

UNIVERSIDADE DE LISBOA

ISEG Instituto Superior de Economia e Gestão



Lisbon School
of Economics
& Management
Universidade de Lisboa



**Essays on the relationship between the use of management
control systems and creativity and innovation in cultural and
creative organizations**

Nuno Manuel Estanqueiro Dias

Orientador: Professor Doutor Alcino Tiago Cruz Gonçalves

Tese especialmente elaborada para obtenção do Grau de Doutor em Gestão

2025

UNIVERSIDADE DE LISBOA

ISEG Instituto Superior de Economia e Gestão



Lisbon School
of Economics
& Management
Universidade de Lisboa



Essays on the relationship between the use of management control systems and creativity and innovation in cultural and creative organizations

Nuno Manuel Estanqueiro Dias

Orientador: Professor Doutor Alcino Tiago Cruz Gonçalves

Tese especialmente elaborada para obtenção do Grau de Doutor em Gestão

Júri:

Presidente: Doutora Maria Rosa Vidigal Tavares da Cruz Quartin Borges, Professora Catedrática e Presidente do Conselho Científico do Instituto Superior de Economia e Gestão da Universidade de Lisboa.

Vogais:

- Doutora Ana Isabel Dias Lopes, Professora Associada com Agregação no ISCTE Business School – Instituto Universitário de Lisboa
- Doutor José Fernando Pereira Biléu Ventura, Professor Auxiliar na Escola de Ciências Sociais na Universidade de Évora
- Doutora Cristina Belmiro Gaio Martins da Silva, Professora Associada com Agregação do Instituto Superior de Economia e Gestão da Universidade de Lisboa
- Doutor Alcino Tiago da Cruz Gonçalves, Professor Associado com Agregação do Instituto Superior de Economia e Gestão da Universidade de Lisboa.

Glossary

IPMA – Importance-Performance Map Analysis

JEL – Journal of Economic Literature

LOC – Levers of Control

MCS – Management Control Systems

MGA – Multigroup Analysis

MICOM – Measurement Invariance of Composite Models

PLS-SEM – Partial Least Squares Structural Equation Modelling

Resumo

Esta tese apresenta os resultados de um estudo de base contingencial sobre as organizações culturais e criativas, fontes de excelência de criatividade e inovação. O estudo aborda a relação que se estabelece entre os sistemas de controlo de gestão - nas suas vertentes *ex-ante* e *ex-post* - e a criatividade e as estratégias de inovação exploradora e exploratória prosseguidas.

Primeiramente, realizámos uma abordagem qualitativa baseada em entrevistas semiestruturadas que nos permitiram aprimorar a seleção dos constructos a utilizar no modelo de investigação. As evidências oferecidas por este estudo qualitativo deram um importante contributo para a construção de um questionário. O inquérito por questionário produziu 357 respostas utilizáveis, as quais foram analisadas utilizando o método de equações estruturais por regressão dos mínimos quadrados parciais.

Os resultados são demonstrativos do diferente posicionamento assumido pelos sistemas de controlo de gestão nas fases do processo criativo, prevalecendo a sua coexistência com controlos orgânicos. Verificou-se também que a utilização de sistemas de controlo interativos está significativamente mais associada a organizações com uma estratégia de inovação exploratória, enquanto as organizações que prosseguem uma estratégia de inovação exploradora tendem a beneficiar complementarmente dos sistemas de controlo de diagnóstico e de fronteira. Adicionalmente, esta investigação conclui que as variáveis individuais e contextuais têm um efeito moderador que facilita a relação entre as alavancas de controlo mecanicistas e as estratégias de inovação prosseguidas, pelo que sugere que estas variáveis operam suplementarmente em contextos de tensão dinâmica.

Esta investigação permite integrar resultados relevantes, quer para o estudo da contabilidade de gestão, quer para a conceção de políticas orientadas para a inovação – especificamente, a adaptabilidade do uso dos sistemas de controlo e a alteração de comportamentos ou das condições em função de uma estratégia alvo.

Palavras-chave: sistemas de controlo de gestão; alavancas de controlo; criatividade; inovação; exploração; exploratório; organizações culturais e criativas.

Códigos de classificação JEL: M41; D91; O31; Z11.

Abstract

This thesis presents the findings of a contingency-based study on cultural and creative organizations, which are key sources of excellence in creativity and innovation. Therefore, this study discusses the relationship established between MCS - at their ex-ante and ex-post levers - and the creativity and the explorative and exploitative innovation strategies pursued.

Firstly, we conducted a qualitative approach based on semi-structured interviews that allowed us to refine the selection of constructs to be used in the research model. The evidence offered by that qualitative study made an important contribution to the construction of a questionnaire. The questionnaire survey yielded 357 usable responses, which were analyzed using the partial least squares structural equation modeling.

Findings show the different positioning of management control systems in the phases of the creative process, with their coexistence with organic controls prevailing. It was also found that the use of interactive control systems is more significantly associated with exploratory innovation strategy organizations, while exploitative innovation strategy organizations tend to benefit complementarily from diagnostic and boundary control systems. Additionally, this research concludes that individual and contextual variables have a moderating effect, enabling the relationship between mechanistic levers of control and the innovation strategies pursued. This suggests that these variables operate supplementarily within contexts of dynamic tension.

This research makes it possible to integrate relevant results both for the study of management accounting, and for the design of policies aimed at innovation - specifically regarding the adaptability in the use of control systems and the change of behaviours or conditions in alignment with a target strategy.

Keywords: management control systems; levers of control; creativity; innovation; explorative; exploitative; cultural and creative organizations.

Jel classification codes: M41; D91; O31; Z11.

Acknowledgements

This thesis would not have been possible without the help, support, and encouragement of several people. First, I would like to thank my advisor, Professor Tiago Cruz Gonçalves. I am deeply grateful not only for his support, critical guidance, and insight throughout this long process but also for his positive demeanour, scientific spirit, and high ethical standards, which have had, and I am sure will continue to have, an everlasting positive impact on my future path.

Second, I would like to express my gratitude to Professor Vítor da Conceição Gonçalves, Director of the PhD Programme in Management at the ISEG Lisbon School of Economics & Management, along with the staff members of the PhD Programme, Professor Carlos Costa, Professor Maria João Guedes, and Professor Nuno Crespo, for their availability and the support I received throughout my studies.

Third, I would also like to thank all the organizations and participants who took part in the interviews and completed the questionnaire. Their participation and willingness to contribute were essential to the success of this research.

Fourth, I would like to thank my family and friends. My deepest appreciation goes to Maria João, Joana, and Sophia. Completing this PhD has required much time and many sacrifices from our family, and without Maria João's love, support, tolerance, and motivation, this would not have been possible. I thank Joana and Sophia for the joy they bring me and for keeping me focused on what truly matters in life.

Finally, I dedicate this work to my parents, for the gift of life and their constant encouragement.

Table of Contents

Glossary	i
Resumo	ii
Abstract.....	iii
Acknowledgements	iv
Table of Contents	v
List of Tables.....	vii
List of Figures.....	x
1. Introduction and Thesis Overview	1
1.1 Introduction.....	1
2. Literature Review and Propositions Development.....	9
2.1 Creativity and Innovation in Culture.....	9
2.2 The relationship between Management Control Systems and Innovation: Dichotomies and Levers of Control.....	18
2.3 The Tension between Management Control Systems and Exploitation and Exploration Innovation Strategies.....	24
2.4 The Moderating Role of Personality Trait and Context Variables.....	37
2.4.1 Openness to Experience.....	37
2.4.2 Transformational Leadership.....	40
2.4.3 Organizational Encouragement	42
2.4.4 Organizational Goal Clarity	44
2.4.5 Discretionary slack	47
3. Research Methods	49
3.1 Qualitative Study.....	49
3.1.1 Sample and Collection Data	50
3.1.2 Content Analysis and Data Classification	51
3.2 Quantitative Study.....	56
3.2.1 Sample and Collection Data	56
3.2.2 Measures and Variables.....	60
4. Results	74
4.1 Qualitative Study.....	74
4.1.1 Discussion.....	94
4.2 Quantitative Study.....	96
4.2.1 Statistical Analysis	96
4.2.2 Results of the Measurement Model	98
4.2.3 Results of the Structural Model	108

4.2.3.1	Robustness tests.....	118
4.2.3.2	Mediation Analysis.....	125
4.2.3.3	Moderation Analysis	129
4.2.3.4	Multigroup Analysis.....	153
5.	General Discussion of Results.....	203
6.	Conclusions and Reflections	217
6.1	Main Conclusions.....	217
6.2	Theoretical Implications.....	222
6.3	Implications for Practice.....	223
6.4	Limitations of the Study.....	224
6.5	Potential Areas for Future Research.....	225
7.	References	227
	Appendices	268
	Appendix A.....	268
	Appendix B.....	271

List of Tables

Table 1 Idea journey phases	11
Table 2 Characterization of participants.....	50
Table 4 Distribution of the survey participants	58
Table 5 Correlation matrix (Pearson)	72
Table 3 Theme/category emerged from the interviews	75
Table 6 Linear Model Estimations Indicator and Internal Consistency Reliability	100
Table 7 Linear Model Estimations Discriminant Validity	101
Table 8 Collinearity Statistics (VIF) for formative indicators	106
Table 9 Outer weights significance test.....	107
Table 10 Significance of the formative indicator's outer loading	107
Table 11 Collinearity Statistics (VIF)	109
Table 12 Total Effects	110
Table 13 Significance Testing Results of the Structural Model and Propositions Tests.....	111
Table 14 Significance Testing Results of the Total Effects	113
Table 15 Model's Explanatory Power	116
Table 16 Assessment of size of predictive power relevance	117
Table 17 PLSpredict Results Report (PLS-SEM versus LM)	118
Table 18 First-Order Construct-Confirmatory Factor Analysis	119
Table 19 Analysing the non-linear effects of the model	121
Table 20 Results of endogeneity test using the Gaussian copula approach	122
Table 21 Fit indices for the one to four-segment solutions for the base model	124
Table 22 Relative segment sizes (N = 357).....	125
Table 23 Mediation analysis through the Organization's creativity dependency variable...	127
Table 24 Mediation analysis through the Idea Realization variable	128
Table 25 Results of regressions for the exploitative and exploratory innovation strategies	152
Table 26 Analyzing the moderating effects of the Function Description group	155
Table 27 Collinearity statistics (VIF) for data set	157
Table 28 Assessment of the fit of the Function Description model	158
Table 29 Assessing measurement invariance for the Manager subgroup versus Both Functions sub-group	159
Table 30 PLS-MGA test in the Function Description multigroup analysis	161

Table 31 Out-of-sample predictive power for the dependent variables	162
Table 32 PLSpredict results report (PLS-SEM versus LM) for the function description group	163
Table 33 Importance-performance map analysis for function description.....	164
Table 34 Analyzing the moderating effects of the cultural and creative domains group	167
Table 35 Collinearity statistics (VIF) for data set	168
Table 36 Assessment of the fit of the cultural and creative domains model	169
Table 37 Assessing measurement invariance for the performing arts subgroup versus interdisciplinary activities subgroup.....	171
Table 38 PLS-MGA test in the cultural and creative domains multigroup analysis	172
Table 39 Out-of-sample predictive power for the dependent variables	173
Table 40 PLSpredict results report (PLS-SEM versus LM) for the domains group	173
Table 41 Importance-performance map analysis for dimension group	175
Table 42 Analyzing the moderating effects of the Legal Nature of Organization group	178
Table 43 Collinearity statistics (VIF) for data set	180
Table 44 Assessment of the fit of the Nature Legal of Organization model	181
Table 45 Assessing measurement invariance for the company subgroup versus non-profit association subgroup	182
Table 46 PLS-MGA test in the legal nature of organization multigroup analysis	183
Table 47 Out-of-sample predictive power for the dependent variables	184
Table 48 Out-of-sample predictive power for the dependent variables	185
Table 49 Importance-performance map analysis for legal nature of organization group ...	187
Table 50 Analyzing the moderating effects of the financing nature	189
Table 51 Collinearity statistics (VIF) for data set	191
Table 52 Assessment of the fit of the financing nature model	192
Table 53 Assessing measurement invariance for the public financing subgroup versus own re-sources subgroup.....	193
Table 54 PLS-MGA test in the financing nature multigroup analysis	194
Table 55 Out-of-sample predictive power for the dependent variables	195
Table 56 PLSpredict results report (PLS-SEM versus LM) for the financing nature group	195
Table 57 Importance-performance map analysis for financing nature group	197
Table 58 Analyzing the moderating effects of the number of employees group	200
Table 59 Collinearity statistics (VIF) for data sets.....	201

Table 60 Assessment of the fit of the number of employees model.....202

List of Figures

Figure 1 Theoretical Model	17
Figure 2 Data structure and clustering.....	54
Figure 3 Reflective measurement model	98
Figure 4 Redundancy analysis for the Belief Control Systems construct	104
Figure 5 Redundancy analysis for the Boundary Control Systems construct	104
Figure 6 Redundancy analysis for the Interactive Control Systems construct	105
Figure 7 Reflective and Formative Model Estimation	109
Figure 8 Openness to Experience Moderator Analysis Results	130
Figure 9 Moderating effect's splot – Openness to experience x Boundary control systems => Ex-ploitative innovation strategy	132
Figure 10 Transformational Leadership Moderator Analysis Results.....	135
Figure 11 Moderating effect's splot - Transformational Leadership x Belief control systems	136
Figure 12 Organizational Encouragement Moderator Analysis Results	138
Figure 13 Moderating effect's splot - Organizational Encouragement x Belief control systems => Ex-ploitative innovation strategy	140
Figure 14 Moderating effect's splot - Organizational Encouragement x Belief control systems => Ex-plorative innovation strategy	142
Figure 15 Organizational Goal Clarity Moderator Analysis Results	144
Figure 16 Moderating effect's splot - Organizational Goal Clarity x Belief control systems	146
Figure 17 Discretionary slack Moderator Analysis Results	148
Figure 18 Moderating effect's splot - Discretionary Slack x Idea realization.....	149
Figure 19 Summary results of the research model	204

1. Introduction and Thesis Overview

1.1 Introduction

Building on the conceptual definitions of creativity and innovation offered by Schumpeter (1947), Amabile (1986), and Sternberg and Lubart (1991), the research in this field has evolved dynamically in several directions – one of which examines the reciprocal relationship between culture, and creativity and innovation (Kwan et al., 2018). When these concepts are linked to economic growth and employment, the cultural and creative industries provide a vital and critical context where multiple values – such as aesthetics, culture, industry, and market — are present at the same time (Marinova & Borza, 2015; Trevisan & Mouritsen, 2023).

As of 2024, the five countries with the highest rankings in the Global Innovation Index – Switzerland, Sweden, the Netherlands, the United States, Singapore, and the United Kingdom - also possess strong economies (Dutta et al., 2024). Furthermore, the citizens of these countries place a high value on creativity and innovation. Google Trends data indicates a steady increase in public interest in terms such as “creativity”, “innovation,” “how to increase creativity”, and “how to innovate” (Kwan et al., 2018).

Eurostat data shows that in 2021, cultural and creative industries employed approximately 7.4 million people across the European Union (EU), accounting for 3.7% of total employment. As of 2019, these industries have also included around 1.2 million companies (the United Kingdom is no longer included in EU statistics following Brexit in 2020) ((Measuring the Cultural and Creative Sectors Consortium, 2022).

In terms of value added, the cultural and creative industries accounted for 2.6% of the EU's total value added in 2019 — the most recent year for which there is data available — amounting to €106.4 billion. This represents a substantial share, exceeding that of several other sectors which often receive greater media attention (Measuring the Cultural and Creative Sectors Consortium, 2022).

The 2008 financial crisis dealt a heavy blow to cultural and creative industries, with long-term repercussions. More recently, the COVID-19 pandemic has caused considerable short-term disruption. Nevertheless, the COVID pandemic crisis has brought several new challenges to the cultural and creative sector, accelerating the main digital trends and revitalising the development of new content and new business models (European Union, 2022). While it is still too early to fully understand the long-term impacts on cultural behaviours and consumption patterns, the resumption of travel and mobility has supported the revival of in-person cultural services (Measuring the Cultural and Creative Sectors Consortium, 2022).

Situating the Portuguese context, in 2020, based on the Integrated Business Accounts System data, there were 64.559 companies in the cultural and creative sector (1.5% less than the previous year). The Performing arts and Architectural activities stood out, representing, respectively, 25.5% and 14.8% of all the cultural and creative companies. The turnover in the cultural and creative sector amounted to 5.9 thousand million Euros (-15.6%), with the Retail sale of newspapers and stationery in specialized stores, Advertising agencies, Other printing, and Television programming and broadcasting activities accounting, together, for almost half (49.4%) of the sector's turnover. The Gross Value Added (GVA) generated by companies in the sector was 2.2 thousand million Euros (13.6% less than the previous year). Still, according to preliminary data from 2021, the total number of companies in the sector was 68,456 (+6.0%) and the turnover reached 6.7 million Euros (+14.1%). The activities that registered the greatest increases were Advertising agencies (+126.7 million Euros), Motion picture, video and television programs production activities (+110.1 million Euros), and Other printing (+85.5 million Euros). The GVA of the cultural sector reached 2.5 thousand million Euros (+15.3% than in 2020)" (INE, 2022: 11-12).

In summary, the cultural and creative sectors are among the most dynamic industries in Europe, playing a key role in driving economic growth and employment, while also contributing to social cohesion and the promotion of cultural diversity (Measuring the Cultural and Creative Sectors Consortium, 2022). In contrast to companies that invest in traditional R&D to develop new products, the nature of the innovative processes and the innovations themselves in the cultural and creative industries are based on novelties and new combinations that result from exploiting semiotic codes (ideas, motifs, contents and intellectual properties) with regard to the material base of the industry (Di Novo et al., 2022; Jones et al., 2015).

The economic value of innovation is due to Schumpeter (1883-1950), distinguishes between radical innovation, which breaks with the existing offer – such as the scientific, technological, and functional leap of the smartphone or the 3D printer – and incremental innovation, which ensures the continuity of the change process by the cultural or creative boldness of making cork footwear (Mateus et al., 2014). It is this process that feeds the concept of “creative destruction” that aims to improve existing goods, products and services or processes by replacing them with something considered new within a philosophy of continuous progress.

In this sense, it is evident that organizations within the various domains of the cultural and creative sector operate in dynamic environments. How they adapt to continuous change is examined from multiple perspectives within the contingency literature. Previous studies have highlighted that this plurality gives rise to tensions within the cultural and creative industries (DeFillippi et al., 2007; Lampel et al., 2000; Moeran & Christensen, 2013). These studies suggest that organizations in the cultural and creative industries are characterized by the co-existence of multiple organizing principles, positioning them as sites of moral multiplexity (Reinecke et al., 2017).

Research in management accounting has explored these tensions through different theoretical lenses. One prominent stream views the relationship between business values and artistic or creative values as inherently antagonistic. Within this perspective, accounting and control systems are seen as embodiments of business logic, which often clash with the creative and cultural values central to these organizations (Adler & Chen, 2011; Christiansen & Skærbæk, 1997; Grabner & Speckbacher, 2016; Le Theule & Lupu, 2016; Oakes & Oakes, 2016; Trevisan & Mouritsen, 2023).

The first objective of this study is to understand the view of how CEOs and artistic directors navigate the complex balance of cultural, artistic, and managerial dimensions, as well as the practices used, while leading their organizations in contexts of high unpredictability. To answer this objective, we employed a qualitative approach, conducted online through semi-structured interviews. This method is appropriate given that several researchers have noted the limited attention paid in the academic literature to the relationship between creativity, innovation, and control (e.g., Bedford, 2015; Speckbacher, 2017).

According to the literature produced, innovation can be understood as fundamentally encompassing two dimensions of activity: the development of new useful ideas and their execution or implementation (Baer, 2012; Kanter, 1988; Janssen, 2000; Scott & Bruce, 1994; Yuan & Woodman, 2010). Creativity refers, thus, to the first dimension, and therefore to the development of new and useful ideas in the short and long term (as advocated by Amabile, 1996; Oldham & Cummings, 1996), while the second activity dimension – the implementation of ideas – describes the process of converting these ideas into new products or services, and improved ways of doing things (Kanter, 1988; West, 2002; Woodman et al., 1993).

Culture-based creativity is the requirement that allows innovation beyond the mere functionality of the product. “It is a resource capable of adding another meaning to the act of consumption, giving a sense or ethical or aesthetic value to production and facilitating product or service differentiation.” (KEA, 2009:37). Although there are different approaches trying to explain innovation in a cultural context, Frith (1988) and Clydesdale (2006) share the assumption that creativity is more the product of an infrastructure than the result of an economic, social, and cultural environment.

Through several studies, research in accounting has aroused a greater interest in the study of the relationship between MCS and creativity and, especially, in understanding how an organization can use its MCS to benefit creativity (Chen et al., 2012; Davila, Foster & Oyon, 2009; Davila & Ditillo, 2017; Grabner, 2014; Kachelmeier et al., 2008; Kachelmeier & Williamson 2010; Lill et al. 2021).

If, on the one hand, there is now empirical evidence to suggest that MCS can boost and support the generation and implementation of creative ideas (Simons, 1990, 1991, 1995; Ahrens & Chapman, 2004; Bisbe & Malagueño, 2009; Davila, 2000), on the other hand, several studies suggest that creative contexts tend not to require high levers of management control (Adler & Chen’s, 2011; Ittner et al. 1997; Kachelmeier et al. 2008; Williamson, 2010). According to this perspective, formal MCS are seen as creativity inhibitors and inadequate in managing the associated uncertainty, for example regarding product innovation (Abernethy & Stoelwinder, 1991; Amabile, 1998). The idea of equilibrium implies that any action or decision taken transfers weight to the control and the creativity dimensions (Trevisan & Mouritsen, 2023).

Underlying the structure of the four Levers of Control (LOC) advocated by Simons is the idea that positive controls (belief systems and interactive control systems) and negative controls (boundary systems and diagnostic control systems) are opposing forces that need to coexist to create dynamic tensions that, in turn, guarantee an effective control, namely “between freedom and constraint, between empowerment and accountability, between top-down direction and bottom-up creativity, between experimentation and efficiency” (Simons, 1995a: 4). The belief systems communicating the company’s core values are “the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organization” (Simons, 1995a: 34). Interactive control systems focusing on strategic uncertainties are “formal information systems that managers use to involve themselves regularly and personally in the decision activities of subordinates” (Simons, 1995a: 95). “Not only do interactive controls have an attention focusing role, they also stimulate search and learning which can result in new emergent strategies” (Simons, 1995a: 91). Boundary systems communicating the risks to be avoided “delineate the acceptable domain of activity for organizational participants” (Simons, 1995a: 39). They include activities that impose codes of business conduct for the organization’s employees which also serve as strategic limits guiding the managers’ search for innovative ideas. Diagnostic control systems communicating critical performance variables are “formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance” (Simons, 1995a: 59).

The general management control literature presents several conceptualizations that, in a broader sense, raise an understanding of the use of controls (Barros & Ferreira, 2019). Simons’ LOC framework is one of the approaches that recognizes the use of various controls and styles in its use (Chenhall & Moers, 2015; Curtis & Sweeny, 2017), having therefore been an influential structure in this new perspective on MCS and innovation. Simons’ LOC framework is a change of paradigm in the traditional way of thinking, as it clearly identifies interactive systems as tools that aim to ensure that organizations explore strategic uncertainties (Davila et al., 2009a; Lewis et al. 2024).

Although there are some case studies demonstrating how managers seek to balance their priorities through MCS (Cardinal et al., 2004; Jørgensen & Messner, 2009; Mundy, 2010), the effects of these balances between those levers of control were not formally tested (Bedford,

2015). According to Martyn et al. (2016), the absence of these systems is particularly noteworthy in quantitative studies, suggesting that future quantitative studies should consider all four levers and the interaction between them.

In corporate strategy one of the central concerns is the choice of how much to invest in different types of activities – namely attention and resources – between exploration and exploitation. (He & Wong, 2004). Summarized by March (1991: 85), exploitation entails “refinement and extension of existing skills”, while exploration requires “experimentation with new alternatives”. This distinction captures a set of fundamental differences in the organization’s behaviour and strategy, with significant impact on the organization’s performance.

Adler et al. (1999) and Gibson and Birkinshaw (2004) have rejected the idea of a continuum between exploitation and exploration, defending that these are two distinct strategies that must be in combination and fully implemented to resolve the dilemma. It is no longer a question of ensuring that exploitation and exploration reach the same level, but of maximizing the use of these two courses of action. (Farjaudon et al., 2011). Even when conceptualizing exploration and exploitation as orthogonal, Birkinshaw and Gupta (2013: 294) propose that it “seems unlikely that a firm can deliver the highest level of achievement on both dimensions simultaneously,” and suggest that managers make decisions of where to position their organizations along the exploration – exploitation spectrum.

Additionally, an important body of research has shown that creativity in a professional context is driven by individual and contextual factors (Judge & Cable, 1997, Madrid & Patterson, 2016). The decision to incorporate person–context interactions is grounded in the argument that individuals with certain personal characteristics are more likely to appreciate and benefit from the rewards and opportunities offered by specific contextual factors, and consequently, exhibit greater creativity when these elements are effectively combined (Shalley et al., 2004). In addition, we proposed to evaluate how measures such as Openness to experience, Organizational encouragement, Transformational leadership, Clarity of objectives, and Discretionary slack moderate the relationship established between the Management Control Systems and Creativity and Innovation.

Based on the preceding discussion, the second objective in this research is to observe how the MCS, through their ex-ante (input) and ex-post (output) control levers, relate to creativity and innovation, particularly in alignment with the strategic orientation – explorative innovation and exploitative innovation strategies – in cultural and creative organizations. The belief, interactive and boundary control systems are classified as ex-ante control levers, while diagnostic control systems are considered ex-post control levers.

Data for this quantitative study was collected through an online questionnaire distributed via email to organizations within the cultural and creative sectors. The target population was derived from a database provided by the National Statistics Institute in 2021. Using the Business Data Sheet for the Cultural and Creative Industries from DGAE (2018) as a reference, a usable population of 5.532 entities was identified. These entities operate across various domains of the cultural and creative industries, including publishing, architectural services, advertising agencies, design and photography, performing arts (such as theatre, music, and dance), as well as literary, library, archival, museum, and other cultural activities.

The decision to study the role of MSCs in cultural and creative organizations is mainly based on three reasons. The first focuses on seeking an answer to the main research question, which is whether management control can positively coexist with creativity and ideas implementation in the cultural and creative sector. This is a sector comprising organizations that operate in different cultural domains, with legal natures (from the public to the private sphere), structures and forms of financing as diverse as those existing in the national context. The second reason seeks to understand the relationship between levers of control and the innovation strategy followed by these organizations in a context of high unpredictability, whether exploitative or explorative innovation strategy, as well as whether the generation and implementation of ideas are mediators of these relationships. These are organizations that enable the expression of creativity par excellence and promote its distribution, enhance innovation in different ways and promote it in other structures and companies, operating continuously in environments of high risk and uncertainty. The third reason is to explore individual and contextual factors that facilitate the relationship between control and creativity and innovation, since we suggest these raise the explanatory capacity of the organizational characteristics that significantly influence the performances under study.

With this investigation, we seek to contribute to the literature on management accounting, through the study of MCS in contingency contexts of strategic uncertainty. At this intersection, we will seek to develop a deeper understanding on the systemic effects of the control systems dimensions, and in the reality under study, to understand how they are operationalised, whether in a complementary or supplementary way, in relation to different modes of innovation.

In this vein, we also intended to contribute to the reinforcement of the literature on innovation, integrating and developing theoretical arguments that show that personality traits associated with context variables can interact together and provide, in this way, better performance for cultural and creative organizations, whose approach can be transposed to other realities.

In the next section, we will revisit the relevant literature relating it to our study and our propositions, and then, in section 3, we will explain the research method adopted. Section 4 will present the data obtained and the results. Section 5 is dedicated to the general discussion of research. Section 6 provides the study's conclusions, implications, limitations and future lines of investigation. Finally, section 7 presents the bibliography consulted.

