▪ Advances in Scientific and Applied Accounting, ▪ ISSN 1983-8611 ▪ São Paulo ▪ v.15, n.2 ▪ p.149-162 ▪ May / Ago 2022
ASAA
▪ DOI: 10.14392/asaa.2022150206

Interorganizational trust and relational performance: intervening of the communication of agricultural cooperatives with their suppliers

Silvana Mannes, Eduardo Tramontin Castanha, Ilse Maria Beuren, Valdirene Gasparetto

Universidade Federal de Santa Catarina, Florianópolis-SC, Brazil.

silvanamannes@yahoo.com.br
eduardo_tramontin@hotmail.com
ilse.beuren@gmail.com
valdirenegasparetto@gmail.com

Edited by:
Delci Grapegia Dal Vesco

Abstract

Objective: To analyze the influence of interorganizational trust on relational performance, as mediated by interorganizational communication of agricultural cooperatives with their suppliers.

Method: A survey was conducted with professionals in corporate-level positions, responsible for establishing contact with partner organizations in Brazilian agricultural cooperatives and 96 valid responses were obtained. To test the hypotheses, we applied the technique of structural equation modeling, with estimation by partial least squares. Furthermore, the importance-performance map (IPMA) was analyzed for the endogenous variable and its predictors.

Findings: A positive and significant influence of trust and interorganizational communication on relational performance was observed. Partial mediating effect of the interorganizational communication variable was also observed. In the IPMA analysis, interorganizational trust showed greater importance, while interorganizational communication greater performance.

Contribution: These findings suggest that trust and interorganizational communication can lead to positive relational outcomes by means of mutual benefits. Thus, they can contribute to the benefit of managers involved in improving decision-making related to interorganizational relationships.

Keywords: Interorganizational trust; Interorganizational communication; Relational performance; Agricultural cooperatives.

How to cite:

Mannes, S., Castanha, E. T., Beuren, I. M., & Gasparetto, V. (2022). INTERORGANIZATIONAL TRUST AND RELATIONAL PERFORMANCE: INTERVENING OF THE COMMUNICATION OF AGRICULTURAL COOPERATIVES WITH THEIR SUPPLIERS. Advances in Scientific and Applied Accounting, 15(2), 121–134/135. https://doi.org/10.14392/asaa.2022150205

Received: July 23, 2021
Revisions required: April 1, 2022
Accepted: April 21, 2022

Introduction

Structural changes occurred in the last decades in social, economic, and technological contexts provoked significant alterations in the forms of transaction between organizations, who started to establish relational exchanges in a more intensive way (Neumann & Laimer, 2019). The relational exchanges between organizations lead to the establishment of long-term interorganizational relationships and may assume the form of a strategic alliance, of joint ventures, buyer-supplier relations, networks, trade associations (Parmigiani & Santos, 2011), among other interorganizational arrangements.

In the buyer-supplier relations, specifically, the literature emphasizes distinctive relational characteristics as crucial for there to be successful relationships. Commitment (Martins, Faria, Prearo & Arruda, 2017; Song, 2018), interorganizational trust (Kingshott, 2006; Lago & Silva, 2012; Schmidt & Schreiber, 2019), compatibility between partners (Wang, Li & Chang, 2016), interorganizational communication (Lago & Silva, 2012), sharing of information (Ganesh, Raghunathan & Rajendran, 2014; Silva & Beuren, 2020), and interorganizational learning (Rajala, 2018; Seo, 2020) are some of the aspects capable of promoting positive relational results.

The interorganizational field literature has advanced in the understanding of the objectives of these arrangements and the obtained results (Lago & Silva, 2012). Such relationships stimulate new challenges for managerial accounting, such as the provision of information to improve and coordinate interorganizational activities in the value chain (Dekker, 2003). In this sense, interorganizational communication is fundamental to organizations (Agarwal & Narayana, 2020; Reinsch, 2001), given that clear and transparent communication impedes distortions and misunderstandings that may result in discomfort and mistrust among those involved (Lago & Silva, 2012).

However, it is still possible to see interorganizational environments that offer resistance to the vertical sharing of information (Agarwal & Narayana, 2020). In view of this, interorganizational trust constitutes itself as an element of safety for organizations that establish relational partnerships, in that it may avoid unexpected opportunistic conduct, prioritizing mutual gains to the detriment of individual gains (Ganesan, 1994). Through trust relations, participants of a supply chain can better understand their responsibilities toward interorganizational partnerships (Potocan, 2009).

Trust-based interorganizational relations are essential for long-term relationships, given that these conditions can reduce costs and provide positive results to those involved (Schmidt & Schreiber, 2019). Dollinger, Golden, and Saxton (1997) consider trust fundamental in the formation of relationships and key factor of success in cooperative strategies. In buyer-supplier interorganizational relationships, this process is supported or made difficult by the perceptions that each organization has about its partners (Donati, Zappala & González-Romá, 2020).

Studies indicate that trust (Gulati & Nickerson, 2008; Zaheer, McEvily & Perrone, 1998) and interorganizational communication (Paulraj, Lado & Chen, 2008; Racela & Thoumrungroje, 2014) exert a positive influence on the relational performance between partner organizations. The research about interorganizational communication seeks to examine the co-creation of meanings between organizations on the existence and character of interorganizational relationships (Shumate, Atouba, Cooper & Pilny, 2017). However, one finds little evidence in the literature about how relational behavior contributes to positive results (Graca, Barry & Doney, 2015).

Researchers and organizational managers point out difficulties in building and maintaining interorganizational relationships (Schmidt & Schreiber, 2019). Although the literature recognizes the difficulties in establishing cooperative, stable, and effective relationships, the studies generally have analyzed pertinent constructs in a non-integrated way, and in diverse contexts. Thus, the objective of this study consists in verifying the influence of interorganizational trust on relational performance, as mediated by the interorganizational communication of agricultural cooperatives with their suppliers. It is presumed that this type of organization, by the cooperative principles that guide it, establishes a high level of trust with its suppliers.

