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The double-edge sword effect of interorganizational trust on involvement in interorganizational networks: The mediator role of affective commitment

This is the final peer-reviewed author's accepted manuscript (postprint) of the following publication:

*Published Version:*

Donati, S., Zappalà, 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 [10.1016/j.emj.2019.12.014].

*Availability:*

This version is available at: <https://hdl.handle.net/11585/779228> since: 2020-11-10

*Published:*

DOI: <http://doi.org/10.1016/j.emj.2019.12.014>

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(Article begins on next page)

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**Simone Donati, Salvatore Zappalà, Vicente González-Romá,**

**The double-edge sword effect of interorganizational trust on involvement in interorganizational networks: The mediator role of affective commitment,**

**European Management Journal,**

**Volume 38, Issue 4,**

**2020,**

**Pages 613-622,**

**ISSN 0263-2373,**

The final published version is available online at  
**<https://doi.org/10.1016/j.emj.2019.12.014>.**

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**The double-edge sword effect of interorganizational trust on involvement in interorganizational networks: the mediator role of affective commitment**

Simone Donati<sup>1</sup>, Salvatore Zappalà<sup>1,2</sup> and Vicente González-Romá<sup>3</sup>

<sup>1</sup> Department of Psychology, University of Bologna, Italy

<sup>2</sup> Department of Psychology and Human Capital Development, Financial University under the Government of Russian Federation, Russia,

<sup>3</sup> Idocal, Universitat de València, Spain.

[simone.donati@unibo.it](mailto:simone.donati@unibo.it);

[salvatore.zappala@unibo.it](mailto:salvatore.zappala@unibo.it)

[vicente.glez-roma@uv.es](mailto:vicente.glez-roma@uv.es)

**The double-edge sword effect of interorganizational trust on involvement in  
interorganizational networks: the mediator role of affective commitment**

Abstract

Some organizations collaborate with other partner organizations to reach common goals, establishing Interorganizational Networks. The governance of the network is often enacted by an Interorganizational Governing Team composed of the directors or top managers of the partner firms. This team plans, manages, and supervises the advancement of the network's common goals. The success of the network depends, to a large extent, on the involvement of the members of the governing team. In this study, we tested a multilevel model of the antecedents of the involvement of governing team members in the management activities of interorganizational networks. We examined whether the relationship between team interorganizational trust, as a team level construct, and individual involvement in management activities is partially mediated by individual affective commitment. Using a sample of 101 respondents belonging to 28 interorganizational governing teams, we tested a multilevel mediation model. Results showed, as expected, a positive indirect effect of team interorganizational trust on individual involvement through individual affective commitment. However, unexpectedly, team interorganizational trust also showed a negative direct relationship with individual involvement. Based on our findings, we highlight the need to also consider the "dark side" of interorganizational trust, and we propose potential mediators to explain the unexpected negative relationship.

*Keywords:* affective commitment; interorganizational trust; interorganizational governing team; interorganizational network; involvement.

## 1. Introduction

A growing number of organizations collaborate with other partner organizations in order to face changes in the environment and markets (Van Gils, 1998). Often, this interorganizational collaboration results in a formal agreement (such as strategic alliances, network contracts, and so on) or in a new hybrid organization (i.e. joint ventures, consortia). A specific form of collaboration is the InterOrganizational Network (ION), in which multiple (usually three or more) legally autonomous organizations decide to collaborate in order to achieve common, shared goals (Braun, Muller-Seitz & Sydow, 2012; Provan, Fish & Sydow, 2007; Provan & Kenis, 2008). IONs have been defined as “*a group of three or more organizations connected in ways that facilitate the achievement of a common goal*” (Provan, Fish & Sydow, 2007, p. 7), a goal that no partner organization could pursue or reach by itself (Saz-Carranza & Ospina, 2010; Provan, Sydow & Podsakoff, 2017). The motivation and willingness of each organization to cooperate and share information, knowledge, and resources with the partners is a decisive factor in nurturing the ION and reaching common goals (Braun, et al., 2012; Swart & Kinnie, 2014; Swart, Kinnie, van Rossenberg & Yalabik, 2014).

One way for companies to cooperate and contribute to the development of the ION is by getting involved, through a representative member, in the governance of the ION itself. In this “shared participant governance” system (Provan & Kenis, 2008; Cristofoli, Markovic & Meneguzzo, 2014), it is “*the collectivity of the partners themselves that make all the decisions and manage network activities*” (Provan & Kenis, 2008, p. 235). Typically, this type of governance is performed by the managers of the organizations that belong to the ION (Provan, Sydow & Podsakoff, 2017) and that constitute what has been called an Interorganizational Governing Team (IGT) (Donati, Zappalà & González-Romá, 2016). An IGT has been described as a governance group composed of directors or top managers of the organizations that belong to the ION. It is devoted not only to planning, managing,

and supervising the advancement of the ION's common goals, but also, when necessary, to creating and implementing new procedures, tools, or solutions that are useful to coordinate and solve problems that arise as the ION's activities develop (Donati et al., 2016).

An important challenge that IONs have to face is establishing and maintaining stable, effective, and cooperative relationships among the different organizations involved. This process is supported or hindered by the perceptions each company has about the other organizational partners. Social and organizational psychology have shown that such inter-organizational situations tend to create prejudices and/or stereotypes towards the other organizations and their members (Drach-Zahavy, & Somech, 2010). Thus, a delicate task of the IGT is not only to control this tendency, but also to develop and spread a positive and trustful perception of the alliance and its goals, in order to motivate members of the IGT and employees of each partner organization to perform well and work to the advantage of the whole ION. IGTs may have what has been called a "*critical juncture*" role (Möllering & Sydow, 2018, p. 14), coordinating the ION's goals, employees' performance at the level of each company, and the involvement of the managers who make up the IGT.