2. Literature Review and Propositions Development

2.1 Creativity and Innovation in Culture

Starting from the 1940s, Psychology began to dedicate more attention to creativity, and from it a diversity of other closely related elements also began to be the object of study, especially creative thinking and the mental processes involved, the intellectual and cognitive personality traits, as well as the factors internal and external to the individual, both environmental and cultural, that act as facilitators or inhibitors of creative expression (Reis & Ribeiro, 2010; Tudda & Santos, 2011).

Amabile (1983a) expands the theory of creativity – hitherto understood as composed by four processes: problem definition, information gathering, idea creation and its evaluation (Steele et al., 2017) – establishing one of the main theoretical models of organizational creativity (Shalley & Zhou, 2008) that goes on to describe creativity in terms of what the various theories explain – as the confluence of intrinsic motivation, and skills in the domain of the task and in the sphere of creative thinking (Amabile, 1983a) .

Organizational creativity focuses, therefore, in the context of an organization and is based on the understanding of creativity as a broader phenomenon than an individual thought process. The predominant definition among several researchers is the one presented by Woodman et al., (1993: 293), who define organizational creativity as “the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system”.

Most of the definitions attributed to an idea, when it is a creative one, bring together two essential aspects (Amabile, 1983b; Anderson et al., 2014; Kaufman, 2016; Oldham & Cummings, 1996, Speckbacher, 2017). The first aspect refers to the novelty, divergence, difference, or newness of the idea, while the second refers to its significance, adequacy, relevance, usefulness, and goal orientation with regard to organizational creativity. This second aspect has been characterized as “having the potential to create value for the organizations in the short or long term” (George, 2007: 441).

In this way, creativity can be seen as the first phase of an innovation process (Baer, 2012). Individual innovation refers to the "development and implementation of new ideas by people who over time engage with others within an institutional context" (Van de Ven, 1986: 591).

In the extensive literature on creativity and innovation, scholars of both dimensions have independently come to recognise that between the beginning and the end of the process, i.e. between the generation of the idea and its implementation, there are also intermediate phases (elaboration and championing) (Campbell, 1960; Ford, 1996; Harvey, 2014; Perry-Smith & Mannucci, 2017; Staw, 1990). The circumscription of these phases suggests different degrees of active involvement resulting from the interactions and purposeful action of creators to facilitate their respective needs (Perry-Smith & Mannucci, 2017). Table 1 characterises all the phases of the process.

Notwithstanding the relevance of these intermediate phases, research adopting a social and relational approach has emphasised the idea generation and implementation phases and recognises that they are two different activities within the innovation process (Baer, 2012; Perry-Smith & Mannucci, 2017).

At the same time, there are also several seminal concepts of innovation from an exhaustive list of references since the second half of the last century. Barnett (1953: 721) understands innovation as "any thought, behaviour, or thing that is new because it is qualitatively different from existing forms". The emphasis is correctly placed on "reorganization rather than upon quantitative variation as the criterion of novelty."

Mansfield (1963) improves the notion of incorporating an idea within an organization and distinguishes between innovation and imitation, the latter being the subsequent use by other social systems. In this line, for Levitt (1966) innovation occurs only when something is totally new, having never been done before. But when competitors in the same sector use this innovative solution, even if it is something new for them, it is not innovation, but imitation.

Table 1 Idea journey phases

Phases	Description	Need	Example	Outcome
Idea generation	The process of generating different creative ideas and selecting the most promising one.	Cognitive flexibility	The screenwriter generates different ideas for new movies, selecting the one he or she judges to have the highest creative potential.	Core concept of the idea (e.g., idea for a movie)
Idea elaboration	The process of systematically evaluating the novel idea's potential and further clarifying and developing it.	Support	The screenwriter starts working on the idea to develop a more detailed summary of the movie, a "treatment," or a first draft that can be presented to potential producers during a pitch meeting.	More detailed description of the idea (e.g., treatment, first draft).
Idea championing	The active promotion of the novel idea, aimed at obtaining the green light for pushing it forward and, consequently, the resources in terms of money, talent, and political cover to implement it.	Influence and legitimacy	The screenwriter tries to sell the idea for the movie to studio executives. He or she must convince producers of the novelty and potential of the idea. This may happen during a so-called pitch meeting.	Greenlight to develop and produce the idea (e.g., approved final script).
Idea implementation	The process of converting the idea into a tangible outcome that can subsequently be diffused and adopted.	Shared vision and understanding	The screenwriter finalizes the script. The production and creative crew work to realize the movie. Once the movie is finished, its success is evaluated by the extent to which it is recognized as creative by peers and critics.	Detailed blueprint or finished product (e.g., movie).

Retrieved from Perry-Smith and Mannucci (2017: 56)

Other authors, such as Carroll (1967) or Becker and Whisler (1967), focus on innovation as an organizational or social process. In the perspective of Becker and Whisler (1967: 463), “it is a process that follows invention but can be separated from it in time and location”. “Invention is fundamentally a creative act of the individual”, while innovation, in the context of their study, “is fundamentally a co-operative group action”. And for them innovation means “the first or early use of an idea by one of a set of organizations with similar goals”.

Thompson (1965) introduces a strategic element in the concept of innovation regarding the adaptability of organizations. For this author, “innovation is meant the generation, acceptance and implementation of new ideas, processes, products or services” and it “implies the capacity to change or adapt”. This definition recognizes that the process of incorporating something new represents a strategic effort for the organization that triggers it, and also that innovation is a multiphase process and not a single event that occurs in a single moment in time (Thompson, 1965: 2).

For Knight (1967: 478), “an innovation is the adoption of a change which is new to an organization and to the relevant environment.” When the author includes the term adoption in his definition of innovation, he does so in the perspective that the organization goes beyond the conception of a new idea, proceeding to its application. The innovation of a new product occurs when it is designed, produced and used, while the innovation of a production process only materializes itself after the operationalization phase.

As noted by Pierce and Delbecq (1976), in the conceptual models defended by Knight (1967), Wilson (1966) and Thompson (1965) there is an agreement regarding the stages identified in an innovation process: generation, adoption and the implementation of ideas.

Still, according to Anderson et al. (2014), there is a general lack of agreement among researchers about what precisely constitutes creativity or innovation, with different studies using quite different operationalizations of each concept. Some scholars argue for a stronger conceptual differentiation between creativity and innovation (Oldham & Cummings, 1996; Rank et al., 2004), while other researchers argue that creativity does not occur only in the early stages of the innovation processes but suggests instead a cyclical and continuous repetition process between idea generation and implementation (Paulus, 2002).

According to Baer (2012), when creativity is defined in terms of the nature of people's ideas, and not their quantification, creativity and implementation are neither synonymous nor necessarily positively correlated. Therefore, simply producing creative ideas does not ensure that these ideas will be implemented.

In defence of an integrated approach, Anderson et al. (2014) mention that creativity and innovation can occur in the sphere of the individual, the team, and the organization, or in more than one of these dimensions in a combined way. However, invariably, they can be reperculated in benefits identifiable in one or more of these dimensions of analysis. Wang and Tsai (2014) show by their study that the resources, management practices and organizational motivation have significant and positive direct effects on innovation, while the expertise, creative skills and intrinsic motivation have significant and positive direct effects on creativity and confirm the reciprocal relationship between innovation and creativity.

As Godart et al. (2015) mention, although all innovations are, by definition, creative up to a certain point, there is great variation in the exact level of creativity a given innovation can exhibit.

The published literature has been referring to different types of innovation, namely technical and administrative (management), product and process, as well as incremental and radical (Damanpour, 1991).

In a few decades, process and management innovations gained greater relevance, as their impact on the efficiency and competitiveness of the organizations has been recognized (Womack et al., 2007; Kirner et al., 2011).

As mentioned by Lukas and Ferrell (2000), these innovations can then be directed to respond to customer demand, or they can be reflected in the creation of something new, which is based on novelty. In this sense, the former are often considered more incremental, exploiting existing knowledge (Lukas & Ferrell, 2000), while the latter are radical innovations that lead to substantial changes in the organization's activities and, therefore, in the existing practices (Damanpour, 1991).

Although it is assumed that organizations should explore their resources and respond to new opportunities, in order to generate gains and introduce radical innovations that ensure their long-term survival (Gschwantner & Hiebl, 2016), the radicalness of innovation is considered relative, given that some management models (TQM, BPR, Six Sigma) have popularized best practices, and that the emphasis on incremental innovation for a specific manager or organization may be perceived as radical (Hage, 1999; Mol & Birkinshaw, 2009; Rogers, 2003; Wright et al., 2012).

In fact, innovation researchers made a distinction between incremental and radical innovations, with the latter being more creative than the former (Damanpour, 1991; Dewar & Dutton, 1986; Henderson & Clark, 1990).

Radical innovation is defined as “a new product that incorporates a substantially different core technology and provides substantially higher customer benefits relative to previous products in the industry” (Chandy & Tellis, 2000: 2). Therefore, radical innovation is characterized mainly by the incorporation of a high degree of new knowledge (Dewar & Dutton, 1986), while requiring new tasks and new processing skills, and an understanding of the market levels and systems across the entire organization (McDermott & O’Connor, 2002). In another light, incremental innovation involves relatively small changes in technology and provides relatively low incremental benefits to the customer per unit of value (Chandy and Tellis, 1998). It is, thus, expected that the knowledge incorporated in the incremental innovation and the innovation skills used in the process are mainly present within the company, although not entirely (Robertson et al., 2012) or are closely related to the company’s level of knowledge (Vermeulen et al., 2007; Yamakawa et al., 2011).

Since innovation is critical to the success of organizations in many sectors and in most cultural and creative industries, in areas such as fashion, art, videogames creation, technology, publishing or cinema, success does not depend on the creativity of each idea generated throughout the whole development and production process, but rather on the public’s evaluation of the final product when that is made available on the market (Godart et al., 2015). In these industries, it is difficult, and often impossible, to separate creativity from innovation (Caves, 2000).

The concept of Cultural and Creative Industries (CCI) – a definition adapted from Working Document No. 2 on Cultural and Creative Industries of ENEI (National Research and Innovation Strategy for Intelligent Specialization 2014-2020) – is vast and diverse and encompasses a set of activities that have in common the use of creativity, cultural knowledge, and intellectual property as resources to produce goods and services with social and cultural significance, such as performing and visual arts, cultural heritage, handicrafts and jewellery, cinema, photography, radio, television, music, publishing, educational and entertainment software (notably videogames) and other computer software and services, the new media, architecture, design, fashion and advertising (DGAE, 2018).

As Street et al. (2016) mention, the approaches that explain cultural innovation are distinct. One of the most familiar is the one Lieberman (2000) calls reflection theory, which is based on the idea that creativity and innovation are generated by the social and political environments in which the artists live. However, for Lieberman (2000: 273) the reflection theory also presents limits, namely when it ignores “the role of internal mechanisms and therefore the fact that changes occur even where external conditions remain constant”.

In the context of cultural and creative industries, a company’s most strategic characteristic is organizational creativity. So, organizations with high levels of innovative capacity enable the creation of an environment that encourages the emergence of creative ideas to produce new products, processes or systems (Ginting et al., 2019).

From investigations carried out in creative industries, such as the field of fashion, for example, the results show that in addition to high levels of creativity and innovation, there is a need for advanced management techniques in the face of the rapid development of the inherent business strategy (Ünay & Zehir, 2012). Still, Ünay and Zehir (2012) claim the coexistence of conflicts of interest between management and creativity and innovation in the search for efficiency.

According to Müller et al. (2009), measuring innovation in creative companies using standard concepts determined from statistics obtained on innovation is complex because, originally, all products and services provided by creative and cultural companies are somehow innovative, whether they are created especially at the request of a particular customer, are based

exclusively or separately from other products by a special degree of originality, or represent the results of individual creative work.

However, as Marinova and Borza (2015) refer, not all creative and cultural companies have to be innovative in the same way. This is especially evident with regard to process innovation, since new products and services can be developed based on standard technology.

Also the acquisition by the creative industries of intermediate goods and services, created by other industries, provides another way for creative industries to promote innovation from a global economy perspective. Cultural and creative industries share knowledge with their own suppliers, either intentionally or because of established relationships, or they can look for more innovative products themselves (Bakhshi et al., 2008).

Castañer and Campos (2002) argue that cultural and creative organizations can cultivate their own innovation by integrating culture and creativity with a specific knowledge and technology adopted externally. In contrast, there is still a preponderance of focus on technological innovation, which tends to prevail, with innovative activities being described exclusively as those related to the adoption of information and communication technologies. This reality overshadows noticing other types of innovation in the cultural and creative sectors, which according to Handke (2004) and Stoneman (2010) shows little awareness for the peculiarity of the cultural organizations' artistic and cultural innovation in creating meaning, aesthetics, or content, which considers other dimensions of content and process, such as multidisciplinary and interactivity (Castañer & Campos, 2002).

The first three propositions identified below aim to raise the understanding of how organizational contexts dependent on creativity enhance high innovation environments and position themselves differently according to the strategy pursued regarding innovation. These relationships are observable in the proposed research model illustrated in figure 1.

Proposition 1: An organization's creativity dependency tends to be positively associated with idea realization.

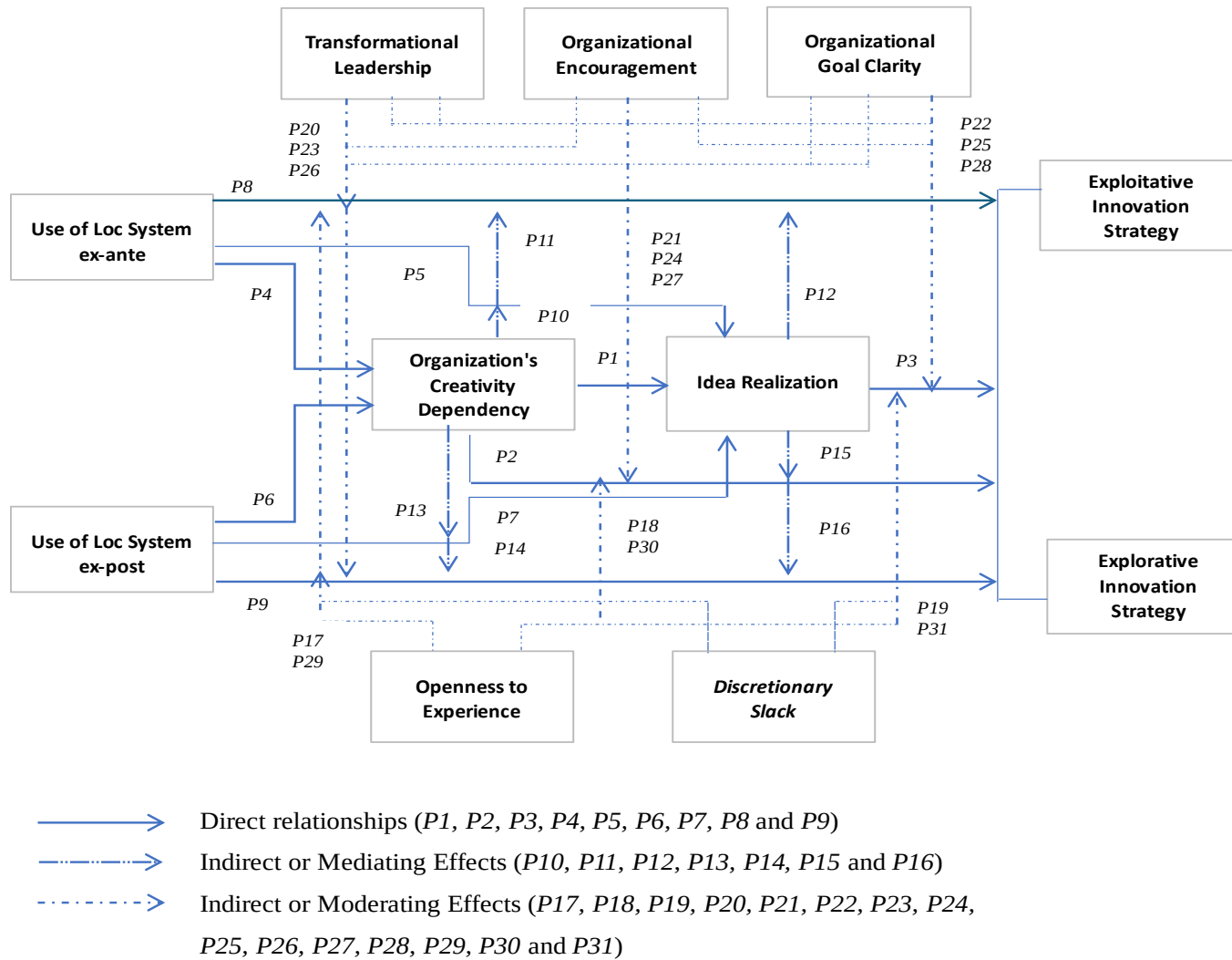


Figure 1 Theoretical Model

Proposition 2: An organization's creativity dependency has a more significant positive association with an explorative innovation strategy than with an exploitative innovation strategy.

Proposition 3: Idea realization has a significant positive association with an explorative innovation strategy than with an exploitative innovation strategy.

2.2 The relationship between Management Control Systems and Innovation: Dichotomies and Levers of Control

Management control was defined by Anthony (1965) as “the process by which managers ensure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives.” This definition would limit researchers not only in their ability to view Management Control Systems (MCS) “as encompassing the largely accounting-based controls of planning, monitoring of activities, measuring performance and integrative mechanisms, it also served to artificially separate management control from strategic control and operational control.” (Langfield-Smith, 1997: 208).

Even though MCS are conventionally perceived as passive instruments that assist management, the concept of MSC has gained a greater reach in the last few decades, focusing “on the provision of more formal, financial quantifiable information to assist managerial decision making to one that embraces a much broader scope of information. This includes external information related to markets and customers, competitors, non-financial information related to production processes, predictive information and a broad array of decision support mechanisms, and informal personal and social controls.” (Chenhall, 2003: 129).

The literature produced in the context of MCS recognizes that managers have a strategic option by which they can position their organizations in specific environments. According to Chenhall (2003), from the research on MCS the evidence suggests a link between strategy and cost control, and the formality of performance evaluation. Studies are focused on strategy at the business unit level and not at the corporate or functional levels.

The current focus, which falls on the strategic dimension, has brought a wide range of possibilities to management accounting (Langfield-Smith, 2008). As Wickramasinghe and Alawattage (2007) mention, new instruments and techniques have been developed to allow accounting and management control to interact with operations, both in terms of management and at the strategic level (Wickramasinghe & Alawattage, 2007). Therefore, in addition to regularly measuring a variety of financial indicators, management control should involve the use of non-financial measures to determine the performance of short-term indicators linked to the achievement of long-term strategic goals (Langfield-Smith, 1997).

The current perspective is that MCS support and facilitate the organizational efforts to respond and adapt to the environment (Davila, 2005), allowing organizations to create unique capabilities (Mundy, 2010) and promote the creation of dialogue and ideas (Davila et al., 2009b).

In the literature produced on the study of organizations, the thought arises that organizational cultures pursue innovation if they are more adaptable and responsive and promote open communication and a free flow of information, as well as creating incentives for the involvement of employees in the development of new ideas, became consensual (Burns & Stalker, 1961; Mintzberg & Waters, 1985; Quinn, 1985).

Mintzberg (1994) brings together a broad body of thought on how organizations propose to generate new ideas, observing the important role of supporting creative innovation processes – not always well accepted sometimes –, and that more open, informal, and explicitly supportive cultures are needed for the promotion of innovation.

Burns and Stalker (1961) argued in the early 1960s that organic organizations were more suited to generate innovation than more mechanistic organizations. According to Chenhall (2003: 131-132), “mechanistic controls rely on formal rules, standardized operating procedures and routines. Organic systems are more flexible, responsive, involve fewer rules and standardized procedures and tend to be richer in data.” In previous studies, the empirical evidence carried out on projects, such as analysis units, corroborated the argument that mechanistic forms of controls tend to be of little relevance to the innovation process associated with a high level of uncertainty (Burns & Stalker, 1961; Ouchi, 1979).

In support of this perspective, the initial literature produced that connected MCS and innovation discussed the dysfunctional effects of these systems in the field of research and development (Van der Meer-Kooistra & Scapens, 2015). In general, these studies showed that forms of organic control were more suited for organizations looking for innovation or, as stated by Grabner and Speckbacher (2016), in the case of organizations highly dependent on creativity it was believed that they could benefit from the establishment of a low level of formal control.

Quinn (1978) states that formal planning practices in organizations institutionalize innovation as something that is seen as incremental. Ouchi (1979) uses some examples to show that control systems dependent on explicit monitoring, evaluation, and correction lead to widespread feelings of demotivation and compatibility with what is instituted. He also says that in innovative environments no rational form of control can be applied.

Based on the structure of Ouchi (1979), other scholars such as Rockness and Shields (1984) and Abernethy and Brownell (1997) seek to understand which control systems are appropriate in research and development organizations, and they tend to conclude that in contexts where uncertainty is high reliance on more personal control mechanisms is preferable to the adoption of accounting or behavioural control systems.

For Davila et al., (2009b) formal MCS must be dissociated from entrepreneurship and innovation, an idea shared in the literature on the theme of innovation. From the meta-analysis developed by Damanpour (1991) on the relationship between innovation and its potential determinants, it is concluded that control tends to be harmful to the innovation effort and underlines the negative effect of formalization.

Simons (1987) and Chenhall and Morris (1995) also demonstrate the existence of the apparent paradox in the context of business strategy that can be explained by the need to adopt organic systems whenever innovation is trying to be encouraged and strict control in the face of excessive innovative environments.

The limitations previously described proposed for the traditional MCS have been questioned, however, and shown to be unfounded in other studies, as there are researchers who consider that these systems can be important to provide the necessary discipline to manage uncertainty.

They also demonstrating the need for a coexistence of formal MCS in uncertain environments where the unit of analysis is the project (e.g., Abernethy & Brownell, 1999; Bisbe & Otley, 2004; Cardinal, 2001; Davila et al., 2009a).

The literature on management control presents several conceptualizations that in a broader sense raise the understanding of the use of controls (Barros & Ferreira, 2019). Simons' LOC framework is one of the approaches that recognizes the use of various controls and styles in its use (Chenhall & Moers, 2015; Curtis & Sweeny, 2017), so it has been an influential framework in this new perspective on MCS and innovation. For Davila et al. (2009a), Simons' LOC framework is a change of paradigm in the traditional way of thinking, as it clearly identifies the interactive systems as tools that aim to ensure that organizations explore strategic uncertainties.

In fact, although some studies suggest that creative contexts do not require high levers of management control, as formal MCS are seen as impediments to creativity and to the associated management of uncertainty, for instance, with product innovation (Abernethy & Stoelwinder, 1991; Amabile, 1998), Simons (1990, 1991, 1995a) suggests that MCS help to boost and support creativity in the sense that MCS can provide a priority agenda incentivizing creation and the implementation of creative ideas (Simons, 1990, 1991, 1995a; Ahrens & Chapman, 2004; Bisbe & Malagueño, 2009; Davila, 2000).

For Simons (1995a, 2000), studies that tend to conclude that management control systems hinder creativity are partial, since they focus exclusively on the use of MCS diagnoses and ignore the implications of the interactive uses of MCS. In contrast, studies that confirm that MCS act as facilitators of creativity, and therefore innovation, are more comprehensive from the perspective that they benefit from the presence of the interactive uses of SCG. It should be noted that in the underlying framework advocated by Simons, positive controls (belief systems and interactive control systems) and negative controls (boundary systems and diagnostic control systems) are opposing forces that need to coexist in order to create dynamic tensions that, in turn, ensure an effective control.

Management accounting literature has defended the view that the levers of control should operate as a system o foster creative work, which is essential for environmental employees

(Mundy, 2010; Henri, 2006; Simons, 1995a, 1995b; Speklé et al., 2017). “The power of these levers” resides not in the way they are used individually but “rather in how they complement each other when used together” (Simons, 2000: 301). Its balance is found with the design and use of combinations of different levers of control (Adler & Chen, 2011).

Still on the relationship between control levers and creativity, Speklé et al. (2017) refer that some experimental studies (for example, Ittner et al., 1997), identify that individual creativity measurement and reward do not reliably raise the creative result. Although this latest literature does not typically demonstrate that control is a barrier to creativity, it also does not provide a clear indication that it facilitates creative performance. Studies inspired by organizational and sociological theories find that the use of accurate accounting controls subordinate or endanger artistic and cultural values generating opposition (Christiansen & Skaerbaek, 1997; Oakes & Oakes, 2016; Trevisan & Mouritsen, 2023). In short, Cools et al. (2017) say that if control is used in a diagnostic way, then it tends to be experienced as an obstacle to creativity, whereas if control is used in an interactive way it can play a creativity boosting role.

It is important to recognize that, presently, innovation can result from innovation projects within an organization, but also from external projects linking several organizations. Ordinary organizations enter into partnerships with other organizations to raise the level of knowledge and overcome financing problems in research and development projects (Moll, 2015).

According to Eikhof and Haunschild (2006: 234), the cultural and creative industries are generally described as “a special sphere of economic production”. These industries represent the overlapping areas between cultural and commercial activities (Turok, 2003) and are closely related to the craft industries in which the production of a product is combined with the search for an artistic vision (Torres, 2002).

The cultural and creative industries have become an integral component of the economic systems of most Western economies (Konrad, 2013; Mietzner & Kamprath, 2013). According to DGAE (2018: 5), in Portugal, as in many other countries in the European space, the cultural and creative industries sector has some differentiating characteristics when compared to other sectors of the economy, namely: i) “it is a sector made up mostly by individuals, micro, small and medium-sized companies working in complex supply chains that combine commercial

with pre-commercial activities (or even anti-commercial) and that to a large extent depend on informal networks through where creative ideas flow”; ii) “it is often composed by highly specialized niche businesses that create value by combining technological innovation and creativity when designing new cultural products”; iii) “its assets are invisible and volatile: talent, reputation, brand, and a large part of these businesses’ critical infrastructure is external to the companies”; iv) it has a business profile little recognized by banks, investors and the government, and is sometimes devalued to the detriment of other activities considered “more profitable”.

By nature, these organizations typically face tensions between creativity and control (Caves, 2000; Howkins, 2001), cultural activity and commercial activity (Turok, 2003), and art and business (Eikhof & Haunschild, 2006), since a creative entrepreneur seeks to make his product in such a way that it meets the needs of the market and, at the same time, satisfies his own sensitivity and creative and artistic vision (McCauley, 1999; Torres, 2002).

To the extent that this combination of commercial and creative activities is the essence of the creative entrepreneurs’ work, those organizations face, as a rule, high levels of uncertainty and unpredictability (Dempster, 2006; Eikhof & Haunschild, 2006; Turok, 2003), namely, with regard to whether their products meet the current market demand; whether customers value the new product in terms of its originality, which is generally unique (Caves, 2000); and also if, as a result, there is a high risk of product failure (Turok, 2003).

The widely assumed tension between the levers of control and idea generation and their implementation seems to depend on the interaction of the adopted models of conceptualizing control with creativity and innovation. We propose, therefore, to test the following propositions regarding the association between the use of ex-ante control systems and organization’s creativity dependency and idea realization.

Proposition 4: i) The use of belief systems is positively associated with the organization’s creativity dependency; ii) the use of interactive control systems is positively associated with the organization’s creativity dependency; and iii) an enabling use of boundary systems is positively associated with the organization’s creativity dependency.

Proposition 5: i) The use of belief systems is positively associated with the idea realization; ii) the use of interactive control systems is positively associated with the idea realization; and iii) an enabling use of boundary systems is positively associated with the idea realization.

Proposition 6: An enabling use of diagnostic systems is positively associated with the organization's creativity dependency.

Proposition 7: An enabling use of diagnostic systems is positively associated with the idea realization.

