

# Do cultural controls and social media stimulate organizational innovation in startups?

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## Abstract

**Objective:** This article examines the role of cultural controls and social media in organizational innovation in startups. Complementarily, it analyzes the possible moderating effect of individual creativity on the relationship between social media and organizational innovation.

**Method:** A survey was carried out with 110 managers of startups incubated in Brazilian incubators. For the analysis of the data, the technique of structural equation modeling by partial least squares was used.

**Results:** The results show that cultural controls do not have direct effects on organizational innovation, however, indirect effects are found. In turn, social media proves to play a mediating role in this relationship, in addition to having a direct effect on organizational innovation. In contrast, individual creativity does not show a moderating effect on the relationship between social media and organizational innovation.

**Contributions:** The findings contribute to the literature by empirically demonstrating possible drivers of organizational innovation, with emphasis on social media, which has been shown to interfere in the magnitude of the relationship between cultural control and organizational innovation and direct effect on organizational innovation. This discovery has important implications for managerial practice in environments that have innovation at the core of their existence, as in the case of startups, since it provides a better understanding of the role of social media in promoting innovation.

**Keywords:** Cultural Controls; Organizational Innovation; Social Media; Startups.

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## Introduction

Organizations operating in competitive and rapidly changing environments face the challenge of adaptation, which requires a comprehensive understanding of internal and external factors that can enhance innovations (Müller-Stewens et al., 2020). According to Alsalamy et al. (2014), innovative managers who can motivate their teams are the ones who enable companies to adapt and achieve success. The role of managers appears to be crucial in this context, necessitating control mechanisms that can support their decision-making. Control can take on a formal and/or informal nature and play different roles within organizations (Goebel & Weißenberger, 2017).

Informal controls have received increasing attention within organizations (Goebel & Weißenberger, 2017), including in the context of startups (Davila et al., 2009; Taylor et al., 2019). These controls are primarily aimed at promoting positive behaviors within organizations (Merchant & Otley, 2007). Among informal controls, there is cultural control, which consists of beliefs, values, and norms (Goebel & Weißenberger, 2016, 2017; Kleine & Weißenberger, 2014). This is relevant for controlling attitudes and behaviors within organizations (Merchant & Van der Stede, 2007). Therefore, the focus is on the impact of cultural control on innovation within the startup environment.

Various control approaches can impact numerous types of innovation (Lopes et al., 2018; Munck et al., 2020; Pазetto et al., 2020). However, for innovative companies like startups (Davila et al., 2009), the findings are not yet conclusive. Typically having fewer resources when compared to large enterprises, small or early-stage companies rely on effective management capabilities for their growth (Bouncken, Pesch & Kraus, 2015). Furthermore, Müller-Stewens et al. (2020) caution that the relationship between control and innovation is more complex than the direct effects hypothesized in previous studies, as this relationship is influenced by other factors.

In the organizational context, including startups, the use of technology, digitalization, and the internet is a part of daily life. These elements have been changing traditional patterns of entrepreneurial activities and have been pointing towards new frontiers (Troise et al., 2022). The internet has become essential by enabling global interaction, communication, access to information, and facilitating social relationships (Gonçalves et al., 2012). As a result of the combination of these elements, various innovations have been shared with diverse audiences, including social media, which are online services that enable social interaction, communication, collaboration, and information sharing (Cheng & Krumwiede, 2018; Torres, 2009).

Social media has become a crucial resource due to its ability to drive business growth, especially for companies

like startups. These newly established enterprises, riddled with uncertainties and risks, can overcome initial challenges through the connectivity offered by social media (Naudé et al., 2014; Troise et al., 2022). The use of social media in the corporate environment is notable for its cost-effectiveness (Kaplan & Haenlein, 2010), which can encourage its adoption in small and medium-sized businesses. By connecting people globally and creating opportunities for knowledge and information sharing, these technologies possess characteristics that can work to enhance organizational results and processes (Ali et al., 2020; Troise et al., 2022).

Prior studies suggest that social media has implications for innovation (Bhimani et al., 2019; Ogink & Dong, 2019). While it is recognized that social media is critical for innovation, there is still a lack of explanations on how to leverage its use to achieve innovation outcomes (Muninger et al., 2022; Nijssen & Ordanini, 2020). Research on social media is fragmented, and findings are incongruent. Some authors highlight social media as a significant source of information, while others caution against overconfidence (He & Wang, 2016, Muninger et al., 2022; Piller et al., 2012). Researchers point out that the lack of management can hinder efforts to promote social media, and insufficient coordination can lead to information integration issues (Muninger et al., 2022; Roberts et al., 2016). Therefore, since control influences employees' perception of what is essential in their work (Merchant & Van der Stede, 2007), cultural controls guide employee behavior and may have an impact on social media.