The importance of IGT managers' involvement in the ION is highlighted in theoretical and empirical research (Provan et al., 2017). Involvement in the ION has been defined as the extent to which each network member participates and dedicates time to the network activities, for instance, by attending meetings, participating in electronic discussions, and joining or leading special projects (Malewicki, 2005). The degree of involvement of network managers in network governance activities is a crucial factor for the ION's success, and it has been considered an indicator of the investment of each partner organization in the ION's business (Currall & Inkpen, 2008; Herranz, 2007; Prestby & Wandersman, 1985; Saz-Carranza & Ospina, 2010) and governance (Agranoff, 2006; Turrini, Cristofoli, Frosini, & Nasi, 2010; Cristofoli & Markovic, 2016).

Three case studies investigated the antecedents of managers' involvement in ION governance activities (Cristofoli, Markovic & Meneguzzo, 2014; Saz-Carranza & Ospina, 2010; Vangen, Hayes, & Cornforth, 2015). These studies developed an in-depth, detailed classification and description of network managers' behaviours, as well as the contextual conditions in which these behaviours take place. However, the research method adopted in these studies did not allow the researchers to measure involvement behaviours and examine the association with their antecedents. This represents an important gap in the literature that our study tries to fill by using a quantitative approach to test a multilevel model of the antecedents of managers' involvement in ION governance activities. From a theoretical perspective, the aforementioned gap hinders our understanding of the factors that promote managers' involvement in ION governance (a key aspect in ION success). From a practical perspective, this gap limits the development of interventions and tools that might promote managers' involvement in ION governance. Theoretically, trust among network organizations and trust among network managers should be key factors that facilitate, promote, and maintain partners' involvement in ION activities (Braun, Muller-Seitz, & Sydow, 2012; Delbufalo, 2012). Therefore, we consider shared interorganizational trust, defined as the shared trust that ION managers feel towards the other organizations involved in the ION (Zaheer, McEvily, & Perrone, 1998; Martínez-Tur & Peirò, 2009), as an antecedent of managers' involvement in ION activities.

Trust-commitment theory (Morgan & Hunt, 1994) suggests that trust predicts commitment. Thus, we also investigated whether the influence of interorganizational trust on managers' involvement is partially mediated by managers' affective commitment to the ION or, in other words, by the managers' desire to remain attached to the ION. Based on this theory, interorganizational trust may also increase managers' involvement indirectly, via its relationship with managers' affective commitment to the ION.

Considering the previous theoretical statements and the relevance of the IGT as a meso-level component of inter-organizational networks, we developed and tested a multilevel model in which a team construct related to the superordinate concept of the network, namely interorganizational trust, affects individual managers' involvement in ION governance. In addition, this model considers individual affective commitment in the ION as a partial mediator between interorganizational trust, a team level construct, and the individual involvement of IGT members.

Our study tries to make the following contributions to the literature. First, we offer an explanation about why and how interorganizational trust is related to managers' involvement in IONs. By testing the mediation role of affective commitment to the ION, we describe one of the mechanisms involved in the relationship between interorganizational trust and individual involvement. Second, we identify interorganizational trust and affective commitment as two antecedents of managers' involvement in IONs. This finding can be used to design strategies to increase managers' involvement (a key factor for ION success). And third, by adopting a multilevel perspective, we consider interorganizational trust as a key team property of the psychosocial context (the IGT) where managers' involvement unfolds. Previous empirical studies on interorganizational trust have been conducted at a single level of analysis, typically the organizational level (McEvily & Zaheer, 2006; Fulmer & Gelfand, 2012), offering limited knowledge about the influence of interorganizational trust on the ION across levels of analysis (Provan, Sydow, & Podsakoff, 2017), especially at the team and individual levels (Schilke & Cook, 2013). By focusing on interorganizational trust, we show that this team property is an important higher-level factor that can explain individual managers' involvement.

## **2. Theoretical background**

### **2.1. Interorganizational trust and managers' involvement in ION governance**

Trust is defined as “the willingness of a party to be vulnerable to the actions of another party



based on the expectation that the other will perform a particular action that is important to the party” (Mayer, Davis, & Schoorman., 1995, p. 712). In the ION literature, trust among interorganizational partners is defined as “*the extent of trust placed in the partner organization by the members of a focal organization*” (Zaheer, McEvily, & Perrone, 1998, p. 142). Interorganizational trust, thus, refers to the predictability of the behaviour of a partner firm. “*If the partner firm fulfills positive expectations, the focal firm develops greater confidence in the partnership, and this confidence in turn mitigates future concerns about opportunism*” (Gulati & Nickerson, 2008, p. 689). In particular, perceiving that ION partners depend on each other to achieve their own business goals decreases the psychological perception of relational uncertainty, leading the network members to actively participate in the ION activities (rather than acting alone) in order to obtain mutual benefits (Clarke, 2006).

Trust among network organizations and trust among network managers should be key factors that facilitate, promote, and maintain partners’ involvement in ION activities (Braun, Muller-Seitz, & Sydow, 2012; Delbufalo, 2012). Following Martinez-Tur and Peiró (2009), we argue that, over time, repeated positive social interactions among managers who are members of an IGT develop a collectively-held, shared trust orientation towards the goodwill intentions, reliability, and trustworthiness of the partner organizations that make up the ION.