Results of the study contribute toward the literature about interorganizational trust and communication as far as they indicate a possible relationship between these constructs, as well as to the improvement of the investigated interorganizational relationships (Gulati & Nickerson, 2008; Paulraj et al., 2008; Racela & Thoumrungroje, 2014; Zaheer et al., 1998). Advances may be observed by applying such constructs in Brazilian agricultural cooperatives, a context that stands out by the cooperative principles in its management and by its relevant social and economic role.

The cooperatives are guided by cooperative principles, such as voluntary and open adherence; democratic control of members; economic participation of members; autonomy and independence; provision of education; training and information; cooperation between cooperatives; and concern for the community (Mojo, Fischer & Degefa, 2015). The discussion about the performance of cooperatives occurs by their particularities, especially their double nature, of fulfilling social and economic aims (Gallardo-Vázquez et al., 2014). The cooperatives play a relevant role, globally, by promoting the creation of employment, social development, and economic growth (Ruostesaari & Troberg, 2016).

Among the different economic sectors in which cooperatives operate, the agricultural trade is that with the largest number of cooperatives (1,223) and employees (207,201), including 992,111 members in Brazil (OCB, 2021). However, the agricultural trade is pointed out as one of the branches of cooperativism that most bears difficulties in intercooperation. One of the reasons pointed out for this are the recurrent financial crises faced by part of these cooperatives, a challenge to be solved in the search for the consolidation by way of relationships (Lago & Silva, 2012).

Thus, for the managerial practice of organizations, this study contributes toward the context of agricultural cooperatives by providing evidence that interorganizational trust and communication can be influent factors of relational performance in buyer-supplier interorganizational relationships. Furthermore, it highlights what aspects have greatest importance-performance for relational performance and must be prioritized by managers. At last, it contributes by showing the benefits of a collaborative environment and of the exchanges in buyer-supplier interorganizational relationships in the national context.

The study yet contributes by exploring the field of agricultural organizations, which is a relevant sector economically in Brazil, and that demands more research. Colares-Santos and Schiavi (2020), in a systematic review of the literature about interorganizational cooperation in agricultural supply networks, observed the lack of studies about trust in such relationships and recommended that future studies address this gap. This allows a better understanding of the behavior relevant to performance in the buyer-supplier relations in agroindustrial organizations.

2 Theoretical frameworks

2.1 Interorganizational trust and relational performance

According to Zaheer et al. (1998), interorganizational trust can be defined as the level of trust placed in the partner company. For Gulati and Nickerson (2008), interorganizational trust refers to a partner company's predictable behavior. In this perspective, previous studies associated trust with positive interorganizational results, such as relational performance (Butt, Shah & Ahmad, 2021; Gulati & Nickerson, 2008; Zaheer et al., 1998). Sako (2006) provides evidence that trust can improve performance in general and the competitive performance of companies involved in interorganizational relationships because it reduces transaction costs, makes collective learning possible by way of the exchange of information and solution of joint problems, in addition to the predisposition to carry out investment in specific assets to improve the relationship with clients and increase future returns.

The relational performance consists in the degree, intensity, or measure in which relational exchanges between organizations occur with success in their planning and execution (Boyle & Dwyer, 1995). By exploring how the concealment of knowledge affects the relational performance between buyers and suppliers in a supply chain, Butt et al. (2021) identified seven elements that negatively affect relational performance, among which are the lack of trust, lack of cooperation, and lack of commitment. Results also revealed that these factors reduce the organization's performance in terms of low quality of the product, increase in waiting time, and higher costs.

Gulati and Nickerson (2008) analyzed the interorganizational trust present in governance and performance choices in exchange relationships of automotive industrial companies. Results of the study indicated that interorganizational trust influenced positively the exchange performance in the relationships investigated, and also influenced the choice of less formal governance models and less onerous to partner organizations.

Zaheer et al. (1998) investigated whether interpersonal and interorganizational trust had a positive influence on the costs of negotiation, conflict, and performance of the supplier in companies' manufacturers of electrical equipment. In addition to finding that interpersonal and interorganizational trust were related constructs, yet distinct, they observed that only interorganizational trust had a direct positive influence on the supplier's performance. Graca et al. (2015) found a significant relationship between interorganizational trust and

performance in the context of buyer-supplier relations.

In this sense, considering the theoretical assumptions and empirical findings in different contexts as shown by the literature, we formulate the following first hypothesis of the research:

H1: There is a positive influence of interorganizational trust on the relational performance of agricultural cooperatives.

2.2 Interorganizational trust and interorganizational communication

Paulraj et al. (2008) describe interorganizational communication as a relational competence capable of providing strategic advantages. Shumate et al. (2017) characterize interorganizational communication as structures, forms, and processes generated by the exchange of messages in co-creation in networks, alliances, partnerships, and interorganizational relationships.

Communication is considered fundamental for organizations and businesses (Agarwal & Narayana, 2020; Reinsch, 2001) because it avoids distortions and misunderstandings (Lago & Silva, 2012), in addition to promoting strategic collaboration (Paulraj et al., 2008). Nonetheless, the organizations resist the vertical sharing of information (Agarwal & Narayana, 2020) because of the barriers present between the collaboration by way of the sharing of information and the need for protecting relevant information amid competition (Shumate et al., 2017).

In this sense, the trust in the exchange partner is a condition of commitment (Graca et al., 2015). In interorganizational relationships, trust acts as a prerequisite to generating and maintaining interaction. Aspects such as transparency, control, and communication can influence the maintenance and creation of trust between partners (Lago & Silva, 2012). Trust promotes cooperative behavior; therefore, it represents both a result and a precondition for interorganizational relationships (Johnston, McCutcheon, Stuart & Kerwood, 2004).

The interorganizational trust limits the opportunistic behavior, is indispensable for reducing barriers, and provides higher levels of interaction and interorganizational communication (Chen, Lin & Yen, 2014; Graca et al., 2015). Zaheer et al. (1998) point out trust as a relevant aspect to the communication between companies. Graca et al. (2015), in a survey conducted with owners, managers, and buyers of organizations operating in Brazil or in the United States, found trust's positive influence on bidirectional communication and on the quality of communication in buyer-supplier relationships. In face of the above considerations, the second hypothesis of the research is presented:

H2: There is a positive influence of interorganizational trust on the interorganizational communication of agricultural cooperatives.