2.3 The Tension between Management Control Systems and Exploitation and Exploration Innovation Strategies

According to He and Wong (2004), the literature has proposed a conceptual distinction between exploitation and exploration, which has been used, explicitly or implicitly, as an analytical construction in a wide range of management research domains, including strategic management (e.g., Winter & Szulanski, 2001), organizational theory (e.g., Holmqvist, 2004; Van den Bosch et al., 1999), and managerial economics (e.g., Ghemawat & Ricart Costa, 1993). "These studies have shown that exploration and exploitation require substantially different structures, processes, strategies, capabilities, and cultures to pursue and may have different impacts on firm adaptation and performance" (He & Wong, 2004: 481).

Exploitation and exploration represent essentially different ways of learning and innovation, which compete for scarce resources (March, 1991). Exploitation is expressed by characterizing terms, such as "refinement, choice, production, efficiency, selection, implementation, execution", while exploration is indicative of "search, variation, risk taking, experimentation, play, flexibility, discovery, innovation" (March, 1991: 71).

As mentioned by Bedford (2015), exploitative activities are directed toward increasing the proficiency and reliability of task performance through modifications to established processes, and also by taking advantage of the experiential learning obtained through the repetition of

routines. This process of incremental learning reinforces and deepens organizational capabilities along a given technological trajectory (Benner & Tushman, 2002; He & Wong, 2004). On the other hand, the activities underlying an exploration strategy involve the search for new and emerging markets, and the development of new prototypes and innovative technologies (Bedford, 2015). This approach requires disruptive organizations that pursue radical departures from prevailing competencies and learned routines, and generate tolerance for slack, persistent experimentation, and improvisation of practices (Andriopoulos & Lewis, 2009; Bedford, 2015; Jansen et al., 2006).

In short, exploration and exploitation are fundamentally different logics that compete for the organizations' scarce resources and, therefore, create tensions among them. This results in the need for these organizations to manage the trade-offs between these two dimensions. However, because there may be a synergistic effect between exploration and exploitation, it is also essential that organizations ensure a balance between the two (He & Wong, 2004).

According to Farjaudon and Soulerot (2011), conciliating exploration and exploitation in the perspective of a continuum between these two dimensions is equivalent either to proceed by chronological alternation, or to find a balance midway between the two organizational approaches. In this sense, it is permissible in the long run for some leaders to oscillate between a clearly innovative strategy and a strategy focused on resource optimization (Ghemawat & Ricart Costa, 1993).

The need for an appropriate balance between exploration and exploitation is a key challenge for organizations (Gupta et al., 2006; March, 1991). However, the appropriate mix of those two dimensions is still up for debate from various perspectives, namely: i) how many resources should organizations allocate on exploration during dynamic environments (Csaszar & Siggelkow, 2010; Jansen et al., 2006; Posen & Levinthal, 2012; Sidhu et al., 2004); ii) which organizational structure is optimal to achieve the desired level of ambidexterity (Benner & Tushman, 2015; Gibson & Birkinshaw, 2004; O'Reilly & Tushman, 2013; Raisch et al., 2009); iii) which situational conditions may also allow for or necessitate continued specialization (Benner & Tushman, 2003; Bedford, 2015; Gupta et al., 2006; Simsek, 2009); iv) and at which level of the hierarchy should the exploration activities take place (e.g.,

Baumann et al., 2019; Hu et al., 2017; Dutt & Joseph, 2019; Eggers & Kaul, 2018; Joseph et al., 2016; Sengul & Gimeno, 2013).

Firstly, we refer to the amount of information that Ungureanu (2020) mentions as an important determinant of the optimal level of exploitation in dynamic environments. According to most empirical research, environmental dynamism raises uncertainty about the future value of opportunities and, to that extent, the organizations that explore more in this context can gather more information and thus reduce this uncertainty (Baum & Wally, 2003; Baumann et al., 2019; Jansen et al., 2006; Sidhu et al., 2014).

In opposition, the use of theoretical models concludes that exploration in more turbulent environments enhances a rapid deterioration of knowledge, reduces the value of newly acquired information, and creates imbalances between current and newly developed practices, which can result in weaker performances (Csaszar & Siggelkow, 2010; Posen & Levinthal, 2012).

Second, the need for an appropriate equilibrium between exploration and exploitation has been conceptualized by Tushman and O'Reilly's (1996) with the idea of the ambidextrous organization. More precisely, they argued that an ambidextrous organization that can operate simultaneously to explore and exploit is likely to achieve superior performance than organizations emphasizing one at the expense of the other (He & Wong, 2004). The literature describes two forms of ambidexterity, structural and contextual (Raisch et al., 2009). Structural ambidexterity refers to the partitioning of tasks between different sub-units (Tushman & O'Reilly, 1996). In this first approach, the organization creates a dual structure where sub-units develop singular competencies, cultures, systems, and processes suited to the requirements of either exploration or exploitation (Bedford, 2015; Duncan, 1976; Raisch et al., 2009). The contextual ambidexterity view (Gibson & Birkinshaw, 2004) proposes that innovation and change are achieved through independent but coordinated exploration efforts throughout a business unit. This is achieved by "building a set of processes or systems that enable and encourage individuals to make their own judgments about how to divide their time between conflicting demands" (Gibson & Birkinshaw, 2004: 209). In both cases the literature recognizes that top management plays a determinant role, which seems to favor more

centralized structures in achieving an effective balance and integration between competing strategic priorities (Simsek, 2009).

Still in this perspective of the behavioural approach to balancing exploration and exploitation, other elements seen as "softer" human aspects, such as informal social support and trust, allow the organization's members to handle various functions and distribute their time between conflicting demands (Gibson & Birkinshaw, 2004; Patel et al., 2013).

However, for some authors, the absence of formal separation between these two dimensions can reduce specialization benefits and promote accelerating cycles of either exploration or exploitation (e.g. Levinthal & March, 1993; Simsek et al., 2009; Stettner & Lavie., 2014). This possibility opens the door for function ambiguity, leaving middle and lower level managers unable to understand how to allocate attention to exploration and exploitation, well as pressure at the level of activity transitions. (Tempelaar & Rosenkranz, 2019).

Third, in addition to ambidexterity, the literature highlights another main adaptive strategy, the punctuated equilibrium, which refers to alternating between periods of specialization (Gupta et al., 2006). As mentioned by Bedford (2015), contexts of stability and predictability and commodity markets tend to provide greater returns for organizations that effectively capitalize on existing technologies. However, in the face of highly dynamic and competitive environments, which are subject to rapid product obsolescence, continued emphasis on exploratory activities to ensure survival is required (Benner & Tushman, 2003; Simsek, 2009). From another perspective, specialization is still attainable through established interorganizational relationships whenever organizations control complementary resources. In this sense, the exploratory efforts of one organization feed the exploratory capacities of another (Gupta et al., 2006).

At the last point, Ungureanu (2020) focuses on the inconsistency of the literature regarding the level of hierarchy that should guide the direction of the organizational exploration. According to Bauman et al. (2018), when comparing the performance of a division with the performance of other divisions, lower-level managers will engage in an exploration strategy if their results are lower than those of other divisions. These conclusions are supported by some empirical studies (e.g., Obloj & Zenger, 2017; Tarakci et al., 2018).

In contrast, the theoretical body developed by de March and Simon (1958) and Nelson and Winter (1982) proposed a decomposition of the organizations into operational units that are centered on efficiency (that is, exploration), and a nuclear area directed at discovering new strategies that tend towards growth (that is, exploitation). In this line, we find empirical work that shows how this matrix creates “dynamic value” according to what was proposed in these theories (Dutt & Joseph, 2019; Knott, 2001, 2002; Knott & Turner, 2019). In the face of this dichotomy, Ungureanu (2020) proposes that whatever their hierarchical level, management should do some exploration. For Ungureanu (2020) the level of exploration appropriate for each hierarchical level is inevitably influenced by various factors, for example the management’s centralization level and the frequency with which the environment changes.

Henri (2006) points out that Simons’ LOC framework (Simons, 1990, 1991, 1994, 1995a) relies on the concept of tension. “The essence of MCS is to manage the inherent organizational tension between creative innovation and predictable goal achievement.” (Henri, 2006: 533). Dynamic tension denotes contradictory but interrelated elements (Lewis, 2000) and this interrelation implies a dynamic relationship that involves both competition and complementarity (English, 2001). In this sense, managers use the MCS as a positive and negative force with the purpose of creating a dynamic tension that helps to manage the inherent organizational tension. Thus, it is widely recognized that the use of controls plays a pivotal role in the success or failure of innovation and learning in organizations (Bedford, 2015; Davila et al., 2009b; Simsek, 2009; Smith & Tushman, 2005).

In this sense, we will consider how MCS is expected to increase the organization’s performance for each innovation mode in the face of the LOC framework (Simons, 1995a, 2000).

Interactive control systems are formal information systems embedded in frequent and intense communication patterns centered on emerging opportunities and strategic uncertainties (Simons, 1995a). In opposition to diagnostic systems, interactive systems are the positive control lever, as communication is forward-looking, facilitative, and inspirational. Simon’s diagnostic control systems are used to motivate, monitor, and reward the achievement of specified goals, while interactive control systems are used to stimulate organizational learning

and the emergence of new ideas and strategies (Simons, 1995a). The diagnostic and interactive systems are used to “elaborate and implement strategy” (Bisbe & Otley, 2004: 711).

In the literature, diagnostic and interactive controls have already been characterized as ambiguous concepts, mainly the interactive controls (Bisbe et al., 2007; Ferreira & Otley, 2009). In effect, according to Tessier and Otley (2012), some authors have attempted to provide a clearer definition of interactive controls, based on Simons’ writings. Nevertheless, no consensus has been obtained concerning the adequate improvement.

On the one hand, to be considered interactive, Bisbe et al. (2007) propose a more inclusive definition that must contain all the following five components: intensive use by superiors, intensive use by subordinates, face-to-face communication, focus on strategic uncertainty, and a non-invasive management style.

On the other hand, Ferreira and Otley (2009) propose a less inclusive definition and suggest that the concept should be split into two distinct components: interactive use of controls; and strategic validity controls. According to the authors, Simons’ definition of interactive controls encompasses two distinct dimensions that do not operate at the same level. Underlying the first concept is the idea that the use of controls, which applies to any control in the organization, concerns the intensity with which managers use controls, described as 'interactive use of controls'. The second concept, labeled "strategic validity controls", focuses on strategy adequacy, and is defined as the set of controls that monitors the right strategy underway in the organization (Tessier & Otley, 2012).

In the discussion raised by Tessier and Otley (2012), they highlight the idea that interactive controls that focus on attention, and facilitate and promote communication (Adler & Chen, 2011) also promote learning (Ferreira & Otley, 2009). In turn, diagnostic controls represent controls that are only observed when deviations from the established targets are identified.

Tessier and Otley (2012) also point out that strategic validity, as designated by Ferreira and Otley (2009), focuses on uncertainty and informs managers about the adequacy of the outlined strategy, thus seeking to ensure the organization’s strategic performance. Based on this they

conclude that: “The revised framework accounts for strategic performance controls and interactive use of controls separately.” (Tessier & Otley, 2012: 177).

Some research, like the one followed by Abernethy and Brownell (1999) and Bisbe and Otley (2004), for example, has shown a positive effect of the interactive use of controls on company performance in settings characterized by innovation and change. This association competes for, at least, two perspectives of reasons.

From a one perspective, according to Bedford (2015), the performance of exploratory innovation organizations depends on discovering emerging opportunities and creating new capabilities, which is demonstrated by the investigations of Burgelman (1991, 2002) and Margison (2002). They have shown autonomous experimentation and search activities for lower-level managers throughout the organizational environment. Additionally, Siggelkow and Rivkin (2006) find that when the level of interdependence between units is low, more extensive exploration at lower levels can increase performance for the organization.

The focus on potential opportunities and innovative perspectives that translate into commercially viable results requires, above all, greater attention and a coordinated allocation of resources by top management that recognizes and integrates such opportunities into the organization’s strategic agenda. For Simons (1995a), this approach by top management is possible through personal and regular involvement in the activities of their subordinates. The interactive control provides management with access to emerging patterns of activity, enabling the selection and the investment of resources into those initiatives that display the most potential in becoming a competitive advantage.

According to Kopmann et al. (2017), interactive strategic controls, which encompass mechanisms to encourage organizational learning and the generation of new ideas and strategic solutions (Simons, 2013), can invert the natural relationship between strategy formulation and implementation, enabling organizations to quickly adapt to emergent strategies.

Miller et al. (2006) replicate and extend March’s (1991) model simulating learning within an organization, and underline how interpersonal interactions in organizations are critical to

knowledge transfer and how important the value of individual learning is.

As mentioned by Gupta et al. (2006), tacit knowledge can only be transmitted by individuals sharing their knowledge directly with others and not through an organizational code. In this sense, the formal use of information systems in an interactive fashion promotes the exchange of tacit knowledge, which guides the search for new opportunities and the obtention of performance benefits from new technologies and markets (Hall, 2010).

Indeed, the model presented by Miller et al. (2006) points to the importance of interpersonal learning in a decentralized way, in order to overcome the potential rigidities of organizations that emphasize exploitation more than exploration. Nevertheless, some degree of specialization in exploration or exploitation may occur at different organizational levels within a system. Paraphrasing authors such as Gupta et al. (2006) and Bedford (2015), the nature of knowledge produced through explorative activities tends to be more nuanced and causally unclear than the knowledge developed in exploitation.

From a second perspective, it should be noted that organizations that are subject to inertial resistance and cognitive bias tend to result in the retention of skill and routines, which in the past gave origin to successful actions (Leonard-Barton, 1992; Levinthal & March, 1993; Smith & Tushman, 2005).

As suggested by Burns and Stalker (1961) in their discussion of organic structures, or Burgelman (1991) in his defense of the importance of autonomous innovation efforts in encouraging organizational renewal and vitality, or Levinthal (1997) concerning successful “re-orientations” that are strongly associated with survival for tightly coupled organizations, highly coupled organizations cannot pursue exploration without foregoing the benefits of exploitation. Inversely, more weakly coupled organizations can exploit the fruits of past knowledge while exploiting alternative bases of future viability.

Indeed, organizations that pursue exploration are usually faced with competitive environments greatly subject to technological shifts, such that optimization upon existing knowledge bases will provide only a temporary advantage (D’Aveni, 1994; Levinthal, 1997). The interactive systems serve as catalysts that challenge the status quo, as well as the validity of current action

plans (Bedford, 2015). Operational activities are thus interrupted by efforts at interactive control, as subordinates are encouraged to make frequent adjustments by trying out one or more ways or means, and by noting and eliminating errors or causes of failure (Chenhall & Morris, 1995). In this sense, according to Simons (1995a), organizations tend to break out of narrow search routines, increasing their performance potential.

To reinforce this idea, interactive systems do not represent an efficient means of control for organizations that develop an exploitative innovation, as they require more management attention and much more significant resources than diagnostic systems (Widener, 2007).

The following is therefore expected:

Proposition 8 i): Emphasis on use of interactive control systems has a positive association with explorative and exploitative innovation strategies.

Another lever of control is the belief systems that, as described by the literature, are likely to have performance benefits for firms pursuing explorative activities.

Exploratory innovation organizations tend to develop their activity under uncertain conditions in which mutations are constant, so explicitly codifying the limits of this performance is a difficult task. However, if core values and beliefs constitute relatively stable standards for individuals to make judgments aligned with the organization's strategic intent as events take place (Bartlett & Ghoshal, 1993; Mundy, 2010), they too facilitate the exchange of information between members of the organization with different experiences and knowledge level, in order to promote new ideas (Hansen, 2002).

The belief systems also play an important role to prevent the onset of organizational inertia and political processes. Through the communication of values and assumptions to managers, belief systems make it possible to avoid that goals and values may not be reflected in the routine (Mundy, 2010; Simons, 1995a).

According to Ahrens and Chapman (2004), even in organizational environments, where the belief system is not considered relevant for certain sub-units or for certain employees, it provides a coherent strategic agenda around which employees can group together. Through

shared organizational values, belief systems promote variance-increasing behaviours, which are vital in exploratory innovation environments (Davila et al. 2009b).

Sharing values also helps to promote exploitative activities, as they resolve conflicting interests and disagreements, facilitating joint action towards specific goals (Jansen et al., 2008). However, as mentioned by Bedford (2015), the excessive focus on belief systems may result in negative returns for organizations that follow exploitative innovations, since by encouraging the search for new opportunities, they move away from established routines and competences.

In a final dimension, it should be noted that, according to Simons (1995a), belief systems increase the motivation of individuals in environments that require creativity. For Adler and Chen (2011), belief systems help to provide and communicate the organizational goals and values that will be internalized throughout the organization. In turn, this internalization of values and strategic intent helps to direct creative efforts towards projects that generate value without an intrinsic impetus. “Although it is the intrinsic motivation that is considered to have the highest effect in generating novel outcomes, that is not mutually exclusive with identified motivation.” (Bedford, 2015: 16).

This leads to the following proposition:

Proposition 8 ii): Emphasis on use of belief control systems has a more significant positive association with an explorative innovation strategy than with an exploitative innovation strategy.

Compared to interactive systems and beliefs systems, the effects of boundary systems and diagnostic control systems are more difficult to predict. A boundary system “delineates the acceptable domain of strategic activity for the organizational participants” (Simons, 1995a: 39) and is an explicit set of organizational definitions and parameters expressed in negative or minimum terms (Simons, 1995a).

Although the available latitude is minimized by exercising the limits established by this lever of control, it does not mean that it translates into a reduction in the employees’ empowerment or motivation. For Mundy (2010), this circumscribed autonomy helps to focus subordinates’

attention on areas considered fundamental to the performance of current operations. Exploitative activities are valued, and the search for continued adjustments and new and opportune solutions is discouraged.

As described by Adler and Chen (2011), boundary systems circumscribe limits to the behaviour of the elements of the organization, in relation to which sanctions are established in the case of a violation of prescribed rules and procedures. By the way, these levers of control minimize the risk of an organization's employees pursuing activities that compromise the reliability and continuity of the established processes, something that is seen as very important for exploitative innovation organizations that typically develop highly coupled activities (Berner & Tushman, 2002).

The boundary systems also suggest taking on a relevant role in strategic renewal by allowing old routines to be disregarded, which leads to new frames of reference being adopted (Simons, 1994).

Although this perspective also seems to promote explorative activities, the limits that are established and sanctioned by boundary systems in the research scope reduce the potential variety of experience and knowledge needed to maximize the expected results of exploratory innovation, which translates into areas of knowledge that have not been explored and, therefore, have not been tested (Bedford, 2015; Rodan, 2005).

Hence it is expected that:

Proposition 8 iii): Emphasis on enabling use of boundary control systems has a more significant positive association with an exploitative innovation strategy than with explorative innovation strategy.

Finally, we address diagnostic control systems, usually associated with mechanistic administrative structures based on rigid control and highly structured communication channels (Henri, 2006). Diagnostic control systems are considered a negative control lever because they focus management's attention on unfavorable or adverse variations and potential mistakes made in implementing the outlined strategies.

According to Benner and Tushman (2002), the greatest benefits occur in environments of innovation exploitation and occur when the organization is able to make continuous but incremental adaptations to processes and activities, rather than the need to reproduce pre-designed routines. There is, however, an associated risk, which can be reflected in negative variations that lead to “a corrective action at best”, while at worst they direct attention to unproductive aspects “such as the credibility of numbers or why things are not better”, without generating any rectification or improvement (Henri, 2006: 534).

The diagnostic control systems share a dual nature, with benefits that tend to be verified in the innovation exploitation environment. On the one hand, the diagnostic control systems can be used in an enabling manner, since they could make the organization’s goals transparent and create progress toward these goals. On the other hand, its use could also promote accountability and give flexibility to the members of the organization in how they use the system and the opportunities to adapt and improve it (Adler, 2006).

As described by Abernethy and Brownell (1999) while reinforcing the first perspective, it is worth noting that since exploitation is based on the understanding of existing processes and capacities, knowledge tends to be more explicit in nature, which in turn allows for greater clarity and precision in defining organizational goals.

Better specification of objectives and their correct communication helps to reduce uncertainty and promote mutual commitment and a coordinated action towards desired outcomes (Adler & Chen, 2011; Bedford, 2015, McGrath, 2001; Widener, 2007).

While discussing the second perspective about diagnostic control systems, we quote Mundy (2010: 501), as they are “not simply a constraining influence on managers’ behaviours, because monitoring processes highlights problems and motivates managers to achieve their goals, sometimes through novel means”. Diagnosis systems only report the intended outcomes, not the procedures that must be followed, so they provide sufficient space and flexibility for subordinates to increase adjustments in their activities (Adler & Chen, 2011).

Clarity of objectives also increases efficiency in finding solutions to problems located at the task level (McGrath, 2001). In turn, this faculty promotes more targeted in-depth learning, which helps to exploit existing technological trajectories.

The development of the above arguments suggests that diagnostic control systems, in combination with boundary control systems, have mutually reinforcing effects for exploitative innovation organizations. As mentioned by Bedford (2015), boundary control systems minimize risk exposure and emphasize depth rather than scope in seeking opportunities, which is consistent with an exploitation environment. With subordinates fully aware of the way in which these limits relate to the organizational goals in an explicitly defined space, they are an element of internalization and support motivation (Adler & Chen, 2011), which is critical for a successful exploitation.

Some evidence suggests that excessive focus on diagnostic mechanisms can redirect the organization's attention to the exercise of minimizing performance deviations. This has the purpose of achieving short-term goals and reducing the new knowledge seeking efforts, which ultimately limits the potential returns of the organization (March, 1973; Osborn, 1998).

On the other hand, diagnostic systems also tend to be aligned with extrinsic reward structures, which can lead to less intrinsic motivation seen as necessary for creativity (Deci & Ryan, 1985; Simons, 1995a).

In the context of exploratory innovation, the literature suggests that the emphasis on diagnostic control systems is unlikely to be associated with significant performance improvements. Exploration involves subordinate experimentation and investigation outside the existing market and technological fields, which implies that it is more difficult to connect activities to results (Bedford, 2015; McGrath, 2001). As exploration objectives are characterized by less accuracy and specificity, it reduces the ability to use quantitative measures as an assessment tool (Turner & Makhija, 2006).

All these arguments lead to the following proposition:

Proposition 9: Emphasis on enabling use of diagnostic control systems has a more significant positive association with an exploitative innovation strategy than with an explorative innovation strategy.

2.4 The Moderating Role of Personality Trait and Context Variables

From the earliest theories of creativity (e.g., Amabile, 1996; Woodman et al., 1993) to the broader literature on person-environment fit (e.g., Kristof, 1996; Schneider, 1987), it has been argued that whenever personal and contextual characteristics are combined, this results in high levels of employee creativity.

Personality traits represent a person's unique patterns of thinking, feeling, and behaving, and convey a sense of consistency and permanence over time (Diener & Lucas, 2023, Joshanloo, 2023). Contextual characteristics are seen as dimensions of the work environment that potentially impact an employee's creativity, but are not inherent to it (Shalley et al., 2004).

The argument in favor of person-context interactions focus on the view that individuals with certain personal characteristics are more likely to value and benefit from the rewards and opportunities provided by specific contextual factors, and consequently to demonstrate greater creativity when these are present. Furthermore, the argument in favor of the interaction of contextual characteristics is that workers are more likely to attend to and value the attributes of one contextual factor when another contextual factor is also present (Shalley et al., 2004).

It is in this sense that we have included personality and contextual characteristics in our review as dimensions that have received attention in the literature on creativity and innovation.

2.4.1 Openness to Experience

To paraphrase Madrid and Patterson (2016), an important body of research has shown that creativity in the workplace is driven by individual and contextual factors, such as personality

traits and professional climate. For example, adopting the Five Factor Model of Personality (Costa & McCrae, 1992), openness to experience has been supported as a relevant cognitive disposition positively associated with the generation of new ideas. The trait activation theory emphasizes that personality traits guide the activation of behaviours, but the situation increases or reduces the impact of traits on behaviour by sending relevant or restrictive signals or indicators (Tett & Burnett, 2003).

Furthermore, the connection between personality traits and relevant contexts that allow them to be highlighted, increases the explanatory contribution of the characteristics to the behaviours studied (Haaland & Christiansen, 2002). According to Sarros et al. (2008), the leaders' innovative tendencies, represented by the "create and conceptualize" composite, are closely related conceptually to intellectual stimulation. Following the trait activation theory, an improvement-orientated work environment could increase the relationship between the leaders' innovative tendencies and intellectual stimulation. From this perspective, in the words of Judge and Cable (1997), insofar as a leader's openness to experience is associated with a preference for an innovation-oriented culture, the presence of such a context should activate this trait and intensify intellectual stimulation behaviours.

In the field of organizational innovation, many scholars suggest that companies can flexibly employ both exploratory and exploitative strategies to sustain their competitive advantages (Araujo-Cabrera et al., 2017; Judge et al., 2002; Levinthal & March, 1993). Openness to experience promotes a more open leadership based on divergent thinking and creativity, when considering multiple strategic perspectives. This approach reduces selective cognitive biases in decision making and enhances strategic flexibility (Herrmann & Nadkarni, 2014; Nadkarni & Herrmann, 2010; Tan & Xia, 2024).

Inspired by this, leaders with greater openness can promote exploratory innovation in their organizations. Firstly, it allows them to understand environmental changes and find survival strategies, seeking to attract new customers and new markets, and invest in instrumental solutions, particularly emerging technologies (Cai et al., 2021; Herrmann & Nadkarni 2014; Tan & Xia, 2024). Secondly, the boldness of these leaders makes them more receptive to new ideas and tolerant of others' perspectives (Javed et al., 2020). Additionally, these competencies can foster an innovative climate throughout the company, reducing subordinates' anxiety about

innovation (McCrae & Costa, 1987; Nwachukwu & Vu, 2020). Simultaneously, leaders who exhibit a high degree of openness actively build, maintain, and manage diverse cooperative relationships (Du et al., 2021). Consequently, companies can launch new products or services based on information from their partners and pursue an exploratory innovation that transcends existing technological boundaries (Cai et al., 2021).

In parallel, openness to experience can enhance the exploitative dimension of an innovation strategy. Leaders with high openness will seek out diverse resources to capitalize on current markets for short-term gains (Herrmann & Nadkarni, 2014; Nadkarni & Herrmann, 2010). For instance, they tend to cultivate harmonious relationships with customers, enabling the company to receive feedback to improve existing products or services (Tan & Xia, 2024).

Additionally, they are more receptive to integrating new knowledge elements in a continuous improvement approach, proactively enhancing the quality and efficiency of the existing products or services, thereby achieving economies of scale (Cai et al., 2021; Du et al., 2021; Jansen et al., 2009).

Hence, while searching for both creativity and efficiency in organizations, it is important for us to understand the moderating effect of openness to experience on the relationship between levers of control, creativity and idea realization, and exploitative and explorative innovation strategies. Therefore, we present the following propositions:

Proposition P17 i): Openness to experience positively moderates the relationship between Interactive Control Systems and Exploitative innovation strategy.

Proposition P17 ii): Openness to experience positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.

Proposition P17 iii): Openness to experience positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy.

Proposition P17 iv): Openness to experience positively moderates the relationship between Diagnostic Control Systems and Exploitative innovation strategy.

Proposition P17 v): Openness to experience positively moderates the relationship between Interactive Control Systems and Explorative innovation strategy.

Proposition P17 vi): Openness to experience positively moderates the relationship between Belief Control Systems and Explorative innovation strategy.

Proposition P17 vii): Openness to experience positively moderates the relationship between Boundary Control Systems and Explorative innovation strategy.

Proposition P17 viii): Openness to experience positively moderates the relationship between Diagnostic Control Systems and Explorative innovation strategy.

Proposition P18 i): Openness to experience positively moderates the relationship between Organization's creativity dependency and Exploitative innovation strategy.

Proposition P18 ii): Openness to experience positively moderates the relationship between Organization's creativity dependency and Explorative innovation strategy.

Proposition P19 i): Openness to experience positively moderates the relationship between Idea realization and Exploitative innovation strategy.

Proposition P19 ii): Openness to experience positively moderates the relationship between Idea realization and Explorative innovation strategy.