In particular, representatives or boundary spanners of the organizations involved interact, perceive, and give meaning to their relationships through their perception of interorganizational shared values, common norms, and coordination practices (Möllering & Sydow, 2018). Especially in the formation of temporary teams (as IGTs), team members can enjoy high levels of trust by developing expectations of trustworthiness from information related to the organizational setting (Meyerson, Weick, & Kramer, 1996; Yang, 2014). Information about the organizational setting, such as organizations’ prior interactions, the reputation of the partners, or categories to which the partner

organizations belong (es. organizational size, tenure, business, sector, etc.), can activate the initial, cognitive basis for trust, even before any further knowledge is obtained from direct experience-based relationships (Schilke and Cook, 2013). As long as this process is reciprocally experienced by each member of the IGT, a shared perception of the trustworthiness of the partners activates a collective, shared form of interorganizational trust among IGT members. Thus, shared interorganizational trust emerges at the team level through social interaction processes. According to social exchange theory (Cropanzano & Mitchell, 2005), when managers involved in IGT teams perceive that their own organization and other partner organizations are trusted by the other IGT members, they will respond, in exchange for such trust, by investing their time and effort in the management activities of the ION (Braun, Muller-Seitz, & Sydow, 2012; Cropanzano & Mitchell, 2005; Crisp & Jarvenpaa, 2013; Das & Teng, 2001; de Jong & Dirks, 2012). Therefore, we formulate the following hypothesis:

*Hypothesis 1: There is a positive cross-level relationship between shared interorganizational trust and managers' involvement in the ION activities.*

## **2.2. Interorganizational trust and affective commitment**

Organizational commitment is the psychological link or attachment between employees and their organization that motivates the former to consciously act in the interests of the latter (Meyer & Allen, 1991). Meyer and Allen's (1997) three-component model of organizational commitment distinguishes three types of commitment: affective commitment (where the attachment is based on an emotional desire to stay), normative commitment (where the attachment is due to felt moral obligations to stay), and continuance commitment (where attachment is based on instrumental reasons related to the cost/benefit estimation of staying or leaving the organization) (Meyer & Allen, 1997). Empirical research and meta-analyses have shown that affective commitment has the strongest relationships with employees' behaviours and attitudes (van Rossenberg et al., 2018; Meyer, Becker,

& Vandenberghe, 2004; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Meyer et al.2012). Based on these results, we decided to focus on affective commitment in the present study.

Based on trust-commitment theory (Morgan & Hunt, 1994), which suggests that trust predicts commitment, and that they both promote cooperative behaviours, we posit that when there is a high level of interorganizational trust among managers involved in IGT teams, managers will also respond by developing affective commitment to the ION. This relationship can be explained by trust processes and bases of commitment (Meyer & Herscovitch, 2001). Relationships characterized by trust are so highly valued that parties wish to remain committed to them. In addition, perceiving that the other partners are trusted because they are working toward common interests and goals reinforces the perception of sharing the same goals, thus providing another basis for affective commitment (Meyer & Herscovitch, 2001). Recent empirical work (Kurt, Yamin, Sinkovics, & Sincovics, 2016) confirms that having a shared sense of community, alignment of values, and a meaningful sense of membership in the network favours the rise of interorganizational trust, which, in turn, improves partners' network commitment. On this point, Morgan and Hunt (1994) propose that commitment involves vulnerability; therefore, the more organizations perceive that their ION partners are trustworthy, the higher their commitment to the collaborative relationship will be. In other words, interorganizational trust stemming from the perception of mutual goal interdependence increases the interest and commitment of ION organizations to their ongoing interorganizational relationships (rather than relationships with other partners) by increasing the importance of this dependence on the ION in the achievement of their own business results (Clarke, 2006; Lawler & Yoon, 1996). Finally, according to social exchange theory, "trust breeds trust". Thus, IGT managers who share a common perception that the ION partners can be trusted will reciprocate by increasing their individual level of affective attachment to the ION (Malewicki, 2005; Pollack, Coy, Green, & Davis, 2015). In particular, having positive expectations

about ION organizations' behaviours might lead to reciprocating the exchange with partners perceived to be an integral/essential part of the network's business (Kurt et al., 2016). Based on Malewicki (2005), we argue that perceiving that the different ION partners are working together in a reliable and satisfying way leads IGT managers to be confident about the interorganizational collaboration, reinforcing their desire to contribute to the ION's course of actions. Thus, we posit the following:

*Hypothesis 2: There is a positive cross-level relationship between shared interorganizational trust and managers' affective commitment to the ION.*

### **2.3. Affective Commitment and Involvement in the ION's Governance**

The degree to which IGT managers devote time and effort to the management of the ION is crucial for their own success. Literature shows that employees who experience a high level of affective commitment towards the organization to which they belong are motivated not only to continue to participate in it, but also to act in the interests of the organization, attend to their duties, perform well, and exceed their regular obligations (Meyer & Allen, 1991; Malewicki, 2005; Meyer, Becker, & Vandenberghe, 2004; Pollack et al., 2015).

