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*Research Article*

# Intrapreneurial behavior and intrapreneurial organizational culture: An analysis of the influence on project success

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## Abstract

**Objectives:** Despite the great academic and practical interest in intrapreneurship, there are few studies that relate it to project success. The objective of this study is to determine the moderating influence of intrapreneurial organizational culture on intrapreneurial behavior and its relationships with project success. The study also aims to establish the heterogeneous profiles of intrapreneurship, and their different effects on the success of projects. **Method:** A survey approach was used, with data analysis by structural equation modeling, linear regression for moderation tests, and latent class analysis for the heterogeneous classification of the sample of 284 project participants in terms of intrapreneurship. Main results: The results show that there is influence of intrapreneurship of professionals on project success. On the other hand, a weak or average intrapreneurial organizational culture reduces the strength of the relationship between intrapreneurship and project success. **Theoretical contributions:** The study also identifies three heterogeneous profiles of intrapreneurs, and that organizational culture increases the possibility of project success, even for individuals with a low profile for intrapreneurship. Originality: This study pioneerly analyzes the relationship between individual and organizational intrapreneurship, as culture, for project success, directly and indirectly, with a diversified methodology. **Contributions to management**: The study suggests for practice the importance of intrapreneurial behavior for the success of projects, and the relevance of stimulating an intrapreneurial organizational culture, capable of mobilizing even less entrepreneurial individuals, to the extent that naturally intrapreneurial individuals are scarce.

**Keywords:** Intrapreneurship. Project Success. Intrapreneurial Organizational Culture. Team. Structural Equation Modeling.

## Comportamento intraempreendedor e cultura organizacional intraempreendedora: Uma análise sobre a influência no sucesso de projetos

## Resumo

**Objetivos:** Apesar do grande interesse acadêmico e prático sobre o intraempreendedorismo, são poucos os estudos que o relacionam ao sucesso de projetos. O objetivo deste estudo é determinar a influência moderadora da cultura organizacional intraempreendedora sobre o comportamento intraempreendedor e suas relações com o sucesso do projeto. O estudo objetiva ainda estabelecer os perfis heterogêneos de intraempreendedorismo e seus diferentes efeitos sobre o sucesso de projetos. **Método:** Utilizou-se como abordagem um survey, com análise dos dados por modelagem de equações estruturais, regressão linear para os testes de moderação, e análise de classes latentes para a classificação heterogênea da amostra de 284 participantes de projetos em termos de intraempreendedorismo. Principais resultados: Os resultados demonstram que há influência do intraempreendedorismo dos profissionais no sucesso de projetos. Por outro lado, uma cultura organizacional intraempreendedora fraca ou mediana, reduz a força da relação do intraempreendedorismo com o sucesso de projetos. **Contribuições teóricas:** O estudo identifica ainda três perfis heterogêneos de intraempreendedores, e que a cultura organizacional eleva a possibilidade de sucesso do projeto, mesmo para indivíduos com baixo perfil para intraempreendedorismo. Originalidade: Este estudo analisa pioneiramente a relação entre intraempreendedorismo individual e organizacional, como cultura, para o sucesso de projetos, direta e indiretamente, com uma metodologia diversificada. **Contribuições para a gestão**: O estudo sugere, para a prática, a importância do comportamento intraempreendedor para o sucesso dos projetos, e a relevância do estímulo à cultura organizacional intraempreendedora, capaz de mobilizar até mesmo indivíduos pouco empreendedores, na medida em que indivíduos naturalmente intraempreendedores são escassos.

**Palavras-chave:** Intraempreendedorismo. Sucesso de projetos. Cultura organizacional Intraempreendedora. Equipe. Modelagem de equações estruturais.

## INTRODUCTION

Intrapreneurship can be defined as the entrepreneurial behavior of employees within an organization, encompassing innovation, proactivity, self-renewal, and the ability to create new businesses (Blanka, 2019; Douglas & Fitzsimmons, 2012). Gawke et al. (2019) reinforce these characteristics by defining intrapreneurial behavior at the individual level, highlighting its connection to strategic renewal and business orientation. These employee attitudes are viewed as a renewal process that supports organizational change (Burström & Wilson, 2015a; Camelo-Ordaz et al., 2011). Furthermore, human capital is essential for organizations to innovate and address the various challenges posed by an unstable, uncertain, and constantly changing business environment (Teece, 2000).

In the current environment, companies need to innovate constantly to achieve better results (Bierwerth et al., 2015; Gawke et al., 2019; Kamil & Nasurdin, 2016). Intrapreneurship can accelerate innovations within organizations if employees with intrapreneurial behavior find an environment that supports the implementation of their ideas and projects. Therefore, companies should cultivate an innovation-friendly environment, encourage proactivity, and establish an organizational culture that empowers any employee to take initiative (Bau & Wagner, 2015). For example, this can be facilitated in organizations that develop projects in a more informal setting, without fixed positions, and with alternating roles for each project.

The importance of top management in stimulating an innovative environment fosters creativity and ideas within companies, allowing intrapreneurship to thrive (Dovey & McCabe, 2014; Manimala et al., 2006; Seshadri & Tripathy, 2006). Intrapreneurial behavior is thus linked to an organizational culture that supports and does not constrain it. This supportive environment is referred to as an intrapreneurial organizational culture (Bau & Wagner, 2015).

According to Bierwerth et al. (2015), intrapreneurship is associated with strong organizational performance. Research has identified intrapreneurship as a significant factor for business profitability and competitiveness (Felício et al., 2012; Gawke et al., 2017; Kamil & Nasurdin, 2016). When intrapreneurial behavior contributes to organizational success, it can also be considered a factor related to project success. However, studies directly addressing this relationship are scarce, highlighting a gap in the literature.

The study by Martens et al. (2018) linked entrepreneurial orientation with project success, demonstrating that entrepreneurship at the organizational level contributes to the good performance of projects. Sakalauskas et al. (2023) analyzed the positive effects of intrapreneurial behavior of project managers on project success. Similarly, this study examines the relationship between intrapreneurship and project success, focusing on the analysis of intrapreneurial employees and intrapreneurial organizational culture as a moderating factor.

Considering these premises, this research aims to answer the following question: What are the contributions of intrapreneurship to project success, mediated by intrapreneurial organizational culture? The objective is to identify the influence of intrapreneurial behavior on project success and to what degree this relationship is moderated by intrapreneurial organizational culture. Other goals of this study include exploring the relationship between intrapreneurship and project management, determining the moderating role of organizational culture, and presenting the different heterogeneous groups in the sample regarding the effects of intrapreneurship on the study variables. The results demonstrate the influence of intrapreneurship, showing that a weak or moderate intrapreneurial organizational culture negatively moderates the relationship between intrapreneurship and project success. Additionally, the results identified three heterogeneous profiles of individuals involved in projects who, when stimulated by an environment of intrapreneurial organizational culture, will favor project success.

Following this introduction, the structure of the paper includes a brief review of the literature, a description of the research method, a presentation and discussion of the results, and final considerations.

## THEORETICAL FOUNDATION

### Intrapreneurship

An intrapreneur is an individual who exhibits entrepreneurial actions and, as a result, generates value within organizations (Douglas & Fitzsimmons, 2012; Blanka, 2019). Antoncic and Antoncic (2011), as well as Taştan e Güçel (2014), clarify the concept of intrapreneurship by focusing on the individual and noting that the construct is a branch of entrepreneurship.

Currently, studies investigate ways to encourage intrapreneurship within organizations, understanding it as a path to develop the company's entrepreneurship through innovativeness and creativity (Deprez et al., 2018). Some studies explore the intrapreneurship process in specific markets, such as healthcare (Lages et al., 2016) and education (Farrukh et al., 2017). Additionally, research examines the relationship of intrapreneurship with other constructs, such as leadership (Deprez & Euwema, 2017) and entrepreneurial orientation (Martens et al., 2018). The literature also highlights the relevance of top management support and organizational culture for the development of intrapreneurship in organizations (Deprez et al., 2018).

Gawke et al. (2019) detailed intrapreneurship through a two-factor model: (i) strategic renewal behavior – aimed at innovativeness within the organization through processes, projects, and general initiatives; (ii) business-oriented behavior – referring to attitudes within the organization aimed at the emergence of new businesses, related to the employee's risk-taking behavior.

According to Gawke et al. (2019), these two behaviors are interconnected, with each comprising a factor of the model. They also assert that a two-factor model is more precise than a unidimensional, single-factor model. Intrapreneurial behavior is thus composed of a combination of strategic renewal and business-oriented behaviors. This second-order model is used in this study. Therefore, we adopted the approach of these authors, focusing on the analysis of intrapreneurial employees to examine intrapreneurial behavior.

### Project Success

Project management is increasingly studied and valued in organizations. Various perspectives highlight the interest of researchers and practitioners in what constitutes project success, ranging from its measurement (De Witt, 1988), differentiating the success of project management to the influence of communication (Cervone, 2014), the role of the project manager and types of projects (Muller & Turner, 2007), its relationship with efficiency (Serrador & Turner, 2015) and planning (Dvir et al., 2003), its relationship with governance (Joslin & Müller, 2016, Derakhshan et al., 2019), organizational aspects (Englund & Graham, 2019), project management practices (Mesa et al., 2019), and other widely addressed aspects in the existing literature (Albert et al., 2017). There is consensus in the literature on the need to monitor project success, including its antecedents and consequences.

