Influence of Formal and Informal Controls on Trust and Individual Creativity

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Abstract

Purpose: This study analyzes the influence of formal and informal controls on trust and individual creativity.

Design/methodology/approach: A survey was conducted with managers of companies listed in Brazil Stock Exchange (Brazil, Bolsa, Balcão-B3), and the final sample was 124 valid responses. The data were analyzed using structural equation modeling and FsQCA (fuzzy set qualitative comparative analysis).

Findings: The results show that the influence of informal controls (cultural and personnel controls) on individual creativity is greater than that of formal controls (action and results controls). It was also found that formal and informal controls facilitate social exchanges between managers by influencing trust. Moreover, the results confirmed the mediation of trust in the relationship between controls and individual creativity. FsQCA demonstrates that formal and informal controls are complemented and, when combined with trust, enable high individual creativity.

Originality: The findings contribute to the literature by demonstrating that the effective use of management controls generates greater trust and awakens creative skills in managers.

Keywords: Cultural and Personnel controls; Result and Action controls; Trust; Creativity.

1. Introduction

Management control systems (MCSs) offer useful information for decision-making (Simons, 2000; Chenhall, 2003) and influence the workforce to achieve organizational goals (Cugueró-Escofet and Rosanas, 2013; Langevin and Mendoza, 2013**)**. Although the broader MCS literature has made significant contributions by showing the impacts of controls on innovation activities (e.g., Bedford, 2015; Chenhall and Moers, 2015; Bedford et al., 2019), new empirical studies that show the impacts of these controls on individual creativity are still needed, especially those that explore the formal and informal approach to controls (Pan Fagerlin and Lövstål, 2020). Generating creative ideas is a means to achieve organizational goals and solve problems in the current organizational context (Moulang, 2013; Ozturk and Karatepe, 2019). It relies on an environment that encourages open discussions among managers and is a key success factor for growth and performance improvement.

The literature related to social psychology suggests that individual creativity is a behavior that depends on the social environment and cognitive abilities (Amabile, 1983; Wang and Netemeyer, 2004). Thus, social exchanges among managers in the organizational environment lead to creativity (Sternberg and Lubart, 1999). Social exchange theory (SET) suggests that the interactions between individuals in the work environment generate obligations (Emerson, 1976) that, when met, lead to expectations such as mutual trust (Blau, 1964). As trust is one of the most important elements of this theory and SET aims to establish stable relationships in the environment (Blau, 1964; Ozturk and Karatepe, 2019), this study explores the benefits of fostering trust in a dynamic environment.

In the same way that more empirical studies on the relationship between formal and informal controls and individual creativity are needed, additional empirical evidence related to the effects of (formal and informal) controls on trust is also welcome. We need additional studies that show how different controls (e.g., formal and informal) build trust in the organization, impacting the creative way in which tasks are performed. Formal control consists of tools that measure and compare the results obtained with predefined goals and ensure that employees perform (not perform) certain beneficial (harmful) actions for the organization (Merchant and Van der Stede, 2007; Abernethy et al., 2010). Informal control ensures that each employee has the necessary conditions to do what must be done (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014), in addition to communicating desired (unwanted) behaviors and sharing values and norms that determine internal social conventions (Merchant and Van der Stede, 2007; Bedford and Malmi, 2015).

These backdrops, show that these controls play different roles in the organization, and possibly generate different impacts on trust and individual creativity. Exploring these nuances is important for at least three reasons. First, it is well known that informal controls are oriented toward organizational norms and values (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014; Goebel and Weißenberger, 2017), which may foster more creativity. Second, it represents an opportunity for further studies to understand the effects of controls (formal and informal) on individual creativity, considering that the nature of creative production demands formal controls (Grabner and Speckbacher, 2016) to standardize tasks (Simons, 1995; Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014) and reduce dysfunctional

behaviors (Adler and Chen, 2011), which may promote less creativity than informal control. Third, the reach of creativity presupposes that formal and informal controls enable greater interaction among managers in the work environment (Moulang, 2013; Bedford, 2015; Speklé et al., 2017). This interaction promotes social exchanges (Blau, 1964) and closeness (Lau and Tan, 2006), generating greater trust in superiors or among coworkers (Brattström et al., 2012). Despite this evidence, the knowledge regards the facilitator effect of trust in the relationship between management controls and individual creativity remains less known. Therefore, this study analyzes the influence of formal and informal controls on trust and individual creativity. The research examined data from 124 firms listed on the Brazilian Stock Exchange (B3) using structural equation modeling and a configurational approach – fuzzy-set qualitative comparative analysis (FsQCA). The results demonstrate that the influence of informal controls (cultural and personnel controls) on individual creativity is greater than that of formal controls (action and results controls). It was also found that formal and informal controls support the social exchanges between managers, which positively influence the trust among individuals in the firm. The mediating role of trust in the relationship between controls and individual creativity was confirmed, evidencing the pivotal role of trust in fostering creativity.