2.3 Interorganizational communication and relational performance

Interorganizational communication is a behavioral phenomenon essential for the perennial management of interorganizational relationships in a supply chain (McCardle & Krumwiede, 2019). According to Paulraj et al. (2008), interorganizational communication, while relational competence, is capable of promoting more collaborative relationships in a supply chain. Partner organizations exerting collaborative communication are capable of exploring their internal resources and market opportunities, which allows improving performance.

Interorganizational communication is determined by structures, forms, and processes that occur from the exchange of messages between organizations and their stakeholders (Shumate et al., 2017). Mohr and Spekman (1994) investigated relational characteristics capable of influencing in a positive manner the success of interorganizational partnerships. They found that commitment, coordination, trust, communication, and resolution of conflicts were important predictors of success in the researched relationships.

Studies indicate that organizations that communicate by means of exchanges of information considered critical have successful relational partnerships (Paulraj et al., 2008; Wenwen & Baiyu, 2015). Paulraj et al. (2008) mention that interorganizational communication, while relational competence, may have positive effects on the results of partner companies. Wenwen and Baiyu (2015) argue that it is through interorganizational communication that relational partners can avoid conflicts and misunderstandings, which results in better relational performance levels.

Lago and Silva (2012) identified conditioning aspects to the development of intercooperative relationships. The authors indicated twelve conditioning development factors of intercooperative relationships in agricultural cooperativism, among which were transparency,

communication, and interorganizational trust. In light of the empirical findings and theoretical assumptions presented by the literature, the third hypothesis formulated was as follows:

H3: There is a positive influence of interorganizational communication on the relational performance of agricultural cooperatives.

2.4 Mediation of interorganizational communication in the relationship between interorganizational trust and relational performance

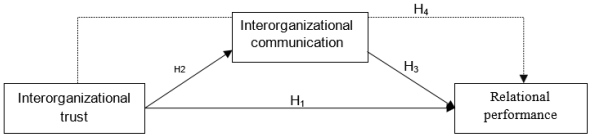
The literature points out different variables that can impact the relationship between trust and performance. Paulraj et al. (2008) highlight that interorganizational communication can be mediating between the main antecedents and result variables among buying and supplying companies. Graca et al. (2015) stress that the impact of trust on the satisfaction with performance depends on variables related to the climate of exchange between partners. Interorganizational communication has already shown to be mediating of the relation between orientation for long-term relationships, network governance, information technology, and supplier's performance (Paulraj et al., 2008), and is seen as a medium that favors a range of organizational processes and provides value increase (Paulraj et al., 2008; Reinsch, 2001).

Trust-based interorganizational relations are seen as essential for long-term relationships, given that these conditions before an exchange may reduce costs, conflicts, enable positive results, as well as better performance to those involved (Gulati & Nickerson, 2008; Schmidt & Schreiber, 2019). Lago and Silva (2012) accent that trust is considered a prerequisite for generating and maintaining interaction. On one hand, trust limits the opportunistic behavior and facilitates interaction (Chen et al., 2014; Graca et al., 2015). On the other hand, interorganizational communication solves conflicts and misunderstandings, explores resources and opportunities, and improves the performance of the relationship (Paulraj et al., 2008; Wenwen & Baiyu, 2015).

Thus, starting from the assumption that interorganizational trust influences interorganizational communication (Graca et al., 2015; Zaheer et al., 1998) and that this communication influences relational performance (Lago & Silva, 2012; Paulraj et al., 2008), we formulate the fourth hypothesis of the research:

H4: There is mediation of interorganizational communication in the relationship between interorganizational trust and relational performance of agricultural cooperatives.

The theoretical model of the research is illustrated in Figure 1, with the hypotheses formulated in consonance with theoretical-empirical evidence from the literature.



Note: The dotted arrow (H4) indicates indirect relation.
Figure 1. Theoretical model of the research.
Source: Elaborated by the authors.

On the basis of theoretical and empirical evidence, it is proposed as follows: interorganizational trust positively influences relational performance (H_1); interorganizational trust positively influences interorganizational communication (H_2); interorganizational communication positively influences relational performance (H_3); and interorganizational trust positively influences relational performance by means of interorganizational communication (H_4).

3 Methodological procedures

3.1 Population and sample

Survey research was conducted with managers of agricultural cooperatives listed in the Organization of Brazilian Cooperatives (OCB). This sector was selected due to the cooperative principles, highlighted by Mojo et al. (2015), which mark its way of management and are aligned with the investigated variables. Sabatini, Modena, and Tortia (2014) argue that the cooperatives have a particular ability to promote the development of trust, differently from other types of enterprises, because they have less hierarchical governance models and do not aim purely at the profit maximization. Furthermore, the choice occurred because of the representativeness of the sector in the national economic scenario. The agricultural trade has the greatest number of cooperatives (1,223) and employees (207,201), and holds 992,111 cooperative members in Brazil (OCB, 2021).

After the survey of cooperatives, we identified the responding professionals of the research, using the LinkedIn network. The population of the research was composed of corporate professionals, who were responsible for establishing contact with partner

organizations. In order to avoid the polarization of respondents from a single cooperative, we delimited the maximum of three respondents by organization. In this search, 997 professionals were identified, of which 252 accepted the invitation of connection. Then, the link of access to the questionnaire by the Google Forms platform was sent, in the period from April to June 2020, resulting in 96 valid responses.

The size of the sample for the analyses proposed in the structural model of this research was determined by the G*Power software, using the following parameters: two predicting variables (trust and interorganizational communication) about the dependent variable (performance of the relationship), considering effect of 0.15, with power of the sample of 1-β= 0.8, at the significance level of 5%, which pointed out a minimum sample of 68 responses, therefore, the 96 valid responses are sufficient.

Sample characterization revealed that 78% of the respondents identified themselves as males. Participants were between 23 and 67 years old, while the average was 40 years. The highest level of schooling pointed out by the participants was graduate degree (77%), followed by master's degree (19%). Predominant areas of education were administration (40%) and accounting (23%). As for the position that they held in the organization, most indicated that they were managers (38%) and coordinators (16%), and they had been holding the position on average for five years.