Project management methodologies are adaptable and provide significant improvements in the control and organization of projects (Carvalho & Rabechini Jr., 2017). According to Shenhar and Dvir (2007), there are various types of projects, defined by their complexity, technology involved, level of innovation, and urgency. Therefore, good project performance refers to the study of project

success. Turner e Muller (2005) present a different perspective on project success, relating it to leadership styles that enable the project to succeed from the project manager's viewpoint.

Initially, the definition of project success was based on the "iron triangle," where scope, time, and cost are measured (Pollack et al., 2018). However, with the increasing complexity of projects and their contexts, this measure began to show flaws, and other factors started to be studied to complement the measurement of project success. There are numerous examples of projects that exceed the planned duration or cost but are still considered successful (Shenhar & Dvir, 2007). In summary, the "iron triangle" approach may not cover all possible variables for measuring project success, and various studies have been developed to complement this definition.

One of the most widely used approaches to measure project success is the model proposed by Shenhar and Dvir (2007). This approach allows for a comprehensive evaluation of the project by assessing not only time, cost, and scope, but also the impact of the project on the user, team, client, and organization in various aspects. Shenhar and Dvir propose a second-order model composed of five relevant analysis dimensions, covering most types of projects in terms of complexity and technology involved: (i) efficiency, which assesses compliance with timeline, budget, and scope; (ii) impact on the client, evaluating customer and user satisfaction, as well as meeting requirements; (iii) impact on the team, assessing the motivation and satisfaction of the project team; (iv) direct and commercial success, measuring return on investment, profitability, or resource savings; and (v) preparation for the future, assessing new businesses or projects generated from the original project. This multidimensional approach provides a more complete view of project success compared to the traditional "iron triangle" analysis (Martens et al., 2018). Therefore, we adopted the multidimensional approach to project success by Shenhar and Dvir (2007) in this study.

Regarding entrepreneurship, Martens et al. (2018) identified that the greater the individual entrepreneurship, the greater the project's success. Similarly, Chou (2018) suggests that the involvement of users and beneficiaries in social projects leads to the success of social entrepreneurship projects. Nair (2020) sfurther highlights the role of female entrepreneurship as an antecedent to the success of entrepreneurial projects. Studies like these provide accumulating evidence of a positive relationship between entrepreneurship and project success. Conversely, while studies suggest a link between intrapreneurship and project success, this relationship is not always direct and may be conditioned by certain factors.

There are characteristics of project managers that are highly relevant to intrapreneurs and vice versa(Sundarbabu & Venkatachalam, 2021), as innovation is a common goal for both roles (Feldmann & Teuteberg, 2019). However, there is still a lack of studies exploring the direct relationship between intrapreneurship and project success, or indirect influences such as organizational culture.

## Intrapreneurial Organizational Culture

The existing literature unanimously acknowledges the influence of organizational culture on organizational outcomes (Abu-Jarad et al., 2010, Cui & Hu, 2012). This understanding extends to innovative behaviors, which thrive within a network of shared values among the organization and its members (Tian et al., 2018). Klofsten et al. (2021) observe that fostering an innovative culture in organizations requires not only structures for innovation but also values, norms, a market-oriented culture, openness to new ideas, and rewards for innovative behavior, thus forming an institutionalized entrepreneurial culture.

Empirical studies indicate a relationship between innovative culture and intrapreneurship. Gursoy and Guven (2016) identified the positive effects of innovative culture on intrapreneurship, including innovation, risk-taking, proactivity, self-determination, and expanding individual networks. Sinha and Srivastava (2016) found that intrapreneurship positively affects successful innovation strategies, providing competitive advantages. Other studies corroborate the favorable effects of intrapreneurship on organizational outcomes, such as performance (Felício et al., 2012), innovative behavior of the team (Ahmad et al., 2012), and successful strategies for organizational internationalization (Dung & Giang, 2021).

Intrapreneurial organizational culture is the culture that supports the development of innovations from within the company at all hierarchical levels (Smith et al., 2016). The corporate environment that allows for innovation, is welcoming of errors, and aims for the greater good of entrepreneurship, is the type of organization that intrapreneurs seek. Intrapreneurs need a supportive environment where they do not fear the consequences of failure (Smith et al., 2016).

Bau and Wagner (2015) present organizational culture as a key factor in defining the intrapreneurial attitudes of employees. According to these authors, an organizational structure can support intrapreneurship through specific practices and resources. An environment with a strong intrapreneurial organizational culture is considered conducive to intrapreneurship because it allows ideas to be thoroughly evaluated before implementation. Thus, intrapreneurial behavior is directly related to organizational behavior, specifically to organizational culture. Companies must stimulate an environment of innovation, creativity, and ideas to allow intrapreneurship to thrive (Dovey & McCabe, 2014; Manimala et al., 2006).

The study by Bau e Wagner (2015) on organizational culture evaluated employees at all levels, from operational to strategic. As a result, the authors propose four dimensions to measure intrapreneurial organizational culture (also called corporate entrepreneurship culture): quality and effectiveness of leadership; collaboration, information, and innovation; market and product know-how; and tasks and responsibilities. In this research, we adopted this approach to intrapreneurial organizational culture.

## Reconciling intrapreneurship, intrapreneurial organizational culture, and project success: development of the model and hypotheses

The study of the relationship between intrapreneurship, intrapreneurial organizational culture, and project success is innovative, as a large volume of existing research on these constructs is qualitative (Mahmoud et al., 2020). Project success requires alignment between team members and project managers to achieve results in terms of customer impact, team performance, organizational preparedness for the future, efficiency, and commercial success. This diverse range of aspects brings challenges for project outcomes that can reconcile the views of various stakeholders. Innovations can enhance results by enabling the development of new processes, products, and approaches. Moreover, the performance of project teams is enhanced by intrapreneurship (Ahmad et al., 2012), leading to favorable results for the organization.

As intrapreneurship fosters innovative behavior, it is expected to contribute to positive project outcomes, especially when entrepreneurship is embedded in individuals and the culture surrounding them. A favorable environment for entrepreneurship within the organization finds fertile ground in intrapreneurs, enhancing beneficial results for organizational activities. The success of a project goes beyond operational results, reaching distinct and complementary dimensions, and benefits from an intrapreneurial atmosphere fostered by such behaviors.

In the study by Burström and Wilson (2015a), intrapreneurship was identified as the necessary connection for project success. In a subsequent study, the same authors (2015b) associated the intrapreneurial attitudes of individuals with the intrapreneurial actions of the company, creating the concept of intrapreneurial ambidexterity and presenting project success as a result of this association. Murthy et al. (2016) attribute one of the project success factors to the intrapreneurship of two employees in their study.

The growing research in the field of entrepreneurship supports the conceptual approach linking the themes of entrepreneurship (entrepreneurial orientation) and project success (Martens et al., 2018). As intrapreneurship is a subarea of entrepreneurship, there is a connection between the constructs of intrapreneurship and entrepreneurial orientation. Both share common characteristics: innovativeness, proactivity, and risk-taking behavior (Gawke et al., 2019). Therefore, if entrepreneurial orientation is related to project success, it stands to reason that intrapreneurial behavior could also be related to project success due to the similarities between the constructs.

The literature indicates that intrapreneurship contributes to the good performance of organizations (Bierwerth et al., 2015; Antoncic & Antoncic, 2011; Felício et al., 2012). Similarly, it is suggested that the intrapreneurial behavior of employees can contribute to project success (Sakalauskas et al., 2023), as well as to the success of organizations. Thus, the first hypothesis of this study emerges:

*H1: The intrapreneurial behavior of project professionals positively influences project success.*

Walmrath et al. (2015) assert that the intrapreneurship of employees involved in the company's continuous improvement projects demonstrates that a strong organizational culture is a crucial factor for fostering intrapreneurship within organizations. Dovey and McCabe (2014) evaluated three unsuccessful projects, despite the presence of individuals with intrapreneurial characteristics. Their case studies show that organizational culture can diminish the intrapreneurial effectiveness of an employee working on a project. Without support from top management and with a weak organizational culture, intrapreneurship may not influence project outcomes. This indicates that intrapreneurship thrives in the presence of a robust intrapreneurial organizational culture. In an organizational culture that does not accept, allow, or support intrapreneurial behavior, intrapreneurial employees will lose momentum, hindering their actions and decreasing the success of the organization's projects.