It is also argued that the effect of social media on innovation can be enhanced by individual characteristics. Creativity is identified as a driving mechanism for organizational innovation (Anderson et al., 2014). Thus, it seems reasonable to assume that creativity is a precursor to innovation (Amabile et al., 1996). Therefore, it is conjectured that creativity has a moderating effect on the relationship between social media and organizational innovation. Organizational innovation pertains to the development or adoption of new ideas, behaviors, and other factors that create products, services, technologies, or new practices for the organization (Damanpour & Aravind, 2012).

Combinations of some of these constructs (cultural controls, social media, individual creativity, and organizational innovation) observed in the literature may not be sufficient, highlighting an important research gap. The interactions of these constructs appear to be essential for innovative companies, such as startups, which need to be both efficient and stimulate innovation simultaneously. Given the above, the objective of this study is to examine the effects of cultural controls and social media on organizational innovation. Additionally, the possible moderating effect of individual

creativity on the relationship between social media and organizational innovation is analyzed. To achieve this, a survey was conducted with managers of incubated startups, and the collected data were analyzed using structural equation modeling techniques.

This study contributes to the literature by empirically analyzing the interactions between cultural controls, social media, creativity, and organizational innovation. By expanding empirical understanding of the relationship between cultural controls and organizational innovation, it contributes by considering a comprehensive perspective. It advances management literature by empirically investigating whether the use of technology can enhance innovation, thereby indicating how social media can be used for the benefit of the organization (Roberts et al., 2016). It also contributes by associating individual and organizational aspects, such as analyzing the moderating effect of individual creativity on the relationship between social media and organizational innovation.

The research findings also provide guidance and encouragement for innovation-driven companies, such as startups, by investigating the effects of cultural controls on innovation mediated by social media. In doing so, incubated startups can ensure their continuity and enhance competitiveness. While previous studies have indicated an association between control and innovation, the literature is silent on the effects of technology on this relationship. The research findings highlight potential determinants of organizational innovation and the success of incubated startups, particularly concerning the relevant strategic factors for driving innovation.

## 2 Theoretical Framework and Hypotheses

### 2.1 Cultural Controls and Organizational Innovation

Control involves specifying standards to align the actions of members with the organization's objectives (Flamholtz et al., 1985). Among the forms that configure control are the formal and informal natures of control. Formal controls are identified as procedures and policies that direct employee behavior (Norris & O'Dwyer, 2004). Informal controls are mechanisms that lead to self-regulation (Chenhall, 2003; Ouchi, 1979). They are shared values, beliefs, and traditions that guide individuals' behavior (Norris & O'Dwyer, 2004).

Informal controls are classified by Goebel and Weißenberger (2017) into personnel control and cultural control. Personnel control is operationalized through selection, training, and job design (Merchant & Van der Stede, 2007), with the aim of controlling and enabling member motivation (Goebel & Weißenberger, 2017). On the other hand, cultural control is implemented and shared within organizations based on beliefs, values, and normative standards (Flamholtz et al., 1985) and has the potential to guide individuals toward

desired behaviors (Simons, 1995).

Small businesses often prioritize informal controls (Chenhall, 2003; Davila & Foster, 2009; Taylor et al., 2019). Theoretical and empirical evidence supports that different modes of control can contribute to different types of innovation in organizations (Munck et al., 2020; Pazetto et al., 2020). This relationship appears to be more pronounced in knowledge-intensive and technology-driven firms operating in uncertain environments (Lopes et al., 2018). Despite recognizing the relevance of informal controls in innovative contexts (Chenhall & Moers, 2015), the evidence is not yet conclusive.

When it comes to cultural controls, the literature is silent regarding their effects on innovation, particularly in the context of startups. Cultural controls are important because they foster a shared commitment through shared norms and values (Ouchi, 1979). The ability to reconcile values, driven by cultural controls, is valuable for promoting organizational innovation (Dougherty, 1992). Organizational innovation involves new ideas that lead to the creation of new services, products, or practices for the organization (Damanpour & Aravind, 2012).