Our study contributes to the literature on MCSs, which is mainly related to formal and informal controls, in several ways. First, the study offers evidence that informal controls are more successful in motivating managers to discover their abilities to produce creative ideas than formal controls. This shows that not all controls can be considered effective in contexts of individual creativity; thus, managers must consider the restrictive effects by adopting formal controls. Second, it suggests that both formal and informal controls promote an environment of reciprocity among managers, increasing trust among them. Third, the study contributes to SET by suggesting that managers are more likely to be creative in an environment of social exchange where different ideas are accepted. Fourth, it is shown that the effective use of MCS generates greater trust and awakens creative skills in managers. By adopting FsQCA, the research advances the literature, suggesting that the combination of formal and informal controls and trust is crucial to promoting managers' creativity. Therefore, we contribute to the literature by showing different effects of controls (formal and informal) on trust and individual creativity. We also added evidence to the control combination literature (Bedford et al., 2016; Gackstatter et al., 2019; Pan Fagerlin and Lövstal, 2020; Schultz et al., 2021), as in the configurational approach, our results suggest complementary effects between formal and informal controls in predicting creativity.

2. Theoretical framework and hypotheses

2.1. Formal and informal controls and individual creativity

Management control system – MCS aims to conciliate individual and organizational goals (Malmi and Brown, 2008), including the search for innovation, conditioned to creative ideals (Adler and Chen, 2011; Bedford, 2015). The literature has pointed out that MCSs can generate creative thoughts (Jørgensen and Messner, 2009; Moulang, 2013; Bedford, 2015) or ideas that significantly solve a given problem when implemented (Moulang, 2013) manly in an environment where social exchanges dynamics encourage creativity (Ozturk and Karatepe, 2019). Based on Social Exchange Theory (SET) this study argues that the use of management controls may facilitate social exchange, as these controls establish standards, and allow communication, flexibility and interaction among employees when the search for creativity is aimed. In this vein, the literature noticed that the more the adoption of management controls by managers the more social exchanges occur, which make employees' efforts count on performance evaluation (Moilanen and Ikäheimo, 2019). However, depending on the type of

MCS, the effects on creativity may differ, and the degree of influence of informal controls on individual creativity may be different from the influence of formal controls.

Formal controls involve "action control" and "result control", reflecting the organization's expectations and seeking to standardize tasks (Simons, 1995; Henri, 2006; Widener, 2007). Because of its more rigid characteristic, this type of control can inhibit creativity (Davila *et al*., 2009). On the other hand, informal controls involve "cultural control" and "personnel control" to establish norms and values. They combine organizational objectives and employees' selective choices (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014), which can potentially lead to managers' creativity.

Studies have found evidence that informal controls lead to creativity (Williams, 2001; Bedford, 2015; Yong *et al*., 2020), as capacity building and training aligned with the organization's interest in disseminating creative ideas among managers increase the individuals' creative performance (Williams, 2001). Furthermore, cultural control brings together elements that guide the search for creativity (Bedford, 2015; Yong *et al*., 2020). For example, shared values facilitate interaction among managers and generate new ideas (Moulang, 2013; Bedford, 2015). This phenomenon occurs because the internalization of values channels efforts that increase individual creativity (Bedford, 2015), suggesting that informal controls have greater potential to predict managers' high creativity. As prior studies have provided divergent results, new studies are needed to underpin the expected different impacts of formal and informal controls on individual creativity. Through the signalization obtained from prior studies (e.g., Tucker et al., 2021), and based on SET, we believe that the impact of informal controls will be greater than the influence of formal controls. Thus, the first research hypothesis is as follows:

H_1: Informal control has more influence on individual creativity than formal control.

2.2. Formal and informal controls and trust

The MCS offers valuable information to managers during their work and seeks to maintain behavior standards (Otley, 1999). In complex environments, organizations increasingly use formal and informal controls to meet their goals (Chenhall, 2003; Merchant and Van der Stede, 2007; Adler and Chen, 2011; Kleine and Weißenberger, 2014). As a result, managers use controls extensively (Langevin and Mendoza, 2013), enabling more significant interaction and increased trust among themselves (Dirks and Ferrin, 2002).

Management control may offer conditions that strengthen communication, disseminate information, reduce role ambiguity and open debates that lead to an overview of social exchanges (mutual trust) (Lau and Tan, 2006). This occurs because the reciprocity between managers is influenced by norms, rules, and organizational structure (Brattström et al., 2012), which provides a context suggesting both formal and informal controls. We argue that firms' values and norms constitute an important part of formal and informal controls (Kleine and Weißenberger, 2014), that lead to social exchange and determine social integration. When trust is fostered within organizations the social exchange process may lead to knowledge sharing and improve firms' creativity in the products and services development (Ozturk and Karatepe, 2019). As previously suggested, firms' norms and values may influence trust by fostering interpersonal relationships and facilitating the dialogue which motivates integrity, reciprocity, good intentions and openness among employees in the workplace (Ozturk and Karatepe, 2019).