2.4.2 Transformational Leadership

According to Bass and Riggio (2006) transformational leadership is a leadership style that involves and inspires followers, committed to realizing a shared vision and organizational goals. It is operationally measured using the following four indicators (Bass & Riggio, 2006): i) charisma, which involves communicating the organization's vision, fostering trust, and earning the employees' admiration for the leader; ii) inspiration, which communicates high expectations and work challenges, raises morale and expresses important goals; iii) intellectual stimulation, which values employees' ideas, develops their rationality and creativity, and involves them in problem-solving; iv) and individualized attention, which entails giving personalized attention to the employees' needs for achievement, respecting individual differences and providing direction.

Research on transformational leadership (e.g., Howell & Avolio, 1993; Pamungkas et al., 2023; Samad, 2012; Vargas, 2015; Waldman & Bass, 1991; Wang & Howell, 2010) and MCS (e.g., Alharbi et al., 2023; Hoai et al., 2022; Ouchi, 2006; Tessier & Otley, 2012) has focused on aligning organizational objectives with individual goals, on the one hand, while promoting employee creativity, innovation capabilities, and commitment to change, on the other hand.

Organizational innovation entails generating or selecting new ideas to offer services, products, and processes that are unique to the organization (Li et al., 2018). Thus, innovation is seen as a key factor for visionary and competitive organizations (Bhaumik, 2018). In the combination of those four indicators, transformational leadership can either encourage or discourage innovation, which ultimately affects the performance of any organization (Ryan & Tipu, 2013).

In recent years, some studies have shown that the presence of transformational leadership has an impact on creativity and innovation (e.g. Denti & Hemlin, 2012; Khalili, 2016), and can enhance the impact of internal control on innovation intensity, effectively channeling resources from internal control systems toward innovation activities (e.g. Hoai et al., 2022). First, in contexts of higher pressure, where more services are provided with fewer resources, internal control is crucial for safeguarding assets (Park et al., 2017) and effectively mitigating innovation risks. Second, transformational leaders positively influence employee satisfaction, beliefs and behaviours (Bass et al., 1987), leading employees to readily support leadership transformation. Hence, the more dedicated and determined transformational leadership is on internal control activities, the higher the intensity of innovation (Hoai et al., 2022).

Contextual leadership is grounded in the complexity theory, which suggests a dynamic perspective on connections and networks. Here, leaders adapt to environmental stimuli and, through their interactions with employees, influence the mental patterns and actions of those employees (Arena & Uhl-Bien, 2016; Osborn & Marion, 2009; Osborn et al., 2014; Visser & Scheepers, 2021). In this line of research, recent studies have contributed to supporting the argument that transformational leadership improves existing methods for making products and services more competitive and drives new initiatives and methods for creating entirely new products and services (e.g., Le & Le, 2023).

Based on these studies, we argue that transformational leadership practices, described, for example, by Osborn and Marion (2009), such as gathering feedback from external stakeholders or encouraging employees to present more complex and challenging issues, can facilitate the relationship between levers of control, creativity and idea realization and the strategies of innovation pursued. Thus, we propose to test the following propositions:

Proposition P20 i): Transformational leadership positively moderates the relationship between Interactive Control Systems and Exploitative innovation strategy;

Proposition P20 ii): Transformational leadership positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy;

Proposition P20 iii): Transformational leadership positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy;

Proposition P20 iv): Transformational leadership positively moderates the relationship between Diagnostic Control Systems and Exploitative innovation strategy;

Proposition P20 v): Transformational leadership positively moderates the relationship between Interactive Control Systems and Explorative innovation strategy;

Proposition P20 vi): Transformational leadership positively moderates the relationship between Belief Control Systems and Explorative innovation strategy;

Proposition P20 vii): Transformational leadership positively moderates the relationship between Boundary Control Systems and Explorative innovation strategy;

Proposition P20 viii): Transformational leadership positively moderates the relationship between Diagnostic Control Systems and Explorative innovation strategy;

Proposition P21 i): Transformational leadership positively moderates the relationship between Organization's creativity dependency and Exploitative innovation strategy;

Proposition P21 ii): Transformational leadership positively moderates the relationship between Organization's creativity dependency and Explorative innovation strategy;

Proposition P22 i): Transformational leadership positively moderates the relationship between Idea realization and Exploitative innovation strategy;

Proposition P22 ii): Transformational leadership positively moderates the relationship between Idea realization and Explorative innovation strategy.

2.4.3 Organizational Encouragement

Several Adlerian scholars, who have followed the line of research of Alfred Adler (1956) – the first psychologist to theorize on encouragement – have elucidated the construct of encouragement in two ways, either in relation to the social phenomenon, which has not been dealt with consistently, or in relation to an individual's way of being (Wong, 2015). For these scholars, the focus is above all on instilling the courage to change, and not simply changing the

behaviour. Therefore, the focus centers on changing the individual's motivation by applying encouragement skills (Carns & Carns, 2006; Sweeney, 2009; Wong, 2015).

Dinkmeyer and Losoncy (1996: 7) offered a broad definition that has been commonly cited: “encouragement is the process of facilitating the development of a persons’ inner resources and courage toward positive movement”.

In the field of creativity, research has identified relationships between work environment perceptions and creativity at work. In addition to organizational encouragement, others such as supervisory encouragement, work group support, sufficient resources, challenging work and freedom are identified as stimulating factors (e.g., Amabile et al., 1996; Woodman et al., 1993). Research in psychology indicates that individuals are more likely to have uncommon, useful ideas, leading to improved outcomes and learning, when their work environments encourage creativity (Suh, 2007).

Also with regard to the relationship between encouragement and innovation, recent work has highlighted their role in stimulating hope and enthusiasm between the members of an organization, making full use of their knowledge and the resources of social networks, with a view to: (i) continuously innovate production processes, improve business practices and consequently change their production methods; and (ii) effectively introduce new products and services (e.g. Lu et al., 2022).

Thus, we propose, in this research model, the introduction of organizational encouragement as a moderating variable, gauging how this variable can ease the relationships among all the main independent variables and the exploitative and explorative innovation strategies, as shown below:

Proposition P23 i): Organizational Encouragement positively moderates the relationship between Interactive Control Systems and Exploitative innovation strategy.

Proposition P23 ii): Organizational Encouragement positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.

Proposition P23 iii): Organizational Encouragement positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy.

Proposition P23 iv): Organizational Encouragement positively moderates the relationship between Diagnostic Control Systems and Exploitative innovation strategy.

Proposition P23 v): Organizational Encouragement positively moderates the relationship between Interactive Control Systems and Explorative innovation strategy.

Proposition P23 vi): Organizational Encouragement positively moderates the relationship between Belief Control Systems and Explorative innovation strategy.

Proposition P23 vii): Organizational Encouragement positively moderates the relationship between Boundary Control Systems and Explorative innovation strategy.

Proposition P23 viii): Organizational Encouragement positively moderates the relationship between Diagnostic Control Systems and Explorative innovation strategy.

Proposition P24 i): Organizational Encouragement positively moderates the relationship between Organization's creativity dependency and Exploitative innovation strategy.

Proposition P24 ii): Organizational Encouragement positively moderates the relationship between Organization's creativity dependency and Explorative innovation strategy.

Proposition P25 i): Organizational Encouragement positively moderates the relationship between Idea realization and Exploitative innovation strategy.

Proposition P25 ii): Organizational Encouragement positively moderates the relationship between Idea realization and Explorative innovation strategy.

2.4.4 Organizational Goal Clarity

Establishing clear goals is fundamental to enhance both individual and organizational performance, as it creates a work environment where employees have a clear understanding of the roles and responsibilities they must fulfil to achieve these goals (Lee et al., 2023). When it comes to organizational goal clarity in relation to team performance, the literature states that a clear understanding of a goal improves performance by channeling efforts towards achieving that goal, while it also motivates the team in that direction through the intensity and persistence of their efforts (Chen & Kanfer, 2006; Gonzalez-Mulé et al., 2016; Locke & Latham, 1990, 2013). On the other hand, organizational goal clarity helps teams collectively form a clear understanding of how their actions contribute to the organization's performance, and which goals are prioritized by the organization (Gist & Mitchell, 1992; Spreitzer, 1995; van

der Hoek et al., 2018). This understanding, in turn, leads to higher levels of performance (Hu & Liden, 2011).

However, when we are faced with defining goals for innovation, the existing theory does not provide such a linear image (Stetler & Magnusson, 2015). In fact, opposing that view, some scholars argue that having clear goals might not be beneficial when it comes to fostering innovation. This viewpoint is based on the idea that ambiguity provides the interpretive space necessary for the emergence of new and different ideas (Brun & Sætre, 2009), and that this results in higher levels of personal commitment than goals that are more instructional in nature (Nonaka, 1991).

Several researchers believe that ambiguity can be advantageous because it leaves more fallback options and a wider range of possible solutions (Brun et al., 2008). Additionally, maintaining an ambiguous vision may allow teams greater autonomy in setting their own goals, which helps to avoid top-down enforcement of goals (Nonaka, 1991).

Setting goals is a highly effective way to manage organizational activities, but when it comes to fostering innovation, it's crucial to tailor goal setting to the distinct logic required for exploration versus exploitation (Levinthal & March, 1993; Stetler & Magnusson, 2015). Supporting both exploration and exploitation activities can be challenging because many management systems, like key performance indicators or performance management frameworks, are typically applied uniformly across the entire organization.

In favor of this line of argument, e.g. Ekvall (1996) and Stetler and Magnusson (2015), refer that there is also evidence from highly creative organizations that employ ambiguous and vague project goals, that might explain why creative outcomes can still be achieved under such conditions - different people involved in the innovation process may interpret the goals in diverse ways, potentially leading to more radical innovations.

Although less concern with goal clarity may depend on the choices to be made regarding market ambiguity (Daft & Weick, 1984; Lee et al., 2023), recent studies suggest that clear goals are said to be positively related to idea implementation and innovation performance

(e.g., Stetler & Magnusson, 2015), as well as to team performance (e.g., van der Hoek et al., 2018).

In line with the existing theory, we propose testing the moderating effect of organizational goal clarity between levers of control, creativity and idea realization, and innovation strategy for both explorative and exploitative activities:

Proposition P26 i): Organizational Goal Clarity positively moderates the relationship between Interactive Control Systems and Exploitative innovation strategy.

Proposition P26 ii): Organizational Goal Clarity positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.

Proposition P26 iii): Organizational Goal Clarity positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy.

Proposition P26 iv): Organizational Goal Clarity positively moderates the relationship between Diagnostic Control Systems and Exploitative innovation strategy.

Proposition P26 v): Organizational Goal Clarity positively moderates the relationship between Interactive Control Systems and Explorative innovation strategy.

Proposition P26 vi): Organizational Goal Clarity positively moderates the relationship between Belief Control Systems and Explorative innovation strategy.

Proposition P26 vii): Organizational Goal Clarity positively moderates the relationship between Boundary Control Systems and Explorative innovation strategy.

Proposition P26 viii): Organizational Goal Clarity positively moderates the relationship between Diagnostic Control Systems and Explorative innovation strategy.

Proposition P27 i): Organizational Goal Clarity positively moderates the relationship between Organization's creativity dependency and Exploitative innovation strategy.

Proposition P27 ii): Organizational Goal Clarity positively moderates the relationship between Organization's creativity dependency and Explorative innovation strategy.

Proposition P28 i): Organizational Goal Clarity positively moderates the relationship between Idea realization and Exploitative innovation strategy.

Proposition P28 ii): Organizational Goal Clarity positively moderates the relationship between Idea realization and Explorative innovation strategy.

2.4.5 Discretionary slack

According to Nohria and Gulati (1996: 1246), slack is defined as "a pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output". This excess capacity available to an organization (March & Simon, 1958) might include redundant employees, capacity or capital (Sheppard, 2020). The literature produced since 'The Theory of the Growth of the Firm', developed by the economist Edith Penrose, and presented in her seminal 1959 book, highlighted the importance of the role of slack and the ability to dynamically reallocate these resources as providing the basis for experimentation and innovation, leading to entrepreneurial entry and growth (e.g. Barney, 1991; Wernerfelt, 1984).

The discretionary slack concept is the precursor of the resource-based view (Barney, 1991; Penrose, 1959; Peteraf, 1993; Rumelt, 1984; Wernerfelt, 1984) that emphasizes the significance of possessing sufficient resources to foster experimentation and growth. The theory of dynamic capabilities (Makadok, 2001; Teece et al., 1997; Winter, 2003) extends this logic by explaining how resources can be developed and reconfigured, enabling organizations to seize entrepreneurial opportunities or to protect themselves against environmental uncertainties. Companies with a heavy resource commitment to their current operations may overlook new opportunities or face failure due to unforeseen events. Thus, it is crucial for entrepreneurs to maintain readily available resources, known as discretionary slack, to respond swiftly to changing circumstances.

As Tabesh et al. (2019) point out, according to the behavioural theory of the firm, the availability of unabsorbed slack resources can promote innovative efforts by relaxing internal controls, reducing conflicts, and fostering a culture of experimentation (Bourgeois, 1981). Researchers, however, have also reported instances in which unabsorbed slack resources, specifically in excessive amounts, can deteriorate the outcomes of innovative activities because of the "diminishing discipline in selection, ongoing support, and termination of innovative projects" (Nohria & Gulati, 1996: 1249). While focusing on overall innovation, most of the empirical evidence has been mixed and researchers have reported positive, negative or curvilinear effects for the relationship between unabsorbed slack resources and innovativeness (e.g.,

Kim & Bettis, 2014; Nohria & Gulati, 1996). However, this might have different implications for different aspects of organizational innovative activities (Greve, 2007; Tabesh et al., 2019).

In order to generate a nuanced view of the relationships between discretionary slack managerial characteristics and different innovative activities, we differentiate the moderating effects of discretionary slack between levers of control, creativity and idea realization, and exploratory and exploitative innovation strategies. therefore, we set out to verify the following propositions:

Proposition P29 i): Discretionary slack positively moderates the relationship between Interactive Control Systems and Exploitative innovation strategy.

Proposition P29 ii): Discretionary slack positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.

Proposition P29 iii): Discretionary slack positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy.

Proposition P29 iv): Discretionary slack positively moderates the relationship between Diagnostic Control Systems and Exploitative innovation strategy.

Proposition P29 v): Discretionary slack positively moderates the relationship between Interactive Control Systems and Explorative innovation strategy.

Proposition P29 vi): Discretionary slack positively moderates the relationship between Belief Control Systems and Explorative innovation strategy.

Proposition P29 vii): Discretionary slack positively moderates the relationship between Boundary Control Systems and Explorative innovation strategy.

Proposition P29 viii): Discretionary slack positively moderates the relationship between Diagnostic Control Systems and Explorative innovation strategy.

Proposition P30 i): Discretionary slack positively moderates the relationship between Organization's creativity dependency and Exploitative innovation strategy.

Proposition P30 ii): Discretionary slack positively moderates the relationship between Organization's creativity dependency and Explorative innovation strategy.

Proposition P31 i): Discretionary slack positively moderates the relationship between Idea realization and Exploitative innovation strategy.

Proposition P31 ii): Discretionary slack positively moderates the relationship between Idea realization and Explorative innovation strategy.

3. Research Methods

3.1 Qualitative Study

The organizations most likely to innovate are those that motivate their employees to be creative, allocate their resources with this objective in mind, and have the management skills that allow them to stimulate a creative work environment (Çokpekin & Knudsen, 2012). Woodman et al. (1993) suggest that an organization's production of creativity depends not only on the creative inputs of the individual, the team and the organization, but also on the context and the environment where the organization operates. In this sense, the territory becomes a strategic asset for the development of creativity (Power & Scott, 2004; Sacco, 2002), as the relational dynamics created by the actors who work in this territory influence the creative processes (Granovetter, 1985; Sedita & Paiola, 2009).

For Jeffcutt and Pratt (2002), that strategic knowledge in cultural industries must result from the analysis of specific organizational fields and should not result from a mere process of importing from other sectors or industries. Jeffcutt and Pratt (2002: 231) recognize that “that cultural industries occupy an unruly organizational space between the domains of culture and industry, that they articulate the contested interfaces between the practices of management and creativity, and that they mobilize these complex operational interrelationships through intermediaries.” Also, as mentioned by Nogare and Murzyn-Kupisz (2022), there is still a lack of robust evidence regarding the relative innovativeness of cultural and creative industries, when compared to other industries, and the extent to which these industries foster innovation in the wider economy.

Seeking to better understand this reality, we conducted a qualitative study. In this study the interview technique was used with information collected through a semi-structured script, considering that several researchers have argued that only modest attention has been paid to the relationship between creativity and innovation and management control systems in the academic literature (e.g. Bedford, 2015; Speckbacher, 2017).

3.1.1 Sample and Collection Data

The sample for this study comprises six interviewees (50% female, 50% male) with functions of responsibility in cultural and creative entities, namely state business ($n = 2$) and private sectors ($n = 4$), realized from March to May 2021. Table 2 presents the characterization of the interviewees.

Table 2 Characterization of participants

Interviewee	E1	E2	E3	E4	E5	E6
Gender	Male	Male	Male	Female	Female	Female
Role	Artistic Director [Theatre]	Artistic Director [Non-governmental organization for development]	CEO and Cultural Manager and Artistic Director [Cultural and Creative Association]	CEO and Cultural Manager [Theatre]	CEO and Brand Designer [Creative Company]	Strategy and Planning Deputy Director [Foundation for Art, Charity, Science and Education]
Years of experience in leadership positions	+15 years	+15 years	+30 years	+15 years	+6 years	+10 years
No. of employees in the organization ⁽¹⁾	85	90	10	88	3	557

(1) Fixed staff structure

The criterion for selecting the interviewed entities was their diversity in terms of the areas of activity in which their organizations operated (visual arts, performing arts, audiovisual and multimedia and advertising), their organization's size and their sources of self-financing.

Seeing that management positions may have greater richness for the study, given that they supervise and guide the work of many others, with inherent decision-making power to establish strategic organizational practices, it seemed relevant to consider a sample of participants composed of professionals with management and leadership positions in cultural and artistic organizations. The intention was to collect perspectives of leaders with some experience, and therefore a minimum number of five years of experience was also deemed in this process of

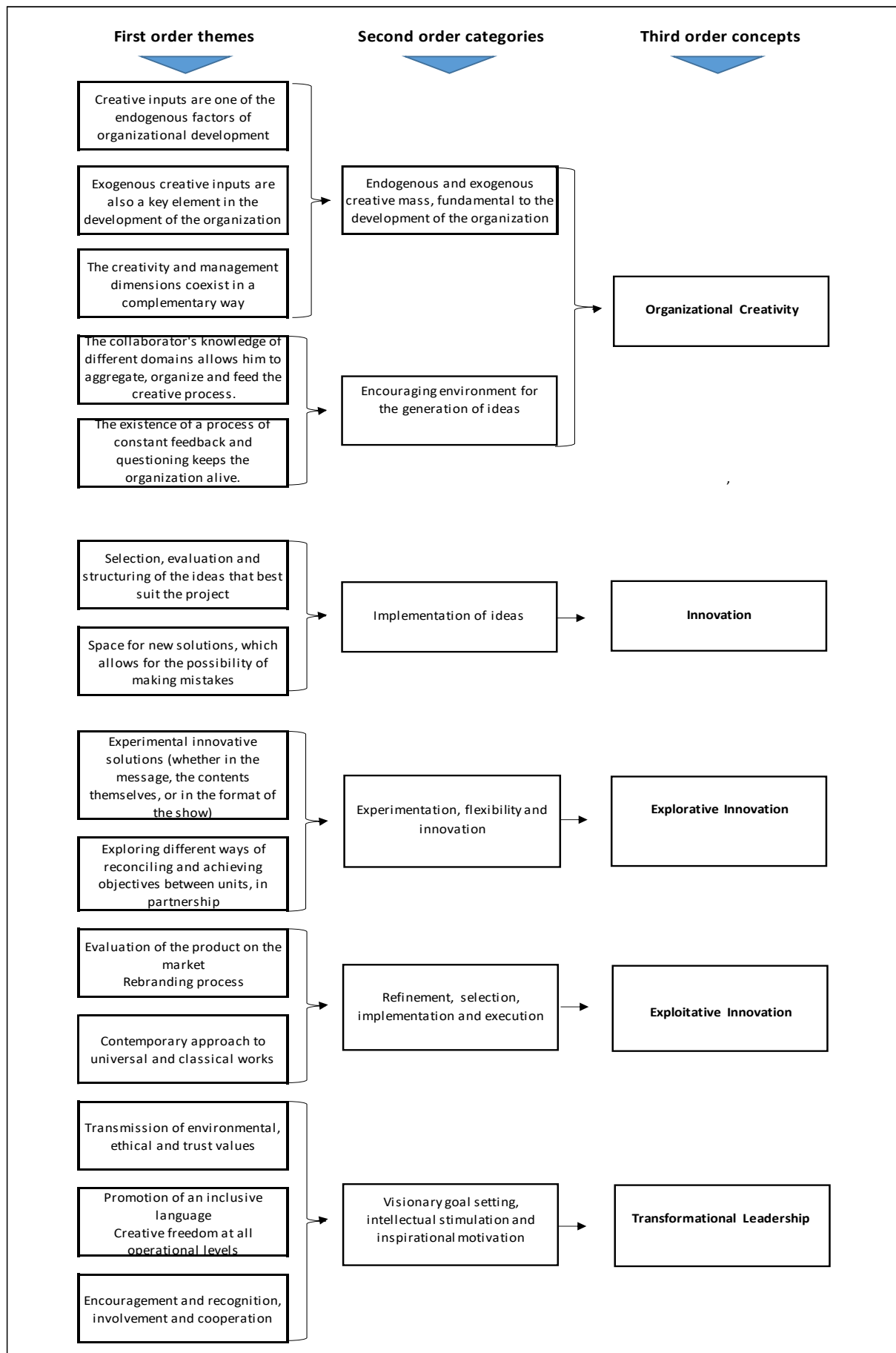
attracting participants. It was also considered relevant that the leaders belong to organizations of low, medium or large dimensions and understand the different management control practices and their level of systematization.

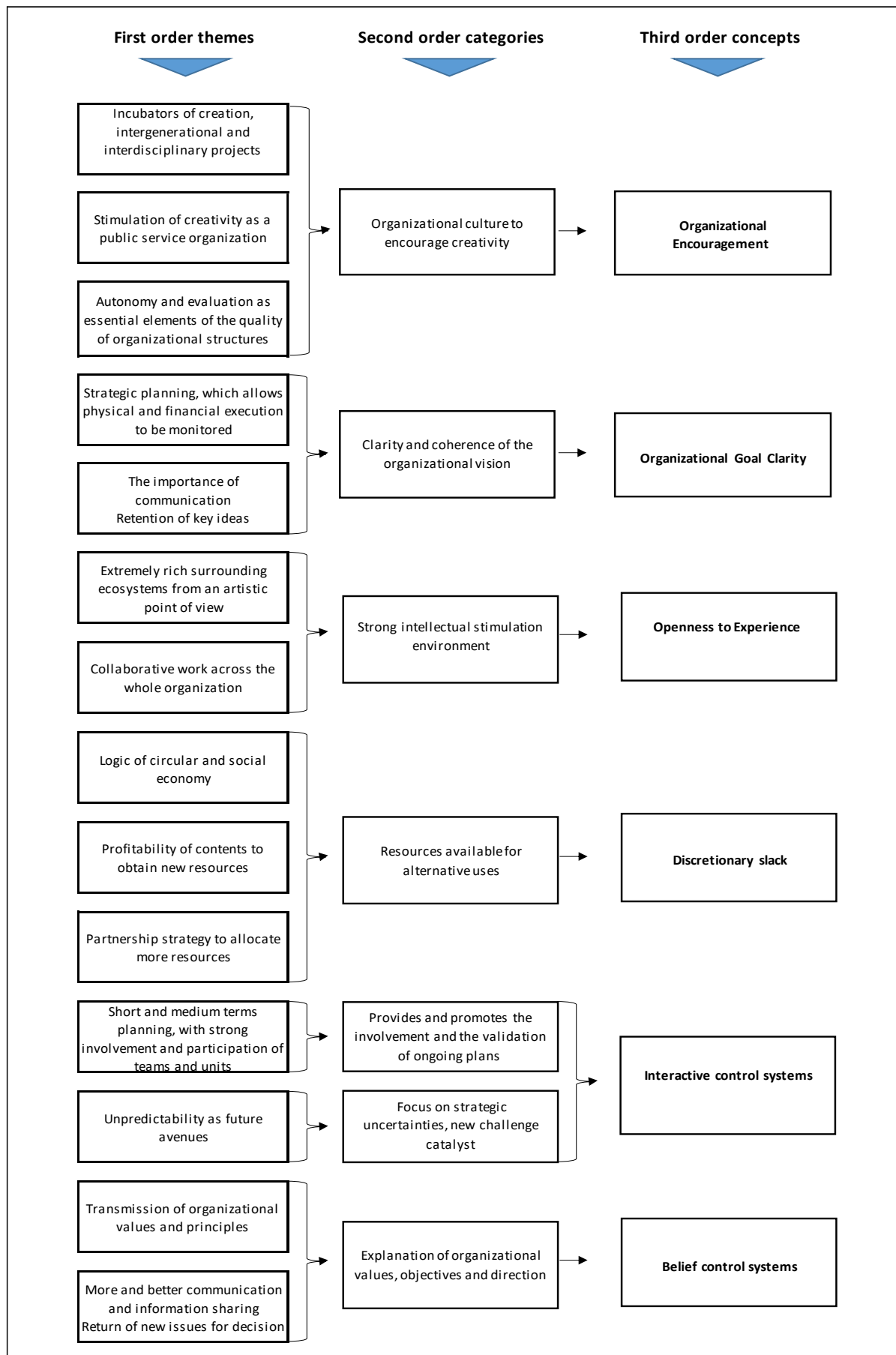
We gathered our data over a period of three months, using semi-structured interviews to do so (Fossey et al., 2002). We used an interview guide with twenty-three open questions concerning five dimensions. These were addressed to all respondents, ensuring commonality across them, while giving them a possibility to expand the conversation by expressing their own points of view. Interviews (lasting between 50 and 70 min) were conducted using the Microsoft Teams and were audio recorded and fully transcribed, totaling 19312 words.

3.1.2 Content Analysis and Data Classification

We conducted qualitative research with information gathered using “NVivo” (Sotiriadou et al., 2014; Van Maanen, 1979). Interpretive research traditions search for plausibility rather than assuming that there is a single objective truth. By grounding our interviewees (artistic directors and cultural managers), working from their categorical worldviews, and collecting data on their perspectives and points of view regarding their work environment (Fossey et al., 2002; Gephart, 2004; Glaser & Strauss, 1965) we embedded the analysis with the participants’ sensemaking (Schutz, 1967).

Additionally, after grounding our analysis in the interviewees’ categories, we moved through the analysis to successive stages of meaning. Using self-report data, the semiotic clustering analysis allowed us to gain access to deep understandings, both implicit and rich, represented systematically in a three-column table. The first order concepts, located in the first column (see Figure 2), are the ones that emerge directly from the data, in this case mainly from the interviews. Such evidence was based purely on the “informants’ own language” (Clark et al., 2010: 407), what they said and understood regarding each question.