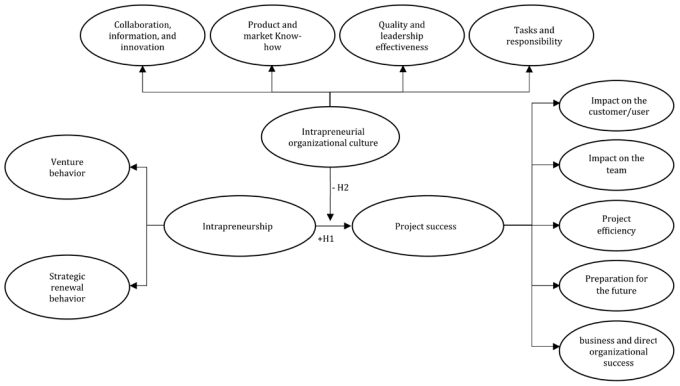
Several studies point out the existence of an organizational culture that fosters intrapreneurship as an important factor for the development of intrapreneurial behaviors of employees (Dovey & McCabe, 2014; Manimala et al., 2006; Seshadri & Tripathy, 2006; Walmrath et al., 2015). These studies highlight the importance of an organizational culture that supports intrapreneurial behavior. Thus, it is possible to identify a moderating effect by the change that occurs in the relationship between two constructs, due to the influence of a third variable, which can be a negative or positive force (Hair et al., 2019). Based on this information, the following hypothesis is proposed:

*H2: The influence of intrapreneurial behavior on project success is reduced in a weak intrapreneurial organizational culture.*

Figure 1 presents the model of this study. In hypothesis 1 (H1), the independent variable is intrapreneurship, and the dependent variable is project success. In hypothesis 2 (H2), intrapreneurial organizational culture is the moderating variable of the relationship.

**Figure 1**

*Conceptual model of relationship among constructs*




Note: Elaborated by the authors.

## METHODOLOGICAL APPROACH

In this research, we employed a quantitative approach, conducting a survey complemented by additional analysis techniques to achieve the specific objectives of the study (Saunders et al.l, 2009). The sample consisted of professionals working on projects in companies located in Brazil, with data collected through web questionnaires using the Sphinx program, a specialized tool for scientific research via the Internet. The data analysis technique was structural equation modeling (Hair et al., 2016), supplemented by analyses of conditional effects (Hayes & Montoya, 2017), and latent class analysis (Weller et al., 2020).

### Research instruments

The questionnaire was based on the intrapreneurship scale by Gawke et al. (2019), validated by Sakalauskas et al. (2023), the project success scale by Shenhar and Dvir (2007), and the intrapreneurial organizational culture scale by Bau and Wagner (2015). The instrument was designed with a Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

A *Employee Intrapreneurship Scale* (EIS) (Gawke et al., 2019) includes two factors: the first factor, related to strategic renewal behavior, consists of 8 assertions; the second factor, related to venture behavior, consists of 7 assertions. We chose the EIS because it is a recent, validated study on the behavior of intrapreneurial employees. The original scale is available in English and Dutch. The scale was translated and presented to respondents in Portuguese, done through back-translation (Behling & Law, 2000).

We also adopted the Shenhar and Dvir (2007) scale, known as the Project Success Assessment (PSA), which consists of five dimensions: project efficiency, impact on the customer, impact on the team, business and direct organizational success, and preparation for the future. The number of assertions ranges from 4 to 6 per dimension. The scale proposed by Shenhar and Dvir (2007) is widely used by project researchers (Mir & Pinnington, 2014; Martens & Carvalho, 2016; Carvalho & Rabechini Jr., 2017; Martens et al., 2018) as a reference for measuring project success.

Intrapreneurial organizational culture was assessed using the Corporate Entrepreneurship Index (CESi) by Bau and Wagner (2015), which includes four dimensions: quality and effectiveness of leadership; collaboration, information, and innovation; market and product know-how; and tasks and responsibility. The number of assertions ranges from 3 to 12 per dimension. Although there are many scales for measuring organizational culture (Bavik, 2016), this study specifically focused on measuring intrapreneurial organizational culture, which guided the selection of the scale. This scale was developed with an emphasis on the individual, consistent

with the other scales used in this study. As the original scale is in English, we performed a back-translation (Behling & Law, 2000) into Portuguese for application to the respondents.

### Data collection procedures

The unit of analysis for this study was the individual participating in a project, regardless of their position (project manager or not), working in companies located in Brazil. The questionnaire was shared online and disseminated in project management study groups and related subjects, using social networks such as LinkedIn and Facebook. Additionally, we used an indirect approach, inviting any professional willing to respond, with the option of anonymity. The authors also contacted project professionals, university professors, and researchers in the field of administration, among others, to help disseminate the questionnaire.

We conducted a pre-test to validate the research instrument with five participants who were not part of the main sample. The pre-test respondents provided minor suggestions, most of which were accepted, primarily involving changes to the instructions for user completion. The layout was also modified for a more pleasant appearance. The pre-test took approximately 15 days. O tempo de pré-teste levou aproximadamente 15 dias.

The required sample size for this study was calculated using G*Power version 3.1.9.4, based on the study by Ringle et al. (2014). The power was adjusted to 0.95, as indicated for the area of applied social sciences according to the study by Bido et al. (2010). The minimum sample suggested was 107 respondents; however, we obtained 284 valid responses by the end of data collection and initial exploratory analyses of multicollinearity and multivariate outliers.

### Data analysis procedures

The methodological procedures comprised three stages. We adopted a mixed approach for data analysis to gain a more detailed understanding of the phenomenon. Initially, we used structural equation modeling to refine the proposed conceptual model and test the direct hypothesis (H1). We employed the repeated indicators approach for partial least squares structural equation modeling (PLS-SEM) for three reasons: first, besides being traditionally used, this approach entails fewer biases (Sarstedt et al., 2019, p. 198). Secondly, this choice is justified based on Hair et al. (2016, p. 251), who discuss the two-step approach as an alternative for second-order models with moderation; however, it does not allow for observing moderation along the organizational culture.

Finally, in this study, we chose to analyze moderation using the model proposed by Hayes (2022, p. 269), cwith the use of PROCESS macro 1, as this approach allows the analysis of the Johnson-Neyman (JN) point, where the occurrence of the moderating effect can be observed, allowing for a better understanding of the phenomenon. Besides, the macro also allows estimating effects based on bootstrapping, a robust technique producing confidence intervals of the effects. When conducting a moderation analysis, the results indicate if there is a moderating effect, causing a change in the relationship between two variables due to the effect of a third. With JN, we can estimate at which moments the moderation occurs (and/or does not occur), presenting the result (probing) along the *continuum* of the moderating variable. This is not possible with the two-stage approach.

To test the moderation of intrapreneurial organizational culture, we adopted the moderation analysis proposed by Hayes and Montoya (2017), which is based on confidence intervals and reduces the possibility of incorrectly accepting evidence of the alternative hypothesis compared to other techniques. Since the phenomenon starts from an individual characteristic—the intrapreneurship of the individual—we assessed the heterogeneity of this characteristic in the sample. We adopted the procedures proposed by Weller et al. (2020) for latent class analysis, generating distinct groups, which were compared through a MANOVA (Multivariate Analysis of Variance) (Hair et al., 2019) to identify the unobserved heterogeneous profiles within the sample.

### Structural Equation Modeling

The data analysis was initially conducted using structural equation modeling, which allows for the complex and simultaneous analysis of multiple variables within the phenomenon under study (Hair et al., 2016). This tool can be used for data that is either normally or non-normally distributed, which is one of its advantages; however, non-normal data necessitate a larger sample size (Hair et al., 2016). For the initial analyses, we used the SmartPLS M3 program. The study by Ringle et al. (2014), guided this analysis, with the steps presented in Tabela 1.

**Table 1**

*Steps used in the structural equations modeling analysis*

| Indicator / process | | Purpose |
|---|---|---|
| 1 | VIF analysis | Assess data multicollinearity |
| 2 | AVE (Average variance extracted) | Convergent validities |
| 3 | Cross loads | Discriminant validity |
| 4 | Fornell and Larcker criterion | Discriminant validity |
| 5 | Cronbach's alpha | Model reliability |
| 6 | *Bootstrapping / Student's t-test* | Assessment of significance |
| 7 | Pearson coefficient | Assessment of variances of endogenous variables |
| 8 | Cohen indicator ($f^2$) | Assessment of constructs about the model |
| 9 | Predictive validity indicator ($Q^2$) | Assessment of the accuracy of the fitted model |
| 10 | Path coefficients (Γ) | Assessment of predictive relationships |
| 11 | $R^2$ value | Evaluates the explanation of the dependent variable |

Note: Adapted from Ringle et al. (2014).

### Moderation analysis

Moderation refers to the effect of an intervening variable on the relationship between a predictor variable and an outcome variable. In other words, it addresses questions like "when" a variable affects the relationship between two other variables. Through moderation, it is possible to observe whether the moderating variable intensifies or attenuates the relationship between these variables. This analysis produces a confidence interval for the moderating effect, allowing the observation of significance and non-nullity.

We conducted the moderation analysis using IBM SPSS v.27 with the PROCESS® macro 4. The choice of Hayes' macro is a more robust approach than direct moderation testing in the structural model, as it allows for the observation of a confidence interval for the moderating effect. The test is based on a large number of resampling iterations, reducing type I errors, and also enables the calculation of the Johnson-Neyman point, which indicates the specific point at which moderation occurs (Hayes, 2022).

### Análise de heterogeneidade

To analyze the intrapreneurial profiles of the sample, we conducted a Latent Class Analysis, following the procedures proposed by (Weller et al., 2020). This technique allows for the identification of latent structures within the sample that represent different groups of individuals with respect to a variable of interest. In this study, we

used this technique to observe different groups of project managers based on their intrapreneurial profiles. Based on these results, we analyzed and compared the responses of these groups and their effects on project success through a MANOVA, complemented by a *post hoc* Tukey test, which is more suitable for a greater number of multiple comparisons.