The characteristic of behavior restriction observed in formal controls (Goebel and Weißenberger, 2017) reduces the ambiguity of roles. This is because result control focuses on the organization's expectations (Abernethy et al., 2010), whereas action control focuses on routine tasks (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014). Thus, these

formal controls can help maintain interpersonal relationships (Kleine and Weißenberger, 2014), as managers may use them to express trust (Kleine and Weißenberger, 2014) and a guide to meet the organization's general goal (Hartmann et al., 2010). However, some studies show that there is a positive effect of formal controls on the quality of information (Gackstatter et al., 2019), project performance (Maqsoom et al., 2020), and product innovation (Pan Fagerlin and Lövstal, 2020). The literature also points out that formal controls can generate distrust by restricting the performance of employees in the organization (Reichert and Sohn, 2022). That is, formal control helps employees organize processes to a certain extent; however, excess formal controls through norms and standards can inhibit trust by limiting performance. Thus, from this point on, informal controls end up having a greater contribution to trust.

On the other hand, informal controls express the activity flows toward the organization's goals (Otley and Pierce, 1995). For example, cultural control encourages bonds and interaction among managers (Merchant and Van der Stede, 2007; Monteiro et al., 2022), and personnel control encourages employee training (Kleine and Weißenberger, 2014). These interactive characteristics of informal controls bring managers closer, as communication becomes more open and organizational values are better understood (Lau and Tan, 2006; Bedford, 2015; Bedford et al., 2019). Therefore, it is possible to say that formal controls can influence exchanges between managers, but informal controls have more influence on trust. The literature provides us with some clues that point to a more positive impact of value-based controls compared to calculative-based controls (Monteiro et al., 2022). While formal controls result in the close monitoring of activities, which can limit the performance of employees, informal controls end up generating a positive work environment based on empowerment and autonomy, which leads to greater trust (Gackstatter et al., 2019). In this sense, the second research hypothesis is given in two statements:

$H_{2a.}$ Formal controls positively influence trust.

$H_{2b.}$ Informal controls positively influence trust more than formal controls.

2.3. Trust and individual creativity

Trust is one of the elements of social exchange theory (SET) and aims to establish stable relationships (Blau, 1964). The literature suggests that trust influences managers' intentions in multiple ways (Ozturk and Karatepe, 2019). Studies have shown that trust is associated with innovative behaviors (Tan and Tan, 2000; Ozturk and Karatepe, 2019). Through behavior that follows the organization's norms, individuals expect benefits such as trust (Blau, 1964). This reciprocity between individuals is recurrent in the work environment (Whitener et al., 1998) and essential in creative environments (Madjar and Ortiz-Walters, 2009).

Studies have suggested that trust enables individuals to perform better at work (Colquitt et al., 2007; Ozturk and Karatepe, 2019). This issue is linked to creativity, as high levels of trust improve communication and information exchange (Lau and Tan, 2006), generating creative ideas (Madjar and Ortiz-Walters, 2009). Furthermore, interaction among individuals is a critical condition that promotes creativity (Zhang and Zhou, 2014). In these circumstances, managers debate goals and participate in elaborating plans and actions that give visibility to efforts toward increased creativity (Bedford et al., 2019). A work environment where managers are free to debate goals (Lau and Tan, 2006) probably offers conditions to inform different strategies to establish trust (Gustafsson et al., 2020), creating an exchange relationship that leads to a joint search for new ideas and solutions (Moulang, 2013). Therefore, trust increases creativity (Brattström et al., 2012; Zhang and Zhou, 2014), and this evidence supports the following research hypothesis:

H_3: A high level of trust among managers positively influences individual creativity.

2.4. Formal and informal controls, trust, and individual creativity

Formal and informal controls are essential for achieving organizational goals (Malmi and Brown, 2008; Kleine and Weißenberger, 2014), and interdependent tasks require greater interaction among managers (Adler and Chen, 2011). Formal and informal controls aim to promote individual creativity (Moulang, 2013; Bedford, 2015) since MCS influences managers' behavior (Malmi and Brown, 2008), such as innovative behavior. These processes require standardizing tasks and establishing goals in the organization (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014). In addition, they need cultural values that encourage more significant interaction among managers (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014; Bedford, 2015).

In a work environment with a strong MCS (Davila et al., 2009), social exchanges resulting from the closer relationship among managers reinforce the relationship between formal and informal controls and individual creativity. Theoretical evidence has suggested that managerial controls determine the level of social interaction in the work environment and, consequently, the degree of trust among managers (Lau and Tan, 2006; Kleine and Weißenberger, 2014). Another line of studies suggested an association between management controls and creativity (Jørgensen and Messner, 2009; Moulang, 2013; Bedford, 2015; Speklé et al., 2017). The usage of formal controls provides an alignment of tasks (Simons, 1995; Moulang, 2013), and the flexibility of informal controls broadens the panorama of communication and debate among managers (Kleine and Weißenberger, 2014; Bedford, 2015; Yong et al., 2020). Based on Social Exchange Theory, it's plausible to argue that the more trust between employees facilitates the impact of management controls the more individual creativity. This occurs because the process of obtaining information and task standards are compatible with the permanent search for creativity when the organizational environment fosters social exchanges that encourage trust among managers (Brattström et al., 2012). Therefore, the fourth research hypothesis is presented in two statements:

H_{4a}: Trust mediates the relationship between formal controls and individual creativity.