Munck et al. (2020) identified patterns of management control that contribute to successful innovation. Pazetto et al. (2020) found the influence of MCS on the innovation of processes in incubated companies, with interactive use prevailing when the purpose is to promote process innovation. Lopes et al. (2018) found that different forms of using MCS in incubated companies have different implications for innovation. Rosa et al. (2022) found a positive relationship between cultural controls and environmental innovation in Brazilian publicly traded companies. Based on the above, it is proposed that:

**H1: Cultural controls have a positive and significant effect on organizational innovation.**

### 2.2 Cultural Controls and Social Media

Cultural controls, which consist of shared values, beliefs, and traditions, are meant to guide employees' behavior (Norris & O'Dwyer, 2004). Therefore, it is presumed that managers can encourage employees to use social media. Social media are online services (e.g., social networks, LinkedIn, Instagram, blogs) that allow for social interaction, communication, collaboration, and information sharing (Cheng & Krumwiede, 2018; Torres, 2009). They also enable the creation of content and the exchange of information in a fast and multidirectional manner (Zhang & Zhu, 2021).

Studies suggest that culture can influence the adoption of social media technologies, as well as employees' attitudes and behaviors regarding social media (Kim et al., 2011; Ramawela & Chukwuere, 2020). In general, control can impact employees' perception of what they deem important in their work (Merchant & Van der Stede,

2007). Specifically, cultural controls have the ability to shape employees' behavior (Norris & O'Dwyer, 2004). Therefore, it is assumed that cultural controls are beneficial for managers in guiding employees' behavior, directing them toward the use of media in favor of the organization. Based on the above, it is postulated that:

**H2: Cultural controls have a positive and significant effect on social media.**

### 2.3 Social Media and Organizational Innovation

Social media has been considered a facilitator of innovation within organizations (Bhimani et al., 2019). Parveen et al. (2016) argue that companies using social media are more predisposed to innovate in the way they do business. Muninger et al. (2019) emphasize that social networks can uniquely benefit innovation processes. It is possible for companies to use social media to capture ideas, facilitate sharing, and communication among individuals (Ali et al., 2020; Allen et al., 2018; Roberts et al., 2016).

Ogink and Dong (2019) emphasize that companies can use external knowledge to drive organizational innovation through social media. Interaction among individuals with similar ideas or common interests on social media creates new business opportunities (Hsieh & Wu, 2019). In the case of incubated startups, social media can boost collective intelligence for organizational innovation (Bhimani et al., 2019). This form of innovation involves new ideas and behaviors that enhance the creation of new practices for the organization (Damanpour & Aravind, 2012).

Cheng and Krumwiede (2018) investigated the potential of social media for collaboration and communication among supply chain partners for the development of new products. The results indicated that it is possible to leverage and support innovation processes through social media. Wang et al. (2016) suggest that social media have positive effects on communication, collaboration, innovation, and performance. Thus, it is hypothesized that:

**H3: Social media has a positive and significant effect on organizational innovation.**

### 2.4 Mediating effect of social media between cultural controls and organizational innovation.

Prior studies (e.g., Haussmann et al., 2020; Santos et al., 2022) have shown mixed results in the relationship between control and innovation, suggesting that other variables may affect this relationship. Haussmann et al. (2020) examined the influence of both formal and informal controls and learning on the innovation of companies in a Brazilian technology park. They found a positive relationship only for informal controls, which, when their direct effects on learning were analyzed, had positive effects, indirectly impacting innovation.

Santos et al. (2022) found that external stimuli can affect the relationship between different uses of MCS and innovation. Consistent with these arguments and results, it is conjectured that social media, as a contemporary and widely used form of communication, may mediate this relationship. Social media represents an intervening variable by providing consumers with a platform that allows interaction and access to information and exchange of values (Gonçalves et al., 2012; Kamboj & Rahman, 2017).

Giordani et al. (2023) examined antecedent factors that favor the use of social media and leverage innovation in startups. They found that the environment, measured by external pressure, and the organization, measured by internal readiness and strategic benefits dimensions, constitute antecedents to the use of social media. Cao et al. (2018) investigated antecedents of social media usage in a supply chain and point out that the environmental, technological, and organizational contexts serve as antecedents to the use of social media. Colombo and Beuren (2023) observed that the interactive use of performance measurement systems drives employee behavior.

