, W., & Kutner, M. H. (2004). *Applied linear regression models*. New York, NY: McGraw-Hill.
- Nielson, C. C. (1998). An empirical examination of the role of “closeness” in industrial buyer–seller relationships. *European Journal of Marketing*, 32(5/6), 441–463.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
- O’Toole, T., & Donaldson, B. (2000). Relationship governance structures and performance. *Journal of Marketing Management*, 16(4), 327–341.
- O’Toole, T., & Donaldson, B. (2002). The strategy to implementation cycle of relationship marketing planning. *The Marketing Review*, 3(2), 195–209.
- Palmatier, R. W., Dant, R. P., Grewal, D., & Evans, K. R. (2006). Factors influencing the effectiveness of relationship marketing: A meta-analysis. *Journal of Marketing*, 70(4), 136–153.
- Palmatier, R. W., Scheer, L. K., & Steenkamp, J. B. E. (2007). Customer loyalty to whom? Managing the benefits and risks of salesperson-owned loyalty. *Journal of Marketing Research*, 44(2), 185–199.
- Patterson, P. G., Cowley, E., & Prasongsukarn, K. (2006). Service failure recovery: The moderating impact of individual-level cultural value orientation on perceptions of justice. *International Journal of Research in Marketing*, 23(3), 263–277.
- Paulraj, A., Lado, A. A., & Chen, J. I. (2008). Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative

- buyer-supplier relationships. *Journal of Operations Management*, 26, 45–64.
- Rauyruen, P., & Miller, K. E. (2007). Relationship quality as a predictor of B2B customer loyalty. *Journal of Business Research*, 60(1), 21–31.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3), 393–404.
- Sahay, B. S. (2003). Understanding trust in supply chain relationships. *Industrial Management & Data Systems*, 103(8), 553–563.
- Samaha, S. A., Palmatier, R. W., & Dant, R. P. (2011). Poisoning relationships: Perceived unfairness in channels of distribution. *Journal of Marketing*, 75(3), 99–117.
- Schiefer, J., & Hartmann, M. (2008). Determinants of competitive advantage for German food processors. *Agribusiness*, 24(3), 306–319.
- Selnes, F. (1998). Antecedents and consequences of trust and satisfaction in buyer-seller relationships. *European Journal of Marketing*, 32(3/4), 305–322.
- Seppänen, R., Blomqvist, K., & Sundqvist, S. (2007). Measuring inter-organizational trust—A critical review of the empirical research in 1990–2003. *Industrial Marketing Management*, 36(2), 249–265.
- da Silveira, G. J., & Cagliano, R. (2006). The relationship between interorganizational information systems and operations performance. *International Journal of Operations & Production Management*, 26(3), 232–253.
- Smets, L. P., Oorschot, K. E., & Langerak, F. (2013). Don't trust trust: A dynamic approach to controlling supplier involvement in new product development. *Journal of Product Innovation Management*, 30(6), 1145–1158.
- Smith, J. B., & Barclay, D. W. (1997). The effects of organizational differences and trust on the effectiveness of selling partner relationships. *Journal of Marketing*, 61(1), 3–21.
- Spadoni, R., Lombardi, P., Canavari, M., & Hingley, M. (2013). Private food standard certification: Analysis of the BRC standard in Italian agri-food. *British Food Journal*, 116(1), 142–164.
- Stern, L. W., El-Ansary, A. I., & Coughlan, A. T. (1996). *Marketing channels*. Upper Saddle River, NJ: Prentice Hall.
- Swaid, S. I., & Wigand, R. T. (2009). Measuring the quality of e-service: Scale development and initial validation. *Journal of Electronic Commerce Research*, 10(1), 13–28.
- Swinnen, J. F. M., & Maertens, M. (2007). Globalization, privatization, and vertical coordination in food value chains in developing and transition countries. *Agricultural Economics*, 37(s1), 89–102.
- Tallontire, A., & Vorley, B. (2005). Achieving fairness in trading between supermarkets and their agrifood supply chains. *Briefing paper*. London, UK: Food Group.
- Teddlie, C., & Tashakkori, A. (Eds.). (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Los Angeles, CA: Sage Publications.
- Thorgren, S., & Wincent, J. (2011). Interorganizational trust: Origins, dysfunctions and regulation of rigidities. *British Journal of Management*, 22(1), 21–41.
- Tschirley, D., Reardon, T., Dolislager, M., & Snyder, J. (2015). The rise of a middle class in east and southern Africa: Implications for food system transformation. *Journal of International Development*, 27(5), 628–646.
- USAID-KAVES (2015). *Mango value chain analysis*. Nairobi/Washington DC: USAID.
- Villena, H. V., Revilla, E., & Choi, Y. T. (2011). The dark side of buyer-supplier relationships: A social capital perspective. *Journal of Operations Management*, 26(6), 561–576.
- Webber, C. M., & Labaste, P. (2010). *Building competitiveness in Africa's agriculture: A guide to value chain concepts and applications*. Washington, DC: The World Bank.
- Williamson, O. E. (1985). *The economic institutions of capitalism*. New York, NY: Free Press.
- Woo, K. S., & Ennew, C. T. (2004). Business-to-business relationship quality: An IMP interaction-based conceptualization and measurement. *European Journal of Marketing*, 38(9/10), 1252–1271.
- Wu, X., & Niederhoff, J. A. (2014). Fairness in selling to the news vendor. *Production and Operations Management*, 23(11), 2002–2022.
- Yang, D., Sivadas, E., Kang, B., & Oh, S. (2012). Dissolution intention in channel relationships: An examination of contributing factors. *Industrial Marketing Management*, 41(7), 1106–1113.
- Yang, J., Wong, W. Y. C., Lai, K., & Ntoko, N. A. (2008). The antecedents of dyadic quality performance and its effect on buyer/supplier relationship improvement. *International Journal of Production Economics*, 120(1), 243–251.
- Yi, Y., & Gong, T. (2008). The effects of customer justice perception and affect on customer citizenship behavior and customer dysfunctional behavior. *Industrial Marketing Management*, 37(7), 767–783.
- Yilmaz, C., Sezen, B., & Kabadayı, E. T. (2004). Supplier fairness as a mediating factor in the supplier performance–reseller satisfaction relationship. *Journal of Business Research*, 57(8), 854–863.
- Zaefarian, G., Najafi-Tavani, Z., Henneberg, S. C., & Naudé, P. (2016). Do supplier perceptions of buyer fairness lead to supplier sales growth? *Industrial Marketing Management*, 53, 160–171.
- Zailani, S., & Rajagopal, P. (2005). Supply chain integration and performance: US versus east Asian companies. *Supply Chain Management: An International Journal*, 10(5), 379–393.
- Zhang, X., & Hu, D. (2011). Farmer-buyer relationships in China: The effects of contracts, trust and market environment. *China Agricultural Economic Review*, 3(1), 42–53.