H_{4b}: Trust mediates the relationship between informal controls and individual creativity.

Figure I presents the research's theoretical model and the predicted hypotheses

[Figure I]

3. Methodology

3.1. Population and sample

This is a descriptive and quantitative study conducted through a survey. The population is managers of 423 firms listed on the Brazilian Stock Exchange (Brasil, Bolsa, Balcão – B3). The firms were selected because they present a more formalized management control (Widener, 2004), which is a crucial element for the research. Managers were approached via the social media platform LinkedIn. Data collection was carried out from December 2019 to March 2020.

The final sample corresponded to 124 firms' middle- and high-level managers, resulting in a 29.31% response rate. This rate is in line with research in the area (Bedford et al., 2019; Gomez-Conde et al., 2019; Anzilago et al., 2022).

Data analysis was conducted with preliminary tests before applying structural equation modeling (Hair Jr et al., 2016). The first test estimated the sample minimum, established in 92 responses according to the calculation in G*Power – it considered the effect size (0.15); significance level of $\alpha = 5\%$; and sample power of $1-\beta = 0.8$ (Faul et al., 2009). The second test observed common method bias, obtained by the Harman single-factor test (Abernethy et al., 2017; Gomez-Conde et al., 2019). The test found that, for the first factor, the total explained variance was less than 0.50, which suggests the absence of bias (Podsakoff et al., 2003). Finally, the nonresponse bias was evaluated through the mean difference test between the first 24 and the last 24. There were no significant differences between the groups, suggesting no bias (AfWåhlberg and Poom, 2015).

3.2. Measurement of variables and analysis procedures

The questions were drawn from the literature on formal and informal controls (Kleine and Weißenberger, 2014), trust (Robinson and Rousseau, 1994; Ozturk and Karatepe, 2019), and individual creativity (Wang and Netemeyer, 2004). The questionnaire was pretested by five academics in accounting and two managers.

3.2.1. Formal and informal controls

To measure managers' perception of formal and informal controls, we used the version of the instrument developed by Kleine and Weißenberger (2014), which was originally based on studies by Jaworski and MacInnis (1989), Kren and Kerr (1993) and Hutzschenreuter (2009). Formal controls were defined as written forms of control that relied on organizational results and operational actions to ensure that the firm´s goal was met. Respondents answered questions related to performance measures, feedback, monitoring, evaluation of employees' task accomplishment, and task routine definition, among others on a seven-point scale (1=strongly disagree to 7=strongly agree) (Kleine and Weißenberger, 2014). The questions of informal control were originally developed by Ouchi (1979), Snell (1992), Widener (2007), Hutzschenreuter (2009) and Wargitsch (2010). The variable informal controls was measured with ten items, which represent the cultural and personnel controls used by firms to achieve organizational goals. Managers were asked to indicate on a seven-point scale (1=strongly disagree to 7=strongly agree) whether the organization gives emphasis on codes, communicates the firm´s value to employees, motivates employees to work, gives opportunities and training to employees to broaden their skills, and implements adequate employee selection, among others.

3.2.2. Trust

The trust construct questions were developed by Robinson and Rousseau (1994) and adapted from the study by Ozturk and Karatepe (2019). Trust is understood as managers' psychological attachment to the organization and was measured on a seven-point Likert scale (1=strongly disagree to 7=strongly agree) with four items that involved integrity, reciprocity, good intentions and openness among others in the workplace (Robinson and Rousseau, 1994; Ozturk and Karatepe, 2019).

3.2.3. Individual creativity

The questions of the individual creativity construct were adapted from the study by Ozturk and Karatepe (2019), who adapted them from the study by Wang and Netemeyer (2004). Individual creativity is composed of six items on a seven-point scale (1=strongly disagree to 7=strongly agree), which captures whether managers carry out tasks in a creative way, have new ideas, generate alternatives for novel problems, find solutions for old problems, and improvise methods to deal with unanswered problems.

3.2.4. Control variables

Control variables were also included to better understand the effects of the main variable while they were controlled. Thus, gender, age, education and experience were considered based on management control literature (Mendes et al., 2017; Lopez-Valeiras et al., 2018; Gomez-Conde et al., 2019).