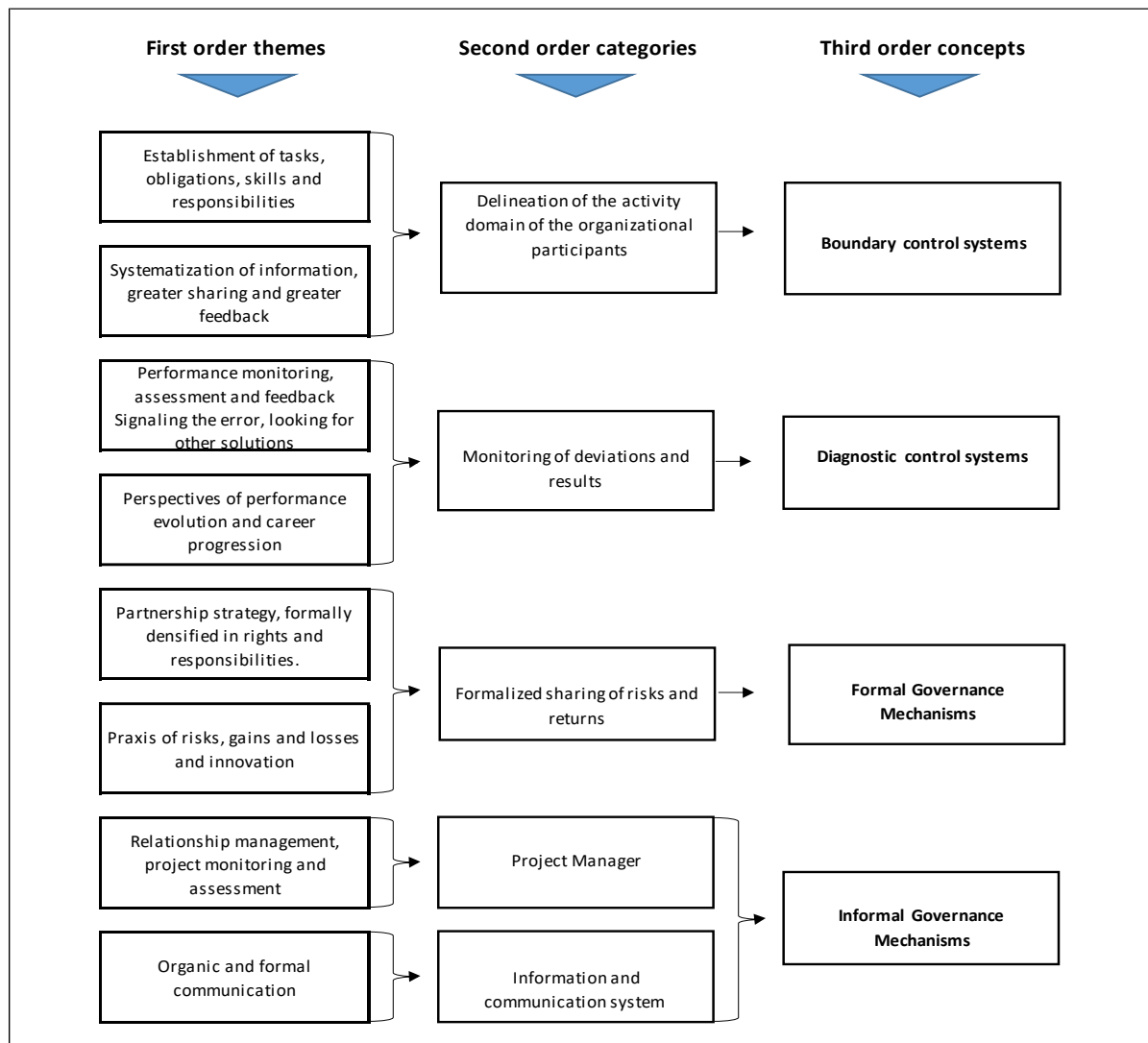


Figure 2 Data structure and clustering

As more semi-structured interviews were conducted, we sought out evidence of emergent patterns present in the interviewees' perceptions. The transformation of unrefined expressions and opinions into more thematic categories was conducted in the second order column via thematic association, which allowed us to capture deeper meanings not evident in the first order concepts (Clark et al., 2010). These second order themes relied upon interpretation of the data collected, as well as from interrogation of the existing theory.

The third order concepts also express a higher level of abstraction, moving from data themes to conceptual abstraction, representing an interpretive effort to lift data to a higher level (Suddaby, 2006), and drawing categories that capture the meanings that form a deep structure beneath the surface of the discourse.

The interpretations presented in the final step regard constructs that were not immediately visible in the primary data and only became implicit when searching for common themes. The analysis was conducted by one coder (the interviewer) and two consultants. All codifications were validated by the consultant's audit.

As a result, the categories in the second column were gathered into the structure of the fifteen study concepts ultimately characterizing the data reporting the empirical situation: (1) Creativity (e.g., "Creativity is primary source of value creation."); (2) Innovation (e.g., "We transform innovative ideas into useful applications."); (3) Explorative innovation (e.g., "Frequent new product/service introductions."); (4) Exploitative innovation (e.g., Improving efficiency in the provision of existing products/services?"); (5) Openness to experience (e.g., "we believe that it's better to stick to your own principles than to be open-minded.") (6) Organizational Encouragement (e.g., "The organizational culture encourages creativity"); (7) Organizational Goal Clarity (e.g., "Our team members have a good understanding of what our organization is trying to do."); (8) Transformational Leadership (e.g., "The leader communicates a clear and positive vision of the future"); (9) Discretionary slack (e.g., "We have uncommitted resources that can be used to fund strategic initiatives at short notice"); (10 to 13) Levers of Control (e.g., "Provide a recurring and frequent agenda for top management activities" "Identify critical performance variables (i.e. factors that indicate achievement of current strategy)" "Are codes of conduct or similar statements relied upon to define appropriate behaviour?" "Does top management actively communicate core values to subordinates?"); (14) Formal governance mechanisms (e.g., "Any share of loss due to cost over-runs that was allocated to the key service providers was shared fairly between the key stakeholders. "A single agreement was developed to acknowledge that the parties would collectively share project risk."); (15) Informal governance mechanisms (e.g., "The project leaders had strong communication skills." "Workshops/Meetings were used for innovation development." (see the Interview Guide Appendix A).

3.2 Quantitative Study

As mentioned in the previous point, we conducted a qualitative approach based on six semi-structured interviews. The interview script allowed us to refine the selection of variables, as well as to analyze the consistency in the understanding of the research items.

The evidence offered by that qualitative study makes an important contribution to the construction of the questionnaire that serves as a base instrument for the quantitative study carried out. The results obtained from the qualitative study enabled us to engage with a range of theoretical concepts. As shown in Figure 2, the categories in the second column were organized into the structure of the study concepts, ultimately characterizing the data that reflects the empirical situation.

Specifically, the narratives of the various interviewees revealed that we identified control dimensions with varying intensities, aligning with the structure of Simons' four Levers of Control (LOC).

Since our focus is on the adoption of MCS within the strategic control structure in relation to the modes of innovation pursued, we believe it would be theoretically relevant to include dimensions related to creativity, source of excellence in these organizations, as well as individual and contextual variables, in the questionnaire. This would help understand their roles as measuring and moderating constructs, respectively.

Several interviewees noted that the governance of both collaborative and individual projects supports the implementation of formal and informal control mechanisms. This made it relevant for us to create a project analysis dimension focused on governance practices

3.2.1 Sample and Collection Data

Data for this first quantitative study was collected through an online questionnaire sent by e-mail to cultural and creative organizations. Specifically, the target population consists of a

universe obtained from the database of the National Statistics Institute made available in 2021. Based on the Business Data Sheet for the Cultural and Creative Industries of DGAE (2018), we identified a usable population of 5532 entities, integrating Cultural and Creative Industries in several areas, such as edition; architecture activities, advertising agencies, and design and photography activities; theatre, music, dance, and other artistic and literary activities; libraries, archives, museums and other cultural activities.

The questionnaire was written in Portuguese, but all measures were originally in English. In line with the conventional method of back translation (Brislin, 1976), three steps were taken. First, the measures were translated from English to Portuguese. This was done with the parallel back-translation procedure. Back-translation first involves translating the measures by an expert from English to Portuguese. Secondly, this translation is then translated back to the original language by another expert without having access to the original measures. This method provides an initial assessment of the adequacy of the translated version of the measures. Finally, we adopted the questionnaire pre-test by applying it to four cultural and artistic organizations. In two of them the functions of management and of the cultural and artistic direction coexist separately within the entity, while in the remaining two cases those functions are assumed by a single person. The pre-test did not reveal any major issues concerning our surveys.

The questions for the online survey were presented in a format similar to those of paper-based self-administered questionnaires, using the structure presented by the Qualtrics Survey Software. The questions were presented in a screen-by-screen format, with each screen representing a separate question box for the questionnaire.

According to Stern et al. (2007), the design of each question screen was such that all questions had to be completed before the respondent could proceed to the next question screen. When the answers on a given question box were incomplete, a pop-up message would highlight the unanswered questions encouraging the participant to answer those questions before proceeding to the next question screen. Despite these efforts, we had missing data in several responses.

The initial request through the Qualtrics application account was reinforced by one reminder e-mail at the end of the first month, followed by a second reminder sent two and a half months

after the first reminder. Of the 1119 participants who started the survey, only 357 responses were considered valid, as the remaining answers were incomplete. Demographic data are displayed in Table 4 (Panels A, B and C).

We used the descriptive analysis to describe the respondents' profile in the data distribution (table 3). The respondents' profile includes function, dimension, legal nature of organization, number of employees and financing nature.

Most (52,10%; $n = 186$) participants are managers, while 34.73% ($n = 124$) of the participants simultaneously assume the functions of manager and artistic or cultural director. The remaining number the respondents performs functions of artistic or cultural direction (13.17%; $n = 47$).

Based on the cultural and creative domains, a significant part of the respondents (28.85%; $n = 103$) has an activity in the performing arts, followed by the interdisciplinary areas (16.53%; $n = 59$), and the audiovisual and multi-media fields (11.76%; $n = 42$). Participants were found in all domains. Regarding the legal nature of the organization factor and in terms of sample proportion, 54.90% ($n = 196$) of the respondents are companies, followed by non-profit associations (33.5%; $n = 118$). All other entity typologies express a smaller number of participants. Based on the number of employees, the employee range of most participants varies from 0 to 25, the average is 1.311, and the standard deviation is 0.864. In terms of sample proportion, 83,75% ($n = 299$) of the respondents are located within this range. Finally, we found that a very significant part of the participants (80.11%; $n = 286$) use their own financial resources, while the remaining part depends on public funding.

Table 3 Distribution of the survey participants

Survey Participants

Panel A: Target sample and completed responses

Initial list of invited people	5532
Number of people who started the survey	1119
Number that completed the survey	357

Panel B: Descriptive statistics for respondents' demographics

Variable	<i>N</i>	Mean	Median	Min	Max	Standard deviation (S.D)
Function description	357	1.826	1.000	1.000	3.000	0.916
Cultural and creative dimensions	357	5.487	5.000	1.000	11.000	4.430
Legal Nature of the Organization	357	4.403	5.000	1.000	9.000	1.406
Number of employees	357	1.311	1.000	1.000	7.000	0.864
Nature of Financing	357	1.801	2.000	1.000	2.000	0.399

PANEL C: Demographic Data

Function Description	<i>n</i>
Manager	186
Artistic and/or Cultural Director	47
Both performed by the same participant	124

Cultural and Creative Dimensions	<i>n</i>
Cultural heritage	26
Libraries	4
Books and publications	20
Visual arts	28
Performing arts	103
Audiovisual and multimedia	42
Architecture	34
Advertising	33
Handicrafts	5
Archives	3
Interdisciplinary activities	59

Legal nature of Organization	<i>n</i>
Public Foundation	5
State Public Company	3
Non-profit Association	118
Cooperative	14
Company	196
Private Foundation	4
Private Institution of Social Solidarity	3
Non-Governmental Development Organization	0
Other	14

Number of Employees	<i>n</i>
0 - 25	299
26-50	29
51-100	16
101-250	7
251-500	3
501-1000	1
> 1000	2

Financing Nature	<i>n</i>
Public Financing (>50%)	71
Own Resources (>50%)	286

All items were measured on a 6-point Likert scale, e.g., 1= Never, 6= Always; 1=Strongly Disagree, 6 = Strongly Agree; or 1 = Very low extent, 6= Very high extent. Being in the presence of an exploratory theme, we chose to adopt an even-numbered scale, avoiding the

use of a midpoint that would become an easy way to avoid answering. Likert-type scales without a midpoint are characterized as forced-choice scales, as the respondents are forced to choose either a disagreement or agreement option (Chyung et al., 2017).

3.2.2 Measures and Variables

The variables for this study are based on previously validated constructs. Our investigation model incorporates both reflexive and formative measures. According to the classical test theory, in reflexive measurement models the measures represent the effects or manifestations of an underlying construct. The direction of causality goes from the construct to its measures. In contrast, formative measurement indicator models assume that the indicators form the construct by means of linear combinations. Each indicator for a formative construct captures a specific aspect of the construct's domain, so the omission of an indicator potentially changes the nature of the construct (Hair et al., 2022). Formative indicators are considered a function of the indicators of a latent variable, which means that changes in its indicators can determine changes in the construct (latent) variables (Sarstedt et al., 2014).

The model integrates four driver constructs, specifically, four exogenous latent variables: diagnostic control system; interactive control system; boundary control system; and belief control system.

The diagnostic control system is treated as a reflective construct, but the interactive control system, the boundary control system and the belief control system constructs are measured through formative measurement models, because there is potential ambiguity in the meanings of their constructs (Chenhall, 2003; Otley & Fakiolas, 2000; Van der Stede, 2001).

It is particularly important, in the case of practice-based constructs where potential ambiguity is higher than for theory-based constructs, to establish a precise definition of the meaning and domain of a construct (Bisbe et al., 2007). Citing the authors “Conceptual specification gives definite meaning to a construct by specifying the indicators or dimensions that researchers

have in mind. A prerequisite for valid research is the proper definition of a construct's domain (including the specification of the dimensions and indicators included in such domain) and this must be based on a review of the conceptual underpinnings of the construct." (Bisbe et al., 2007: 795).

These three constructs are measured by a total of thirteen formative indicators that have been derived from literature and qualitative and quantitative studies, and they correspond to the survey questions. In short, previous investigations have allowed us to understand the importance of interactive control in facilitating internal and external information flows in process management and organizational innovation (Lopez-Valeiras et al., 2016), in stimulating creativity and product innovation, by offering guidance, triggering initiatives and providing legitimacy to these (Bisbe & Otley, 2004, Speklé et al., 2017), in providing evidence regarding the mode of innovation pursued by the company (Bedford, 2015) and in helping the reflection and critical reflection in teams (Matsuo & Matsuo, 2017). For the two remaining levers, boundary and belief systems, published studies have shown results more or less consistent with expectations (McCarthy & Gordon, 2011; Bedford, 2015; Speklé et al., 2017) and have collected very little evidence (Barros & Ferreira, 2022).

The endogenous latent variables include four reflective constructs, namely, organization's creativity dependency, idea realization, exploration innovation strategy and exploitation innovation strategy.

We chose not to include formal and informal governance mechanisms as constructs in the research model, given that this aspect of the questionnaire was designed with the project, rather than the organization, as the focus of analysis. However, this data could be used in future studies.

3.2.2.1 Dependent Variables

3.2.2.1.1 Exploration and exploitation Innovation Strategy

Exploration enhances a solid performance by creating new opportunities and enabling organizations to target new markets (He & Wong, 2004; Mueller et al., 2013). Exploitation improves the organizations' performance through refinement and variance reduction, and further penetration of the organization's existing markets (He & Wong, 2004; Mueller et al., 2013). We follow extant research (e.g., Birkinshaw & Gupta, 2013) and conceptualize exploration and exploitation as distinct strategies.

The set of items used in our investigation are considered reflective indicators of a higher order construct and were obtained from He and Wong (2004) and Jansen et al. (2006). These items have also been validated in a few subsequent studies (Bedford, 2015; Cao et al., 2009; Jansen et al., 2009; Lubatkin et al., 2006).

The Explorative and Exploitative Innovation Strategies are designed through nine items: (1) "Low cost products/services" (Explorative_1); (2) "Being first to market with new products/services" (Explorative_2); (3) "Developing new generation product/service capabilities" (Explorative_3); (4) "Frequent new product/service introductions" (Explorative_4); (5) "Experimenting with new products/services" (Explorative_5); (6) "Improving quality of existing products/services" (Exploitative_1); (7) "Frequent, but incremental modifications to existing products/services" (Exploitative_2); (8) "Improving efficiency in the provision of existing products/services" (Exploitative_3); (9) "Opening up new product/service markets" (Exploitative_4). We removed from this analysis the item "Increasing economies of scale in existing product/service markets".

We used a 6-point Likert scale, where 1 reflects "very low emphasis" and 6 reflects "very high emphasis".

3.2.2.2 Levers of Control (ex-ante and ex-post)

According to Simons (1995a: ix), the levers of control framework is an “action-oriented theory of control”, seen as a tool for the implementation and control of business strategies that resulted from over 10 years of work, including case studies and discussion of thoughts with senior executives and managers.

Four key concepts are attached to Simons’ LOC: core values; risks to be avoided; strategic uncertainties; and critical performance variables. As designated by Simons, each of these is controlled by a particular system, that is, a LOC. For successful implementation of the strategy, the author argues that organizations should use all four levers in an appropriate combination.

Core values are controlled by the belief systems, which guide the creative process of exploring new opportunities and instill widely shared beliefs (Simons, 1995a). Risks to be avoided are controlled by the boundary systems, which plays the negative and limiting role of circumscribing the domain where the company seeks new opportunities (Simons, 1995a). Strategic uncertainties are controlled by the interactive control systems, whose role is to encourage organizational learning and the process of development of new ideas and strategies (Simons, 1995a). Finally, critical performance variables are controlled by the diagnostic control systems, whose function is to monitor, assess and reward achievement on key areas of performance (Simons, 1995a).

In the theoretical model presented in figure 1, we consider the three first levers of control, that is, belief, boundary, and interactive control systems, as “Use of Loc System ex-ante”. The diagnostic control system is seen here as “Use of Loc System ex-post”. In the applied survey, participants answered questions separately for each lever of control.

The Interactive Control Systems are based, as mentioned, on the formative model defined by Bisbe et al. (2007) as an emergent multidimensional construct formed by a series of defining constitutive dimensions. Bisbe et al. (2007) identifies five defining dimensions of this construct: (i) intensive use by top management; (ii) intensive use by operating managers; (iii)

face-to-face challenge and debate; (iv) focus on strategic uncertainties; and (v) non-invasive, facilitating, and inspirational involvement.

These five dimensions, which themselves are first-order constructs, are manifested by a series of observable reflective indicators (Bisbe et al., 2007; Jarvis et al., 2003). For each dimension we use a single concrete indicator (Rossiter, 2002). The construction of these five indicators was based on previous studies (Abernethy & Brownell, 1999; Bedford, 2015; Bisbe & Otley, 2004; Davila, 2000; Henri, 2006; Naranjo-Gil & Hartmann, 2007; Widener, 2007). They are: (1) Provide a recurring and frequent agenda for top management activities (interactive_1); (2) Provide a recurring and frequent agenda for subordinate activities (interactive_2); (3) Enable continual challenge and debate of underlying data, assumptions and action plans with subordinates and peers (interactive_3); (4) Focus attention on strategic uncertainties (i.e. factors that may invalidate current strategy or provide opportunities for new strategic initiatives) (interactive_4); and (5) Encourage and facilitate dialog and information sharing with subordinates (Interactive_5).

The Boundary Control Systems and Beliefs Control Systems are also based on formative measurement models. The Boundary Control Systems consists of four constitutive dimensions: (i) they define an appropriate conduct (Boundary_1); (ii) they set limits to search and experimentation (Boundary_2); (iii) they are actively communicated by top management (Boundary_3); and (iv) they establish sanctions that are applied to subordinates engaging in activities outside stated boundaries, regardless of the outcome (Boundary_4) (Simons, 1994, 1995, 2000). These dimensions are constitutive facets of multidimensional constructs rather than reflections or manifestations of underlying constructs (Bisbe et al., 2007; Jarvis et al., 2003; Law et al., 1998).

As mentioned by Bedford (2015), some organizations may have established very detailed codes of conduct, without having however a strategy by top management to communicate them to their subordinates or to apply sanctions in case of non-compliance. Conversely, other organizations may have robust codes of conduct that are informally perceived by their employees, although with a low level of formalization.

A review of the literature shows that the Belief Control Systems also integrate four attributes: (i) they inspire and promote commitment the core values of the organization (Belief_1), (ii) they are actively communicated (Belief_2); (iii) they are used to create commitment to the organization's objectives (Belief_3) ; and (iv) they inspire and guide employees to search for new opportunities (Belief_4) (Simons, 1994, 1995, 2000). As in the previous control systems, the dimensions of the belief control systems do not necessarily share the same conceptual similarity.

For the dimensions of each lever of control, we also used a single concrete indicator (Rossiter, 2002), with some of the items being obtained from the work of Widener (2007). However, because some indicators capture only subsets of the attributes of these constructs, we used some additional items created by Bedford (2015) and based on the descriptions of Simons (1994, 1995a, 2000), making these operationalizations more representative of the dimensions under study.

In turn, the Diagnostic Control Systems are treated through a reflective measurement model. We adopted five items that are identified as reflecting the main stages of a conventional cybernetic control cycle, as described by Simons (1994, 1995a, 2000). The items are adaptations of those used by Bedford (2015), Henri (2006) and Widener (2007) from Simons (1994, 1995a, 2000). They are: "Identify critical performance variables (i.e., factors that indicate achievement of the current strategy)" (Diagnostic_1); (ii) "Set targets for critical performance variables" (Diagnostic_2); (iii) "Monitor progress toward critical performance targets" (Diagnostic_3); (iv) "Provide information to correct deviations from preset performance targets" (Diagnostic_4); (v) "Review key areas of performance" (Diagnostic_5).

For all these measures, we used the Likert scale, where 1 reflects "very low extent" and 6 reflects "very high extent".

3.2.2.3 Mediators variables

3.2.2.3.1 Organization's creativity dependency

We chose to measure the dependence of creativity in organizations using items that reflect to what extent the development of creative ideas constitutes the main competitive advantage of the organization, and to what extent its employees assume special importance in this creative process. We adopted the five items suggested by Grabner (2014) that capture the scope of this measure: (1) “Creativity is a organization's primary source of value creation” (Creativity_1); (2) “Trade in creative ideas is the organization's largest source of revenue” (Creativity_2); (3) “Commercial success primarily depends on employee creativity” (Creativity_3); (4) “Competitive advantage is based on the creative abilities of the employees” (Creativity_4); and (5) “Employee creativity is the main input factor in the creation/provision of products” (Creativity_5). We used a 6-point Likert scale, where 1 reflects “never” and 6 reflects “always”.

3.2.2.3.2 Idea Realization

Since the production of creative ideas involves abandoning or extending existing products, services, or ways of doing things, uncertainty prevails as a significant feature of most creative ideas (Kanter, 1988; Pelz, 1985; Wolfe, 1995). This scenario of uncertainty leads to internal perspectives that can result in unnecessary implementation delays or in their failure (Egri & Frost, 1991; Green et al., 2003). In this sense, we introduced Idea Realization as a measure, which is measured by 4 items, namely: “I transform innovative ideas into useful applications” (Idea_1); (2) “I try to introduce innovative ideas into the work environment in a systematic way” (Idea_2); (3) “I work actively on trying to test new ideas” (Idea_3); (4) “I focus on promoting the positive elements of new ideas” (idea_4). Responses are measured on a 6-point Likert scale ranging from “never” (1) to “always” (6).

3.2.2.4 Moderating Variables

3.2.2.4.1 *Transformational Leadership*

Transformational leadership (TL) has been the object of a notable number of prior studies (e.g., Burns, 1978; Ensley et al., 2006), that suggests that transformational leadership appeal to the ideals and morals of followers, inspiring them to reach their highest levels of achievement and taking ownership of the goals of the group. This leadership style helps to stimulate inspiration and promote long-term vision, which also provides incremental contributions from followers to the achievement of the objective itself, with higher levels of performance (Nguyen et al., 2017; Pearce et al., 2003; Phaneuf et al., 2016).

The Global Transformational Leadership scale used to measure transformational leadership is based on the leader behaviours described by Carless et al. (2000). The items were written to capture each of the seven leader behaviours (Podsakoff et al., 1990): (1) communicates a vision, (2) develops staff, (3) provides support, (4) empowers staff, (5) is innovative, (6) leads by example, and (7) is charismatic. These items were: (1) communicates a clear and positive vision of the future, (2) treats staff as individuals, supports and encourages their development, (3) gives encouragement and recognition to staff, (4) fosters trust, involvement and co-operation among team members, (5) encourages thinking about problems in new ways and questions assumptions, (6) is clear about his/her values and practises what he/she preaches, and (7) instils pride and respect in others and inspires me by being highly competent (Carless et al., 2000:393).

The transformational leadership style is not an inherent trait of a leader but rather a set of behaviours they demonstrate. Thus, we measured transformational leadership as a higher-order reflective construct, considering this method is consistent with prior studies (Mu et al., 2018; Suifan et al., 2018; Ali & Wu, 2022).

We used a 6-point Likert scale ranging from "1 - rarely or never" to "6 - very frequently, if not always".

3.2.2.4.2 *Organizational Encouragement*

The literature on organizational culture and creativity and innovation was highlighted by some studies, whose writing in the areas of creativity and innovation and organizational culture has been based on scholarly endeavors about concepts organized by organizational supports and impediments - work environment factors that appear to enhance or that may undermine creativity, e.g., Amabile et al. (1996), Kanter (1983), Van de Ven et al. (1989) and Tesluk et al. (1997).

Amabile et al. (1996) identified six support scales through an instrument called KEYS that they hypothesized as being able to differentiate between high-creativity climates and low creativity climates, integrating (i) organizational encouragement, (ii) supervisory encouragement, (iii) work group supports, (iv) freedom, (v) sufficient resources, and (vi) challenge.

Organizational encouragement is also considered as a subscale (created by Amabile et al., 1996) comprising several aspects, such as encouragement of risk taking and idea generation, supportive evaluation of ideas, collaborative idea flow and participative management and decision making (Lean, 2005). To this extent, we adopted organizational encouragement as a moderating variable in this study.

In the sense that organizational encouragement is a construct that pertains to the actions and behavioural patterns of the organization as a whole, we tend to consider it as not being reflexive in nature, and therefore, is approached as a formative variable. (Myszkowski et al., 2019).

We used the measure recommended by Tripon (2015) with the following items: (i) The organizational culture encourages creativity; (ii) Ideas are fairly and constructively judged; and (iii) Creative work is rewarded and recognized. We adopted a 6-point Likert scale, where 1 reflects “not at all” and 6 reflects “extremely”.

3.2.2.4.3 *Organizational Goal Clarity*

According to Locke et al. (1988) and Locke and Latham (1990), the goal-setting theory proposes that clear goals are essential for higher organizational performance. This clarity guides the attention, motivation and commitment of employees to these goals. The organizational efficiency is strongly affected by the clear understanding that employees have of their responsibilities in achieving organizational goals in the workplace, since these responsibilities integrate the organizational structure (Heine et al., 2023).

At the same time, clear goals allow for committed participants with change within the organization. Clear information regarding the organizational change, such as organizational goals, increases employees' promptitude and efficacy throughout the change process (Armenakis et al., 1993; Heine et al., 2023; Terry & Jimmieson, 2003).

Thus, we tested the moderating effect of organizational goal clarity in our model. This variable, treated as reflective, was assessed on a 6-point Likert scale (1 = very inaccurate and 6 = very accurate). We adopted the following items from Patterson et al. (2005), also used for Gonzalez-Mulé et al. (2016: 2031): i) "Our team members have a good understanding of what our organization is trying to do."; ii) "The future direction of the organization is clearly communicated to our team members."; iii) "Our team members are well aware of the long-term plans and direction of the organization."; and iv) "There is a strong sense of where the organization is going among the team members.".

3.2.2.4.4 *Openness to Experience*

The Five-Factor classification of personality traits includes openness to experience, which is an important personality trait for generating novel ideas, as it involves seeking out new experiences and developing varied thoughts and ideas (Madrid & Patterson, 2016). Open to experience individuals are described as curious, imaginative and creative, artistically sensitive and responsive to unconventional and nonconformist perspectives (Costa & McCrae, 1992; Choi, 2011; Madrid et al., 2014; McCrae & Costa, 1997; McCrae, 1987).

The benefits of openness to experience to creativity and innovation in organizations have been supported in a series of studies (Hammond et al. 2011; Madrid et al., 2014; Madrid et al., 2016). We used the measure recommended by McCrae et al. (2005), with the following items: i) I like the old-fashioned methods I'm used to; ii) I believe variety is the spice of life; iii) Our ideas of right and wrong may not be right for everyone in the world.; and iv) I believe that it's better to stick to your own principles than to be open-minded. We adopted a 6-point Likert scale, where 1 reflects "not at all" and 6 reflects "extremely".