It is conjectured that cultural controls and social media may contribute to organizational innovation for the following reasons: (i) social media can overcome the connectivity difficulties and limitations of early-stage companies (Troise et al., 2022); (ii) authors have pointed out a relationship between control and innovation (Lopes et al., 2018; Munck et al., 2020; Pazzetto et al., 2020); (iii) the literature suggests that social media can make innovation processes more efficient and effective, improving organizational procedures such as knowledge sharing and communication (Ali et al., 2020; Allen et al., 2018; Archer-Brown & Kietzmann, 2018; Troise et al., 2022). Therefore, it is presumed that:

**H4: Social media has a mediating effect on the relationship between cultural controls and organizational innovation.**

### 2.5 Moderating effect of individual creativity between social media and organizational innovation.

Previous studies (e.g., Chaubey et al., 2019; Chaubey et al., 2022) have noted that the relationship between organizational innovation and its antecedents can be altered by situational or personal factors, with the latter varying based on employees' values, attitudes, and behaviors. In this context, a significant antecedent of innovation is creativity.

In the organizational context, creativity involves conceiving new ideas that can be applied in activities, practices, processes, or products, so that when successfully implemented, they lead to innovation (Amabile et al., 1996). Creativity, when directed towards generating

and implementing new ideas within the organizational environment, tends to result in the development of innovative processes, products, and services, thereby fostering organizational innovation (Chaubey et al., 2019; Gumusluoglu & Ilsev, 2009).

In online user networks, such as those in social media, new ideas are generated or developed, and feedback is provided on the ideas posted (Ogink & Dong, 2019). When these new ideas are combined with creativity, they can generate new or enhance existing processes, products, and services (Scuotto et al., 2017). Therefore, it is postulated that startups with more creative individuals can amplify the effect of social media on organizational innovation. Thus, the hypothesis is as follows:

**H5: Individual creativity moderates the relationship between social media and organizational innovation.**

Figure 1 illustrates the theoretical model depicting the research hypotheses.

In the theoretical model, the following postulates are

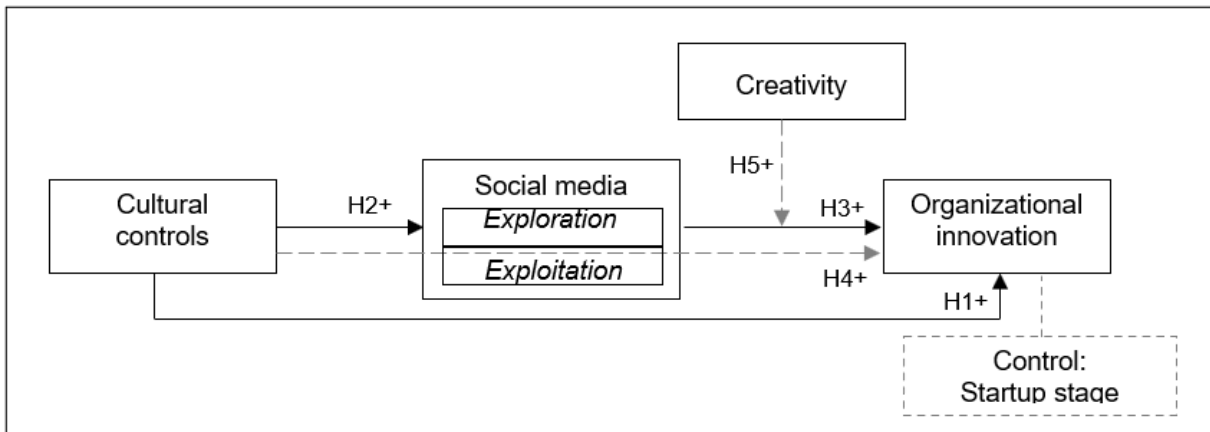
made: positive effects of cultural controls on organizational innovation (H1); positive effects of cultural controls on social media (H2); positive effects of social media on organizational innovation (H3); mediating effects of social media between cultural controls and organizational innovation (H4); and moderating effects of individual creativity between social media and organizational innovation (H5).

### 3 Method

#### 3.1 Population and sample

A survey was conducted with managers of startups residing in business incubators affiliated with the Association of Entities Promoting Innovative Enterprises (Anprotec). The identification of the companies took place on the business incubators' websites, where 1,347 startups were identified. The search for the managers of these companies was carried out on the LinkedIn professional network, and three to five respondents per company were selected, with a preference for managers at the managerial level.