The PLS-SEM analysis technique was adopted (Hair Jr et al., 2016) to evaluate the relationship among the constructs using the PLS algorithm, bootstrapping, and blindfolding (Hair Jr. et al., 2016). Complementarily, the configurational approach based on FsQCA was used to verify the possible combinations that lead to the best configuration of a dynamic work environment that features high creativity. This technique combines Boolean algebra and fuzzy-set theory and helps find central and peripheral solutions (Ragin, 2009). Moreover, it is a technique well accepted in the business area (Roig-Tierno et al., 2017), specifically in management accounting studies (Frare et al., 2021; Monteiro et al., 2022), due to its potential for identifying "equifinality" (Fiss, 2011).

4. Analysis and discussion of results

4.1. Measurement model

The first stage of the SEM evaluated the constructs' reliability and validity. Reliability is assessed by composite reliability (CR), while validity is assessed by the AVE and Fornell-Larcker criterion and cross-loading (Hair Jr et al., 2016). Table 1 shows the results of the measurement model using the PLS algorithm technique.

[Table I]

According to Table 1, the reliability of the research instrument was confirmed (CR>0.70 for all constructs). Informal control had the highest CR (0.91), followed by formal control (0.90). The requirement for convergent validity was met (AVE>0.50 for all constructs) (Hair Jr et al., 2016). The construct trust had the highest AVE (0.68), followed by informal control (AVE=0.58). The discriminant validity was confirmed by cross-loading, the Fornell-Larcker criterion, and the HTMT criterion (<0.85) (Henseler et al., 2016). Finally, the model did not present collinearity problems (VIF<5). After confirming the adequacy of the constructs, we proceeded with the structural analysis.

4.2. Structural model

The structural model allowed the evaluation of the research hypotheses through path diagrams that aim to respond to the propositions observed in the literature. We carried out the bootstrapping technique considering 5,000 interaction subsamples and bias-corrected and accelerated bootstrap (Bca) (Hair Jr et al., 2016). Table 2 presents the results of the proposed hypotheses.

[Table II]

The first hypothesis (H_1) stating that informal control has more influence on individual creativity than formal control was supported (FC→CR: β=-0.063; p>0.10; IC→CR: β= 0.235; p<0.05). These findings suggest that, alone, action control and result control – because they have cybernetic characteristics – tend to inhibit managers' creativity, while cultural control and personnel control positively and significantly influence managers' creativity. Regarding Hypothesis H_2, the results showed that formal controls (β=0.347; p<0.01) and informal controls (β=0.412; p<0.01) are positively and significantly related to trust. Therefore, H_{2a} and H_{2b} were both supported, indicating that management control plays an essential role in establishing trust among managers in the organization. Regarding Hypothesis H_3, the findings supported the relationship between trust and individual creativity (β=0.249; p<0.05), confirming that a high degree of trust among managers positively influences individual creativity.

The mediation of trust in the relationship between formal control and individual creativity was also tested, confirming H_{4a} and H_{4b}. It was found that the indirect effect of the relationship between formal control, trust, and individual creativity was positive and significant (β=0.087; p<0.10), which means that formal controls only led to increased creativity if the organization had a healthy working environment, grounded on trust among managers. The mediation of trust in the relationship between informal controls and creativity was also evaluated, and partial mediation was observed (β=0.103; p< 0.10). This finding reinforces the importance of social exchanges among managers to promote individual creativity. The results largely supported the hypotheses and provided evidence that, in dynamic environments, formal and informal controls lead to greater trust, increase managers' autonomy to search for new ideas when seeking to solve problems and disseminate an environment of mutual learning and innovation while performing professional tasks.

4.3. Fuzzy-set Qualitative Comparative Analysis

In the complementary analysis, the variable formal controls were analyzed based on their first order. Action and results control (formal controls) were analyzed followed by the analysis of informal controls (personnel control and cultural control) separately. Trust and individual creativity were treated as previously tested in regression. These analyses aimed to understand the complementarities among independent variables in the prediction of the outcome. The constructs were calibrated using the 25th percentile for the full non-membership, the 50th percentile for the crossover point, and the 75th percentile for full membership, following Ali et al. (2016) and Bedford et al. (2016). The analysis of the necessary conditions suggests using the intermediate solution since none of the variables alone was always or almost always necessary (Lee and Raschke, 2020) to predict high creativity. Thus, we initialized the truth table considering the 0.80 consistency threshold. Table 3 shows the configuration of conditions that predict high creativity.

[Table III]

The FsQCA results showed that four solutions could predict the high creativity of managers in the studied organizations. Based on the "equifinality" approach, these solutions are equally effective for achieving high creativity (Fiss, 2011). The first solution demonstrated that the combination of *Action Control x ~Result Control x Personnel Control x ~Cultural Control* is shared by 18% and enables high creativity. The second solution shared by 15.4% combines *~action control x result control x personnel control x trust*. The third solution is shared by 17.5% and encompasses *~Action Control x Personnel Control x Cultural Control x Trust*. The fourth solution combines *Action Control x Personnel Control x ~Result Control x*

Cultural Control x Trust and is shared by 9.1% of respondents. Together, the four solutions have an explanatory power of 31.90% and 84.80% consistency to predict high creativity. These results demonstrate that formal and informal control may be combined to predict high individual creativity, supporting the contemporary debate in management accounting related to the benefits that the complementarity approach provides to the literature and organizational management.