Affective commitment is considered a powerful source of internal motivation that leads people to persist over time and struggle with opposing forces in order to reach a specific goal (Meyer et al., 2004). According to Meyer et al. (2004), this persistent behaviour stems from sharing the same values and interests attributed to a specific organizational target (i.e., the company, a specific organizational unit or team). Specifically, organizational commitment is the psychological bond that links employees to their workplace, and it can be focused on different 'targets' within this setting. For instance, the target of the commitment process can be the employee's profession, the team to which he/she belongs, or the wider organization in which he/she is employed. Employees who are committed to their profession, team, or organization generally feel a connection with the target, share the same values

and goals, and wish to contribute to its success. Based on this reasoning, we argue that affective commitment may also concern the ION, and so we posit that the affective commitment that IGT managers experience towards the ION will lead them to invest time in the ION's management activities. This motivational momentum provided by affective commitment is based on the sharing of the ION's goals. Therefore, we formulate the following hypothesis:

*Hypothesis 3: There is a positive relationship between managers' affective commitment to the ION and their involvement in ION management activities.*

#### **2.4. Interorganizational trust-commitment mediation effects**

Considering Hypotheses 1, 2, and 3, we propose that individual affective commitment to the ION partially mediates the cross-level relationship between interorganizational trust and managers' involvement. That is, we posit that interorganizational trust is positively related to managers' affective commitment, which, in turn, is positively related to managers' involvement. The former relationship can be theoretically justified by trust processes and bases of commitment (Meyer & Herscovitch, 2001; see section 2.2). Trusted relationships are positively valued by people. Subjects involved in trusted relationships want to maintain them, and they are affectively committed to them. This latter relationship is justified by the motivational drive provided by affective commitment (Meyer et al., 2004), which leads people to invest time and effort in their tasks (see section 2.3). Together, they explain why interorganizational trust is related to managers' involvement via affective commitment. Moreover, we posit partial mediation because there can be other mediating mechanisms that are not considered here and may explain the positive relationship between interorganizational trust and managers' involvement in ION management activities. Therefore, we propose the following:

*H4: There is a positive indirect cross-level effect of interorganizational trust on managers' involvement, mediated by managers' affective commitment.*

In this view, the team level of analysis may represent a “*critical juncture*” (Möllering & Sydow, 2018, p. 14) in the interorganizational trust dynamic. In other words, we assume that social interactions within interorganizational teams reinforce collaborative relationships among ION partners, moving from a phase characterized by a generalized reputation, or cognitive-based trust, to a personally-experienced, more committed, and highly involved phase. In order to capture the theorized process, we use a multilevel approach that establishes how the collective perception of interorganizational trust, considered as a team level property, influences the individual IGT members’ attachment to the ION and their involvement in IGT activities (see Figure 1).

INSERT FIGURE 1 HERE

### **3. Method**

#### **3.1. Sample**

The study sample was composed of 101 respondents belonging to 28 Interorganizational Governing Teams (IGTs) operating in a northern region of Italy. IGTs are top management teams comprised of managers from companies that participate in common joint ventures, alliances, or consortia, and they are typically considered the “control room” of interorganizational networks (ION) (Drach-Zahavy, 2011; Drach-Zahavy & Somech, 2010; Keyton, Ford, & Smith, 2008).

Of the 276 IONs that responded to a public call to support innovation projects initiated by networks of firms, we obtained a list of 240 funded networks composed mainly of companies established in the Emilia Romagna Region (North-East of Italy). Of them 57.9% belonged to the manufacturing sector, and 42.1% belonged to the services sector. The average number of enterprises per ION was 3.84 (SD=1,8; range: 3- 20), and the average duration of the network projects was 31.34 months (SD= 5,6; range: 24 - 49).

Of the 240 IONs, 143 were considered for the study because they were easy for the research

group to reach for logistic and economic reasons. To explain the reasons for the study and the terms of participation, we contacted, by telephone and/or e-mail, the representatives of 98 of these networks.

Fifty-seven IONs were interested in participating in the research and had a representative-coordinator available to be interviewed to provide information about interorganizational collaboration and the network management system. However, our aim in this study was to involve IONs governed through a shared participant governance system, and only 53 IONs met this requirement. The IGTs of 35 IONs agreed to participate in the study, and 143 questionnaires were administered. Of them, 104 were returned and correctly filled in, with an average return ratio of 72.72%. However, seven teams were excluded because their questionnaire response rate was below 60%. We used this cut-off point because Timmerman's (2005) findings suggest that lower response rates lead to enough measurement error to decrease correlations shown by team-level variables and increase Type II error. The final sample consisted of 28 IGTs. The average response rate across the 28 teams was 83%.

The average IGT size was 5.3 members (SD = 2.2), ranging from 3 to 9 members, and the average team tenure was 26.8 months (SD = 19.5).

Participants were 79.2% male and 20.8% female, with an average age of 46.9 years (SD = 9.7). Regarding education, 48% of the participants had a high school diploma, 47% had a university degree, and the remaining 5% had a middle school diploma.

## **3.2. Measures**

### **3.2.1. Interorganizational trust**

To measure interorganizational trust, we used 4 items from the Interorganizational Trust scale developed by Norman (2002) ("*We trust that the organizations that form the network will respect the signed interorganizational plan*"), "*There is a high level of trust in the working relationship with our*

*partners*”, “*We trust that our partners’ decisions will be beneficial to the entire network*”, “*We trust that our partners’ decisions will be beneficial to our firm*”). Each team member answered the items on a 5-point Likert scale (from 1: “*completely disagree*” to 5: “*completely agree*”). Cronbach’s alpha for this scale was .94.

### **3.2.2. Managers’ Affective Commitment**

To measure managers’ affective commitment, we used 4 items from the Italian version (Pierro, Tanucci, Cavalieri, & Ricca, 1992) of the affective commitment scale from Allen and Meyer’s (1990) Organizational Commitment questionnaire. Items were adapted to the specific context of IONs (“*I would be sorry if I left this interorganizational collaboration network for another one*”; “*The interorganizational network in which I participate with my company has a lot of meaning for me*”; “*I do not feel ‘emotionally attached’ to this interorganizational network*” (reverse item); “*I really feel like this interorganizational network’s problems are my problems*”). Each team member answered the items on a 5-point Likert scale (from 1: “*completely disagree*” to 5: “*completely agree*”). Cronbach’s alpha for this scale was .73.