A total of 959 managers of incubated startups identified



Note: The dashed arrows refer to the mediation (H4) and moderation (H5) hypotheses.

Figure 1. Theoretical model of the research

Source: Author's own elaboration.

in this network were invited to participate in the research, following the established criteria. Of the 523 managers who accepted the invitation, the research instrument was made available to them on the QuestionPro platform from November 2022 to May 2023. This process resulted in 110 valid responses, which is sufficient according to the minimum requirement of 77 responses, with a confidence level of 0.80 and a margin of error of 0.05, as determined by G\*Power (Faul et al., 2009). The sample size is consistent with previous studies in the Brazilian context that explored phenomena related to early-stage companies (e.g., Frare & Beuren, 2021).

The demographic analysis reveals that 70.9% of the respondents are male. Regarding their educational background, 27% have completed a bachelor's degree, and 30% have completed a specialization and/or Master in Business Administration (MBA). Concerning their positions within the startups, 22% hold executive C-level positions (such as CEO, CFO, COO, CTO), 23% are directors, 11% are managers, 3% are coordinators, and 40% hold various positions (e.g., analysts, developers, etc.). In terms of the startup profiles, 67% have fewer than 50 employees and operate in different economic sectors (e.g., agribusiness, education, finance, healthcare, services, technology, engineering). Regarding the incubation stage of the startups, 61 (55%) indicated that they are in the pre-incubation or incubation phase, and 49 (45%) have already graduated from the incubation program.

### 3.2 Research constructs and instrument

The theoretical model of the research comprises four constructs: cultural controls, social media, individual creativity, and organizational innovation. The constructs were measured using instruments (Appendix A) adopted in previous studies. The multi-items were assessed on a five-point Likert scale.

All research instruments were initially translated from English to Portuguese, and then a back-translation was done to ensure translation quality. The statements were adapted to the context of incubated startups, and the questionnaire was reviewed by three researchers in the field, who recommended only wording changes.

The construct of cultural controls was measured using items from Goebel and Weißenberger (2017). Respondents were asked to indicate to what extent each of the situations described in the six items applied to the cultural controls used by top management in the company, with 1 = does not apply and 5 = applies completely.

The construct of social media was measured using items from Freixanet et al. (2021), which aims to investigate the degree of agreement among individuals regarding the use of social media in their company through the exploitation and exploration of social media. Respondents were asked

to indicate their level of agreement with each of the seven items, with 1 = strongly disagree and 5 = strongly agree.

Individual creativity was measured using eight items from Moulang (2015). Respondents were asked to indicate the extent to which they engaged in certain creative activities in their job role, with 1 = almost never and 5 = almost always.

Organizational innovation was measured using items from Soomro et al. (2020). Respondents were asked to indicate their level of agreement with each of the three items regarding the level of innovation in their organization in new products and services, new methods of production, and delivery of services in the past three years, compared to their main competitors, with 1 = strongly disagree and 5 = strongly agree.

The literature suggests that larger and more experienced companies have higher levels of innovation (e.g., Baregheh et al., 2016; Guo et al., 2019). Therefore, the startup stage was considered as a control variable. It was coded as 0 for graduated startups (those that have gone through the incubation process but may still be affiliated with incubators) and 1 for pre-incubated and incubated startups (those going through the incubation process and receiving support from an incubator).

### 3.3 Bias test

To avoid Common Method Bias, several precautions were taken, such as using different research instruments, ensuring anonymity, providing clear instructions, including a cover letter, being cautious in translating and reviewing the statements, and communicating that there are no right or wrong answers. Despite these precautions, this article used data from a single source collected at a single point in time, making it susceptible to common method bias. Therefore, a Harman's single factor test was conducted using SPSS, which resulted in four factors. The main factor explained only 30.86% of the variance in the variables, which is below the established threshold of 50% (Podsakoff et al., 2012). Hence, it is unlikely that common method bias is a concern.

Another concern regarding data collection is non-response bias. To analyze this bias, the means of the first and last 10% of respondents were compared, which is representative of non-respondents (Gomez-Conde et al., 2021). However, no significant differences were found between the initial and final respondents. Therefore, the presence of these biases in the data analysis is unlikely.