4.4. Discussion of results

The research findings help to better understand how MCSs are useful in environments that demand creative managers. The study showed that the effect of informal controls on individual creativity is greater than the effects of formal controls. The findings demonstrated that the relationship between formal controls and individual creativity was negative and not significant. The tailored restrictive effect of formal controls (result control and action control) based on routine tasks and establishing specific performance goals (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014) is investigated in this study. While previous research noticed the undermining impact of formal controls on innovation behavior (Bisbe and Otley, 2004; Davila et al., 2009), our study recognizes that the relationship between formal control and creativity is complex but does not support the undermining impact of results and action control. On the other hand, informal controls positively and significantly influenced individual creativity. This finding is consistent with the literature that points out that MCSs generate new ideas and aim to solve problems (Moulang, 2013; Bedford, 2015; Speklé et al., 2017; Bedford et al., 2019). Cultural control encourages internalizing organizational values, sharing informal codes of conduct and knowledge of the organization's mission (Merchant and Van der Stede, 2007; Kleine and Weißenberger, 2014), and making managers prioritize the organization's strategies essential to creativity. These factors influence hiring processes since employees are carefully chosen according to the organization's norms and values (Kleine and Weißenberger, 2014; Goebel and Weißenberger, 2017).

The study also demonstrated that formal controls positively influence trust among managers, while informal controls positively and significantly influence individual creativity. The work environment facilitated interactions and generated obligations – which were fulfilled – among managers (Blau, 1964; Emerson, 1976). Thus, it is possible to say that managerial control plays a vital role in the work environment (Davila et al., 2009) since the use of formal controls in creative environments is essential, even though these controls are used on a smaller scale (Grabner and Speckbacher, 2016). These findings represent an advance in the literature on MCSs (Lau and Tan, 2006) and contribute to the theory of social exchange when offering evidence that MCSs are instruments that encourage the dissemination of reciprocity and mutual trust among managers.

Another contribution of this research is the evidence that trust positively influences individual creativity. That is, social exchanges in the work environment can generate divergences of ideas, which is healthy to foster creativity. These findings corroborate studies that showed a positive association between trust and creativity (Madjar and Ortiz-Walters, 2009; Ozturk and Karatepe, 2019). Managers perceived behavior of integrity among the entities in the hierarchy (Robinson and Rousseau, 1994; Ozturk and Karatepe, 2019), which fosters closeness among managers, increase trust (Lau and Tan, 2006), and internalized organizational values (Bedford, 2015). These factors are decisive for individual creativity (Brattström et al., 2012; Zhang and Zhou, 2014).

Finally, the findings indicated an indirect and positive effect of formal controls on individual creativity mediated by trust. Therefore, trust fostered by social exchanges in the work environment reinforces the influence of formal controls on managers' creativity so that the

mediating effect is total. There was also an indirect effect of informal controls on individual creativity, partially mediated by trust. These findings corroborate the literature (Lau and Tan, 2006; Moulang, 2013; Bedford, 2015), as management controls provide an environment of greater communication, which generates interpersonal trust (Lau and Tan, 2006) and increases managers' creativity (Moulang, 2013; Bedford, 2015). Thus, we suggest that firms intensify the effective use of management controls to enhance trust among individuals in the organization and incentivize the search for creativity.

The study's configurational approach allowed extending the contributions of the previous literature on MCS and trust. The results showed that the combination of formal controls (result control and action control) and informal control (cultural control and personnel control) in the work environment predict high individual creativity. Trust was also a central element among the solutions presented, which highlights its essential role in organizational success. Therefore, the research confirmed that the combination of managerial controls and trust leads to high creativity.

5. Conclusion

This study analyzed the influence of formal and informal controls on trust and individual creativity. Through structural equation modeling, the research revealed that the influence of informal controls (cultural control and personnel control) on individual creativity is greater than the influence of formal controls (action control and result control). In addition, it was possible to observe that formal and informal controls facilitate social exchanges among managers, as they positively and significantly influenced trust. It was demonstrated that environments that facilitate closeness among managers generate reciprocity and stable relationships based on trust, fostering creativity. The mediation of trust in the relationship between formal controls and creativity was total. On the other hand, the mediating effect of trust in the relationship between informal controls and creativity was partial. The FsQCA resulted in four possible solutions that reinforce previous findings and lead to managers' high creativity. Thus, it was confirmed that the combination of formal and informal controls and trust among managers enables high creativity.