For model adjustment, we observed the AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) indicators. It is important to note that these indicators should be evaluated based on their magnitude—the smaller, the better—as these criteria compare possible models and suggest the amount of information loss in composing a possible solution (Weller et al., 2020). AIC is a measure that allows inference about how well the sample fits the data and its potential to predict outcomes. The BIC criterion assesses the fit of complex models. Both criteria have their advantages and disadvantages, so we chose to use both and graphically observe the inflection of the curve of these indicators to determine the optimal solution.

## ANALYSIS AND DISCUSSION OF RESULTS

The analysis of the profiles of the 284 respondents allowed us to identify the predominant characteristics of the sample: male professionals (73%), working in the IT sector (46%), with postgraduate academic training (49%), and more than 11 years of professional experience in projects (45%). Most respondents are active in companies located in the state of São Paulo, Brazil (68%). The sample also shows that the majority of respondents are in the role of project manager (59%), with an average age of 39 years, and are working with small teams (62%) consisting of up to 10 members.

### Validation of the proposed model

After preparing the database, we applied statistical tests as guided by Ringle et al. (2014). Initially, we identified convergent and discriminant validity, as well as the fit of the data to the proposed model. First, we verified the Variance Inflation Factor (VIF) of the final sample of 284 respondents using the SPSS program to analyze the multicollinearity of the variables in the proposed model. Variables with a VIF value equal to or greater than 5.0 were removed from the model to avoid issues with multicollinearity (Hair et al., 2016). Consequently, the variables GS1 (General success, VIF = 6.195), LQE (Leadership quality and effectiveness), LQE3 (VIF = 5.141), LQE4 (VIF = 6.247), LQE9 (VIF = 6.134), LQE11 (VIF = 5.334), CII (Collaboration, information, and innovation), CII8 (VIF = 10.392), and CII9 (VIF = 7.099) were removed.

Following this, we found the factor loadings of the items to be satisfactory and balanced, with a reference value of 0.708 (Hair et al., 2016). High factor loadings indicate that the variables and dimensions are well-adjusted to the model (Hair et al., 2019). After this analysis, we performed convergent and discriminant validity tests in SmartPLS4 for model adjustment through confirmatory analysis. The use of the partial least squares technique is justified in this study due to the predictive objectives of the research, the possibility of non-normality in the data, a reduced sample size, and the reduction of total errors (Ringle et al., 2014).

After confirming that the average variance extracted (AVE) for convergent validity was above 0.5 for all dimensions, we evaluated the square root of the AVE using the Fornell and Larcker criterion for discriminant validity (Hair et al., 2016). According to this criterion, the square root of the AVE of a construct must be greater than its correlation with other variables. The next analysis was the cross-loading test for discriminant validity (Appendix A). In this test, the value of each item should be higher for its respective variable than for others.

The structural model explained 36.8% of the variance in project success. We also evaluated the model's reliability indices (Cronbach's Alpha and composite reliability), as well as convergent validity (AVE > 50%) and discriminant validity (the square root of the AVE of a construct being higher than its correlation with other constructs), all achieving the established parameters, as demonstrated in Table 2.

The model demonstrated a high capacity to interpret the construct of project success (dependent variable), which is explained through intrapreneurship and the interaction of intrapreneurial organizational culture (Hair et al., 2016). Additionally, the model's accuracy values ($Q^2$) and the effect size of the variables ($f^2$) were evaluated. Table 3 presents these indicators and confirms that intrapreneurship had the greatest effect on the model.

The construct of intrapreneurship shows the highest $f^2$ value (.531), while the constructs of project success and intrapreneurial organizational culture present very close values (Hair et al., 2016). The fact that the $f^2$ effect is greater in the intrapreneurship variable indicates its higher relevance in the tested conceptual model.

**Table 2**

*Reliability, convergent, and discriminant validity of the model dimensions*

| Dimensions | AVE | CR | $R^2$ | CA | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .587 | .908 | .792 | .882 | **.766** | | | | | | | | | | |
| 2 | .601 | .913 | .846 | .889 | .312 | **.775** | | | | | | | | | |
| 3 | .616 | .828 | .545 | .694 | .390 | .291 | **.785** | | | | | | | | |
| 4 | .631 | .911 | .693 | .882 | .513 | .288 | .642 | **.794** | | | | | | | |
| 5 | .710 | .925 | .714 | .898 | .374 | .228 | .571 | .616 | **.843** | | | | | | |
| 6 | .715 | .883 | .397 | .802 | .486 | .315 | .296 | .402 | .367 | **.846** | | | | | |
| 7 | .555 | .882 | .657 | .840 | .385 | .289 | .517 | .583 | .574 | .385 | **.745** | | | | |
| 8 | .622 | .929 | .793 | .912 | .699 | .234 | .424 | .539 | .473 | .397 | .368 | **.788** | | | |
| 9 | .643 | .926 | .866 | .906 | .335 | .712 | .324 | .319 | .252 | .239 | .252 | .283 | **.802** | | |
| 10 | .710 | .936 | .737 | .918 | .336 | .268 | .526 | .568 | .669 | .374 | .648 | .345 | .208 | **.843** | |
| 11 | .574 | .870 | .665 | .814 | .630 | .356 | .502 | .514 | .432 | .532 | .352 | .606 | .400 | .342 | **.757** |

Notes: AVE = Average variance extracted. CR = Composite reliability. $R^2$ = Coefficient of determination. CA = Cronbach's Alpha. Values in bold on the diagonal are the square root of the AVE. Numbering in the first column of the table corresponds to the dimensions of the constructs: 1. Collaboration, information, and innovation (IOC), 2. Venture behavior (INTRA), 3. Project Efficiency (PS), 4. Impact on the team (PS), 5. Impact on the customer/user (PS), 6. Product and market know-how (IOC), 7. Preparation for the Future (PS), 8. Quality and leadership effectiveness (IOC), 9. Strategic Renewal Behavior (INTRA), 10. Business and direct organizational success (PS), 11. Tasks and Responsibility (IOC). IOC = Intrapreneurial organizational culture; INTRA = Intrapreneurship; PS = Project success. Elaborated by the authors.

**Table 3**

*Evaluation of the model's dimensions and constructs ($Q^2$) and precision ($f^2$)*

| Dimensions and constructs | $Q^2$ | $f^2$ |
|---|---|---|
| Intrapreneurship | | .531 |
| Strategic renewal behavior | .552 | |
| Venture behavior | .503 | |
| Project success | .155 | .415 |
| Impact on the customer/user | .501 | |
| Business and direct organizational success | .482 | |
| Impact on the team | .435 | |
| Preparation for the future | .353 | |
| Project efficiency | .322 | |
| Intrapreneurial organizational culture | | .414 |
| Quality and leadership effectiveness | .488 | |
| Collaboration, information, and innovation | .458 | |
| Tasks and responsibility | .377 | |
| *Product and market know-how* | .264 | |

Note: Elaborated by the authors.

## Hypothesis testing

After validating the model, with $R^2$=36.8%, we conducted hypothesis testing using bootstrapping for direct relationships and hierarchical regression analysis for moderation (Hair et al., 2016). All hypotheses were confirmed, as shown in Table 4.

**Table 4**

*Results of hypothesis tests*

| Hypothesis | Structural relationship | Original coefficient | t-test [CI][1] | p-value | Status |
|---|---|---|---|---|---|
| H1 | Intrapreneurship -> Project success | .136 | 2.391 | .017 | Confirmed |
| H2 | Moderation of intrapreneurial organizational culture in the H1 relationship | -.101 | -2.869 [-.110; -.032] | .001 | Confirmed |

Note: [1] CI = Confidence interval. Elaborated by the authors.

Hypothesis 1 describes the positive and significant influence of intrapreneurship on project success, and it was confirmed (H1: Γ = .136, $t_{(284)}$ = 2.391, p<.05). This demonstrates that the greater the intrapreneurial behavior, the greater the project success. This result corroborates previous studies (Burström & Wilson, 2015a; Burström & Wilson, 2015b; Rigtering & Weitzel, 2013) that consider the intrapreneurship of the project team, not just the behavior of the project manager. This finding expands the discussion on intrapreneurship, previously focused on the role of the project manager, by showing that the intrapreneurship of any team member can influence project success.

The results also confirmed Hypothesis 2, revealing the moderation of intrapreneurial organizational culture in the relationship between intrapreneurship and project success (*effect* = - .101, IC [-.170; -.032], $t_{(284)}$ = - 2.869, p<.05 ). A negative moderating effect was identified, indicating that intrapreneurial organizational culture, at low and medium levels, reduces the strength of the influence of intrapreneurial behavior on project success. This observation aligns with the qualitative study by Dovey and McCabe (2014), which reported on failed projects, contrasting with the typical focus on successful projects in intrapreneurship studies. Thus, this study presents indicators of weak organizational culture and a lack of support for projects, showing that these factors, along with the intrapreneurial behavior of those involved, directly impact project success.