### 3.4 Data analysis procedures

To analyze the data collected for the constructs, descriptive analysis and exploratory factor analysis techniques were applied. To test the hypotheses, structural equation

modeling (SEM) was used, estimated using the partial least squares (PLS) technique through the SmartPLS 4 software.

In the application of SEM-PLS, path analysis and bootstrapping with 5,000 resamples were conducted, resulting in direct relationships for direct effect hypotheses and total indirect coefficients for mediation hypotheses (Hair et al., 2019). All procedures recommended by Hair et al. (2019) for the measurement model and structural equation model were followed.

## 4 Data description and analysis

### 4.1 Mensuration model and descriptive statistics

In the measurement model, the model quality was assessed (Hair et al., 2019). In the confirmatory factor analysis, one item (CR18) was removed from the model due to negatively affecting validity and reliability criteria. Table 1 presents information regarding reliability and validity criteria, along with descriptive statistics.

Table 1. Mensuration model and descriptive statistics

Latent Variables/ Indicators	Discriminant Validity: Fornell-Larcker/HTMT				
	1	2	3	4	5
1. Cultural control	<b>0,781</b>	0,519	0,348	0,541	0,205
2. Social media	0,467	<b>0,795</b>	0,206	0,506	0,120
3. Individual creativity	0,284	0,170	<b>0,735</b>	0,290	0,108
4. Organizational innovation	0,458	0,439	0,253	<b>0,844</b>	0,267
5. Startup stage	-0,186	0,091	-0,112	-0,240	<b>1,000</b>
Mean	3,81	3,74	4,07	3,5	
Standard Deviation	1,10	1,21	0,88	1,08	
Mode	4	4	4	4	
Average Variance Extracted (AVE) $\geq 0.50$	0,610	0,632	0,541	0,713	
Cronbach's Alpha $\geq 0.70$	0,870	0,902	0,858	0,799	
Composite Reliability (CR) $\geq 0.70$	0,876	0,906	0,888	0,803	

Note: N=110. Values in bold represent the square root of AVE, and the lower left diagonal shows the correlation values, while the upper right diagonal presents the HTMT values.

Source: Research data.

The reliability is confirmed as the variables exhibit composite reliability and internal consistency (Cronbach's alpha) values greater than the minimum threshold ( $>0.70$ ) suggested by the literature (Hair et al., 2019). The results also indicate that the AVE values are higher than 0.50, signifying appropriate levels of convergent validity (Hair et al., 2019). The Fornell-Larcker criterion, which demonstrates discriminant validity, specifies that the square root of the AVE values should be greater than the absolute values of correlations between variables. Meanwhile, the Heterotrait-Monotrait (HTMT) criterion implies values below 0.90 (Hair et al., 2019), and both

criteria are met.

The Variance Inflation Factors (VIF) were also examined, which indicates the absence of multicollinearity among the latent variables, in line with the criteria provided by Hair et al. (2019). Based on the measurement model, the data are adequate and allow us to proceed to the structural model analysis stage.

### 4.2 Structural model and hypothesis testing

For hypothesis testing in the structural model, bootstrapping analysis was performed with 5,000 resamplings, bias-corrected confidence interval, and a two-tailed 5% significance level. In evaluating the structural model, the Pearson's coefficient of determination ( $R^2$ ) and predictive relevance ( $Q^2$ ) were considered. Additionally, the path coefficients (path), t-values, and p-values were obtained and are presented in Table 2.

Table 2. Results of the structural model: hypotheses testing

Hypotheses	Structural coefficient ( $\beta$ )	t-value	p-value	Decision
H1 Cultural controls -> Organizational innovation	0,191	1,845	0,065	Reject
H2 Cultural control -> Social media	0,466	6,165	0,000***	Do not reject
H3 Social media -> Organizational innovation	0,333	3,402	0,001***	Do not reject
H4 Cultural controls -> Social media -> Organizational innovation	0,155	3,061	0,002***	Do not reject
H5 Individual creativity X Social media -> Organizational innovation	-0,205	2,756	0,006***	Reject
CO Organizational innovation	-0,440	2,953	0,003***	Do not reject

Caption: CO = Control.

Note 1: N= 110. Significant at the level of 0.10\*; 0.05\*\*; 0.01\*\*\*.

Note 2: Structural model evaluation ( $R^2$ ): Social media 0.217; Organizational innovation 0.391.

Source: Research data.