This research generated theoretical implications that corroborate the literature on the relationship between management controls and individual creativity (Moulang, 2013; Bedford, 2015; Speklé et al., 2017). The findings suggested that informal controls are crucial to managers' creativity and motivate managers to rediscover their creative abilities. In addition, the results help explain how management controls influence the environment, promoting interaction among managers. The study advances by filling the gap regarding the interface between formal and informal controls and trust (Lau and Tan, 2006; Goebel and Weißenberger, 2017) under the lens of social exchange theory. The arguments that formal and informal controls increase managers' creativity as these professionals perceive a motivating organizational environment are reinforced. A motivating environment offers freedom and trust among managers so that new skills emerge while they perform their tasks (considering that managers achieve creativity through debate and differences of opinion at the operational/task level). This research contributes by presenting a dual approach that allows for the analysis of the results symmetrically, using PLS and FsQCA focusing on complex causal relationships (Ning, 2017), which enable the study to inform that formal (action and result controls) and informal control (personnel and culture controls) are complementary when predicting individual creativity.

Regarding practical implications, the findings obtained in this study help managers make better decisions regarding ways to motivate their employees. Senior management should encourage information sharing among managers, and formal and informal controls are vital to

achieving these ends. Additionally, considering that the managers' search for greater creativity presupposes satisfaction with the working conditions, organizations should pay greater attention to cultural control and personnel control when hiring individuals, seeking professionals with purposes aligned with those of the organization. Based on these findings, organizations are expected to invest in training their managers, and senior management should carefully assess the managers' skills, which can be decisive for organizational success.

The study's limitations suggest parsimony in the generalization of the findings. Future research could analyze the management control system's relationships based on the systems approach (diagnostic and interactive). In addition, it is suggested to include other elements of social exchange theory in future studies and consider examining organizational creativity, since creative organizations may be likely to encourage managers to be more creative. However, the search for creativity can lead managers to ambiguities (Zhang and Zhou, 2014). Therefore, we suggest future studies that aim to understand how managers can end up manifesting ambiguous ideas that limit creativity.

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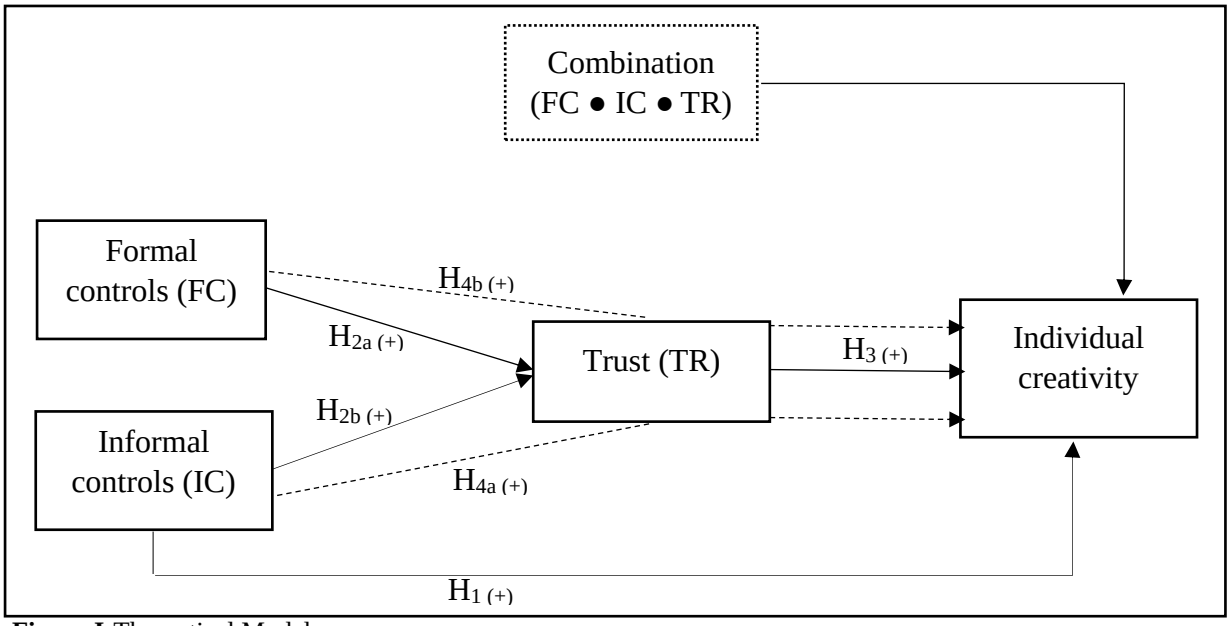

Figure I-Theoretical Model

→ Direct effect.

⇢ Indirect effect.

● fsQCA (further analysis).