We conducted Confirmatory Factor Analysis to test whether the items underlying the interorganizational trust and affective commitment scales measured the expected factors. We compared the goodness of fit of the hypothesized two-factor model with the fit of a one-factor model. The two-factor model showed a satisfactory fit to the data ( $N = 101$ ,  $\chi^2 = 23.08$ ,  $df = 19$ ;  $p > 0.05$ ;  $RMSEA = 0.05$ ;  $SRMR = 0.03$ ;  $CFI = 0.99$ ), whereas the one-factor model did not ( $\chi^2 = 68.68$ ,  $df = 20$ ;  $p < 0.01$ ;  $RMSEA = 0.16$ ;  $SRMR = 0.09$ ;  $CFI = 0.90$ ). Moreover, the difference in fit between the two models was statistically significant ( $\Delta\chi^2 = 45.6$ ,  $\Delta df = 1$ ,  $p < 0.01$ ). These results showed that the two scales measure two different constructs and have discriminant validity. The convergent validity of the two-factor model was supported by the significant loadings observed (above .69,  $p < .01$ ). We



also examined discriminant validity by means of the Average Variance Extracted (AVE). The AVEs for interorganizational trust and affective commitment were .87 and .56, respectively. The AVE for each factor was larger than the square of the correlation between the two factors (.50), thus providing support for the discriminant validity of the two constructs (Anderson & Gerbing, 1988; Fornell & Larcker, 1981).

### **3.2.3. Managers' involvement**

Some previous studies used the percentage (Horng, Klasik, & Loeb, 2010) or amount of time (Prestby & Wandersman, 1985) devoted to managerial or network activities as an indicator of involvement. Moreover, Bergkvist and Rossiter (2007) showed that when the construct to be measured is "concrete" (i.e., it is not a trait or an ability), then single-item measures are acceptable because they have similar predictive validity to corresponding multiple-item measures. Based on these arguments, we used a single item asking how much time per week each IGT member usually dedicated to the ION's management activities. The response options were the following: 1: "*less than one hour per week*"; 2: "*from one to three hours per week*"; 3: "*from three to eight hours per week*"; 4: "*more than eight hours per week*".

### **3.2.4. Control Variables**

We controlled for individual and team factors that could be related to the managers' affective commitment and involvement. At the individual level, we controlled for the role that IGT members perform in their own organization (entrepreneur or managerial staff) because information and knowledge resulting from this position might influence the perception of the ION partners' reliability (Krishnan, Martin, & Noorderhaven, 2006; Laan, Noorderhaven, Voordijk, & Dewulf, 2011) and, consequently, personal involvement in the ION's activities (Malewicki, 2005). Information about each IGT member's role was collected during the interview with the IGT coordinator. In addition, we

controlled for gender, age, and education of the IGT members because previous studies observed that these personal characteristics are antecedents of organizational commitment (Mathieu & Zajac, 1990). This information was collected through a questionnaire that IGT members filled in personally (education was measured using an ordinal scale ranging from middle school to PhD education).

At the team level, we controlled for team size because previous literature shows that a large number of members in workgroups may influence team processes by making interactions among members more difficult and complex (Riopelle et al., 2003), thus weakening trust within teams (Sato, 1988) or decreasing team members' motivation to contribute to team activities (Chidambaram & Tung, 2005).

### **3.3. Data Aggregation**

Interorganizational trust was computed by aggregating the scores of managers who belonged to the same IGT, using a "referent-shift consensus" composition model (Chan, 1998). Before aggregation, we computed within-team agreement by means of the interrater agreement index,  $r_{wg(j)}$  (James, Demaree, & Wolf, 1993). The high average value obtained (.91,  $SD = .13$ ) was satisfactory. We also computed an ANOVA to see whether there was enough between-team difference in interorganizational trust. The results obtained ( $F(27, 73) = 2.93, p < .001$ ) were satisfactory. Finally, we computed the Intraclass Correlation Coefficients (ICC1 and ICC2) (James, 1982; James, Demaree, & Wolf, 1984) to estimate consistency in interorganizational trust ratings and the reliability of the trust means, respectively. The results obtained (.35 and .66, respectively) were satisfactory. All these results supported the aggregation of interorganizational trust scores at the team level.

### **3.4. Analysis**

Taking into account the nested structure of our data (participants were members of IGTs) and the multilevel nature of our hypotheses, we used Multilevel Structural Equation Modeling (ML-SEM)

to test our model and hypotheses. Considering the variables of our research model and the levels at which they reside, our multilevel model can be considered a 2-1-1 path analysis model (Preacher, Zyphur, & Zhang, 2010; Heck & Thomas, 2015). Our predictor (X, interorganizational trust) is a team level (i.e., level 2) variable, and our mediator (M, affective commitment) and outcome variables (Y, involvement) are individual level (i.e., level 1) variables. Following Preacher et al.'s (2010) recommendation, we simultaneously estimated all the hypothesized relationships in one multilevel model using Mplus 6 (Muthén & Muthén, 2012). Before starting the analysis, we grand-mean centred our team-level independent variable, namely Interorganizational Trust (Heck, Thomas, & Tabata, 2010; Enders & Tofighi, 2007).