3.2.2.4.5 *Discretionary slack*

Research on creativity and innovation has shown that some creative behaviours, such as finding creative solutions to business problems, adopting creative changes in organizational processes and challenging the *status quo*, generate the necessary, albeit not sufficient, conditions for innovation to occur (Im & Workman, 2004; Sethi et al., 2001; Troilo et al., 2014).

The perceived availability of discretionary resources provides more opportunities for creative behaviours in a given organizational context (Bourgeois, 1981), promoting untried ideas and approaches with a higher level of risk and uncertainty (Andrews & Smith, 1996; Mishina et al., 2004; Sharfman et. al., 1988)

In extant investigations, Troilo et al. (2014) verified a dependence on slack resources to perform knowledge outside the company's current domains (distal searches), which, in turn, enhanced radical innovation. Dasí et al. (2015) examined the moderating effect of slack resources on firm growth through internationalization, in the context of exploration and exploitation strategic orientation of companies, and Sheppard (2020) studied the relationship between discretionary slack and growth and survival of small firms.

With the purpose of analyzing the moderating effect of discretionary slack, as a reflexive variable, we used the measure recommended by Atuahene-Gima (2005) with the following items: i) "We have uncommitted resources that can be used to fund strategic initiatives at short notice"; ii) "We have a large amount of resources available in the short run to fund our initia-

tives"; iii) "We will have no problems obtaining resources at short notice to support new strategic initiatives"; and iv) "We have substantial resources at the discretion of management for funding new strategic initiatives".

We adopted a 6-point Likert scale, where 1 reflects "strongly disagree" and 6 reflects "strongly agree".

3.2.2.5 Summary of constructs

Factor analyses reveal unidimensional constructs, with an acceptable variance explained. In addition, all the constructs used in the analyses that will be presented have acceptable Cronbach's alphas. Although the constructs are theoretically distinct and measured using validated scales, it is still likely that there will be a correlation between them.

Since this study models these variables as distinct, we present the Pearson correlation matrix in table 5. We calculate them in IBM's SPSS 27. All correlations are below $r = 0.7$, except for the association between Diagnostic control systems and Interactive control systems ($r = 0.805$), Belief control systems and Boundary control systems ($r = 0.719$), Organizational goal clarity and Boundary control systems ($r = 0.798$) and Organizational goal clarity and Belief control systems ($r = 0.956$).

Table 4 Correlation matrix (Pearson)

Function description	Cultural and creative dimensions	Legal nature of organization	Number of employees	Financing nature	Organization's creativity dependency	Idea realization	Explorative innovation strategy	Exploitative innovation strategy	Interactive control systems	Diagnostic control systems	Boundary control systems	Belief control systems	Openness to experience	Organizational encouragement	Organizational goal clarity	Transformational leadership	Slack discretionary
Function description	1																
Cultural and creative dimensions	-0.050	1															
Legal nature of organization	0.030	-0.019	1														
Number of employees	-0.155**	-0.042	0.021	1													
Financing nature	-0.003	0.121*	0.113*	-0.202**	1												
Organization's creativity dependency	0.001	0.088	-0.017	-0.046	0.081	1											
Idea realization	-0.063	0.041	0.009	0.097	0.083	0.303**	1										
Explorative innovation strategy	0.039	-0.006	0.103	0.029	0.026	0.314**	0.271**	1									
Exploitative innovation strategy	-0.006	0.017	0.082	-0.008	0.035	0.278**	0.266**	0.713**	1								
Interactive control systems	0.035	0.023	-0.016	-0.047	0.020	0.382**	0.394**	0.513**	0.493**	1							
Diagnostic control systems	0.084	-0.003	0.076	-0.088	0.047	0.345**	0.325**	0.500**	0.509**	0.805**	1						
Boundary control systems	-0.075	-0.071	-0.046	0.118*	0.085	0.387**	0.395**	0.404**	0.408**	0.490**	0.516**	1					
Belief control systems	-0.079	-0.058	-0.018	0.157**	-0.010	0.302**	0.353**	0.358**	0.348**	0.506**	0.514**	0.719**	1				
Openness to experience	0.155**	-0.019	0.007	0.009	-0.087	-0.226**	-0.044	0.163**	0.232**	0.246**	0.213**	-0.123*	0.009	1			

**The correlation is significant at the 0.01 level (two-tailed).

*The correlation is significant at the 0.05 level (two-tailed).

Essays on the relationship between the use of management control systems and creativity and innovation in cultural and creative organizations

	Function description	Cultural and creative dimensions	Legal nature of organization	Number of employees	Financing nature	Organizatio n's creativity dependency	Idea realization	Explorative innovation strategy	Exploitative innovation strategy	Interactiv e control systems	Diagnosti c control systems	Boundary control systems	Belief control systems	Openness to experience	Organizati onal encourage ment	Organizati onal goal clarity	Transfor mational leadership	Slack discretionary
Organizational encouragement	0.020	0.092	-0.027	-0.053	0.048	0.728**	0.259**	0.382**	0.435**	0.500**	0.430**	0.323**	0.289**	0.218**	1			
Organizational goal clarity	-0.092	-0.061	-0.013	0.187**	0.004	0.309**	0.379**	0.349**	0.343**	0.471**	0.465**	0.798**	0.956**	-0.064	0.245**	1		
Transformational leadership	0.199**	0.065	-0.009	-0.114*	0.032	0.403**	0.256**	0.407**	0.429**	0.677**	0.641**	0.381**	0.411**	0.298**	0.550**	0.361**	1	
Slack discretionary	0.160**	0.007	0.009	-0.101	0.049	0.406**	0.231**	0.576**	0.537**	0.533**	0.514**	0.325**	0.324**	0.247**	0.509**	0.284**	0.517**	1

**The correlation is significant at the 0.01 level (two-tailed).

*The correlation is significant at the 0.05 level (two-tailed).

4. Results

4.1 Qualitative Study

Eighteen second-order categories, where representative evidence from interviews is also included, were identified in the data emerging from the set of research questions asked to artistic directors and cultural managers (see Table 3).

The first two categories – “Endogenous and exogenous creative mass, fundamental to the development of the organization” ($N = 6$; Coverage = 3,63%) and “Encouraging environment for the generation of ideas” ($N = 6$; Coverage = 3,00%) - were grouped into third-order concepts (organizational creativity), representing both the environmental and the cultural that act as influencers of creative expression and thinking, and converge on the notion defended by Woodman *et al.*, (1993: 293) who define organizational creativity as “the creation of a valuable, useful new product, service, idea, procedure, or process by individuals working together in a complex social system”. The following excerpts from the interviews are illustrative of this conceptualization: "We have established the main creativity and innovation lines we want to define for the organization (...) both on the artistic side and on the management side, we have started to work on these lines. There is a work of great complementarity, where both aspects help each other." (E3); "We work a lot with design thinking, we work a lot with this process, it's a non-linear conception of ideas, (...) " (E5).

The third category is implementation of ideas ($N = 6$; Coverage = 3,30%), which refers to the process of idea structuring, its acceptance and implementation. The following two transcripts are from entities operating in the field of performing arts "(...) we all think and develop a solution together, evaluate ideas and then move on to the process of structuring that idea in a more complex and more complete way." (E5) or “(...) is always looking for new ways to innovate, new ways to reach other audiences, to extend its offer to all types of audiences” (E6) are representative of references we found in the literature. For example, the definition adopted by Fagerberg *et al.* (2005) that we can sum up as carrying out a new idea for a product or process, or the definition developed by Gordon and McCann (2005: 525) who defend that “innovation involves the successful implementation of a new product, service, or process,

Table 5 Theme/category emerged from the interviews

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
1.Organizational Creativity	6	6,63%	1.1. Endogenous and exogenous creative mass, fundamental to the development of the organization	6	3,63%	"(...) creativity and its stimulation are fundamental functions of the public service we provide, as well as of our organization, since they are transversal to both." (E1) "The main factor is endogenous; there has to be a very rich creative landscape, especially of creative inputs (...)" (E2) "We have established the main creativity and innovation lines we want to define for the organization (...) both on the artistic side and on the management side, we have started to work on these lines. There is a work of great complementarity, where both aspects help each other." (E3) "Creativity comes from my multidisciplinary perspective of artistic fundamentals" (E4) "Our creative ability comes from the people who work with us." (E5) "We have external curators, in the sense of supporting us in the decision of which temporary exhibitions we are going to have each year, and therefore bring in new ideas from the outside." (E6)
			1.2. Encouraging environment for the generation of ideas	6	3,00%	"A creator uses their knowledge of the different domains to somehow aggregate, organize and feed the creation of these stories." (E1) "We have many sessions where we constantly feed back ourselves, and the big issues we question ourselves about allow us to keep an institution alive (...)." (E2) "The Management Board, together with the Artistic Director, holds brainstorming sessions to assess whether this is the way forward and how we can achieve it" (E3) "In our discussion, we planted some seeds with simpler or more difficult themes, whatever they may be" (E4) "We work a lot with design thinking, we work a lot with this process, it's a non-linear conception of ideas, (...)" (E5) "(...) is always looking for new ways to innovate, new ways to reach other audiences, to extend its offer to all types of audiences." (E6).

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
2. Innovation	6	3,30%	2.1 Implementation of ideas	6	3,30%	"This place allows for the possibility of error, because without error there is no evolution. And in that sense, this theatre is one of the few artistic places in the arts where this should be privileged. And then it produces one of two outcomes: either a success or a major failure." (E1) "(...) once you receive the funding, you'll need three or four months to complete the implementation phase. During this time, you'll go through the therapeutic stage of the project or process, fully realizing the work. After those three months, the project will debut, and you'll quickly move on to the next, because as a creator, you're always thinking about your next creation." (E2) "(...) we work with creatives for creatives and for the public." (E3) "It often starts with the theme we want to communicate and the direction we want to take. We also need to consider the spatial conditions we have and where we're going to place things. Naturally, there are different ways to begin. Sometimes, there are pre-existing premises that guide us toward achieving a specific message. Other times, we start completely from scratch, deciding on a theme and a format, and from there, shaping the message. This message then translates into the languages or mediums we typically use." (E4) "(...) we all think and develop a solution together, evaluate ideas and then move on to the process of structuring that idea in a more complex and more complete way." (E5) "Each unit has its own way of implementing the ideas, it depends on each creative process (...)." (E6)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
3. Explorative Innovation	6	4,75%	3.1 Experimentation, flexibility and innovation	6	4,75%	"The commitment to new knowledge is constant in all sectors, all that is needed is a course in new dramaturgy. We are producing new knowledge, new ideas, new material." (E1) "(...) when we present, it's through creation, relying on the audience." (E2) "(...) we try to implement strategies within the theater team itself so that collaborators with more technical functions are also creative in their solutions, becoming themselves factors of change in the creation process." (E3) "(...) try things that have not been tried, whether in the message, the contents themselves, or in the format of the show." (E4) "(...) allows us to explore different ways to combine and be able to work several units in partnership to achieve the goals of each one." (E5) "Other challenges that arise from the point of view of innovation have to do with sustainability and the environmental concerns that these organizations must have."(E6)
4. Exploitative Innovation	5	3,45%	4.1. Refinement, selection, implementation and execution	5	3,45%	"On the other hand, we also improve the know-how we have. (E1) "We're a silent, supportive back-up structure—an incubator. We're not a presentation structure (...). "In artistic creation projects (...) the work is immensely collaborative, and the implementation process is very transversal." (E2) "We take the universal and more classical dramaturgy, and give it a reading or challenge the creators to give it a more contemporary reading." (E3) "When the customer already knows that the product doesn't work and needs to change, the product undergoes a rebranding process." (E5) "(...) there's also the work of giving a new look to what already exists" (E6)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
5. Transformational Leadership	5	6,23%	5.1. Vision and philosophy of the organization, Intellectual stimulation	5	6,23%	"(...) maintain environmental values, ethical values, and values of trust in terms of the relationship with the artists and with the public upstream and downstream." (E2) "(...) we strive to have an inclusive language, open to all, practicing positive discrimination." (E3) "(...) we do what we love to do, which is artistic activity, artistic creation and artistic production, and we know that is being used for a greater cause." (E4) "We are highly motivated and provide the freedom for people to work." (E5) "(...) there is a lot of creative freedom at the operational levels (...). The units themselves consider what makes sense to them, and what makes sense within the objectives they propose to achieve during a given period of time(...)" (E6)
6. Organizational Encouragement	3	1,32%	6.1. Organizational culture to encourage creativity	3	1,32%	"(...) creativity and the stimulation of creativity is a fundamental function of the public service we provide, but also as an organization, since it is transversal in it." (E1) "We are a winter garden, a fertilizer for a lot of things." (E2) "These projects are intergenerational (we learn from people who know more and who are older); intercultural (different cultures); and interdisciplinary (with different disciplines)." (E2) "We began integrating women into the lighting and sound teams, and we realized that the company culture and the relationships between people in these areas changed significantly" (E3)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
7. Organizational Goal Clarity	4	2,56%	7.1. Clarity and coherence of the organizational vision	4	2,56%	"(...) we have also our strategic planning process for the following year. And with this planning we fine-tune the issues more related to the budget and, on the other hand, ensure that the physical execution takes place according to what is defined in the activities plan (...)." (E1) "(...) thinking about projects for a 4-year period, we also do an annual retreat." (E2) "We try to have public communication in our communication strategy; these are the key ideas that we want people to retain, so that they understand the thread that will direct at least that year's programming (...)." (E3) "(...) leave a very strong message of what we are doing and what our performance is." (E6)
8. Openness to Experience	4	3,04%	8.1. Strong intellectual stimulation environment	4	3,04%	"The Theater (...), as a public entity of public service, must be the place in these commitments that allows for the possibility of error, because without error there is no evolution." (E1) "Our leadership is characterized by creative freedom; there is a lot of creative freedom at the operational levels, albeit subject to evaluation." (E2) "(...) we try to implement strategies within the theater team itself so that the collaborators with more technical functions are also creative in their solutions, and become themselves factors of change in the creation process." (E3) "(...) always a very innovative language, always in an attempt to never stay in the same place (...)" (E4)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
9. Discretionary slack	5	3,03%	9.1. Resources available for alternative uses	5	3,03%	"The way we manage ourselves, influenced by our culture, is that all departments have their own independent budgets (...) operating within a system of autonomy that is mutually supervised and always open to adjustments." (E1) "(...) our outputs are huge with very little money and few resources, and the relationship between our output and our budget is always something mysterious." (E2) "This strategy of working by projects, even within the schedule itself, is a strategy that works very well in terms of resource allocation." (E3) "If there is budgetary slack, there is always the idea of creating our own content that can then be monetized to generate more resources (...) always within this logic of social economy." (E4) "(...) new areas in which the organization wants to be or that it wants to strengthen, or others where it intends to divest because they are no longer priorities." (E6)
10. Interactive control systems	4	7,03%	10.1. Provides and promotes the involvement and the validation of ongoing plans	4	6,14%	"We always plan ahead and anticipate risky situations." (E2) "(...) the contents to be developed must have the involvement of the team. Only with their motivation and involvement is it possible to have the inputs we need to achieve that goal." (E4) "Our planning is done quarterly through an information system (...) in what way we are going to reach other customers, how we implement our service on social media, if we advertise, if we do content production, in what moment we will complete all the layouts, what we hope to achieve in how much time." (E5) "After the activity plan is approved, the document is shared and published internally, precisely so that this interaction capacity between units can exist." (E6)
			10.2. Focus on strategic uncertainties. New challenge catalyst	3	0,89%	"The planning we do seeks to provide solidity and a lot of anticipation. This predictability is essential, especially because on the part of the State there is always unpredictability." (E2) "(...) the meetings are not only about balance, but also about perspectives for the future. (...) "(E4) "(...) to implement improvements in a perspective of process continuity." (E5)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
11. Belief control systems	4	3,38%	11.1. Explanation of organizational values, objectives and direction	4	3,38%	"There is a continuous flow of information about what is constant activity". All these sectors are integrating everything I do within their practices and their budget, and in this sense they are giving me a set of questions to decide upon(...)" (E1) "The organization has a deep-rooted culture, and an extraordinary organization in the sense that there are procedure manuals for everything; all departments are very aware of what their area of activity is, what are their objectives, in what way they operationalize the information (...)" (E3) "We like to be transparent, how much we invest, and how much we profit. What is the strategy, what is the company's path in a short and medium term perspective, what are our goals." (E5) "The organization transmits its reference values and principles underlying its creation (...). It is lived and breathed inside and outside." (E6)
12. Boundary control systems	5	5,32%	12.1. Delineation of the activity domain of the organizational participants	5	5,32%	"I handle management, my treasurer makes the payments, my producers prepare the bookkeeping for the accountants, and then the accountants finalize the books. So, there are four levels of oversight. Since we must maintain absolute transparency, we have strict, draconian rules." (E2) "We have currently a team management system in which we manage to place all the necessary information, (...) it has different permission levels, allows us to manage conflicts, including in operations, which has transformed a lot." (E3) "There are things that are easily understandable, basically intuitive, but naturally it is necessary to establish a list of tasks, obligations, competencies and responsibilities, and areas of activity." (E4) "Each element of the organization has its expertise." (E5) "There are internal control mechanisms that may be applied in order to safeguard the sphere of action of each unit or each employee." (E6)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
13. Diagnostic control systems	6	7,83%	13.1. Monitoring of deviations and results	6	7,83%	"There is a need to monitor people's performance and give them feedback on that same performance." (E1) "The signaling of error - in the sense of moving towards other paths - and of success is extremely important, otherwise we will not be able to evolve." (E1) "We conduct extensive evaluations among ourselves and assess the breeders using a questionnaire." (E2) "Management control is carried out practically every day by each of the project managers, ensuring that those responsible have a global view of the projects. There is daily monitoring of progress." (E3) "The issue of positive reinforcement is very important for a team, so that it is motivated and pursues the goals that are set." (E4) "We use an application within the Web, that gives us reports. (...) The system has a schedule of tasks that allows us to enter comments and know the level of execution compared to what was expected." "We believe that control works in our organization." (E5) "The organization also has a model for monitoring and evaluating its projects and activities, and this is more aimed at monitoring the processes and the "impact of their performance" in the medium and long term (...)" (E6) "(...) has a performance evaluation model for its employees, which is put into practice every year with four moments throughout the year, something that has repercussions on the evaluation and on the career progression of the employees." (E6)

Third order concepts	N*	% coverage	Second order categories	N	% coverage	Representative evidence from interviews
14. Formal Governance Mechanisms	4	2,57%	14.1. Formalized sharing of risks and returns	4	2,57%	"It is a catalyst for this praxis of risk and innovation or a receptacle for this praxis of risk and innovation, (...) which is fundamental for its progression and for the progression of others." (E1) "In the various work models developed, for example at an international level and with similar theatres, what we do is share risks and gains." (E3) "There are always contracts where what was agreed between the various parties involved ends up being signed." (E3) Bringing more complex projects into reality - which to date have not existed so much in Portugal in terms of completely different formats - is very possible in a partnership strategy." (E4) "The risk can be assumed in many ways, sometimes in full, while in other cases the risk is shared." (E6)
15. Informal Governance Mechanisms	5	7,72%	15.1 Project Manager	3	3,67%	"The (...) monitoring of the entire process is fundamental, from the pre-production phase, creation and assembly of the project, the presentation and premiere of the project, to the career phase of the show, the tour or the stationary presentations (...)." (E3) "In each of the projects we develop, there is always a designated producer." (E4) "The project manager takes it from start to finish, but the end of the project only occurs when the final evaluation is carried out within the scope of this monitoring and evaluation model." (E6)
			15.2 Information and communication system	3	4,05%	"Communication works in two ways, it is organic and intrinsic to our way of being. But there is a formal communication process, of all the meetings and everything that is communication (...)" (E1) "We normally use the information system preferred by the customer." (E5) "Right now we have a centralized database already created, and we are currently working to add more and more information to this historical database." (E6)

- Each value may be different from the sum of the frequencies of the lower-order themes/categories because several interviewees cited more than one lower-level theme/category.
- E# - Identifying the interviewee.

which for most activities entails their commercial success”.

As mentioned by Wijngaarden et al. (2019), in both these studies we find the argument that innovation is distinct from the simple inception of an idea or invention and consider successful implementation a core element of innovation, even though commercial success is not always the most relevant purpose of production in context of the creatives industries.

The fourth and fifth categories focuses on the organization's innovation and strategy regarding the mode of investigation pursued. These perspectives are welcomed in the theoretical view of the works of March and Simon (1958) and Nelson and Winter (1982), which proposed a decomposition of the organizations into operational units that are focused on efficiency (i.e., exploitation), and a headquarter function that is focused on finding new avenues for growth (i.e., exploration).

All interviewees alluded to the most practiced mode of innovation in their organization. An explorative innovation strategy tends to predominate in the discourse used, as evidenced in the fourth category “Experimentation, flexibility and innovation” ($N = 6$; Coverage = 4,75%). Most leaders alluded to experimentation and the creation of new knowledge. In the area of the performing arts, we highlight “(...) try things that have not been tried, whether in the message, the contents themselves, or in the format of the show,(...)” (E4) while also including other topics, such as environmental concerns and the sustainability of organizations.

The fifth category “Refinement, selection, implementation and execution” reflects the simultaneous adoption of an exploitative innovation strategy ($N = 5$; Coverage = 3,45%). An example is “We take the universal and more classical dramaturgy and give it a reading or challenge the creators to give it a more contemporary reading.”(E3).

This strategy is in line with what is advocated by Dutt and Joseph (2019), Knott (2001), Knott (2002) and Knott and Turner (2019), in contrast to the processes of change in structure – centralization, decentralization, and then reintegration (Siggelkow & Levinthal, 2003) – or flat out decentralization (e.g. Burns & Stalker, 1961; Knudsen & Levinthal, 2007; Mintzberg, 2003, 1978; Rivkin & Siggelkow, 2003) to cope with dynamic environments. According to Ungureanu (2020:5), in comparison with an organizational change process (by nature more

expensive and longer in time), "changing the resource allocation windows", depending on what type of hierarchy exists in the organization, and "changing the incentives at various levels of activity" as a way to reach a desired balance level of exploration/exploitation mix, is cheaper and more immediate.

We observed among the answers of the participants personal competences at the leadership level that allow us to understand the success of organizations. The sixth category "Visionary goal setting, intellectual stimulation and inspirational motivation" extracted from the interviews integrates specific transformational leadership characteristics ($N = 5$; Coverage = 6,23%).

As noted by Nguyen et al. (2017), a transformational leader can influence the reaction of managers and play an important role in creating an organizational culture that enhances an innovative environment (Bass & Avolio, 1994). "Transactional leadership consists of management-by-exception and contingent reward in external motivational control (...)." (Hagemann, 2022: 339). Indeed, external goal setting and reward through goal achievement for controlling desired behaviour, are the most important qualities of this leadership style. (Bass & Riggio, 2006; Hagemann, 2022).

Three main themes emerged: focus on the "Transmission of environmental, ethical and trust values"; focus on the "Creative freedom at all operational levels external"; and focus on the "Encouragement and recognition, involvement and cooperation". The first theme refers to idealized influence, the following transcriptions are examples: "(...) maintain environmental values, ethical values, and values of trust in terms of the relationship with the artists and with the public upstream and downstream" (E2); "(...) we strive to have an inclusive language, open to all, practicing positive discrimination." (E3). The second theme refers to intellectual stimulation (e.g., "(...) there is a lot of creative freedom at the operational levels (...). The units themselves consider what makes sense to them, and what makes sense within the objectives they propose to achieve during a given period of time (...)" (E6)). Finally, the third theme represents the inspirational motivation. We present the following transcript as an example: "(...) we do what we love to do, which is artistic activity, artistic creation and artistic production, and we know that is being used for a greater cause." (E4).

The identification of the seventh category "Organizational culture to encourage creativity" ($N = 3$; Coverage = 1,32%) was driven by the work of Theresa M. Amabile, very focused on behaviour in the context of the organization (McLean, 2005). Thus, our category was defined based on themes addressed by the interviewees such as "Stimulation of creativity as a public service organization" and "Autonomy and evaluation as essential elements of the quality of organizational structures".

One of the context factors identified in the scale proposed by Amabile et al. (1996) that differentiates between a climate of high and low creativity is organizational encouragement. The organizational encouragement factor encompasses several aspects, including risk taking and idea generation, evaluation of idea support, collaborative flow of ideas, and participatory management and decision-making (Amabile et al., 1996). Organizational encouragement is also founded on the thinking defended by Kanter (1983), which is based on the idea of integrating structures supported by a matrix structure, through which multiple structural connections are established and supported on a horizontal communication process.

Examples of excerpts collected are: "We are a winter garden, a fertilizer for a lot of things." (E2); "These projects are intergenerational (we learn from people who know more and who are older); intercultural (different cultures); and interdisciplinary (with different disciplines)." (E2); and "(...) creativity and the stimulation of creativity is a fundamental function of the public service we provide, but also as an organization, since it is transversal in it." (E1).

Another domain was observed and reflected in the eighth category "Clarity and coherence of the organizational vision" ($N = 5$; Coverage = 2,56%), which includes themes such as "Strategic planning, which allows physical and financial execution to be monitored" and "the importance of communication" and "retention of key ideas". This set of themes finds support in goal-setting theory, since it proposes that clear goals are essentials for higher organizational performance because they guide employees' attention to organizational goals, and therefore, they motivate employees to be committed to these goals and to stay committed to the change within the organization (Heine et al., 2022; Locke et al., 1988; Locke & Latham, 1990). In particular, during change processes, leaders ensure that their employees have a clear understanding of the change, providing them with the necessary explanations and information about the proposed path for the organization, and its consequences (Stouten et al., 2018).

On these different dimensions of this category, references can be found among the interviewees, such as "(...) we have also our strategic planning process for the following year. And with this planning we fine-tune the issues more related to the budget and, on the other hand, ensure that the physical execution takes place according to what is defined in the activities plan (...)." (E1); "We try to have public communication in our communication strategy; these are the key ideas that we want people to retain, so that they understand the thread that will direct at least that year's programming (...)." (E3); or "(...) leave a very strong message of what we are doing and what our performance is." (E6).

For the ninth category "Strong intellectual stimulation environment" ($N = 4$; Coverage = 3,04%) contributed themes as "Extremely rich surrounding ecosystems from an artistic point of view" and "Collaborative work across the whole organization". References emerged from the interviewees such as, for example, "The Theatre (...), as a public entity of public service, must be the place in these commitments that allows for the possibility of error, because without error there is no evolution." (E1), "Our leadership is characterized by creative freedom; there is a lot of creative freedom at the operational levels, albeit subject to evaluation." (E2), or "(...) we try to implement strategies within the theatre team itself so that the collaborators with more technical functions are also creative in their solutions and become themselves factors of change in the creation process." (E3).

A relevant body of research has evidenced that creativity is driven by individual and contextual factors in the workplace, such as personality traits and work climate (Amabile & Pillemer, 2012; Egan, 2005; George, 2007; Hammond et al., 2011; Hennessey & Amabile, 2010; Madrid & Patterson, 2016; Madrid et al., 2014; Rank et al., 2004; Shalley et al., 2004; Woodman & Schoenfeldt, 1990). For example, adopting the Five Factor Model of personality (Costa & McCrae, 1992), openness to experience has been supported as a relevant cognitive disposition positively associated with the generation and implementation of novel ideas.

Indeed, the literature shows that open individuals are characterized beyond the search for new and varied experiences, by a particularly permeable structure of awareness (Wang et al., 2022), which allows for better integration and combination of new and unrelated information (Baer, 2010; Baer & Oldham, 2006) and increases employees' ability to take advantage of the information benefits when working in different work environments (Homan et al., 2008).

As we indicate in figure 1, the two themes were organized into one second-order category, which in turn gave rise to one third-order concept - openness to experience.