Table I
Measurement model

Constructs	**CC**	**AVE**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1.Informal controls	0.918	0.583	**0.764**	0.568	0.676	0.395	0.094	0.169	0.148	0.226
2.Formal controls	0.901	0.537	0.511	**0.733**	0.628	0.249	0.102	0.152	0.226	0.196
3.Trust	0.895	0.682	0.590	0.558	**0.826**	0.406	0.249	0.125	0.088	0.135
4.Individual creativity	0.882	0.561	0.337	0.169	0.338	**0.749**	0.102	0.219	0.264	0.273
5.Gender	-	-	0.087	0.083	0.228	-0.002	-	0.102	0.126	0.043
6.Age	-	-	0.157	-0.111	0.111	0.215	-0.102	-	0.853	0.541
7.Tenure	-	-	0.099	-0.201	0.057	0.241	-0.126	0.853	-	0.538
8.Education	-	-	0.214	-0.149	0.121	0.258	0.043	0.541	0.538	-

Quality criteria	R^2	R^2 Adj	Q^2
Trust	0.478	0.451	0.293
Individual creativity	0.202	0.154	0.090

Note: The Diagonal refers to square root of AVE. Values below the diagonal indicate Fornell-Larcker while the values above indicate Heterotrait-Monotrait ratio.

Table II
Structural Model

Path analysis	**B**	**T-value**	**P-Value**		**Hypotheses**
Hypothesized path					
Formal controls → Individual creativity	-0.063	0.463	0.644	H_1	Supported
Informal controls→ Individual creativity	0.235	2.072	0.039**		
Formal controls →Trust	0.347	4.148	0.000***	H_{2a}	Supported
Informal controls →Trust	0.412	5.058	0.000***	H_{2b}	Supported
Trust → Creativity	0.249	2.056	0.040**	H_3	Supported
Formal controls→Trust→ Individual creativity	0.087	1.877	0.061*	H_{4a}	Supported
Informal controls → Trust → Individual creativity	0.103	1.723	0.085*	H_{4b}	Supported
Control variable					
Gender → Trust	0.176	2.583	0.010***		
Gender → Individual creativity	-0.058	0.628	0.530		
Age → Trust	0.031	0.282	0.778		
Age → Individual creativity	-0.105	0.585	0.558		
Tenure →Trust	0.075	0.673	0.501		
Tenure → Individual creativity	0.223	1.216	0.224		
Education → Trust	0.037	0.445	0.657		
Education → Individual creativity	0.137	1.353	0.176		

Note: Standardized coefficients, T-value and p-value are presented. ***, ** and *denote 1%, 5% and 10% significance levels respectively.

Table III.
Configurations for high individual creativity

Constructs	**Individual creativity**			
	1	2	3	4
Action controls	●	⊗	⊗	●
Result controls	⊗	●		●
Personnel controls	●	●	●	⊗
Cultural controls	⊗		●	●
Trust		●	●	●
Consistency	0.835	0.891	0.877	0.807
Raw coverage	0.180	0.154	0.175	0.091
Unique coverage	0.043	0.061	0.035	0.031
Overall coverage	0.319			
Overall consistency	0.848			

Note: Solid circles (●) indicate the presence and circles with a cross (⊗) demonstrate absence. Blank space suggests that the condition is "redundant".

Appendix A - Questionnaire

Formal controls	
Action controls (AC)	
FC1	Superiors monitor necessary steps regarding their employees' achievement of performance goals
FC2	Superiors evaluate the way in which employees accomplish an assigned task
FC3	Superiors define the most important work steps for routine tasks.
FC4	Superiors provide employees with information on the most important steps regarding the achievement of performance goals
FC5	Policies and procedures manuals define the fundamental course of processes.
Result controls (RC)	
FC6	Specific performance goals are established for employees.
FC7	Employees' achievement of performance goals is controlled by their respective superiors
FC8	Potential deviations from performance goals have to be explained by the responsible employees.
FC9	Employees receive feedback from their superiors concerning the extent to which they achieved their performance goals.
FC10	Variable remuneration components are linked to assigned performance goals*
Informal controls	
Personnel controls (PC)	
IC1	Our employees are carefully selected whether they fit our organization's values and norms.
IC2	Much effort has been put into establishing the best-suited recruiting process for our organization.
IC3	Emphasis is placed on hiring the best-suited applicants for a particular job position.
IC4	Training and development activities for employees are regarded as being very important.
IC5	Our employees receive numerous opportunities to broaden their range of skills.
Cultural controls (CC)	
IC6	In our organization, high emphasis is placed on sharing informal codes of conduct with employees.
IC7	Our mission statement conveys the organization's core values to our employees.
IC8	Top managers communicate the organization's core values to employees.
IC9	Our employees are aware of the organization's core values
IC10	Our employees perceive the values codified in our mission statement to be motivating.
Trust	
TR1	I believe my employer has high integrity
TR2	I can expect my employer to treat me in a consistent and predictable fashion
TR3	In general, I believe my employer's motives and intentions are good
TR4	My employer is open and upfront with me
Individual creativity	
CR1	I carry out routine tasks in ways that are resourceful
CR2	I come up with new ideas for satisfying customer needs
CR3	I generate and evaluate multiple alternatives for novel customer problems
CR4	I have fresh perspectives on old problems
CR5	I improvise methods for solving a problem when an answer is not apparent
CR6	I generate creative ideas for service and product

*Dropped due to low factorial loading