The multilevel mediated relationship involved in Hypothesis 4 (a 2-1-1 indirect effect) was assessed by testing the corresponding indirect effect (*ab*). The statistical significance of the indirect effect was tested by means of the product of coefficients method proposed by MacKinnon and colleagues (MacKinnon, Lockwood & Hoffman, 1998; MacKinnon, Lockwood, Hoffman, West & Sheets, 2002) and implemented in the *RMediation* software (Tofighi & MacKinnon, 2011), which provides point estimates and confidence intervals for the indirect effect. We chose the distribution-of-product-method because it does not assume that the product of the regression coefficients that estimate the indirect effect is normally distributed, and it has performed well in terms of accurate Type I error rates and satisfactory statistical power in simulation studies (MacKinnon et al., 2002; Tofighi & MacKinnon, 2011).

#### **4. Results**

Descriptive statistics and correlations for the study variables are displayed in Table 1. Because only gender showed a statistically significant correlation with one of the model variables (affective

commitment,  $r = -.23, p < .05$ ), we only controlled for this relationship when testing the hypotheses.

INSERT TABLE 1 HERE

First, we fitted a “Baseline model with random intercepts” and no predictors, in order to compute the Intraclass Correlation Coefficient (ICC) for the model’s outcome variable (Involvement in the ION). The ICC estimates the proportion of variance of a given variable between teams. The ICC value obtained (.23) revealed a relevant proportion of between-team variance in the outcome variable, and so multilevel modelling was justified.

We assessed the fit of our multilevel model by using a combination of absolute ( $\chi^2$ , standardized root mean square residual-SRMR) and relative (comparative fit index-CFI) fit indices. The results obtained were as follows:  $\chi^2(1) = 3.61, p > .05$ ; CFI = .87; SRMR-within = .03, SRMR-between = .01. The non-significant chi-square statistic supported the model’s fit. However, the CFI was below the cut-off point of .90. These indices provide measures of model fit for the overall model. Recent research recommends that researchers should obtain specific fit indices for the between and within parts of their multilevel models (Ryu, 2014; González-Romá & Hernández, 2017). In this regard, the SRMR indices obtained for the within and between parts of our multilevel model were satisfactory. Thus, we proceeded to examine the model’s parameter estimates.

Regarding Hypothesis 1, the results showed that interorganizational trust had a negative cross-level relationship with involvement ( $-.79, p < .01$ ; see Figure 2). This result was in the opposite direction of the expected relationship. Therefore, Hypothesis 1 was not supported.

In the case of Hypothesis 2, the results showed a positive cross-level relationship between interorganizational trust at the team level and managers’ affective commitment at the individual level ( $.46, p < .01$ ; see Figure 2). Thus, Hypothesis 2 was supported.

With regard to Hypothesis 3, the parameter estimate obtained ( $1.04, p < .01$ ; see Figure 2)

revealed a positive relationship between managers' affective commitment to the ION and their individual involvement in the ION. This result supported Hypothesis 3.

INSERT FIGURE 2 HERE

In relation to Hypothesis 4, which proposed a positive indirect cross-level "effect" of interorganizational trust on managers' involvement in the ION management activities via affective commitment, we first computed the estimated indirect "effect", which equalled .48 (SE = .2). Then, we tested its statistical significance using the product of coefficients method and the *RMediation* software (MacKinnon et al., 1998; MacKinnon et al., 2002; Tofighi & MacKinnon, 2011). The corresponding 95% confidence interval for the estimated indirect effect was: .137, .921. Because this interval did not include the value of zero, we concluded that the investigated indirect "effect" was statistically significant. Thus, Hypothesis 4 was supported by our results.

Finally, the results obtained showed that interorganizational trust explained 37.3% of the between-team variance in affective commitment, whereas these two variables explained 73.3% of the between-team variance in managers' involvement in ION management activities.

## **5. Discussion**

Using a multilevel approach (Klein, Palmer, & Conn, 2000), the present study shows that interorganizational trust has an indirect positive effect, through managers' affective commitment, on IGT managers' involvement in the ION. In addition, we also observed an unexpected finding: interorganizational trust has a direct and negative relationship with managers' involvement. The theoretical and practical implications of these results are discussed below.

### **5.1. Theoretical implications**

A relevant theoretical implication of our study is the identification of managers' affective

commitment to the ION as one of the mechanisms linking interorganizational trust and managers' involvement in ION activities. When there is a high level of interorganizational trust, the ION partners are trusted and relationships with them are highly valued, and this fosters managers' desire to stay committed to the ION. As a result, affective commitment becomes a motivational drive (Meyer et al., 2004) for active involvement in the ION. Affective commitment leads people to persist in order to reach specific goals (Meyer et al., 2004), and we observed that managers with high affective commitment to the ION are willing to devote time to ION activities in order to reach the shared ION goals, and they actually do so. Therefore, extending previous literature showing that interorganizational trust was mainly experienced at the interpersonal level among representatives of two companies (Delbufalo, 2012; McEvily & Zaheer, 2006), our study shows that interorganizational trust can also be experienced as a shared, team-level perception. Moreover, we showed that the shared perception of trust among partners of an interorganizational collaboration is positively linked to individual involvement through affective commitment. Our study shows the importance of considering collective states in order to extend and better specify the trust-commitment theory (Morgan & Hunt, 1994) at the interorganizational level. A key characteristic of the mediated relationship we found is that it runs across levels. Previous literature on team trust has mainly focused on team-level outcomes (Costa, Fulmer, & Anderson, 2018; de Jong, Dirks, & Gillespie, 2016). By adopting a multilevel approach, we show that consequences of interorganizational team-level trust can also be observed at the individual level, with involvement in ION activities as an individual outcome of team level trust, in addition to the outcomes already observed.