3.2 Constructs and research instrument

In Table 1, we present constructs and statements used to operationalize the research. A note recorded in the research instrument alerted the respondents to consider the cooperative's relationships with its main suppliers of the supply chain.

The interorganizational trust construct was measured by means of five statements adapted from Zaheer et al. (1998). Participants were questioned about the level of trust in their supplier, considering a scale from 1 (totally disagree) to 5 (totally agree). Exploratory Factor Analysis (EFA) attested to the unidimensionality of the construct. Results of the statistics of Kaiser-Meyer-Olkin (KMO=0.681) and Bartlett Sphericity (sig. = 0.000) confirmed the global adequacy of the construct, as per assumptions presented by the literature (Fávero & Belfiore, 2017). The model's internal consistency was confirmed by the Cronbach alpha (β=0.7). The percentage of total variance explained by the factor that constitutes the construct is 53.87% (>50%).

The interorganizational communication construct was measured on the basis of six statements extracted from the study of Paulraj et al. (2008). Respondents were requested to indicate their perception in each statement about the communication established with their supplier, considering a scale from 1 (totally disagree) to 5 (totally agree). The EFA attested to the unidimensionality of the construct. Results of the statistics of Kaiser-Meyer-Olkin

Table 1. Constructs of the research and statements

Constructs	Statements
Interorganizational Trust (Zaheer et al., 1998).	IT1. Our supplier was always impartial in his negotiations with us. IT2. Our supplier may use opportunities that arise to profit at our expense. * IT3. On the basis of past experiences, we cannot trust with full confidence in our supplier to maintain the promises made to us. * IT4. We are avoiding negotiating with our supplier when the specifications are not clear. * IT5. Our supplier is trustworthy.
Interorganizational Communication (Paulraj et al., 2008).	CO1. We share confidential information with our supplier. CO2. Suppliers receive all the information that can help them. CO3. Information exchange occurs often and in a timely manner. CO4. We keep one another informed about the events or changes that may affect the other party. CO5. We have frequent face-to-face planning/communication. CO6. We exchange performance feedback.
Relational Performance (Boyle & Dwyer, 1995).	RP1. There is an efficient work relationship between the cooperative and this supplier. RP2. The planning of negotiation is easily conducted with this supplier. RP3. Any planning or exchange between the cooperative and this supplier is successfully completed. RP4. Overall, the cooperative and this supplier have a good performance together in the execution of our respective tasks.

Note: (*) Reverse statement.
Source: Elaborated by the authors.

(KMO=0.747) and Bartlett Sphericity (sig. = 0.000) followed the specifications of the literature and confirmed the global adequacy of the construct (Fávero & Belfiore, 2017). The model's internal consistency was attested to by the Cronbach alpha (β=0.8), which showed a coefficient higher than the limit set in the literature. The percentage of total variance explained by the factor that constitutes the construct is 53.91% (>50%).

Four statements validated by Boyle and Dwyer (1995) were used for measuring relational performance. Respondents were questioned as to their perception in each statement about the relational performance with their supplier, considering a scale from 1 (not at all satisfied) to 5 (very satisfied). The EFA confirmed the unidimensionality of the construct. The results of the Kaiser-Meyer-Olkin (KMO=0.777) and Bartlett Sphericity (sig. = 0.000) tests met the specifications of the literature and attested to the global adequacy of the construct (Fávero & Belfiore, 2017). The model's internal consistency was confirmed by the Cronbach alpha (β=0.8), which showed a coefficient higher than the limit set in the literature. The percentage of total variance explained by the factor that constitutes the construct is 64.00% (>50%).

3.3 Data analysis procedures

Harman's single factor test was applied to verify the presence of common method bias. Results indicated that the main factor explained 36.25% of the total variance. Thus, it is highlighted that no variable represents individually large part of the variance (>50%), which indicates that the common method bias does not represent a problem for data analysis, according to assumptions outlined by the literature (Podsakoff et al., 2003).

In the data analysis, we used the techniques of descriptive analysis, exploratory factorial analysis, and structural equation modeling (SEM), estimated from the partial least squares (PLS) technique. The PLS-SEM model analysis comprehends the following two stages: measurement model and structural model. For the analysis of direct hypotheses, precepts of Hair Jr. et al. (2017) and Bido and Silva (2019), which suggest a <0.05 p value, were observed. In the analysis of mediation, we followed the precepts of Hair Jr. et al. (2017) and Bido and Silva (2019), that the antecedent variable must influence the mediating and that the mediating must influence the consequent. Bido and Silva (2019) highlight that for confirming total mediation, the indirect effect must be significant, while the direct one must not have significance.

Beyond path analysis through PLS-SEM, to deepen the discussion of results, we conducted the importance-performance map (IPMA) analysis for the endogenous variable and its respective predictors. Such analysis extends the way of reporting the PLS-SEM results by evidencing the interface between importance (beta coefficients) and performance (mean value of latent constructs), which provides additional discoveries and conclusions (Ringle & Sarstedt, 2016). The IPMA analysis allows prioritizing constructs to improve a given target construct, combining the analysis of the dimensions of importance and performance in practical PLS-SEM applications, which proves to be useful in prioritizing managerial actions (Ringle & Sarstedt, 2016).

4 Presentation and analysis of results

4.1 Measurement model

In the measurement model analysis, validity (convergent and discriminant) and reliability (individual and composite) of constructs were verified to attest to the validity of the model (Hair Jr. et al., 2017). Table 2 presents the measurement model evaluation.

Table 2. Measurement model

Panel A: Discriminant validity by the Fornell-Larcker criterion			
Constructs	1	2	3
1. Interorganizational Trust	0.815	0.521	0.637
2. Interorganizational Communication	0.445	0.733	0.716
3. Performance of the Relationship	0.559	0.589	0.800
Panel B: Validity and reliability indicators			
Cronbach Alpha (>0.70)	0.766	0.784	0.811
Composite Reliability (>0.70)	0.855	0.852	0.876
Average Variance Extracted (>0.50)	0.664	0.537	0.640
Panel C: Descriptive statistics of constructs			
Mean	3,29	3,82	3,97
Standard Deviation	1,02	0,92	0,68

Note: In Panel A, coefficients in the lower/left diagonal represent the Fornell-Larcker criterion and coefficients in the upper/right diagonal, the Heterotrait-Monotrait Ratio of Correlations (HTMT) criterion; values in bold correspond to the square root of AVE.
Source: Data from the research.