For a better understanding of this moderation result, we performed an analysis based on the Johnson-Neyman test (Hayes & Montoya, 2017), which showed that moderation occurs up to a certain point but not at all levels of intrapreneurial organizational culture. This test differs from other moderation tests by allowing not only the determination of the occurrence of moderation but also the specific interval in which it occurs, since it is not observed throughout all values. Table 5 presents the moderation intervals of intrapreneurial organizational culture identified through the Johnson-Neyman test, above the dashed line.

**Table 5**

*Points of moderation of intrapreneurial organizational culture*

| IOC[1] | Effect | SD[2] | t-test | p-value | Lower CI[3] | Upper CI[3] |
|---|---|---|---|---|---|---|
| 2,087 | .445 | .119 | 3.750 | .000 | .211 | .678 |
| 2,333 | .420 | .111 | 3.799 | .000 | .202 | .638 |
| 2,578 | .395 | .103 | 3.853 | .000 | .193 | .597 |
| 2,824 | .370 | .095 | 3.911 | .000 | .184 | .557 |
| 3,070 | .346 | .087 | 3.973 | .000 | .174 | .517 |
| 3,315 | .321 | 0.80 | 4.037 | .000 | .164 | .477 |
| 3,561 | .296 | .072 | 4.100 | .000 | .154 | .438 |
| 3,807 | .271 | .065 | 4.156 | .000 | .143 | .400 |
| 4,052 | .247 | .059 | 4.192 | .000 | .131 | .362 |
| 4,298 | .222 | .053 | 4.188 | .000 | .118 | .326 |
| 4,543 | .197 | .048 | 4.109 | .000 | .103 | .291 |
| 4,789 | .172 | .044 | 3.909 | .000 | .086 | .259 |
| 5,035 | .148 | .042 | 3.542 | .000 | .066 | .230 |
| 5,280 | .123 | .041 | 2.998 | .003 | .042 | .203 |
| 5,526 | .098 | .042 | 2.331 | .020 | .015 | .181 |
| 5,653 | .085 | .043 | 1.968 | .050 | .000 | .170 |
| 5,772 | .073 | .045 | 1.634 | .103 | -.015 | .161 |
| 6,017 | .048 | .049 | .989 | .323 | -.048 | .145 |
| 6,263 | .024 | .054 | .437 | .663 | -.083 | .130 |
| 6,509 | -.001 | .060 | -.019 | .985 | -.120 | .117 |
| 6,754 | -.026 | .067 | -.388 | .698 | -.157 | .106 |
| 7,000 | -.051 | .074 | -.687 | .493 | -.196 | .095 |

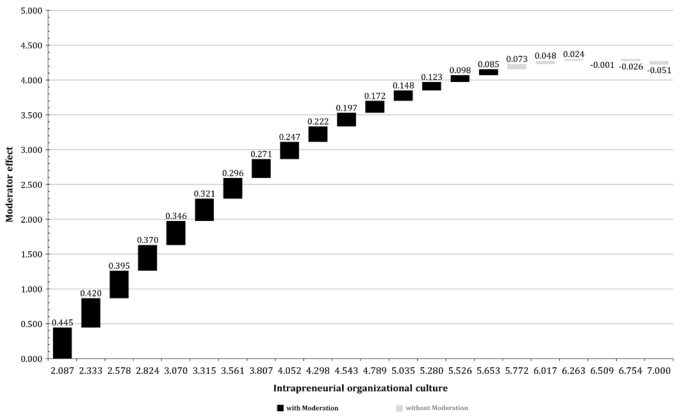
Notes: [1] IOC = Intrapreneurial organizational culture. [2] SD = Standard deviation. [3] CI = Confidence interval. Elaborated by the authors.

Moderation occurred from low levels of intrapreneurial organizational culture up to a threshold of 5.653, as shown in Figure 2. Figure 2 also illustrates the evolution of the level of intrapreneurial organizational culture, showing that a weak culture moderates the influence of intrapreneurship on project success. However, a strong intrapreneurial organizational culture ceases to moderate this relationship, meaning it no longer alters the strength between intrapreneurship and project success. This confirms the theory that organizational culture allows intrapreneurship to flow but does not necessarily boost or increase intrapreneurial behavior.

The results indicate that a strong level of intrapreneurial organizational culture does not alter the strength of the relationship between intrapreneurial behavior and project success, either negatively or positively. However, levels of weak or moderate intrapreneurial organizational culture can reduce the effect of intrapreneurial behavior on project success.

**Figure 2**

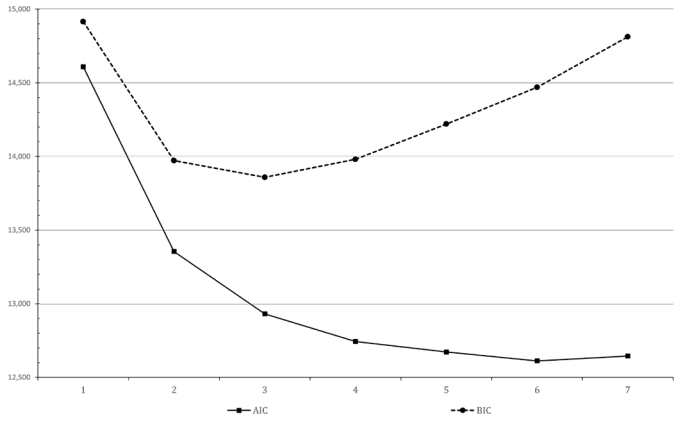
*Moderation of intrapreneurial organizational culture on the relationship between intrapreneurship and project success*




Note: Elaborated by the authors.

**Figure 3**

*BIC and AIC criteria*




Note: Elaborated by the authors.

## Effects of heterogeneity of intrapreneurship in individuals

To understand the manifestation of the intrapreneurial characteristic in the sample and its impacts, we conducted a latent class analysis. Table 6 presents the fit criteria for seven proposed solutions.

We also observed the number of parameters for the desired class solution, ensuring it continues to grow with the proposition of solutions, as well as the decrease in Log Likelihood. The LR/Deviance (1) indicator points to how much the model deviates from the ideal and should be as low as possible. From this table, we observed that an ideal solution appears to be between 3 and 4 classes. Figure 3 shows the graphical view of AIC and BIC.

A Figure 3 shows that the optimal class solution is between 3 and 4 classes, where there is an inflection in the curves. Subsequently, we analyzed the percentage of participants in each class. Observing the proportion of individuals indicates a solution of up to 7 classes (7% in this class). Figure 3 then demonstrates that the 3-class solution is ideal, showing the most probable point of inflection. Thus, we opted for a 3-class solution based on the intrapreneurial profile. From this solution, we analyzed the remaining items of the construct and assigned a general meaning to each one to compose a category. This is shown in Table 7.

Based on Table 7, we grouped the items of the same category to compose a continuum of intrapreneurship through its dimensions. We created categories in each dimension of the construct, such as Strategic Renewal Behavior (SRB) and Venture Behavior (VB). The category "realize" represents the individual's inclination to deliberately execute some activity. Another category was named "creatie/propose" to generalize the individual's inclination to conceive new activities or innovative processes. After this categorization, the analysis based on the three identified classes is represented in Figure 4.

Regarding the Strategic renewal behavior (SRB) dimension, Figure 4 shows that Class 1, similar to Class 3, has more "realize" individuals than Class 2, although all three classes show a declining trend in the "realize" category. There is also a tendency for growth in the "create-propose" category.

For the Venture behavior (VB) dimension, the capacity and intention to "realize" is lower in all three classes, although higher in Classes 1 and 3. There is an exception concerning the conception of new projects (VB5, "I undertake activities that result in new projects within my organization"), which increases in the VB dimension, likely due to the most pressing activity in the sample.

In summary, for both the SRB and VB dimensions, individuals are less inclined to "realize" and more oriented towards "create/propose".

**Table 6**

*Adjustment criteria for the seven initial proposed classes*

| Indicators | Statistics | | | | | | |
|---|---|---|---|---|---|---|---|
| Number of complete cases | 284 | 284 | 284 | 284 | 284 | 284 | 284 |
| Number of estimated parameters | 84 | 169 | 254 | 339 | 424 | 509 | 594 |
| Residue Density Function | 200 | 115 | 30 | -55 | -140 | -225 | -310 |
| Maximum Log Likelihood | -7.220 | -6.508 | -6.212 | -6.033 | -5.912 | -5.797 | -5.729 |
| AIC | 14.608 | 13.355 | 12.931 | 12.744 | 12.673 | 12.612 | 12.645 |
| BIC | 14.915 | 13.971 | 13.858 | 13.981 | 14.220 | 14.469 | 14.813 |
| LR/Deviance | 11.234 | 9.811 | 9.218 | 8.860 | 8.619 | 8.388 | 8.251 |
| Chi-square | .001 | .001 | .001 | .001 | .001 | .001 | .001 |
| Number of repetitions | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

Note: Elaborated by the authors.