Another key characteristic of the indirect relationship we observed, extending the existing literature, is related to the "*changing nature of trust*" (Yang, 2014, p. 858). In particular, it seems that the IGT plays the role of a "critical juncture", in that it helps to transform a trust relationship that is

cognitively based (for instance, based on information about a partner organization's trustworthiness and reputation; Schilke & Cook, 2013; Yang, 2014) into an affective relationship, characterized by affective commitment to the ION. In other words, developing interorganizational trust as a collective form of trust towards the other organizations seems to lead IGT members to reciprocate this trust by developing a greater commitment to network goals and activities. Future studies should go beyond single-level approaches to discover other multiple outcomes of interorganizational team trust at the individual level and better clarify the mechanisms through which a cognitive trust belief about the partners becomes affective commitment to the joint effort.

However, our study also shows that interorganizational team trust is a "double-edge sword" that can have both positive and negative consequences. In fact, contrary to Hypothesis 1, our results show that interorganizational trust has a negative direct relationship with involvement in the ION. This unexpected result has interesting theoretical implications. First, it suggests that, in addition to other forms of the "dark side" of trust (Costa et al., 2018; Gargiulo & Ertung, 2006; Langfred, 2004), there is also a "dark side of interorganizational team trust" (Delbufalo, 2012) that does not contribute to fostering functional outcomes. Second, our results indicate that an important issue for future research involves the mediators that may link interorganizational trust to positive or negative outcomes. If affective commitment encourages positive outcomes, we believe that other mediators may explain the negative relationship found in the present study (de Jong et al., 2016; Newell & Swan, 2000). For instance, the perception that all partner organizations are trustworthy and well intentioned might create a sense of "diffusion of responsibility" (Bandura, 1999), a reduced sense of personal responsibility and accountability, which, especially in a teamwork situation, may lead individuals to reduce their involvement in team activities (Alnuaimi, Robert, & Maruping, 2010). Another potential mediator is behaviour monitoring. High levels of interorganizational trust may decrease the need to

monitor and control the behaviour of trusted partners (McEvily & Zaheer, 2006; Costa & Anderson, 2011), which may create the belief that teammates are not interested in each other's efforts (Hoon & Tan, 2008). This belief may contribute to decreasing IGT managers' motivation to invest time in team activities. Future studies should investigate whether the mediators suggested above explain why interorganizational team trust is negatively related to individual involvement. Incidentally, our study answers the call made by Morgan and Hunt (1994) to "*determine whether this dual path holds elsewhere*" (p. 32) by confirming that the dual path, or as we call it, the double-edge sword effect of trust, also holds at the interorganizational team level. Interestingly, the proposal by MacKinnon (2000) to jointly examine multiple mediators in order to test and integrate alternative theories suggests using multiple team processes and states to develop a more accurate and nuanced assessment of the involved mediating mechanisms.

The "double-edge sword" relationship observed here raises the question of which factors might foster the positive path and which factors might buffer the negative one. A team level moderator capable of buffering the negative effect found could be the level of team task interdependence (i.e., the degree to which team members rely on each other to accomplish the team goal). In situations characterized by low task interdependence, team members work relatively independently, with more possibilities of developing lower levels of involvement compared to situations where team members' interactions and participation are critical to accomplishing the team goals (Costa et al., 2018). On the other hand, an useful team level moderator to improve the positive indirect path might be team leadership. Previous studies (for example, Paolucci, Dimas, Zappalà, Lourenço, & Rebelo, 2018) have demonstrated that team leaders who engage in transformational leadership behaviours (for example, communicating a vision, developing and empowering staff, providing support and examples to teammates; Carless, Wearing & Mann., 2000) favour the development of team members' trust and



positive emotions towards the leader and the team itself. Thus, it is reasonable that in IGTs with high levels of transformational leadership, team members might easily accept the ION goal and mission (Avolio, Zhu, Koh, & Bhatia, 2004) by getting more involved in network managerial activities. Finally, the IGT's social network might represent a useful moderator to foster the positive interorganizational trust path and buffer the negative one. Previous studies have shown that dense strong ties among teammates create a team structural condition that improves trust, motivating team members to exchange their knowledge and resources and mobilizing their involvement in teamwork (Obstfeld, 2005).

Finally, the negative path observed in this study suggests the need to study the effects of interorganizational trust on commitment and involvement while also considering theoretical approaches about reverse or cyclical modes of influence (Möllering & Sydow, 2018). For instance, it might be important to see whether and how IGT members' involvement affects interorganizational trust by confirming or disconfirming the initial expectation about ION partners' trustworthiness. For instance, the low participation of a network manager might be perceived by the other IGT members as a sign of low partner reliability which, over time, might decrease their desire to contribute to the ION.

Introducing a team approach in the longitudinal study of interorganizational collaboration should enrich the comprehension of the evolution of trust across different inter-organizational levels by highlighting the role played by the teams' social dynamics within these kinds of collaboration.

## **5.2. Managerial implications**

A practical implication of our findings is that strategies to increase interorganizational trust should be viewed with caution because they can have both functional and dysfunctional influences on IGT managers' involvement. Therefore, before using interorganizational trust as a lever to increase

managers' involvement, more research should be conducted on the possible mediators of the negative relationship between interorganizational trust and IGT managers' involvement.

Due to the positive relationship observed between managers' affective commitment and involvement, increasing the former by developing a Common Business Understanding (CBU) among network partners should be a useful strategy. A CBU would provide a shared definition of the ION's "common mission identity" regarding the vision, mutual aims, roles, and expectations within the ION (Kasper-Fuehrera & Ashkanasy, 2001). IGT managers' participation in the development of the CBU would help to increase their affective attachment to the ION. Previous research has shown a positive association between participation and affective commitment (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Torika, Schyns, & Looise, 2010).