The analysis of the coefficient of determination ( $R^2$ ), which indicates the predictive validity of the proposed model, shows a percentage of 21.7% for predicting social media and 39.1% for organizational innovation. For predictive relevance ( $Q^2$ ), results above zero were obtained, confirming the accuracy of the model (Hair et al., 2019).

The structural coefficients show that there is no direct relationship between cultural controls and organizational innovation, supporting the rejection of H1. Thus, it cannot be asserted that cultural controls have direct effects on organizational innovation.

H2, which posits significant positive direct effects of cultural controls on social media, found support and should not

be rejected. H3, which assumes significant positive direct effects of social media on organizational innovation, also found support and should not be rejected.

H4, which predicts mediation of social media in the relationship between cultural control and organizational innovation, found support and should not be rejected, with full mediation. This indicates that the relationship between cultural control and organizational innovation only becomes significant with the insertion of the mediating variable.

H5, which posits the moderating effect of individual creativity on the relationship between social media and organizational innovation, although it showed statistical significance, demonstrated a contrary force to what was expected. Therefore, this hypothesis was not statistically supported and can be rejected.

Finally, as a control variable, the effect of the startup stage on organizational innovation was tested. A significant effect ( $\beta = -0.440$ ;  $p > 0.003$ ) was found for group 0, meaning that already graduated companies promote higher levels of organizational innovation.

### 4.3 Results discussion

The research results do not indicate a direct positive effect of cultural controls on organizational innovation, supporting the rejection of H1. This result differs from the findings of studies that found a significant positive relationship between some form of control and different types of innovation (Lopes et al., 2018; Munck et al., 2020; Pazetto et al., 2020). The divergent findings may be due to the particularities or characteristics of the surveyed companies. They also reinforce that the relationship between control and innovation may be more complex than the direct effects explored in the literature (Müller-Stewens et al., 2020).

H2, which assumes significant and positive effects of cultural controls on social media, found support for not rejecting it. This finding is consistent with the argument that cultural controls can be useful in guiding employees' behavior toward the use of social media (Kim et al., 2011; Ramawela & Chukwuere, 2020). The underlying premise is that control can affect employees' perception of what is important in their work (Merchant & Van der Stede, 2007), and the role of cultural controls is to shape employees' behavior (Norris & O'Dwyer, 2004).

H3, which predicts significant and positive effects of social media on organizational innovation, was supported, allowing it not to be rejected. This result is in line with findings from Ali et al. (2020), Allen et al. (2018), Bhimani et al. (2019), Cheng and Krumwiede (2018), Ogink and Dong (2019), Roberts et al. (2016), and Wang et al. (2016), who in different contexts observed

the relevance of social media for innovation. It is argued that social media promotes organizational innovation by fostering innovation processes related to idea generation, interaction, communication, and information sharing.

H4, which assumes mediation of social media in the relationship between cultural control and organizational innovation, was supported, allowing it not to be rejected. This result confirms that cultural controls can induce the use of social media (Goebel & Weißenberger, 2017) and that social media can make innovation processes more effective (Ali et al., 2020; Allen et al., 2018; Archer-Brown & Kietzmann, 2018; Troise et al., 2022).

H5, which suggests the moderation of individual creativity in the relationship between social media and organizational innovation, showed statistical significance but was rejected due to the opposite effect presented. The strength of the relationship is negative, indicating that the relationship between social media and organizational innovation weakens with the presence of individual creativity. This suggests that individual creativity does not require external stimuli, as it is an intrinsic characteristic of the person. Thus, a creative individual does not necessarily need to use social media to be creative.

The research results align with what is considered almost adequate, indicating that there is no perfect formula for control in uncertain and innovative environments (Fried, 2017). It is also worth noting that previous studies have pointed out that older and larger companies have higher innovation rates due to their technical capabilities and technological alliances aimed at promoting innovation (e.g., Baregheh et al., 2016; Guo et al., 2019). In parallel to this, it was found that startups in the graduation stage show higher levels of organizational innovation because, in addition to being larger and older, they have received support from the business incubator and have a solution in the market.