Then, we identified a tenth category "Resources available for alternative uses" ($N = 5$; Coverage = 3,03%) based on themes such as "Logic of circular and social economy", "Profitability of contents to obtain new resources" or "Partnership strategy to allocate more resources". These emerged from contributions such as "This strategy of working by projects, even within the schedule itself, is a strategy that works very well in terms of resource allocation." (E3), "If there is budgetary slack, there is always the idea of creating our own content that can then be monetized to generate more resources (...) always within this logic of social economy." (E4) or "(...) new areas in which the organization wants to be or that it wants to strengthen, or others where it intends to divest because they are no longer priorities." (E6).

All these statements drove the identification of the "Discretionary slack" concept, which refers to organizational resources that are available for discretionary use, since although they are committed to specific activities or organizational contexts, they are not absorbed and are available for alternative uses (Troilo et al., 2014). The literature has suggested that this form of slack resource is crucial to explaining the company's ability to explore, should the opportunity arise, since it is associated with managerial discretion (Mishina et al., 2004; Sharfman et al., 1988; Simsek et al., 2007)

As also underlined by Sheppard (2020), the discretionary slack allows to perform searches outside the current knowledge domain of the company (designated by distal searches) which, in sequence, offer the company with a fuller set of solutions to be applied in the context of the radical innovation process (Troilo et al., 2014).

The next categories result from the understanding that the interviewed entities use control systems in the context of their activity. The eleventh and twelfth category, which we named "Provides and promotes the involvement and the validation of ongoing plans" ($N = 4$; Coverage = 6,14%) and "Focus on strategic uncertainties, new challenge catalyst" ($N = 3$; Coverage = 0,89%) arise from themes such as "Short and medium terms planning, with strong involvement and participation of teams and units" and "Unpredictability as future avenues", respectively.

Even though it cannot be separated from diagnostic control in the sense that it also exposes tracking the progress, to search for dialogue that ends up arising from a questioning phase, the involvement of the top managers with the subordinates and the exchange of information, which helps to improve the present plans or the strategy, are signs of interactive control (Barros & Ferreira, 2022; Simons, 2000). The following excerpts are examples of these references: "(...) the contents to be developed must have the involvement of the team. Only with their motivation and involvement is it possible to have the inputs we need to achieve that goal." (E4); "After the activity plan is approved, the document is shared and published internally, precisely so that this interaction capacity between units can exist." (E6).

The interactive controls "also stimulate search and learning which can result in new emergent strategies" (Simons, 1995a: 91). From this point of view, the managers intensely promote a pervasiveness of face-to-face challenges and discussion; a non-invasive, facilitating and inspirational involvement, challenging what has been achieved and what the strategic uncertainties are that the future will bring (Barros & Ferreira, 2022, Bisbe et al., 2007). With this positioning the managers guide the organization to search for new opportunities, new challenges, focusing on strategic uncertainties (Simons, 2000).

We found the following statements that were considered representative of this dimension: "The planning we do seeks to provide solidity and a lot of anticipation. This predictability is essential, especially because on the part of the State there is always unpredictability."; "(...) to implement improvements in a perspective of process continuity." (E2); and "(...) the meetings are not only about balance, but also about perspectives for the future. (...)" (E4).

The thirteenth category was defined as "Explanation of organizational values, objectives and direction" ($N = 4$; Coverage = 3,38%), according to the following themes: "Transmission of organizational values and principles"; "More and better communication and information sharing"; and "Return of new issues for decision". These themes converged to the belief control system concept, which means "the explicit set of organizational definitions that senior managers communicate formally and reinforce systematically to provide basic values, purpose, and direction for the organisation" (Simons, 1995a: 34).

This framework promoted by Simons (1995a) identifies formal belief systems that indicate desired organizational direction, seen as an equilibrium between innovation and efficiency (Chenhall & Moers, 2015). We found some excerpts from the interviews that showed that these systems are used to communicate and stimulate the involvement of the organization with innovation (Barros & Ferreira, 2022): "The organization transmits its reference values and principles underlying its creation (...) (E3); "It is lived and breathed inside and outside." (E6).

According to Tessier and Otley (2012), these beliefs are a type of control that can be used to manage objectives of control (performance and compliance). We also found references to this level: "We like to be transparent, how much we invest, and how much we profit. What is the strategy, what is the company's path in a short and medium term perspective, what are our goals." (E5); "(...) all departments are very aware of what their area of activity is, what are their objectives, in what way they operationalize the information (...)" (E3).

In parallel with the previous category, we identified a new category "Delineation of the activity domain of the organizational participants" ($N = 5$; Coverage = 5,32%) , based on the following themes "Establishment of tasks, obligations, skills and responsibilities" and "Systematization of information, greater sharing and greater feedback", which leads us to another group of controls that are used to specifically manage compliance (Tessier & Otley, 2012) – boundary control systems.

These integrate two dimensions, operational (or business conduct) boundaries and strategic boundaries (Simons, 1995a). All are based on risks to be avoided. The first ones inform the employees of the limits imposed on their activities and can be communicated through social controls, e.g., values and codes of conduct or rules and procedures. For example, "There are things that are easily understandable, basically intuitive, but naturally it is necessary to establish a list of tasks, obligations, competencies and responsibilities, and areas of activity." (E4) or "There are internal control mechanisms that may be applied in order to safeguard the sphere of action of each unit or each employee." (E6).

The second set of controls establishes limits at the strategic level of the organization. We identified the following excerpts: "We have currently a team management system in which

we manage to place all the necessary information, (...) it has different permission levels, allows us to manage conflicts, including in operations, which has transformed a lot." (E3).

Associated with the previous category, we identified the fifteenth category - "Monitoring of deviations and results" ($N = 6$; Coverage = 7,83%), which represents a four lever of control defended by Simons (1995a), diagnostic control systems. The contributions collected for this category result from topics such as "Performance monitoring, assessment and feedback, signalling the error, looking for other solutions" and "Perspectives of performance evolution and career progression".

According to Simons (1995a: 59), diagnostic control systems, which provide information on a set of performance variables, are "formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance".

The interviews carried out allowed us to obtain evidence of the existence of a formal routine for monitoring the degree of fulfilment of the company's objectives and individual objectives, as well as the indicators considered fundamental for the achievement of the strategy. This monitoring is communicated to all those who intervene in the system through a software that informs about the level of achievement and communicates it to employees and their superiors. Are examples: "We use an application within the Web, that gives us reports. (...) The system has a schedule of tasks that allows us to enter comments and know the level of execution compared to what was expected." (E5).

Associated with this tracking process, diagnostic control systems are also used to motivate employees, monitor their performance, and promote appropriate incentives to ensure the achievement of organizational goals (Baird et al., 2019). These two constraining levers, (boundary and diagnostic) provide "structure by placing limits on inappropriate behaviours, setting clear targets and expectations, and monitoring feedback" (Speklé et al., 2017: 74).

The extent of this process is verified according to the following excerpts: "There is a need to monitor people's performance and give them feedback on that same performance." (E1); "The signalling of error - in the sense of moving towards other paths - and of success is extremely

important, otherwise we will not be able to evolve." (E1); or "The issue of positive reinforcement is very important for a team, so that it is motivated and pursues the goals that are set."(E4).

The extrinsic motivation in the form of bonuses and incentives (Simons, 2000) is also verified by the following statements: "The organization also has a model for monitoring and evaluating its projects and activities, and this is more aimed at monitoring the processes and the "impact of their performance" in the medium and long term (...)" (E6); and "(...) has a performance evaluation model for its employees, which is put into practice every year with four moments throughout the year, something that has repercussions on the evaluation and on the career progression of the employees." (E6).

Kruis et al. (2016) empirical findings allow to conclude that equilibrium can instead be achieved through diverse combinations of these four levers of control. As Barros and Ferreira (2022: 575) refer, "the levers have specific features and ways of manifesting their presence in practice, and it is in their interdependencies, which warrant consideration, that relevant aspects reside." Transversely, the interviews provided the understanding that control practices are increasingly adopted and perceived as useful and essential. The following excerpt is an example: "We believe that control works in our organization." (E5).

The last three categories presented relate to structural and relational aspects within the scope of organizational governance.

The sixteenth category called "Consensual sharing of risks and returns between the parties" ($N = 4$; Coverage = 2,57%), derives from a first theme that we describe as "Partnership strategy, formally densified in rights and responsibilities". This first perspective focuses on the structural architecture of transactions and highlights the importance of contracts or "written agreements between two or more parties, perceived as legally binding" (Lyons & Mehta, 1997: 241). In this sense, structures are responsible for defining roles and responsibilities (Bianchi & Sousa, 2016). The following excerpt is representative of this: "There are always contracts where what was agreed between the various parties involved ends up being signed."(E3).

These structures integrate mechanisms of formal governance that encourage the parties to invest and cooperate in a particular joint project during its development phase, seen as fundamental to the success of the innovation project (Chen & Manley, 2014; Lenferink et al., 2012; Love et al. 2010; Morwood et al., 2008). In this context we can find some references from interviewed: "Bringing more complex projects into reality - which to date have not existed so much in Portugal in terms of completely different formats - is very possible in a partnership strategy." (E4); "It is a catalyst for this praxis of risk and innovation or a receptacle for this praxis of risk and innovation, (...) which is fundamental for its progression and for the progression of others." (E1).

The second theme in this category, "Formalized sharing of risks and returns", matches to one of the formal mechanisms (Chen et al., 2012) - risk and reward sharing regime, which allows parties in a collaborative project to share savings and any cost underrun or overrun against the expected outcome. We found some more representative excerpts: "In the various work models developed, for example at an international level and with similar theatres, what we do is share risks and gains." (E3); and "The risk can be assumed in many ways, sometimes in full, while in other cases the risk is shared." (E6).

The next two categories are associated with mechanisms of informal governance. As Poppo and Zenger (2002) refer, formal and informal mechanisms are used together and complementary in intercompany collaborations. Informal mechanisms fill the gaps of the formal approaches, such as omissions or contractual adjustments, and sustain cohesion at the personal and relational levels (Alvarez et al., 2010; Farndale et al., 2010; Keller et al., 2021; Wacker et al., 2016; Zhao & Chen, 2013).

The seventeenth category "Project Manager" ($N = 3$; Coverage = 3,67%) was obtained from the theme "Relationship management, project monitoring and assessment". According to Turner (2009: 311) "The governance of a project involves a set of relationships between the project's management, its sponsor (or executive board), its owner and other stakeholders. It provides the structure through which the objectives of the project are set, and the means of attaining those objectives and monitoring performance are determined." Some researchers have studied the subject of the project governance from a wide range of theoretical perspectives and different structures brought by the literature, however, without a clear consensus on

what attributes constitute a model of project governance (Levie et al., 2017; ul Musawir et. al. 2020; Zwikael & Smyrk, 2015).

Some excerpts now transcribed treat this topic: "The (...) monitoring of the entire process is fundamental, from the pre-production phase, creation and assembly of the project, the presentation and premiere of the project, to the career phase of the show, the tour or the stationary presentations (...)." (E3); and "The project manager takes it from start to finish, but the end of the project only occurs when the final evaluation is carried out within the scope of this monitoring and evaluation model." (E6).

The eighteenth and last category of this study, "Information and communication system" ($N = 3$; Coverage = 4,05%) comes from a single theme "Organic and formal communication". Collaborative project governance is also based on the assumption of cooperative and joint decision-making, using information systems that support open communication and information sharing, which in turn promotes organizational alignment (Chen & Manley, 2014; Hauck et al., 2004; Love et al., 2010). In more recent times, the digitalization of supply networks through the development of information systems and the adoption of innovative technologies strengthen the integration and agility of supply chains and networking (Ageron, 2020; Keller et al., 2021).

We leave some excerpts in this sense: "Communication works in two ways, it is organic and intrinsic to our way of being. But there is a formal communication process, of all the meetings and everything that is communication (...)" (E1); "We normally use the information system preferred by the customer." (E5); or "Right now we have a centralized database already created, and we are currently working to add more and more information to this historical database." (E6).

4.1.1 Discussion

With this qualitative study, we sought to obtain perceptions and perspectives organized by thematic categories that would support us in conceptualizing the research model and, therefore, in defining the various constructs to be related in the quantitative study. The findings

offer a comprehensive view of how CEOs and artistic directors navigate the complex balance of cultural, artistic, and managerial dimensions while leading their organizations in contexts of high unpredictability.

First, the excerpts from all the interviewees highlight the idea that both the endogenous and exogenous environment and the organizational culture act as fundamental influencers of creative expression and thinking and converge on the notion of organizational creativity (Woodman et al., 1993).

Second, all the interviewees recognized the existence of different phases in the innovation process, distinguishing between the beginning, the generation of the idea, the end of the journey, its implementation, as well as other possible intermediate phases of development and validation of the idea. This conceptualization is in view with the literature produced (Axtell et al., 2000; Baer, 2012; Perry-Smith & Mannucci, 2017).

Third, the different participants highlight the exploration of current competencies and new competencies that allow them to align and adapt to the innovation strategies followed in their organizations. All interviewees alluded to the most practiced mode of innovation in their organization, as such, it is possible to conclude that an explorative innovation strategy tends to predominate.

Fourth, the contextual ambidexterity observed in the various excerpts – defined by Gibson and Birkinshaw (2004: 209) as "the behavioural capacity to simultaneously demonstrate alignment and adaptability across an entire business unit" – is driven by a combination of personal traits and organizational mechanisms. Together, these factors create a context that empowers individuals to engage in both exploitation and exploration within the same organization (Visser & Scheepers, 2020). We found indications of the existence of individual characteristics, such as Openness to experience, and contextual characteristics, such as Organizational encouragement, Transformational leadership, Organizational goal clarity, and Discretionary slack, which we can use in the quantitative study.

Lastly, the different narratives of the interviewees suggest an alignment with studies that reveal the coexistence of their goals with control practices in these organizations (e.g., Plante et

al., 2021; Mikes & Morhart, 2017; Speklé et al., 2017; Trevisan & Mouritsen, 2023). This dialogue seems to be more fruitful because of the greater use of interactive and diagnostic controls, from the perspective of managing, while monitoring their strategic activities and processes.

These organizations also act as promoters and participants in strategic projects, both nationally and internationally, which have given rise to emergent strategies. As a result, they serve as catalysts for change, reshaping both the strategic and structural context (Mirabeau & Maguire, 2014; Kopmann et al., 2017). Several interviewees noted that the governance of both collaborative and individual projects supports the implementation of formal and informal control mechanisms.

4.2 Quantitative Study

4.2.1 Statistical Analysis

We analyzed the data obtained from the survey that we applied to cultural and creative sector using the partial least squares structural equation modeling (PLS-SEM) approach.

In recent years, researchers have increasingly been turning to second-generation techniques, referred to as structural equation modeling (SEM) (Hair et al., 2022) and seen as one of the best mainstream methods to analyze topics of business management field (Sarstedt et al., 2014; Sleimi & Emeagwali, 2017). It enables researchers to concomitantly model and estimate complex relationships among multiple dependent and independent variables.

For using SEM, there are two types of methods: covariance-based techniques (CB-SEM) and variance-based partial least squares (PLS-SEM) (Hair et al., 2012). Hair et al. (2022: 4) argues "CB-SEM is primarily used to confirm (or reject) theories (i.e. a set of systematic relationships between multiple variables that can be tested empirically). It does this by determining how well a proposed theoretical model can estimate the covariance matrix for a sample data set."

In opposition, as mentioned by Jöreskog and Wold (1982: 270), PLS has been introduced as a "causal-predictive" approach to SEM, which concentrates on explaining the variance in the model's dependent variables (Chin et al., 2020).

PLS regression is a regression-based approach that explores the linear relationships between multiple independent variables and a single or multiple dependent variables. In short, PLS is a component-based latent variable statistical modelling technique that proposes to maximize variance explained while minimizing measurement errors (Hair et al., 2022).

A PLS path model consists of two elements: first, a structural model (or inner model in the context of PLS-SEM) displays the relationships between the constructs and identifies the dependent and independent latent variables relationships; second, a construct's measurement model (or outer model in the context of PLS-SEM) displays the relationships between the construct and its indicator variables.

The PLS approach is suitable for small sample sizes. The minimum sample size for PLS modeling should be equal to ten times the number of independent variables, considering both measurement and structural models (Barclay et al., 1995). This is equivalent to 10 times the maximum number of arrow-heads pointing at a latent variable anywhere in the PLS path model (Hair et al., 2022). In this study we observe 33 arrow-heads pointing at a latent variable (including 12 in measurement model and 21 in structural model). Therefore, our sample size of 357 is considered adequate for PLS modelling.

We followed the procedures suggested by Hair et al. (2022), Ahrholdt et al. (2019) and Svensson et al. (2018) to analyze the interaction and nonlinear effects. A two-stage approach is particularly appropriate for estimating the models in our study variables: firstly, we evaluate the reflexive and formative measurement models; secondly, we are going to assess of the structural model results.

4.2.2 Results of the Measurement Model

The results presented in figure 3 give us a first overview of the outcomes report from SmartPLS 4.

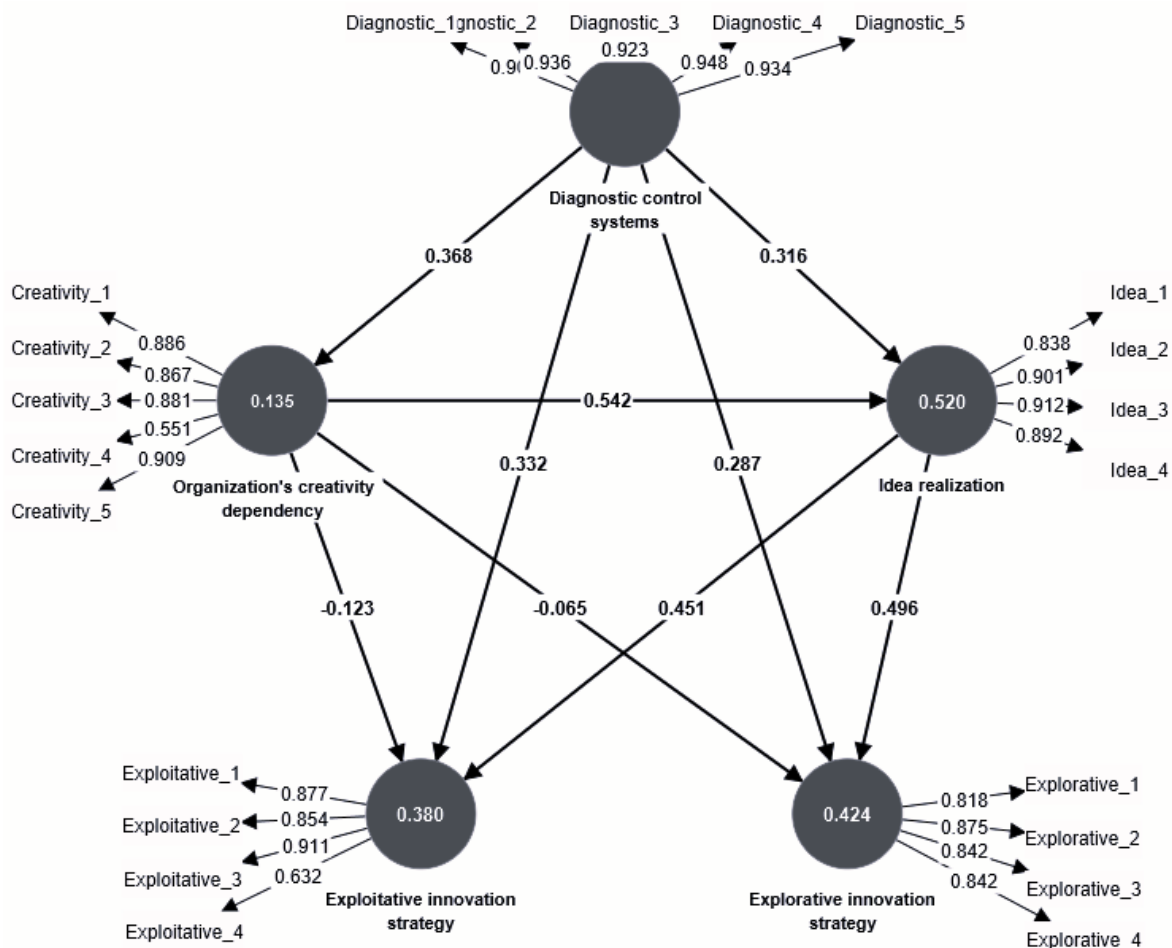


Figure 3 Reflective measurement model

As shown in this figure, the standardized outer loadings for the reflective measurement models are presented. The standardized path relationships between the constructs in the structural model are also shown, as well as the R^2 values for the endogenous latent variables (in the respective circles).

Primarily, the reflective measurement model is assessed by analyzing individual item reliability, construct reliability and convergent and discriminant validity for all reflective constructs. These procedures ensure that the constructs' measures are reliable and valid before assessing the nature of the relationships among the constructs.

The indicators' reliability in the reflexive measurement models offers acceptable standardized outer loadings, given that the values obtained are greater than 0.708 (Hair et al, 2022). We found only three indicators with outer loadings lower than this established value (Creativity_4: 0.550 and Exploitative_4: 0.632) that we decided to keep them based on their contribution to content validity (see Table 6).

Following, we analyzed the constructs' internal consistency reliability and convergent validity. Each of the measurement constructs had a composite reliability equal to or higher than 0.894, indicating acceptable composite reliability. We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that, on average, the constructs explain more than half of the variance of its indicators. These procedures indicate acceptable convergent validity (Chin, 1998; Hultland, 1999).

Additionally, all Cronbach's Alpha, reliability rho_A and composite reliability values are well above the critical threshold of 0.70. The results show the existence of internal consistency reliability.

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. Table 7 – Panel A reports the correlation coefficients in the off-diagonal and the square roots of the AVE in the diagonal.

Table 6 Linear Model Estimations | Indicator and Internal Consistency Reliability

Reflective Construct/Indicator	Outer Loadings	Cronbach's alpha	Composite Reliability	Average Variance Extracted (AVE)
Organization's Creativity Dependency		0.882	0.915	0.689
Creativity is a organization's primary source of value creation	0.886			
Trade in creative ideas is the organization's largest source of revenue	0.867			
Commercial success primarily depends on employee creativity	0.881			
Competitive advantage is based on the creative abilities of the employees	0.551			
Employee creativity is the main input factor in the creation/provision of products	0.909			
Idea Realization		0.909	0.936	0.785
I transform innovative ideas into useful applications	0.838			
I try to introduce innovative ideas into the work environment in a systematic way	0.901			
I work actively on trying to test new ideas	0.912			
I focus on promoting the positive elements of new ideas	0.892			
Explorative Innovation Strategy		0.873	0.909	0.713
Low cost products/services	0.818			
Being first to market with new products/services	0.875			
Developing new generation product/service capabilities	0.842			
Frequent new product/service introductions	0.842			
Exploitative Innovation Strategy		0.868	0.894	0.682
Improving quality of existing products/services	0.877			
Frequent, but incremental modifications to existing products/services	0.854			
Improving efficiency in the provision of existing products/services	0.911			
Opening up new product/service markets	0.632			
Diagnostic Control Systems		0.960	0.969	0.863
Identify critical performance variables (i.e., factors that indicate achievement of the current	0.902			
Set targets for critical performance variables	0.936			
Monitor progress toward critical performance targets	0.923			
Provide information to correct deviations from preset performance targets	0.948			
Review key areas of performance	0.934			

Table 7 Linear Model Estimations | Discriminant Validity

Panel A: Fornell-Larcker criterion

Reflective Construct	Correlations and Square Roots (SQRT) of AVE ⁽¹⁾				
	Diagnostic	Exploitative	Explorative	Idea	Creativity
Diagnostic Control Systems	0.964				
Exploitative Innovation Strategy	0.519	0.909			
Explorative Innovation Strategy	0.519	0.722	0.919		
Idea Realization	0.516	0.541	0.602	0.941	
Organization's Creativity Dependency	0.368	0.296	0.367	0.658	0.911

⁽¹⁾ Diagonal elements are square roots (SQRT) of AVE and off-diagonal elements are correlations between constructs. Numbers in bold - square roots of AVEs of constructs.

Panel B: Cross Loadings criterion

Indicator Loading	Reflective Construct				
	Diagnostic Control Systems	Exploitative innovation strategy	Explorative innovation strategy	Idea realization	Organization's creativity dependency
Creativity_1	0.340	0.255	0.371	0.603	0.886
Creativity_2	0.314	0.248	0.320	0.571	0.867
Creativity_3	0.307	0.276	0.275	0.576	0.881
Creativity_4	0.123	0.108	0.145	0.286	0.551
Creativity_5	0.373	0.292	0.357	0.615	0.909
Diagnostic_1	0.902	0.496	0.483	0.491	0.342
Diagnostic_2	0.936	0.474	0.498	0.470	0.317
Diagnostic_3	0.923	0.502	0.506	0.469	0.328
Diagnostic_4	0.948	0.460	0.445	0.469	0.353
Diagnostic_5	0.934	0.478	0.477	0.494	0.367
Exploitative_1	0.522	0.877	0.636	0.497	0.255
Exploitative_2	0.398	0.854	0.608	0.450	0.249
Exploitative_3	0.446	0.911	0.625	0.471	0.218
Exploitative_4	0.323	0.632	0.512	0.353	0.273
Explorative_1	0.361	0.556	0.818	0.453	0.260
Explorative_2	0.493	0.605	0.875	0.557	0.331
Explorative_3	0.405	0.597	0.842	0.498	0.350
Explorative_4	0.479	0.676	0.842	0.514	0.297
Idea_1	0.382	0.449	0.512	0.838	0.645
Idea_2	0.464	0.492	0.544	0.901	0.520
Idea_3	0.471	0.504	0.568	0.912	0.571
Idea_4	0.509	0.471	0.508	0.892	0.599

Panel C: Heterotrait-Monotrait Ratio (HTMT) criterion

Reflective Construct Combinations	Original Sample (O)	Sample Mean (M)	Bias	95% Confidence
Organization's creativity dependency -> Idea	0.719	0.719	-0.000	[0.649; 0.779]
Organization's creativity dependency -> Explorative	0.406	0.406	0.000	[0.312; 0.496]
Organization's creativity dependency -> Exploitative	0.341	0.342	0.001	[0.242; 0.440]
Organization's creativity dependency -> Diagnostic	0.384	0.384	0.000	[0.286; 0.475]
Idea realization -> Explorative innovation strategy	0.675	0.675	-0.000	[0.593; 0.745]
Idea realization -> Exploitative innovation strategy	0.618	0.617	-0.001	[0.518; 0.706]
Idea realization -> Diagnostic Control Systems	0.551	0.551	-0.000	[0.469; 0.622]
Explorative innovation strategy -> Exploitative innovation	0.849	0.849	0.000	[0.782; 0.900]
Explorative innovation strategy -> Diagnostic Control	0.564	0.563	-0.000	[0.469; 0.643]
Exploitative innovation strategy -> Diagnostic Control	0.573	0.572	-0.001	[0.487; 0.651]

These results indicate that, for all latent variables, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). For example, the AVE of the latent variable Diagnostic control systems found was 0.929, so the square root obtained is approximately 0.964. In this and all other cases, all the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

Since this criterion is insufficiently consistent in detecting serious violations of discriminant validity (Henseler et al., 2015), the second method for testing discriminant validity – cross-loading criterion - was used and showed that most indicator loadings were higher than their respective cross loadings. The use of this criterion, along with a qualitative assessment of the questions measuring the use of levers control constructs in connection with creativity and innovation, provides evidence of overall discriminant validity (Hair et al., 2017).

As recommended by Henseler et al. (2015), the heterotrait–monotrait ratio (HTMT) was applied to further explore discriminant validity as an alternate assessment approach more precise than the Fornell-Larcker test (Hair et al., 2022). The results suggest that the constructs in the path model are conceptually distinct, with values below the most conservative threshold of 0.85.