### **5.3. Limitations and strengths**

Our study has some limitations that should be taken into account. First, the study sample was composed of a small number of teams, which reduced the power of the statistical analyses. However, despite this limitation, we were able to find statistically significant relationships. Second, all the variables were measured using IGT managers' responses, which may have inflated the relationships among the variables. Third, the cross-sectional design implemented in our study does not allow us to make causal interpretations of our findings. Fourth, our dependent variable, manager's involvement in the network, was measured using a single item. Although concrete single-item measures seem to have the same predictive validity as multiple-item measures (Bergkvist & Rossiter, 2007), future studies should examine the observed relationships using time-lagged, longitudinal designs, possibly using a multi-item measure of the time devoted to different types of network managerial activities.

Finally, other interesting future studies should consider the different roles of network members, an aspect that we did not take into account in this study. Following Janowicz-Panjaitan and

Noorderhaven's (2009) arguments, in interorganizational relationships people who hold corporate level positions develop interorganizational trust by using different sources of information from those used by people who perform operational and professional roles. For instance, whereas top managers mainly rely on formal organizational documents about ION partners' reputations and competence, employees might obtain their interorganizational trust perceptions from information captured during collaborative interactions with employees of the other partner companies. These two different forms of interorganizational trust perceptions might result in different influence mechanisms on network commitment and involvement that require future specific testing.

However, the present study also has some strengths that deserve attention. First, the multilevel approach allowed us to ascertain that antecedents of individual involvement also reside at the team level of analysis. Second, by testing a mediational model, we were able to identify one of the mechanisms (individual affective commitment) linking interorganizational trust to individual involvement.

## **6. Conclusion**

Our results support the overall premise that interorganizational trust, measured at the team level, has an effect on the involvement of individual representatives of firms (partnering in an interorganizational collaboration) serving on the team that manages the collaboration. The results also suggest that there is a positive, indirect effect of interorganizational trust, through the mediation of affective commitment, on interorganizational collaboration, as well as a negative direct effect on involvement in the activities of the ION. This double-edge sword effect confirms the need to further investigate the mediators through which a positive vs. negative effect is observed, and/or the moderators that can enhance the positive effect and buffer the negative one.

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Table 1. Descriptive results for the individual- and team-level study variables (means, standard deviations, and correlations)

Variable	Mean	SD	1	2	3	4	5
Individual-level measures							
1. Managers' involvement	2.35	.99	-				
2. Affective Commitment	3.87	.71	.20*	-			
3. Role in Firm (categorical)	-	-	.13	-.18	-		
4. Age	46.97	9.76	-.09	-.08	-.11	-	
5. Gender (categorical)	-	-	-.10	-.23*	.11	-.11	-
6. Education Level (ordinal)	3.87	2.12	-.03	-.05	.10	-.19	.11
Team-level measures							
1. Team Size (Control Var.)	4.57	2.04	-				
2. Interorganizational Trust	3.94	.60	-.24	-			

Note. N = 101 (Individual level), N = 28 (Team level). \*  $p < .05$ ; \*\*  $p < .01$ .

Figure 1. Theoretical Multilevel Model

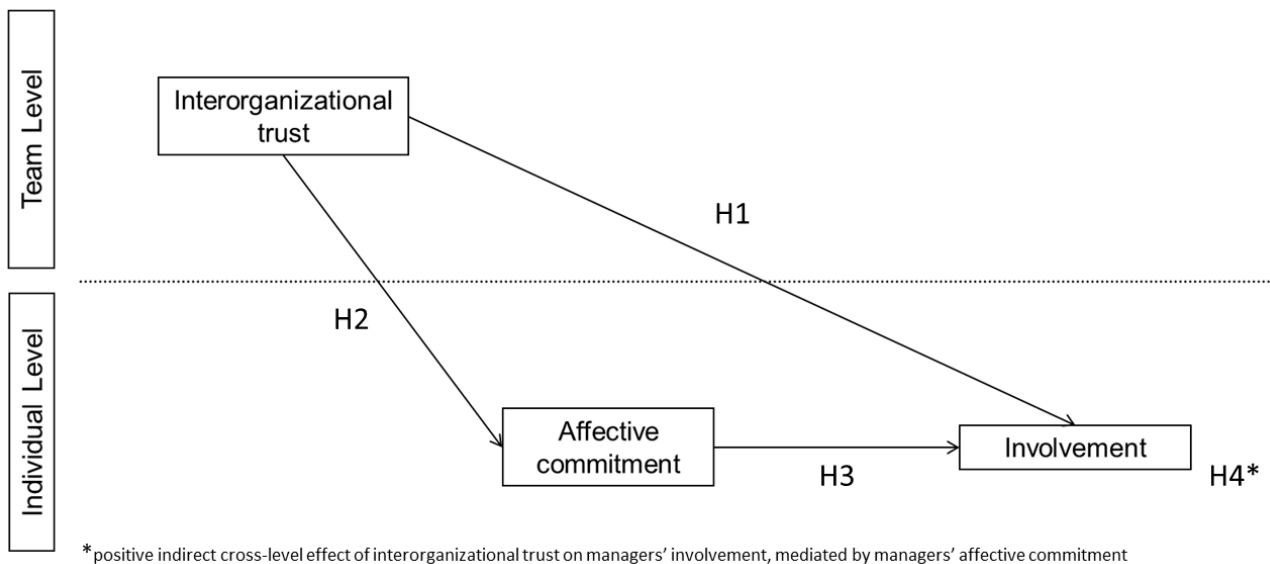


Figure 2. Unstandardized estimates and standard errors for the hypothesized relationships