For the reliability of the constructs' indicators, Hair Jr. et al. (2017) recommend values higher than 0.70, yet loads between 0.40 and 0.70 should only be excluded if they lead to an increase in Average Variance Extracted (AVE) and Composite Reliability (CR). Thus, for the adequacy of the model, there was the need for exclusion of IT1, IT4, and CO1 statements.

After the exclusion of these statements, the reliability of the constructs of the research was evaluated by the Cronbach alpha and composite reliability. The Cronbach alpha showed coefficients above the threshold of 0.7 (>0.7). The composite reliability of the construct also showed values above the threshold stipulated by the literature (>0.7) (Hair Jr. et al., 2017). Such aspects denote the internal consistency of the constructs that make up the research's theoretical model.

After internal and composite reliability, we assessed constructs' convergent validity by the average variance extracted (AVE), which determines that the coefficients of latent variables must present values higher than the limit of 0.50 (>0.50), as stipulated by Hair Jr. et al. (2017). As demonstrated in Table 2, the way external loads and latent variables correlate proves to be adequate.

Discriminant validity was analyzed by the Fornell-Larcker criterion. The values of discriminant validity of all variables are higher than the correlation matrix coefficients, which suggests acceptable discriminant validity. Thus, the analyses indicate that the measurement model is adequate, which allows proceeding to the next stage, of analysis of structural relationships. Another measure used for discriminant validity was the Heterotrait-Monotrait Ratio of Correlations (HTMT), which showed satisfactory indexes (<0.85) (Hair Jr. et al., 2019).

In regard to descriptive statistics, the three constructs of the theoretical model showed averages higher than the midpoint of the scales (1 to 5) used in the statements (<3). The interorganizational trust, interorganizational communication, and relational performance constructs showed averages of 3.29, 3.82, and 3.97 respectively. Such results were above the midpoint of the scale, which denotes the presence of the constructs of the research in the interorganizational relationships established between the investigated agricultural cooperatives and their suppliers.

4.2 Structural model

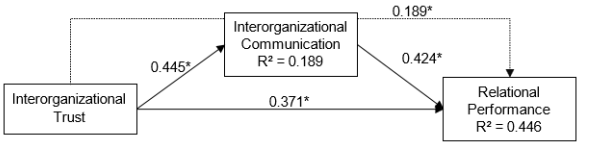
After attesting to the validity and reliability of the measurement model, we proceeded to the evaluation of the structural model. Such evaluation begins by the path analysis arrangement (Table 3) to present the hypotheses proposed (H), established relationship, Path coefficient, t value, p value, and the result of each hypothesis.

In the structural model, the multicollinearity of variables was analyzed through the Variance Inflation Factor (VIF), which aims to identify constructs that are highly correlated (Hair Jr. et al., 2017). Maximum index in VIF was 2.039, with its maximum value staying below the limit set in the literature (VIF<3); therefore, the coefficients of VIF attest to the absence of multicollinearity in the study's variables (Hair Jr. et al., 2019).

Coefficients of determination (R^2) were observed, which establish the level of variance in endogenous variables for all exogenous variables linked to it (Hair Jr. et al., 2017). The R^2 of interorganizational communication and relational performance constructs was 0.189 and 0.446, respectively. For the area of social sciences, R^2 coefficients at 2% are of small effect, 13% are of medium effect, and 26% are of large effect (Ringle, Silva & Bido, 2014). Such results denote model's medium and large predictive accuracy effect.

By the predictive relevance (Q^2) or Stone-Geisser indicator it was possible to evaluate the level at which the model drew closer to what one expected (model's accuracy). Predictive relevance of interorganizational communication and relational performance showed coefficients of 0.092 and 0.278, respectively, which indicates model's accuracy in relation to the reality. These results meet adequacy criteria, given that the coefficients show values higher than zero (Q^2>0), which meets the criteria stipulated by the literature (Ringle et al., 2014; Hair Jr. et al., 2017).

Subsequently, we analyzed the results of the structural model, specifically values of the structural coefficients of each relationship and coefficients of determination of the model's constructs. Figure 2 presents results of the structural model, by means of values of the coefficients of each relationship, and the constructs' coefficients of determination.



Note: The dotted line indicates the interorganizational communication mediating effect on the relationship between interorganizational trust and relational performance. N=96. *p<0.05.
Figure 2. Structural model.
Source: Data from the research.

H_1 presumed direct and positive relationship between interorganizational trust and relational performance,

Table 3. Path analysis

H	Relationship	Path	T value	P value	Result
H_1	Interorganizational trust -> Relational performance	0,371	4,749	0,000	Accepted
H_2	Interorganizational trust -> Interorganizational communication	0,445	5,923	0,000	Accepted
H_3	Interorganizational communication -> Relational performance	0,424	4,860	0,000	Accepted
H_4	Interorganizational trust -> Interorganizational communication -> Relational performance	0,189	3,537	0,000	Accepted

Note: Variance Inflation Factor (VIF): max. = 2.039. Coefficient of determination (R^2): Interorganizacional communication = 0.189, Relational performance = 0.446. Predictive relevance (Q^2): Interorganizational communication = 0.092, Relational performance = 0.278.
Source: Data from the research.

relationship confirmed at the 5% significance level and coefficient of β=0.371 and p=0.000. By the H_1 hypothesis confirmation it is possible to infer that the trust present in interorganizational relationships established between agricultural cooperatives and their main suppliers promotes higher levels of performance in the relationship. A H_2 previa relação direta e positiva entre confiança interorganizacional e comunicação interorganizacional. Os dados sugerem a confirmação da hipótese H_2 (β=0,445; p=0,013), sendo aceita ao nível de significância de 5%. Dessa forma, a confiança interorganizacional estabelecida entre as cooperativas agropecuárias e seus fornecedores é capaz de promover maiores níveis de comunicação interorganizacional.

H_2 predicted direct and positive relationship between interorganizational trust and interorganizational communication. Data suggest the H_2 hypothesis confirmation (β =0.445; p=0.013), being accepted at the 5% significance level. In this way, the interorganizational trust established between agricultural cooperatives and their suppliers is capable of promoting higher levels of interorganizational communication.