**Table 7**

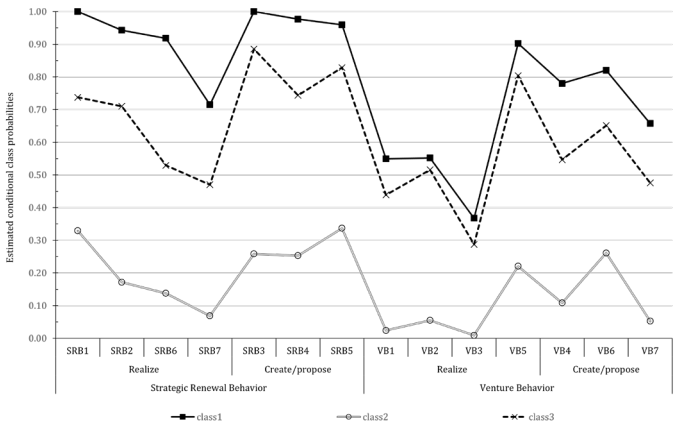
*Categorization of intrapreneurship items*

| Construct | Item | Code | Category |
|---|---|---|---|
| Strategic renewal behavior | I undertake activities to realize change in my organization. | SRB1 | Realize |
| | I undertake activities to change the current products/services of my organization. | SRB2 | Realize |
| | I contribute ideas for strategic renewal for my organization. | SRB3 | Create/Propose |
| | I conceptualize new ways of working for my organization. | SRB4 | Create/Propose |
| | I utilize the insights of other experts to innovate in my organization. | SRB5 | Create/Propose |
| | I undertake activities that change the structure of my organization. | SRB6 | Realize |
| | undertake activities that change the work practices of my organization. | SRB7 | Realize |
| Venture behavior | I undertake activities to set up new business units. | VB1 | Realize |
| | I undertake activities to reach new markets or communities for my organization. | VB2 | Realize |
| | I undertake activities that result in new departments outside of my organization. | VB3 | Realize |
| | I conceptualize new ways of service for my organization. | VB4 | Create/Propose |
| | I undertake activities that result in new projects within my organization. | VB5 | Realize |
| | I actively establish new collaborations with experts outside of my profession. | VB6 | Create/Propose |
| | I conceptualize new products for my organization. | VB7 | Create/Propose |

Note: Elaborated by the authors.

**Figure 4**

*Intrapreneur classes and profiles*




Note: Elaborated by the authors.

Therefore, we named Class 1 "Visionary Intrapreneurs," which represents the minority, with n=49 (17.3%) of the sample. We named Class 3 "Potential Intrapreneurs," given its similarity to Class 1, with n=121 (42.8%) of the sample. Finally, we named Class 2 "Reluctant Intrapreneurs," with n=113 (39.9%) of the sample. In the VB dimension, "Reluctant Intrapreneurs" tend to grow and emulate the behavior of the visionaries. However, in the VB dimension, they distance themselves from intrapreneurship.

The next step was to consider the different responses of the classes and compare them through a MANOVA, which is a technique that allows for multiple comparisons of differences among means (Hair et al., 2019). The "Potential Intrapreneurs" and "Reluctant Intrapreneurs" classes are the most opposed, making it relevant to pay more attention to comparing these two classes. Initially, the means of the first-order constructs were compared to observe distinct or converging evaluations, as seen in Table 8.

**Table 8**

*Comparisons among classes in constructs*

| Construct | Intrapreneur Class | Mean | Class | p-value | Lower CI[1] | Upper CI[1] |
|---|---|---|---|---|---|---|
| Project success | 1. Visionary | 5.926 | 2 | .001 | 0.436 | 1.185 |
| | | | 3 | .011 | 0.081 | .824 |
| | 2. Reluctant | 5.115 | 1 | .001 | -1.185 | -.436 |
| | | | 3 | .009 | -0.644 | -.072 |
| | 3. Potential | 5.474 | 1 | .011 | -0.824 | -.081 |
| | | | 2 | .009 | 0.072 | .644 |
| Intrapreneurial organizational culture | 1. Visionary | 5.775 | 2 | .001 | 0.488 | 1.277 |
| | | | 3 | .086[a] | -0.034 | .747 |
| | 2. Reluctant | 4.892 | 1 | .001 | -1.277 | -.488 |
| | | | 3 | .001 | -0.827 | -.225 |
| | 3. Potential | 5.418 | 1 | .086[a] | -0.747 | .034 |
| | | | 2 | .001 | 0.225 | .827 |
| Intrapreneurship | 1. Visionary | 5.678 | 2 | .001 | 2.319 | 2.840 |
| | | | 3 | .001 | 0.651 | 1.167 |
| | 2. Reluctant | 3.098 | 1 | .001 | -2.840 | -2.319 |
| | | | 3 | .001 | -1.869 | -1.471 |
| | 3. Potential | 4.769 | 1 | .001 | -1.167 | -.651 |
| | | | 2 | .001 | 1.471 | 1.869 |

Notes: [1] CI = Confidence interval. [a] Not statistically significant at 5%. Elaborated by the authors.

The identified classes of intrapreneurs differ in all constructs except for intrapreneurial organizational culture, where Classes 1 and 3 (the closest) do not have a statistically significant difference (Visionary = 5.775 vs. Potential = 5.418, p = .086). In the other constructs, we observed that the higher the level of entrepreneurship, the more positive the responses for organizational climate and project success.

Thus, an effort was made to compare the results of the moderation of intrapreneurial organizational culture on the relationship between individual intrapreneurship and project success among the classes. These results can be observed in Table 9.

**Table 9**

*Direct Effects on Project Success and Organizational Culture Moderation*

| Class (Code) | | Direct effect | Lower CI[1] | Upper CI[1] | Moderation | Lower CI[1] | Upper CI[1] |
|---|---|---|---|---|---|---|---|
| Visionários | (1) | .525 | -.520 | 1.571 | -.590 | -.242 | .124 |
| Relutantes | (2) | 1.277 | .179 | 2.375 | -.233 | -.466 | 2.023 |
| Potenciais | (3) | .938 | -.971 | 2.846 | -.167 | -.508 | .174 |

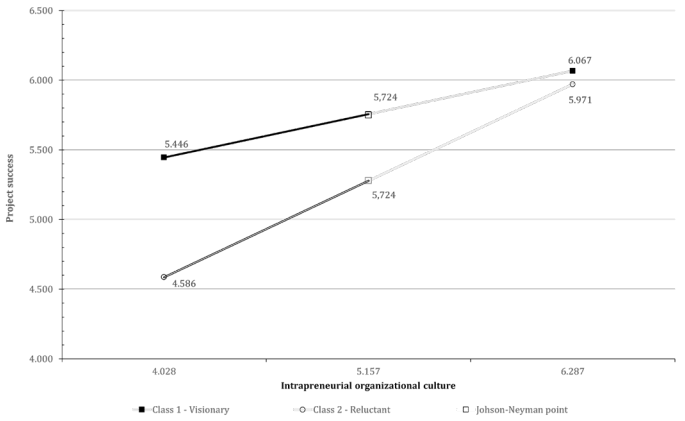
Note: [1] CI = Confidence interval. Elaborated by the authors.

The results indicate that the direct effect of the intrapreneurial profile, as a measured trait of the individual, only occurs in Class 2 (effect = 1.277, CI [.179; 2.375]). This suggests that at higher levels, the intrapreneurial profile does not have a direct relationship, perhaps depending more on the level of organizational culture and the intrapreneurial profile of the group rather than the individual. To test this assumption, we conducted a moderation

test of organizational culture on the relationship between the intrapreneurial profile and project success. These results can be seen in Figure 5.

**Figure 5**

*The moderating effect of intrapreneurial organizational culture*




Note: Elaborated by the authors.

This result suggests that project success is consistently higher for more visionary individuals (Class 1), especially when the level of intrapreneurial organizational culture is elevated, up to a moderation point of 5.724 (Johnson-Neyman), with a significant interaction between the type of class and organizational culture (effect = .338, $t_{(283)}$, p<.001, CI [.075; .601]).

In other words, the intrapreneurial profile, viewed as a group, is influenced by organizational culture, resulting in consistently more positive effects on project success. Even less intrapreneurial individuals begin to have a greater impact on project success as levels of organizational culture that stimulate intrapreneurship are raised. Specifically, although reluctant individuals (Class 2) have low levels of individual intrapreneurship, which hinders project success, the results of this moderation test provide evidence that intrapreneurial organizational culture can help these individuals become more intrapreneurial and, therefore, contribute more to project success. Even if reluctant individuals do not inherently possess intrapreneurial characteristics, an intrapreneurial organizational culture can stimulate them to change their attitudes and elevate the level of project success.

### Additional tests: managers, team members, and team size

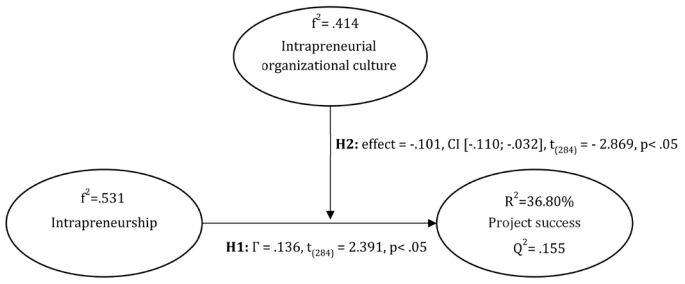
TAdditional tests indicated that there is no statistically significant difference between intrapreneurial project managers and intrapreneurial team members in influencing project success (F=1.254, p>.05). This finding reinforces the fact that the intrapreneurship of any team member can influence project success, not just the intrapreneurship of the project manager. To complement this test, we conducted an analysis considering team size as a moderator of the relationship between intrapreneurial behavior and its influence on project success (F=1.230, p>.05). Again, there was no statistically significant difference between the groups in this new test, reinforcing the initial finding.