## 5 Conclusion and implications

This study examined the role of cultural controls and social media in organizational innovation in incubated startups. It also analyzed the potential moderating effect of individual creativity on the relationship between social media and organizational innovation. The results showed that cultural controls do not have a direct effect on organizational innovation but have indirect effects. Social media has a mediating effect in this relationship as well as a direct effect on organizational innovation. The moderating effect of individual creativity on the relationship between social media and organizational innovation, despite statistical significance, showed a contrary direction to what was expected. In conclusion, higher levels of organizational innovation can be achieved through the alignment of cultural controls and the use of social media. The findings suggest possible drivers of



organizational innovation, such as social media, which influence the strength of the relationship between cultural controls and organizational innovation. This discovery could have significant implications for innovation-focused environments, such as incubated startups, by enhancing our understanding of the role of social media in promoting innovation.

The study has implications for the literature. First, it highlights the relevance of social media in organizations that focus on innovation, such as startups, emphasizing that technologies can be beneficially used in innovative contexts (Muninger et al., 2022; Nijssen & Ordanini, 2020). Second, it responds to the call for research that considers a relationship not as direct between control and innovation and that may have intervening variables to promote it (Müller-Stewens et al., 2020). Third, it adds value by examining the moderating effect of individual creativity on the relationship between social media and organizational innovation (Chaubey et al., 2019; Gumusluoglu & Ilsev, 2009), considering both individual and organizational aspects. Fourth, it contributes new knowledge to the literature on startups, a field that, despite its importance in a country's economy, has not received the recognition it deserves in academic research.

The research results also have implications for managerial practice. First, implications for startup management may arise from the non-significant results found in the direct relationship between cultural controls and organizational innovation. Managers may need to consider other intervening variables that affect the relationship between cultural controls and organizational innovation. Second, by highlighting that social media can have a positive impact on organizational innovation, it is essential for managers to better understand their effects to enhance their business and ensure its continuity. Third, in a world focused on digital technologies, it is crucial for companies in general and startups in particular to adapt to the environment and seize the opportunities that social media can provide. Fourth, it has social implications by pointing out that innovation benefits various stakeholders, whether through the conveniences it can offer or the employment opportunities it can create.

The research has several limitations, primarily related to methodological choices, which limit generalizations. Limitations such as the cross-sectional design may inspire further research using longitudinal data or different research methods, such as in-depth case studies or experiments. New studies could also explore other variables that might impact these relationships. Additionally, other typologies of management control systems (e.g., the Malmi & Brown package, 2008) could be considered in future research. An obvious extension would be to investigate the intensity and relevance of this use. Similarly, as only organizational innovation was considered, other types of innovation, such as open

innovation, product, and process innovation, could be explored. Lastly, the sample of incubated startups exhibits unique characteristics, necessitating replications of this research in other companies.

## Appendix A. Research Instrument

### Cultural Controls (Goebel & Weißenberger, 2017)

- CC1. Traditions, values, and norms play a significant role in our organization.
- CC2. In our organization, significant emphasis is placed on sharing informal codes of conduct with employees.
- CC3. Our mission statement conveys the core values of the organization to our employees.
- CC4. Our mission statement conveys the core values of the organization to our employees.
- CC5. Our employees are aware of the organization's key values.
- CC6. Our employees perceive the values encoded in our mission statement as motivators.

### Social Media (Freixanet et al., 2021)

#### Exploration de mídias sociais

#### Social Media Exploration

- MS1. We collect, monitor, analyze, and integrate social media data into the company.
- MS2. Social media helps the company identify internal and external talent.
- MS3. Social media helps the company understand market changes.
- MS4. Social media helps the company generate new ideas.

#### Social Media Exploitation

- MS5. Social media supports daily decision-making.
- MS6. Social media helps the company share knowledge.
- MS7. Social media helps the company provide customer service and support.

### Individual Creativity (Moulang, 2015)

- CR11. I regularly come up with creative ideas.
- CR12. I regularly experiment with new concepts and ideas.
- CR13. I regularly perform tasks in a creative manner.
- CR14. I often engage in problem-solving in intelligent and creative ways.
- CR15. I usually research potential innovations and improvements in my business unit.
- CR16. I often generate and evaluate multiple alternatives for new problems within my business unit.
- CR17. I frequently provide new perspectives on old problems.
- CR18. I usually improvise methods for solving a problem when a solution is not apparent.\*

Note: \*Item excluded.

### Organizational Innovation (Soomro et al., 2020)

IO1. The rate of new products or services in the organization has grown rapidly.

IO2. The rate of introducing new methods of production or service delivery in the organization has grown rapidly.

IO3. Compared to its competitors, the organization has become much more innovative.

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