H_3 presumed direct and positive relationship between interorganizational communication and relational performance, confirmed at the 5% significance level and coefficient of β=0.424 and p=0.000. In view of this, it is possible to infer that the interorganizational communication established between agricultural cooperatives and their suppliers has a positive influence on relational performance.

The data expressed in Table 3 and Figure 2 suggest a positive influence of interorganizational trust on relational performance by means of interorganizational communication (β=0.189; p=0.000), being accepted at the 5% significance level. Therefore, one finds a partial confirmation for such a relationship, in that interorganizational trust can lead to higher levels of relational performance regardless of the presence of the mediating variable. Therefore, one infers that the interorganizational trust present in the relationships between agricultural cooperatives and their suppliers has a positive influence on relational performance by means of interorganizational communication.

4.3 Importance-Performance Analysis

Subsequently, IPMA was analyzed for the endogenous variable of relational performance. Assumptions for the application were fully met. Figure 3 shows the IPMA map relative to relational performance.

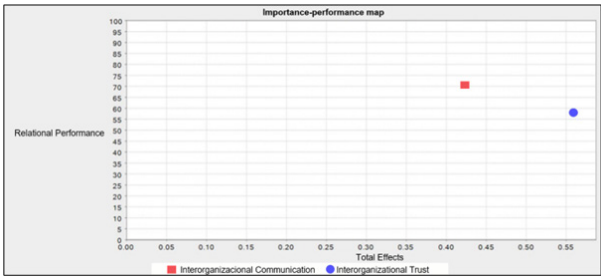


Figure 3. Importance-performance map (IPMA).
Source: Data from the research.

Overall, interorganizational trust (performance = 57.70; importance = β=0.559) and interorganizational communication (performance = 70.44; importance = β=0.424) are fixed in the quadrant that denotes high importance (total effects, in the x axis) and performance (constructs' average score, in the y axis), to the detriment of relational performance. Yet, it is noted that interorganizational communication has higher performance in relational performance, while interorganizational trust shows higher importance in relational performance.

4.4 Discussion of results

H1, which predicted direct influence of trust on relational performance, was supported. Such a result corroborates previous empirical findings in environments different from the present study that trust figures as a key component in improving the levels of relational performance (Butt et al., 2021; Gulati & Nickerson, 2008; Schmidt & Schreiber, 2019; Zaheer et al., 1998). These results are consistent with the findings of Butt et al. (2021). By exploring how the concealment of knowledge affects relational performance between buyers and suppliers in a supply chain, the authors identified seven elements capable of negatively influencing relational performance, among which were the lack of trust, the lack of cooperation, and the lack of commitment.

A similar relationship was researched by Gulati and Nickerson (2008), who analyzed the influence of preexisting interorganizational trust on governance choices and, in turn, on the performance of exchange relationships. The authors observed that trust between relational partners influenced in a positive way the performance of exchange in the relationships investigated. Furthermore, trust positively influenced the choice of less formal governance models and less onerous to partner companies.

H_2, which predicted direct and positive influence of trust on interorganizational communication, was also confirmed. Such a result is in line with former studies that identified support for this relationship in different contexts (Graca et al., 2015; Lago & Silva, 2012; Zaheer et al., 1998). Interorganizational trust is capable of minimizing opportunistic behavior, reducing barriers and facilitating interactions and interorganizational communication (Chen et al.,2014; Graca et al., 2015).

Zaheer et al. (1998) showed the importance of trust for exchanges between organizations inserted in interorganizational relationships. This condition may, moreover, affect communication levels. In the buyer-supplier relation context, Graca et al. (2015) identified the positive influence of interorganizational trust on bidirectional communication and quality of communication between owners, managers, and buyers from companies operating in Brazil or United States. In confirming trust as an antecedent, we highlight the fact that in the ambit of agricultural cooperatives, trust triggers interaction, facilitating communication between the different actors.

H_3, which predicted positive and significant relationship between interorganizational communication and relational performance, was accepted. Other studies have also demonstrated the relationship between communication and relational performance (Mohr & Spekman, 1994; Paulraj et al., 2008). Lago and Silva (2012) identified the determinants of the development of intercooperative relationships in the agricultural sector and found twelve determinants for the development of such relationships, among which transparency, communication, and interorganizational trust.

According to McCardle and Krumwiede (2019), interorganizational communication is an important behavioral phenomenon to be considered in managing interorganizational relationships. For Wenwen and Baiyu (2015), it is through communication that relational partners can avoid conflicts and misunderstandings, and positively influence relationships. By confirming the positive relationship between interorganizational communication and relational performance in agricultural cooperatives, one deduces that communication is also an important factor for improving relational performance, given its relevance in the management of conflicts, solution of joint problems, learning, and exploration of opportunities (Sako, 2006).

H_4, which predicted the interorganizational communication mediation in the relationship between trust and relational performance, had statistical support. This relationship indicates that the trust present in the relationships between agricultural cooperatives and their suppliers positively influences relational performance by means of communication. As trust limits the opportunistic behavior and facilitates communication (Chen et al., 2014; Graca et al., 2015), it is possible to solve conflicts and explore resources and opportunities, which improves in the level of relational performance (Paulraj et al., 2008; Wenwen & Baiyu, 2015).

The importance-performance (IPMA) analysis showed that trust and interorganizational communication presented themselves in the high importance and high-performance quadrant, in regard to relational performance between agricultural cooperatives and their suppliers. However, some peculiarities can be observed, such as the fact that interorganizational trust has greater importance and interorganizational communication greater performance, which demonstrates that interorganizational trust is the element that most receives importance from managers, while interorganizational communication has greater potential of influencing relational performance.

5 Conclusions

In the present study, we analyzed the influence of trust and interorganizational communication on the relational performance of agricultural cooperatives with their suppliers. Results indicate that both trust and interorganizational communication have a positive influence on relational performance, and that trust influences interorganizational communication. Partial mediating effect of interorganizational communication on the relationship between trust and relational performance was found. This suggests that trust and interorganizational communication are important drivers of relational performance by reducing costs and opportunistic behavior, imposing commitments in the relationship, avoiding conflicts, and exploring resources and opportunities. Furthermore, trust denotes greater importance, while interorganizational communication has greater performance, which is to say, has greater potential of influencing relational performance.