## DISCUSSIONS

The results of this study indicate that intrapreneurship and the interaction of intrapreneurial organizational culture explained 36.8% of the variation in project success, with the interaction between both producing a significant moderating effect. The effects of the variables intrapreneurial organizational culture and intrapreneurship reached equivalent values in the model ($f^2$= .414 and $f^2$= .531, respectively). This study also provides empirical evidence of the positive and significant relationship among the constructs of the theoretical model concerning hypothesis H1: intrapreneurial behavior influences project success. Hypothesis H2, testing the moderation of intrapreneurial organizational culture on the relationship between intrapreneurship and project success, was confirmed, showing negative moderation depending on the level of culture. The resulting final model can be observed in Figure 6.

**Figure 6**

*Final model*




Note: Elaborated by the authors.

We verified the positive influence of intrapreneurship on project success with the test ($t_{(284)}$ = 2.391, p<.05). These results align with the studies of Martens et al. (2018) and Sakalauskas et al. (2023) regarding the importance of entrepreneurship for the good performance of projects, identifying the positive influence of entrepreneurial orientation and intrapreneurship on project success, respectively, referring to entrepreneurship at the organizational level concerning organizational strategy. These results further corroborate the role of innovativeness as a stimulus for favorable outcomes for the organization, in this study, project success. Various studies present evidence similar to this initial result of positive effects of intrapreneurship on project success, such as the effect of efficiency (Serrador & Turner, 2015), communication (Cervone, 2014), governance (Joslin & Müller, 2016), and innovative behavior (Gursoy & Guven, 2016).

This study, in turn, considered the individual (project manager or team member) as the unit of analysis, demonstrating that the intrapreneurial behavior of participants positively affects project success. The results also corroborate findings that intrapreneurship contributes to the strong performance of organizations (Bierwerth et al., 2015; Antoncic & Antoncic, 2011; Felício et al., 2012), and in this study, to the good performance of projects, which ultimately contributes to organizational results.

We verified the positive influence of intrapreneurship on project success through tests of effect and significance with an path coefficients of Γ = .540 ($t_{(284)}$ = 10.007, p<.05). These findings corroborate arguments that an organizational culture allowing and supporting intrapreneurship is an important factor for the development of intrapreneurial behaviors in employees (Dovey & McCabe, 2014; Walmrath et al., 2015). This result also reinforces previous findings and the proposition that an innovative and entrepreneurial culture in organizations enhances positive outcomes (Hayton & Cacciotti, 2013). This study also advances the limited literature on the role of intrapreneurial culture, currently debating its role in addressing increasingly complex organizational challenges through greater employee involvement (Prieto et al., 2020).

This study advances the debate by presenting evidence that intrapreneurial organizational culture negatively moderates the relationship between intrapreneurship and project success, corroborating hypothesis H2, as indicated by the tests of effect and confidence interval (effect = - .101; CI [-.170; -.032], $t_{(284)}$ = -2.869, p<.05). The result of the Johnson-Neyman test (Hayes

& Montoya, 2017), twith an effect index of = 5.653 (sd=.085, p<.05), demonstrated that when there is a weak or moderate intrapreneurial organizational culture, the moderating effect of intrapreneurial behavior occurs, reducing its strength on project success. Conversely, a strong intrapreneurial organizational culture ceases to moderate the relationship, showing no significant effect, thus maintaining the positive impact of intrapreneurship on project success. These findings add new perspectives to the debate about the role of intrapreneurial organizational culture as a condition for enhancing innovation, as suggested in previous studies that do not empirically address the issue or determine its effect boundaries (Ahmad et al., 2012).

The results of this study indicate that project success can be enhanced by focusing on aspects of intrapreneurship within the team, relating to behaviors of strategic renewals oriented towards business (Gawke et al., 2019), as well as developing an intrapreneurial organizational culture through the dimensions proposed by Bau and Wagner (2015): quality and effectiveness of leadership (Γ = .890, $t_{(284)}$ = 63.508, p<.05); collaboration, information, and innovation (Γ = .890, $t_{(284)}$ = 59.241, p<.05); tasks and responsibility (Γ = .816, $t_{(284)}$ = 30.615, p<.05); and product and market know-how (Γ = .630, $t_{(284)}$ = 13.821, p<.05).

Project success, in turn, is characterized according to the dimensions of Shenhar and Dvir (2007), for impact on the customer/user (Γ = .845, $t_{(284)}$ = 33.490, p<.05), business and direct organizational success (Γ = .859, $t_{(284)}$ = 40.117, p<.05), impact on the team (Γ = .833, $t_{(284)}$ = 34.956, p<..05), preparation for the future, and project efficiency (Γ = .810, $t_{(284)}$ = 24.923, p<.05).

The results also identified three profiles of intrapreneurs among the project participants who responded to this study. These profiles have been suggested in other works as relevant elements for understanding the dynamics of teams in organizations (Badoiu et al., 2020), or through their motivational profiles (Chan et al., 2017). ,However, they had not yet been empirically observed in their heterogeneity within project teams. Despite uniquely observing intrapreneurship, this trait manifests heterogeneously among individuals. In this study, these distinct groups were named: visionaries, potentials, and reluctants. These profiles represent high, medium, and low levels of intrapreneurship, respectively.

We observed that using these profiles as predictors of project success, moderated by intrapreneurial organizational culture, stimulates success in projects, especially among individuals from the reluctant group. This means that even individuals with low levels of intrapreneurship can contribute to project success if the company encourages them to be intrapreneurs as part of the organization's culture.

## FINAL CONSIDERATIONS

The main objective of this study was to identify the influence of intrapreneurial behavior on project success, moderated by intrapreneurial organizational culture. This goal was achieved by establishing both the direct relationship between intrapreneurship and project success and the intervening action of intrapreneurial organizational culture. The specific objectives of this study were to present the relationship between intrapreneurship and project management, determine the specific moderation point of organizational culture, and identify the different heterogeneous groups in the sample regarding the effects of intrapreneurship on the study variables.

The theoretical foundation related intrapreneurship to project management, thereby forming the theoretical basis for understanding the problematization that prompted this study, supporting the first specific objective. Through the results of the Johnson-Neyman test, it was possible not only to establish the moderation effect but also to determine the point along the range of the moderation of intrapreneurial organizational culture. This provided a better understanding of the phenomenon of indirect manifestation of organizational culture in the relationship between intrapreneurship and project success. Finally, through latent class analysis, we achieved the third specific objective of the study, determining the heterogeneity of profiles in the sample and their distinct impact on the study's constructs.

This study theoretically contributes by linking the themes of intrapreneurship and intrapreneurial organizational culture with project management, demonstrating the positive effects of intrapreneurship and a strong culture on project success. The moderation of intrapreneurial organizational culture on the relationship between intrapreneurship and project success also reinforces the importance of such a culture, both for the intrapreneurial behavior of employees and for project outcomes. The influence of intrapreneurship on project success can be reduced in environments with a weak or moderate intrapreneurial organizational culture. The findings regarding the lack of difference between team members and managers, as well as team size, are also contributions of this study. Additionally, the study adds to the literature on factors that contribute to project success.

As for managerial and practical contributions to organizational practice, it can be stated that organizations wanting to increase project success should invest in developing intrapreneurial employee behavior. Human factor management policies can contribute to project success by stimulating an intrapreneurial climate. Another possibility is that the human resources department considers intrapreneurial behavior characteristics in the selection and development of project team professionals to increase the likelihood of project success. Additionally, enhancing an intrapreneurial organizational culture allows intrapreneurial behavior to influence project success, consequently improving organizational performance, and supporting the development of employee careers, skills, and competencies.

A primary limitation of this study is that the sample consists of project professionals working in companies located in Brazil, mostly in the IT sector. This limitation also opens opportunities for future studies to test and validate the model in other countries and sectors, including those with hybrid teams. Another research limitation is the respondents' bias in perceiving their behavior. Future research can address this limitation by working with both individual and team assessments, thus balancing the individual's subjective view.

For future studies, we suggest exploring the moderation of intrapreneurial organizational culture in the relationship between intrapreneurship and project success more deeply, using a qualitative approach. Case studies in companies focused on projects with weak, moderate, and strong intrapreneurial organizational cultures could further expand explanations about the effect of negative moderation on the influence of intrapreneurial behavior on project success.

Other possible studies could explore the importance of each team member in project success through qualitative studies and analyses, considering the methodology used in this study. For example, in agile methods, the intrapreneurial behavior of the project team member may have a greater influence than in traditional methodologies.