As a practical implication of the study, the fact that trust and interorganizational communication can lead to positive results and mutual benefits by impacting relational performance is highlighted. Better knowing the particularities of agricultural cooperatives implies greater understanding of the main differences in their management philosophy, their behavior in interorganizational relationships, and these organizations' buyer-supplier relational performance. Managers of agricultural cooperatives may consider these findings in the intent to perfect decision-making in what concerns

interorganizational relationships.

The findings of this investigation also show theoretical implication by finding indications that constructs such as trust and interorganizational communication have a positive impact on the relational performance of agricultural cooperatives. The present study is part of the efforts of the literature toward validating assumptions pertinent to these variables in interorganizational relationships (Butt et al., 2021; McCardle & Krumwiede, 2019; Wenwen & Baiyu, 2015). The research meets the call for more studies seeking to verify relational behavior that contributes to results of success (Graca et al., 2015) and studies investigating agroindustrial relationships based on the trust literature (Colares-Santos & Schiavi, 2020).

The study has limitations arising from contextual elements and from the delineation of the research, which may result in new investigation opportunities. Future studies may verify if the findings of this research are consistent with other types of interorganizational relationships, as in strategic alliances, network of collaborating companies, and franchises, for example. As the sample comprehends exclusively agricultural cooperatives of the Brazilian scenario, results must be interpreted with parsimony, and future studies may replicate the theoretical model in another context and compare the results. Limitations inherent to the survey may be overcome by adopting other research methods, such as case studies. The study also shows limitations in not using control variables, which may be considered in future research (e.g., verifying if the time in the position influences the results).

References

Agarwal, U.A., & Narayana, S.A. (2020). Impact of relational communication on buyer–supplier relationship satisfaction: role of trust and commitment. Benchmarking: *An International Journal, 27*(8), 2459-2496. Doi: 10.1108/BIJ-05-2019-0220.

Bido, D.S., & Silva, D. (2019). SmartPLS 3: especificação, estimação, avaliação e relato. *Administração: Ensino e Pesquisa, 20*(2), 1-31. Doi: 10.13058/raep.2019.v20n2.1545

Boyle, B.A., & Dwyer, F.R. (1995). Power, bureaucracy, influence, and performance: their relationships in industrial distribution channels. *Journal of Business Research, 32*(3), 189-200. Doi: 10.1016/0148-2963(94)00045-G.

Butt, A.S., Shah, S.H.H., & Ahmad, A.B. (2021). Does knowledge hiding undermine buyer-supplier relationship performance in supply chains? A dyadic perspective. *Journal of Information and Knowledge Management Systems*, ahead-of-print. Doi: 10.1108/VJIKMS-06-2020-0118.

Chen, Y.H., Lin, T.P., & Yen, D.C. (2014). How to facilitate inter-organizational knowledge sharing: The impact of trust. I*nformation & management, 51*(5), 568-578. Doi: 10.1016/j.im.2014.03.007.

Colares-Santos, L., & Schiavi, S.M.D.A. (2020). Redes de cooperação interorganizacional: evidências sobre os estudos em sistemas agroindustriais. *Revista ADM. MADE, 24*(1), 42-54. Doi: 10.21714/2237-51392020v24n1p042054.

Dekker, H.C. (2003). Value chain analysis in interfirm relationships: a field study. *Management accounting research, 14*(1), 1-23. Doi:10.1016/S1044-5005(02)00067-7.

Dollinger, M.J., Golden, P.A., & Saxton, T. (1997). The effect of reputation on the decision to joint venture. *Strategic management journal, 18*(2), 127-140. Doi: 10.1002/(SICI)1097-0266(199702)18:2<127::AID-SMJ859>3.0.CO;2-H.

Donati, S., Zappala, S., & González-Romá, V. (2020). The double-edge sword effect of interorganizational trust on involvement in interorganizational networks: The mediator role of affective commitment. *European Management Journal, 38*(4), 613-622. Doi: 10.1016/j.emj.2019.12.014.

Fávero, L.P., & Belfiore, P. (2017). *Manual de análise de dados: estatística e modelagem multivariada com Excel®, SPSS® e Stata®*. Elsevier, São Paulo.

Gallardo-Vázquez, D., Sánchez-Hernández, M.I., & Castilla-Polo, F. (2014). Theoretical and methodological framework for the qualitative validation of an explanatory model of social responsibility in cooperatives societies. *Management Research: The Journal of the Iberoamerican Academy of Management, 12*(3), 259-287. Doi: 10.1108/MRJIAM-10-2013-0524.

Ganesan, S. (1994). Determinants of long-term orientation in buyer-seller relationships. *Journal of Marketing, 58*(2), 1-19. Doi: 10.1177/002224299405800201.

Ganesh, M., Raghunathan, S., & Rajendran, C. (2014). The value of information sharing in a multi-product, multi-level supply chain: Impact of product substitution, demand correlation, and partial information sharing. *Decision Support Systems, 58*, 79-94. Doi: 10.1016/j.dss.2013.01.012.

Graca, S.S., Barry, J.M., & Doney, P.M. (2015). Performance outcomes of behavioral attributes in buyer-supplier relationships. *Journal of Business & Industrial Marketing, 30*(7), 805-816. Doi: 10.1108/JBIM-04-2014-0072.

Gulati, R., & Nickerson, J.A. (2008). Interorganizational trust, governance choice, and exchange performance. *Organization Science, 19*(5), 688-708. Doi: 10.1287/orsc.1070.0345.

Hair Jr, J.F., Hult, G.T.M., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Los Angeles: Sage.

Hair Jr., J.F., Risher, J.J., Sarstedt, M., & Ringle, C.M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2-24. Doi: 10.1108/EBR-11-2018-0203.

Johnston, D.A., McCutcheon, D.M., Stuart, F.I., & Kerwood, H. (2004). Effects of supplier trust on performance of cooperative supplier relationships. *Journal of Operations Management, 22*(1), 23-38. Doi: 10.1016/j.jom.2003.12.001.

Kingshott, R.P. (2006). The impact of psychological contracts upon trust and commitment within supplier–buyer relationships: A social exchange view. *Industrial Marketing Management, 35*(6), 724-739. Doi: 10.1016/j.indmarman.2005.06.006.

Lago, A., & Silva, T.N. (2012). Condicionantes do desenvolvimento de relacionamentos intercooperativos no cooperativismo agropecuário. *Organizações Rurais & Agroindustriais, 14*(2), 212-226.

Martins, D.M., Faria, A.C., Prearo, L.C., & Arruda, A.G.S. (2017). The level of influence of trust, commitment, cooperation, and power in the interorganizational relationships of Brazilian credit cooperatives. *Revista de Administração, 52*(1), 47-58. Doi: 10.1016/j.rausp.2016.09.003.

McCardle, J., & Krumwiede, D. (2019). Interfirm Cultural Compatibility and Communication in Supply Chain and Operations Performance. *Journal of Supply Chain and Operations Management, 17*(2), 188.

Mohr, J., & Spekman, R. (1994). Characteristics of partnership success: partnership attributes, communication behavior, and conflict resolution techniques. *Strategic management Journal, 15*(2), 135-152. Doi: 10.1002/smj.4250150205.

Mojo, D., Fischer, C., & Degefa, T. (2015). Social and environmental impacts of agricultural cooperatives: evidence from Ethiopia. *International Journal of Sustainable Development & World Ecology, 22*(5), 388-400. Doi: 10.1080/13504509.2015.1052860.

Neumann, J.L., & Laimer, C.G. (2019). Proposed Application of the Relationship Marketing in Interorganizational Relations. *Brazilian Journal of Marketing, 19*(1), 118-131. Doi: 10.5585/remark.v18i1.3925.

Organização das Cooperativas Brasileiras [OCB] (2021). Cooperativas. Recuperado em maio, 2021, de http://www.ocb.org.br/servicos.

Parmigiani, A., & Santos, M. (2011). Clearing a path through the forest: A meta-review of interorganizational relationships. *Journal of Management, 37*(4), 1108-1136. Doi: 10.1177/0149206311407507.

Paulraj, A., Lado, A.A., & Chen, I.J. (2008). Inter-organizational communication as a relational competency: Antecedents and performance outcomes in collaborative buyer–supplier relationships. *Journal of Operations Management, 26*(1), 45-64. Doi: 10.1016/j.jom.2007.04.001.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y., & Podsakoff, N.P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879. Doi:10.1037/0021-9010.88.5.879.

Potocan, V. (2009). Does trust influence supply chain management. *Journal of American Academy of Business, 15*(1), 118-124.

Racela, O.C., & Thoumrungroje, A. (2014). Export market orientation, interfirm communication, interfirm cooperation and export performance. *International Journal of Management and Marketing Research, 7*(1), 1-14.

Rajala, A. (2018). Examining the effect of interorganizational learning on performance: a meta-analysis. *The Journal of Business & Industrial Marketing, 33*(4), 574-584. Doi: 10.1108/JBIM-08-2017-0205.

Reinsch Jr, N.L. (2001). Business performance: business communication is a compound, not a mixture. *Vital Speeches of the Day, 67*(6), 172.

Ringle, C.M., Silva, D., & Bido, D.S. (2014). Modelagem de Equações Estruturais com utilização do SmartPLS. *Revista Brasileira de Marketing, 13*(2), 56-73. Doi: 10.5585/remark.v13i2.2717.

Ringle, C.M., & Sarstedt, M. (2016). Gain more insight from your PLS-SEM results. *Industrial Management & Data Systems, 116*(9), 1865-1886. Doi: 10.1108/IMDS-10-2015-0449.

Ruostesaari, M.L., & Troberg, E. (2016). Differences in social responsibility toward youth: A case study based comparison of cooperatives and corporations. *Journal of Co-operative Organization and Management, 4*(1), 42-51. Doi: 10.1016/j.jcom.2016.03.001.

Sabatini, F., Modena, F., & Tortia, E. (2014). Do cooperative enterprises create social trust?. *Small Business Economics, 42*(3), 621-641. Doi: 10.1007/s11187-013-9494-8

Sako, M. (2006). Does trust improve business performance. *Organisafional Trust: A Reader*, 267-294.

Schmidt, S., & Schreiber, D. (2019). Inter-organizational trust: definitions, elements and operationalization. *Desenvolvimento*

em Questão, 17(48), 71-83. Doi: 10.21527/2237-6453.2019.48.71-83.

Seo, R. (2020). Interorganizational learning for R&D consortium performance: a social capital perspective. *Journal of Knowledge Management, 24*(2), 395-414. Doi: 10.1108/JKM-06-2019-0265.

Shumate, M., Atouba, Y., Cooper, K.R., & Pilny, A. (2017). Interorganizational communication. *The International Encyclopedia of Organizational Communication*, 1-24. Doi: 10.1002/9781118955567.wbieoc117.

Silva, A., & Beuren, I.M. (2020). Efeitos dos sistemas de controle gerencial e do compartilhamento de informações no risco interorganizacional de uma rede de franquia. *Advances in Scientific & Applied Accounting, 13*(1), 3-22. Doi: 10.14392/asaa.2020130101.

Song, M. (2018). Does having a strong commitment matter in building sustainable networks? *Quality & Quantity, 52*(2), 551-564. Doi: 10.1007/s11135-017-0583-7.

Wang, J.J., Li, J.J., & Chang, J. (2016). Product co-development in an emerging market: The role of buyer-supplier compatibility and institutional environment. *Journal of Operations Management, 46*, 69-83. Doi: 0.1016/j.jom.2016.07.002.

Wenwen, L., & Baiyu, L. (2015). Understanding the Impacts of Inter-organizational Communication on strategic alliance performance and stability. *African Journal of Business Management, 9*(21), 735-740. Doi: 10.5897/AJBM2015.7898.

Zaheer, A., McEvily, B., & Perrone, V. (1998). Does Trust Matter? Exploring the Effects of Interorganizational and Interpersonal Trust on Performance. *Organization Science, 9*(2), 141–159. Doi:10.1287/orsc.9.2.141.