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### Conflit of interest statement

*The authors declare that there is no conflict of interest.*

## Authors' statement of individual contributions

| Roles | Contributions | | |
|---|---|---|---|
| | Elias, T. C. da | Martens, C. D. P. | Bizarrias, F. S. |
| Conceptualization | ■ | ■ | ■ |
| Methodology | ■ | ■ | ■ |
| Software | ■ | | ■ |
| Validation | ■ | ■ | ■ |
| Formal analysis | ■ | ■ | ■ |
| Investigation | ■ | ■ | |
| Resources | ■ | ■ | |
| Data Curation | ■ | ■ | ■ |
| Writing - Original Draf | ■ | ■ | ■ |
| Writing - Review & Editing | ■ | ■ | ■ |
| Visualization | ■ | | ■ |
| Supervision | | ■ | ■ |
| Project administration | ■ | | |
| Funding acquisition | ■ | ■ | |

Note: Acc. CRediT (Contributor Roles Taxonomy): https://credit.niso.org/

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## Appendix A

*Crossloadings of items*

| Items | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CII1 | **.762** | .175 | .274 | .381 | .259 | .369 | .290 | .44 | .169 | .213 | .389 |
| CII2 | **.747** | .172 | .223 | .340 | .199 | .334 | .307 | .392 | .156 | .211 | .369 |
| CII3 | **.793** | .153 | .245 | .349 | .231 | .322 | .181 | .515 | .166 | .210 | .417 |
| CII4 | **.783** | .236 | .308 | .432 | .280 | .376 | .258 | .576 | .256 | .263 | .573 |
| CII5 | **.695** | .357 | .379 | .458 | .395 | .387 | .428 | .572 | .447 | .289 | .566 |
| CII6 | **.801** | .314 | .314 | .402 | .352 | .457 | .368 | .608 | .307 | .357 | .504 |
| CII7 | **.776** | .239 | .330 | .374 | .262 | .344 | .227 | .60 | .264 | .236 | .522 |
| PE1 | .176 | **.808** | .252 | .216 | .112 | .225 | .241 | .111 | .495 | .247 | .239 |
| PE2 | .342 | **.826** | .304 | .277 | .165 | .324 | .267 | .268 | .570 | .271 | .361 |
| PE4 | .164 | **.718** | .096 | .133 | .004 | .200 | .196 | .076 | .418 | .141 | .091 |
| IC1 | .285 | **.814** | .195 | .243 | .196 | .220 | .208 | .226 | .648 | .164 | .278 |
| IC2 | .264 | **.784** | .312 | .328 | .357 | .231 | .265 | .270 | .653 | .263 | .373 |
| IC3 | .222 | **.690** | .188 | .171 | .199 | .256 | .155 | .130 | .529 | .173 | .320 |
| IC4 | .217 | **.776** | .204 | .165 | .165 | .249 | .227 | .153 | .518 | .181 | .236 |
| IC5 | .317 | .176 | **.803** | .522 | .403 | .230 | .361 | .371 | .208 | .397 | .461 |
| IT1 | .215 | .193 | **.758** | .389 | .334 | .186 | .298 | .206 | .237 | .331 | .309 |
| IT2 | .362 | .297 | **.792** | .570 | .565 | .268 | .519 | .390 | .307 | .484 | .399 |
| IT3 | .424 | .214 | .624 | **.864** | .610 | .316 | .546 | .442 | .236 | .529 | .452 |
| IT4 | .347 | .208 | .542 | **.775** | .472 | .327 | .404 | .379 | .198 | .440 | .389 |
| IT5 | .363 | .181 | .481 | **.839** | .407 | .312 | .440 | .411 | .186 | .411 | .397 |
| IT6 | .378 | .242 | .470 | **.783** | .323 | .326 | .412 | .367 | .250 | .341 | .298 |
| PMK1 | .476 | .302 | .481 | **.769** | .513 | .352 | .564 | .458 | .326 | .510 | .449 |
| PMK2 | .445 | .225 | .441 | **.728** | .565 | .282 | .382 | .503 | .321 | .446 | .440 |
| PMK3 | .309 | .177 | .491 | .543 | **.836** | .356 | .556 | .395 | .194 | .635 | .361 |
| PF1 | .350 | .181 | .529 | .518 | **.861** | .329 | .453 | .409 | .205 | .544 | .430 |
| PF2 | .351 | .225 | .547 | .549 | **.887** | .352 | .489 | .429 | .265 | .566 | .436 |
| PF3 | .235 | .157 | .304 | .432 | **.820** | .200 | .436 | .329 | .165 | .517 | .246 |
| PF4 | .319 | .216 | .512 | .541 | **.809** | .292 | .476 | .425 | .226 | .551 | .333 |
| PF5 | .402 | .214 | .242 | .308 | .269 | **.821** | .250 | .270 | .200 | .244 | .478 |
| PF6 | .330 | .296 | .211 | .354 | .331 | **.867** | .383 | .296 | .212 | .350 | .375 |
| LQE1 | .481 | .286 | .290 | .355 | .327 | **.848** | .345 | .422 | .195 | .351 | .485 |
| LQE10 | .327 | .156 | .452 | .546 | .627 | .284 | **.761** | .366 | .215 | .601 | .334 |
| LQE12 | .225 | .171 | .240 | .367 | .311 | .218 | **.719** | .168 | .142 | .385 | .121 |
| LQE2 | .282 | .265 | .341 | .389 | .389 | .333 | **.760** | .247 | .158 | .533 | .231 |
| LQE5 | .295 | .207 | .377 | .357 | .334 | .302 | **.698** | .255 | .168 | .374 | .271 |
| LQE6 | .298 | .285 | .40 | .445 | .366 | .317 | **.778** | .285 | .253 | .479 | .317 |
| LQE7 | .280 | .218 | .462 | .457 | .464 | .265 | **.750** | .285 | .175 | .475 | .264 |
| LQE8 | .532 | .293 | .384 | .537 | .477 | .289 | .386 | **.705** | .286 | .385 | .502 |
| SRB1 | .575 | .181 | .385 | .537 | .411 | .286 | .337 | **.863** | .272 | .297 | .499 |
| SRB2 | .605 | .245 | .401 | .478 | .380 | .367 | .350 | **.821** | .304 | .314 | .563 |
| SRB3 | .487 | .155 | .273 | .318 | .279 | .272 | .247 | **.819** | .125 | .187 | .351 |
| SRB4 | .469 | .015 | .279 | .339 | .301 | .348 | .154 | **.772** | .090 | .172 | .459 |
| SRB5 | .554 | .085 | .261 | .310 | .374 | .246 | .220 | **.796** | .115 | .235 | .375 |
| SRB6 | .554 | .200 | .278 | .420 | .396 | .353 | .299 | **.749** | .248 | .314 | .506 |
| SRB7 | .612 | .281 | .395 | .438 | .359 | .335 | .310 | **.773** | .317 | .263 | .541 |
| BDS1 | .251 | .487 | .287 | .250 | .232 | .157 | .156 | .202 | **.822** | .097 | .330 |
| BDS2 | .225 | .591 | .295 | .286 | .215 | .203 | .195 | .259 | **.731** | .189 | .358 |
| BDS3 | .342 | .608 | .313 | .298 | .226 | .236 | .224 | .278 | **.843** | .177 | .355 |
| BDS4 | .320 | .576 | .318 | .272 | .228 | .177 | .237 | .239 | **.857** | .167 | .344 |
| BDS5 | .220 | .547 | .208 | .238 | .228 | .199 | .185 | .217 | **.791** | .146 | .315 |
| BDS6 | .233 | .595 | .204 | .239 | .147 | .177 | .199 | .180 | **.851** | .188 | .291 |
| TR1 | .284 | .588 | .192 | .203 | .138 | .190 | .213 | .215 | **.705** | .205 | .248 |
| TR2 | .292 | .207 | .518 | .539 | .680 | .285 | .573 | .361 | .180 | **.856** | .294 |
| TR3 | .263 | .235 | .474 | .457 | .578 | .297 | .517 | .256 | .163 | **.876** | .278 |
| TR4 | .295 | .193 | .561 | .558 | .666 | .356 | .530 | .334 | .174 | **.864** | .340 |
| TR5 | .279 | .258 | .354 | .411 | .477 | .354 | .570 | .276 | .173 | **.838** | .266 |
| VB1 | .257 | .234 | .313 | .412 | .424 | .327 | .517 | .180 | .184 | **.808** | .237 |
| VB2 | .310 | .235 | .402 | .475 | .521 | .279 | .573 | .317 | .182 | **.813** | .307 |
| VB3 | .377 | .302 | .389 | .369 | .350 | .514 | .293 | .351 | .298 | .315 | **.746** |
| VB4 | .481 | .342 | .376 | .413 | .358 | .455 | .258 | .450 | .376 | .293 | **.845** |
| VB5 | .333 | .210 | .314 | .282 | .257 | .309 | .191 | .361 | .240 | .182 | **.687** |
| VB6 | .544 | .262 | .436 | .437 | .365 | .374 | .311 | .429 | .285 | .258 | **.772** |
| VB7 | .593 | .229 | .378 | .417 | .300 | .363 | .268 | .645 | .301 | .242 | **.727** |

Notes: 1. Collaboration, information, and innovation (IOC), 2. Venture behavior (INTRA), 3. Project efficiency (PS), 4. Impact on the team (PS), 5. Impact on the customer/user (PS), 6. Product and market know-how (IOC), 7. Preparation for the Future (PS), 8. Quality and leadership effectiveness (IOC), 9. Strategic renewal behavior (INTRA), 10. Business and direct organizational success (PS), 11. Tasks and responsibility (IOC). IOC = Intrapreneurial organizational culture; INTRA = Intrapreneurship; PS = Project success. Elaborated by the authors.