In order to verify whether the HTMT ratios are significantly different from the threshold value (see Panel B in Table 7), we used statistical test for each combination of constructs in our model, which focuses on the right tail of the bootstrap distribution for all pairs of constructs and shows that their HTMT value is significantly lower than the corresponding threshold values (0.85 and 0.90) with 0.05 significance level. As can be seen in table 6 - Panel C, the analysis of Percentile Bootstrap confidence intervals procedure (10.000 sub-samples and the "no sign changes option") shows that all values of HTMT ratio are significantly different from one (HTMT Inference), providing support for discriminant validity of the constructs studied (Hair et al., 2022; Henseler et al., 2015).

Nevertheless, to assess potential common method bias problems, Podsakoff et al. (2003) recommend we employed Harman's (1976) single-factor test. The test result shows that the first factor accounts for less than 50% of the overall variance explained (Podsakoff & Organ, 1986), i.e., 42.916%, thereby indicating that common method variance presumably does not have a bearing on the results.

Having completed the evaluation of the internal consistency of the reflective measurement model, it is now important to evaluate the formative measures. The results presentation in the figures 4, 5 e 6 give us a first overview of the outcomes report from SmartPLS 4. As these figures show, we observe the standardized outer weights for the formative measurement models (Belief, Boundary and Interactive) and standardized outer loadings for the reflective measurement models. The standardized path relationships between the constructs in the structural model are also shown, as well as the R^2 values for the endogenous latent variables (in the respective circles).

In the second stage we assess the convergent validity of the formative measurement model by correlating the formatively measured construct with a reflective measure or single-item measure of the same construct, also known as redundancy analysis (Chin, 1998). Objectively, we use in each case the formatively measured construct as an exogenous latent variable predicting an endogenous latent variable, which is operationalized through one or more reflective indicators.

Following Hair et al. (2022), the desired magnitude for the path between $Y_1^{\text{formative}}$ and $Y_1^{\text{reflective}}$ is 0.80 with a minimum of 0.70, which must translate into an R^2 at least 0.50. The next figures exhibit the results for the redundancy analysis for the Belief Control Systems, Boundary Control Systems and Interactive Control Systems constructs.

The original formative construct is labeled with suffix _F and the assessment of the use of the respective management control systems using different indicators of the same construct is labeled with the suffix _G. The results obtained in the three cases show a path coefficient of 0.851, 0.753 and 0.780 for the formative constructs Belief Control Systems, Boundary Control Systems and Interactive Control Systems, respectively. All formatively measured constructs provide convergent validity.

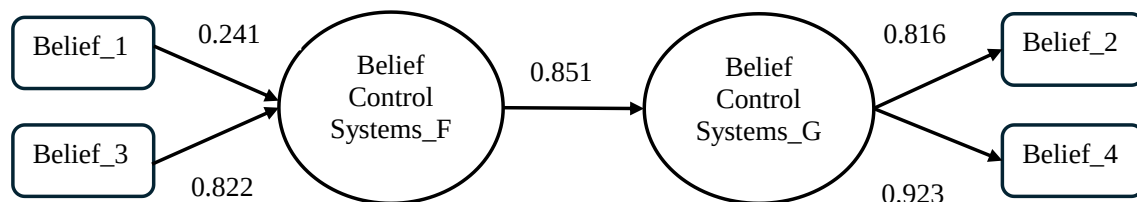


Figure 4 Redundancy analysis for the Belief Control Systems construct

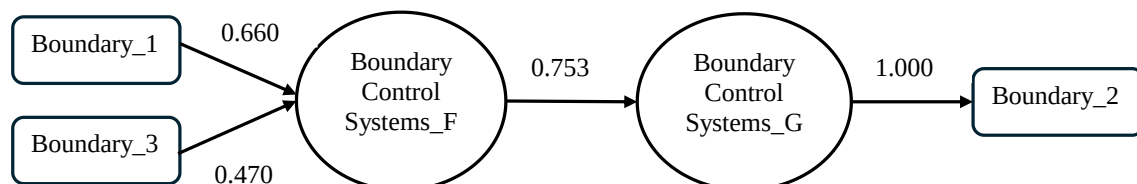


Figure 5 Redundancy analysis for the Boundary Control Systems construct

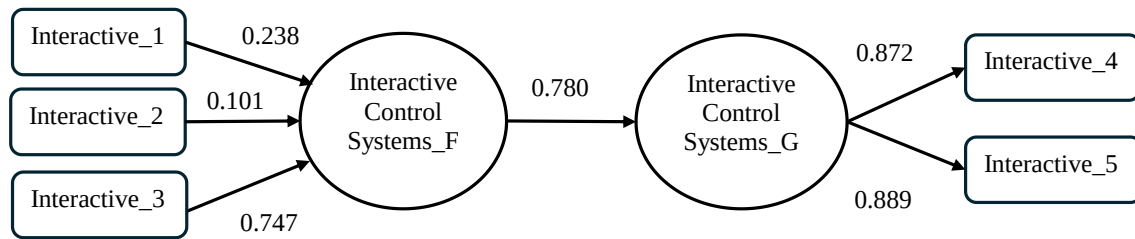


Figure 6 Redundancy analysis for the Interactive Control Systems construct

To assess the level of collinearity between training indicators and its impact on the estimation of weights and their statistical significance, we applied the variance inflation factor (VIF) as a collinearity measure. In this procedure, the VIF values must be below the threshold of 5 and, ideally, the VIF values should be close to 3 and lower, since at this level there can also occur collinearity (Becker et al., 2015; Hair et al., 2022; Mason & Perreault, 1991).

The results obtained show that the VIF values uniformly are below the threshold of 5 (see table 8), so we can conclude that we are not under the presence of critical collinearity levels in any of the formative constructs and is not an issue for the estimation of the path model.

Hair et al. (2019) proposes another important criterion for evaluating the contribution of a formative indicator and its relevance, in this case through the estimation of its outer weights. The values of the outer weights reflect each indicator's relative contribution to the construct or its importance relative to constituting the construct. Then, following what was proposed by Hair et al. (2022), we must test if the outer weights in formative measurement models are significantly different from zero by means of bootstrapping procedure.

The next exhibit (table 9) presents the result of the bootstrap 95% confidence interval in order to provide additional information on the stability of an outer weight estimate, as well as its t value and p values. From the analysis of this information, we found that a set of the formative indicators are significant at a 5%, but in the following formative indicators this is not the case: Belief_1; Belief_3; Boundary_1; Boundary_2; Interactive_1; and Interactive_3.

Table 8 Collinearity Statistics (VIF) for formative indicators

Formative Indicators	Outer VIF Values
They inspire and promote commitment the core values of the organization (Belief_1)	1.987
They are actively communicated (Belief_2)	1.509
They are used to create commitment to the organization's objectives (Belief_3)	4.210
They inspire and guide employees to search for new opportunities (Belief_4)	4.031
They define an appropriate conduct (Boundary_1)	2.014
They set limits to search and experimentation (Boundary_2)	2.311
They are actively communicated by top management (Boundary_3)	1.733
Provide a recurring and frequent agenda for top management activities (interactive_1)	4.007
Provide a recurring and frequent agenda for subordinate activities (interactive_2)	4.054
Enable continual challenge and debate of underlying data, assumptions and action plans	2.801
Focus attention on strategic uncertainties (interactive_4)	1.836
Encourage and facilitate dialog and information sharing with subordinates (Interactive_5)	2.072

However, when analyzing the outer loadings of the formative indicators (Table 10), we see that all of them (including Belief_1; Belief_3, Boundary_1, Boundary_2; Interactive_1 and Interactive_3) have outer loadings above 0.50 and the p-value of all indicator loadings is clearly below 0.01. Thus, the results suggest that all the loadings express a significant level of 1%.

According to Hair et al. (2022), whenever the outer weight of the indicator is not significant, but its outer loading is above 0.50, the indicator must be interpreted as absolutely important, i.e. regarding to the informative contribution of this indicator to the explanation of the formative construct, without considering any other associated indicators for that construct). In this sense the indicator should generally be retained in the model.

Table 9 Outer weights significance test

Formative Constructs	Formative Indicators	Outer Weights	<i>t</i> Value	<i>p</i> Value	95% Percentile Confidence Interval	Significance *
Belief control systems	Belief_1	-0.153	0.937	0.349	[-0.476; 0.169]	No
	Belief_2	0.775	7.182	0.000	[0.537; 0.968]	Yes
	Belief_3	-0.116	0.504	0.614	[-0.572; 0.323]	No
	Belief_4	0.541	2.329	0.020	[0.063; 0.984]	Yes
Boundary control systems	Boundary_1	0.179	1.210	0.226	[-0.116; 0.475]	No
	Boundary_2	0.104	0.722	0.470	[-0.186; 0.382]	No
	Boundary_3	0.805	8.702	0.000	[0.608; 0.977]	Yes
Interactive control systems	Interactive_1	0.014	0.073	0.942	[-0.229; 0.269]	No
	Interactive_2	0.272	2.112	0.035	[-0.008; 0.518]	Yes
	Interactive_3	0.143	1.233	0.218	[-0.093; 0.377]	No
	Interactive_4	0.229	2.393	0.017	[0.049; 0.416]	Yes
	Interactive_5	0.516	5.420	0.000	[0.322; 0.701]	Yes

* Basic Bootstrapping procedure (two-tailed testing with $p < 0,05$)

Table 10 Significance of the formative indicator's outer loading

Formative Constructs	Formative Indicators	Outer Loadings	<i>t</i> Value	<i>p</i> Value *
Belief control systems	Belief_1	0.517	4.845	0.000
	Belief_2	0.941	21.288	0.000
	Belief_3	0.688	7.830	0.000
	Belief_4	0.763	9.455	0.000
Boundary control systems	Boundary_1	0.704	8.512	0.000
	Boundary_2	0.741	10.907	0.000
	Boundary_3	0.979	46.602	0.000
Interactive control systems	Interactive_1	0.763	17.388	0.000
	Interactive_2	0.799	18.473	0.000
	Interactive_3	0.847	20.929	0.000
	Interactive_4	0.766	14.031	0.000
	Interactive_5	0.907	28.305	0.000

* Basic Bootstrapping procedure (two-tailed testing with $p < 0,05$)

With this analysis we conclude the evaluation of the formative measurement models. The results obtained regarding the assessment of the convergent validity, the collinearity of the indicators and their significance and relevance allow us to state that the formative constructs also show satisfactory quality levels. Consequently, we can proceed to the assessment of the structural model.

4.2.3 Results of the Structural Model

The structural model results are presented and interpreted next. Figure 7 presents the key results of the full model estimation (reflective and formative constructs), with the path coefficients as well as the R^2 values of the endogenous latent variables.

First, analogous to the evaluation of formative measurement models, Hair et al. (2022) recommends checking the structural model for collinearity issues by studying the VIF values for all sets of predictor constructs in the structural model.

Table 11 presents the various combinations of the endogenous latent variables and corresponding exogenous latent variables, through which we analyze the sets of predictor constructs for collinearity: (1) Belief control system, Boundary control systems, Diagnostic control systems and Interactive control systems as predictors of Organization's creativity dependency; (2) Belief control system, Boundary control systems, Diagnostic control systems, Interactive control systems and Organization's creativity dependency as predictors of Idea realization; 3) Belief control system, Boundary control systems, Diagnostic control systems, Idea realization, Interactive control systems and Organization's creativity dependency as predictors of Explorative innovation strategy; and (4) Belief control system, Boundary control systems, Diagnostic control systems, Idea realization, Interactive control systems and Organization's creativity dependency as predictors of Exploitative innovation strategy. All these sets exhibit VIF values below the threshold value of 5, therefore we conclude that collinearity is not a critical issue in the structural model.

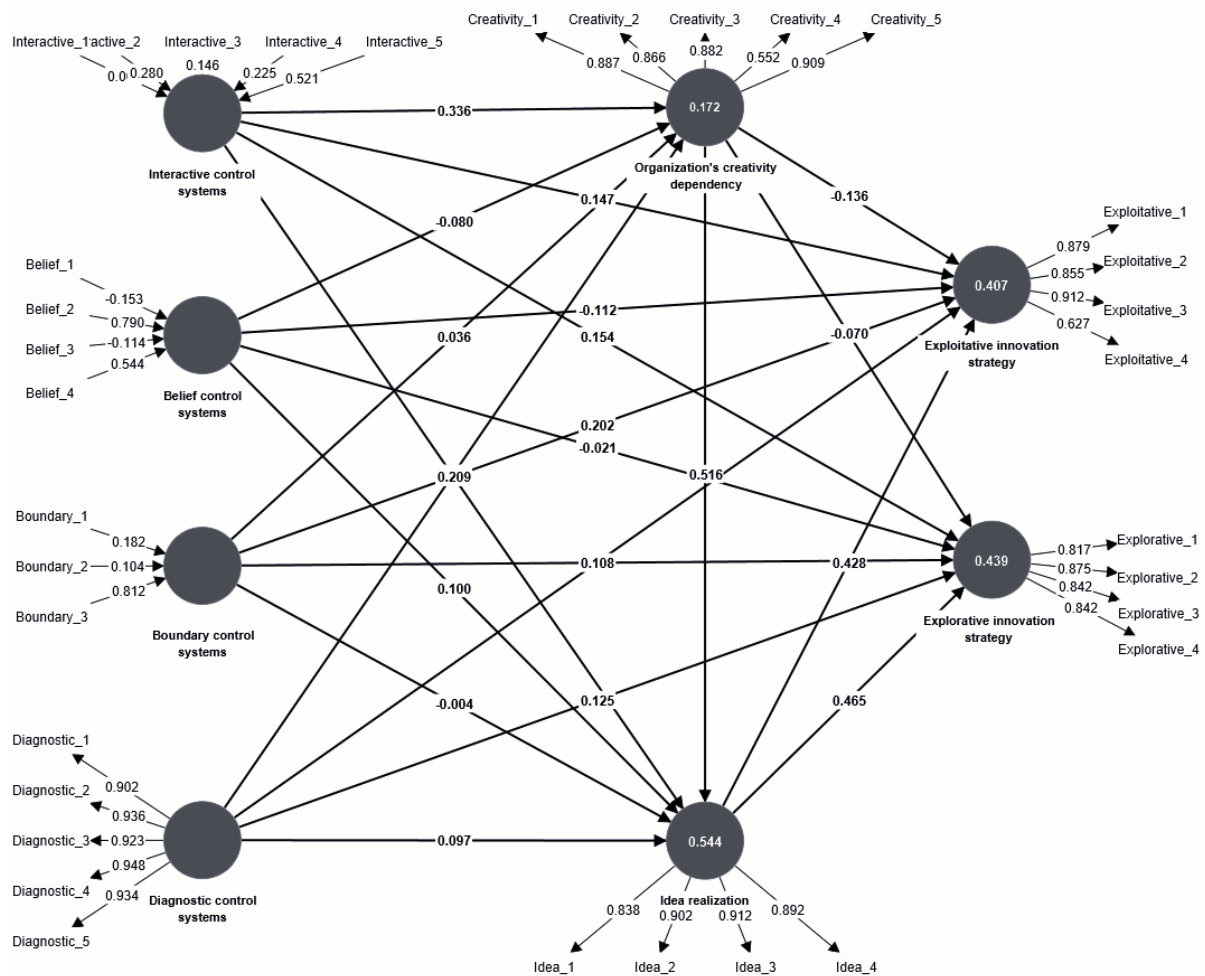


Figure 7 Reflective and Formative Model Estimation

Table 11 Collinearity Statistics (VIF)

Predictor Constructs	Belief control systems	Boundary control systems	Diagnostic Control Systems	Exploitative innovation strategy	Explorative innovation strategy	Idea realization	Interactive control systems	Organization's creativity dependency
Belief control systems				2.213	2.213	2.191		2.184
Boundary control systems				2.186	2.186	2.186		2.184
Diagnostic Control Systems				3.409	3.409	3.389		3.371
Idea realization				2.192	2.192			
Interactive control systems				3.383	3.383	3.288		3.151
Organization's creativity dependency				1.793	1.793	1.208		

The path coefficients obtained represent the hypothesized relationships among the constructs established in this model. For example, looking at the relative importance of the driver constructs for Exploitative Innovation Strategy and Explorative Innovation Strategy, we find that the Idea Realization has the highest path coefficient (0.428 and 0.465, respectively). On the other hand, the use of Belief control system, Boundary control systems, Diagnostic control systems present very little bearing on Organization's creativity dependency and Idea realization, in contrast to the Interactive control system construct, which shows a high path coefficient in the relationship to those two endogenous variables.

We can also measure how strongly each of the control systems, ultimately, influences the key target variables via the mediators constructs Exploitative innovation strategy and Explorative innovation strategy (see table 12). As expected, given its attributes that allow it greater acceptance in organic environments, the use of interactive control systems has the strongest total effect on Exploitative innovation strategy and Explorative innovation strategy (0.265 and 0.308, respectively), followed by use of Diagnostic control systems, Boundary control systems and Belief control systems.

Table 12 Total Effects

Predictor Constructs	Belief control systems	Boundary control systems	Diagnostic Control Systems	Exploitative innovation strategy	Explorative innovation strategy	Idea realization	Interactive control systems	Organization's creativity dependency
Belief control systems				-0.076	0.012	0.059		-0.080
Boundary control systems				0.204	0.112	0.014		0.036
Diagnostic Control Systems				0.222	0.190	0.159		0.121
Exploitative innovation strategy								
Explorative innovation strategy								
Idea realization				0.428	0.465			
Interactive control systems				0.265	0.308	0.382		0.336
Organization's creativity dependency				0.085	0.170	0.516		

Table 13 presents the significance values and the relative importance of the path coefficients in terms of the magnitude of their standardized values. Bootstrapping procedure was used selecting no sign changes option, complete bootstrapping and bias-corrected and accelerated (BCa), for 10.000 subsamples (Hair et al., 2022).

In first phase, assuming a 1% e 5% significance level, and after, 10% significance level (in case the previous level does not show significance), we focus on the 99%, 95% and 90% bootstrap confidence intervals taken, respectively, and find that all relationships in the structural model are significant (with regard to direct effects), except Organization's creativity dependency -> Explorative innovation strategy; Belief control systems -> Organization's creativity dependency; Boundary control systems -> Organization's creativity dependency; Boundary control systems -> Idea realization; Diagnostic control systems -> Organization's creativity dependency; Diagnostic control systems -> Idea realization; Belief control systems -> Explorative innovation strategy; and Diagnostic Control Systems -> Explorative innovation strategy (see table 13).

However, although the relationships between an organization's dependency on creativity and explorative innovation strategy, as well as between belief control systems and explorative innovation strategy, are statistically significant, they do not support the corresponding propositions (P2 and P8ii), as the associations found are negative.

Table 13 Significance Testing Results of the Structural Model and Propositions Tests

Relationships	Expected sign	Path Coefficients	<i>t statistics</i>	<i>p values</i>	Confidence Intervals	Supported/ No supported
P1: Organization's creativity dependency -> Idea realization	(+)	0.516	0.000	0.000*	[0.424; 0.601]	Supported
P2: Organization's creativity dependency -> Exploitative innovation strategy	(+)	-0.136	0.018	0.018**	[-0.251; -0.024]	No supported
P2: Organization's creativity dependency -> Explorative innovation strategy	(+)	-0.070	0.243	0.243	[-0.188; 0.046]	No supported
P3: Idea realization -> Exploitative innovation strategy	(+)	0.428	5.787	0.000*	[0.286; 0.575]	Supported
P3: Idea realization -> Explorative innovation strategy	(+)	0.465	6.586	0.000*	[0.333; 0.611]	Supported

*** Significant at the 0.10 level (two-tailed)

** Significant at the 0.05 level (two-tailed)

* Significant at the 0.01 level (two-tailed)

Relationships	Expected sign	Path Coefficients	<i>t</i> statistics	<i>p</i> values	Confidence Intervals	Supported/ No supported
P4 i): Belief control systems -> Organization's creativity dependency	(+)	-0.080	0.825	0.409	[-0.288; 0.092]	No supported
P4 ii): Interactive control systems -> Organization's creativity dependency	(+)	0.336	3.946	0.000*	[0.166; 0.498]	Supported
P4 iii): Boundary control systems -> Organization's creativity dependency	(+)	0.036	0.489	0.625	[-0.108; 0.185]	No supported
P5 i): Belief control systems -> Idea realization	(+)	0.100	1.756	0.079***	[-0.017; 0.206]	Supported
P5 ii): Interactive control systems -> Idea realization	(+)	0.209	2.859	0.004*	[0.067; 0.353]	Supported
P5 iii): Boundary control systems -> Idea realization	(+)	-0.004	0.075	0.940	[-0.119; 0.106]	No supported
P6: Diagnostic Control Systems -> Organization's creativity dependency	(+)	0.121	0.181	0.181	[-0.052; 0.301]	No supported
P7: Diagnostic Control Systems -> Idea realization	(+)	0.097	1.356	0.175	[-0.047; 0.231]	No supported
P8 i): Interactive control systems -> Exploitative innovation strategy	(+)	0.147	1.785	0.074***	[-0.023; 0.300]	Supported
P8 i): Interactive control systems -> Explorative innovation strategy	(+)	0.154	2.123	0.034**	[0.007; 0.290]	Supported
P8 ii): Belief control systems -> Exploitative innovation strategy	(+)	-0.112	1.706	0.088***	[-0.252; 0.005]	No supported
P8 ii): Belief control systems -> Explorative innovation strategy	(+)	-0.021	0.341	0.733	[-0.153; 0.083]	No supported
P8 iii): Boundary control systems -> Exploitative innovation strategy	(+)	0.202	3.171	0.002*	[0.083; 0.332]	Supported
P8 iii): Boundary control systems -> Explorative innovation strategy	(+)	0.108	1.924	0.054***	[0.004; 0.224]	Supported
P9: Diagnostic Control Systems -> Exploitative innovation strategy	(+)	0.170	2.086	0.037**	[0.022; 0.342]	Supported
P9: Diagnostic Control Systems -> Explorative innovation strategy	(+)	0.125	1.511	0.131	[-0.031; 0.292]	No supported

*** Significant at the 0.10 level (two-tailed)

** Significant at the 0.05 level (two-tailed)

* Significant at the 0.01 level (two-tailed)

Table 14 Significance Testing Results of the Total Effects

Relationships	Expected sign	Path Coefficients	<i>t statistics</i>	<i>p values</i>	Confidence Intervals	Supported/ No supported
P1: Organization's creativity dependency -> Idea realization	(+)	0.516	11.489	0.000*	[0.425; 0.599]	Supported
P2: Organization's creativity dependency -> Exploitative innovation strategy	(+)	0.085	1.654	0.099***	[0.001; 0.171]	Supported
P2: Organization's creativity dependency -> Explorative innovation strategy	(+)	0.170	3.426	0.001*	[0.076; 0.271]	Supported
P3: Idea realization -> Exploitative innovation strategy	(+)	0.428	5.839	0.000*	[0.288; 0.574]	Supported
P3: Idea realization -> Explorative innovation strategy	(+)	0.465	6.570	0.000*	[0.329; 0.604]	Supported
P4 i): Belief control systems -> Organization's creativity dependency	(+)	-0.080	0.819	0.412	[-0.252; 0.069]	No supported
P4 ii): Interactive control systems -> Organization's creativity dependency	(+)	0.336	3.854	0.000*	[0.153; 0.500]	Supported
P4 iii): Boundary control systems -> Organization's creativity dependency	(+)	0.036	0.494	0.627	[-0.084; 0.162]	No supported
P5 i): Belief control systems -> Idea realization	(+)	0.059	0.757	0.449	[-0.087; 0.171]	No supported
P5 ii): Interactive control systems -> Idea realization	(+)	0.382	4.801	0.000*	[0.216; 0.530]	Supported
P5 iii): Boundary control systems -> Idea realization	(+)	0.014	0.213	0.834	[-0.101; 0.125]	No supported
P6: Diagnostic Control Systems -> Organization's creativity dependency	(+)	0.121	1.303	0.191	[-0.022; 0.278]	No supported
P7: Diagnostic Control Systems -> Idea realization	(+)	0.159	1.970	0.049**	[0.008; 0.322]	Supported
P8 i): Interactive control systems -> Exploitative innovation strategy	(+)	0.265	3.135	0.002*	[0.086; 0.417]	Supported
P8 i): Interactive control systems -> Explorative innovation strategy	(+)	0.308	3.917	0.000*	[0.141; 0.449]	Supported
*** Significant at the 0.10 level (two-tailed)						
** Significant at the 0.05 level (two-tailed)						
* Significant at the 0.01 level (two-tailed)						

Relationships	Expected sign	Path Coefficients	<i>t</i> statistics	<i>p</i> values	Confidence Intervals	Supported/ No supported
P8 ii): Belief control systems -> Exploitative innovation strategy	(+)	-0.076	1.070	0.289	[-0.212; 0.024]	No supported
P8 ii): Belief control systems -> Explorative innovation strategy	(+)	0.012	0.174	0.862	[-0.122; 0.114]	No supported
P8 iii): Boundary control systems -> Exploitative innovation strategy	(+)	0.204	2.910	0.004*	[0.066; 0.341]	Supported
P8 iii): Boundary control systems -> Explorative innovation strategy	(+)	0.112	1.709	0.086***	[0.009; 0.222]	Supported
P9: Diagnostic Control Systems -> Exploitative innovation strategy	(+)	0.222	2.607	0.009*	[0.067; 0.401]	Supported
P9: Diagnostic Control Systems -> Explorative innovation strategy	(+)	0.190	2.098	0.036**	[0.021; 0.371]	Supported

*** Significant at the 0.10 level (two-tailed)

** Significant at the 0.05 level (two-tailed)

* Significant at the 0.01 level (two-tailed)

Table 14 summarizes the results for the sum of direct and indirect effects of the exogenous latent variables Belief control system, Boundary control systems, Interactive control systems and Diagnostic control systems on the endogenous and target latent variables Organization's creativity dependency, Idea realization, Explorative innovation strategy and Exploitative innovation strategy taken from the bootstrapping results report, at 5% significance level and, ultimately, at 10% significance level. We included in this analysis the bias-corrected confidence intervals, well as the lower and upper bounds.

The propositions of the combined samples were also significant, except: P4 i): Belief control systems -> Organization's creativity dependency ($p > 0.10$); P4 iii): Boundary control systems -> Organization's creativity dependency ($p > 0.10$); P5 i): Belief control systems -> Idea realization ($p > 0.10$); P5 iii): Boundary control systems -> Idea realization ($p > 0.10$); P6: Diagnostic Control Systems -> Organization's creativity dependency ($p > 0.10$); P8 ii): Belief control systems -> Exploitative innovation strategy ($p > 0.10$); and P8 ii): Belief control systems -> Explorative innovation strategy ($p > 0.10$).

We proceeded to evaluate the quality of the structural model through explained variance (R^2). This is a key criterion for evaluating the structural model's explanatory power (Ahrholdt et al., 2019; Hair et al., 2022).

Examining the R^2 of the endogenous latent variables, the R^2 values of Exploitative innovation strategy (0.407), Explorative innovation strategy (0.439) and Idea realization (0.544) can be considered moderate, whereas the R^2 value of Organization's creativity dependency (0.172) represents an explained variance rather low, with very little explanatory power.

In supplement to ΔR^2 , which quantifies additionally explained variance, we draw on the f^2 effect sizes to evaluate each included latent variable's contribution. The f^2 effect size expresses the change in the R^2 value when, the first time, a specific predecessor construct is included, and the second time the same exogenous latent variable selected is excluded from model (Hair et al., 2022) (see table 15).

f^2 is calculated as follows (Hair et al., 2014):

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

The R^2 value is quantified continuously from M0 to M6. From M1 to M6 is explained the effect size of Belief control systems, Boundary control systems, Interactive control systems, Diagnostic Control Systems, Organization's creativity dependency and Idea realization constructs, respectively, on the endogenous latent variable set of the model (Exploitative Innovation strategy, Explorative innovation strategy, Organization's creativity dependency and Idea realization).

Table 15 Model's Explanatory Power

Endogenous latent variables	R^2	ΔR^2	f^2 effect size	Size
M0				
Exploitative innovation strategy	0.407			
Explorative innovation strategy	0.439			
Idea realization	0.544			
Organization's creativity dependency	0.172			
M1				
Exploitative innovation strategy	0.401	0.006	0.010	Null
Explorative innovation strategy	0.439	0.000	0.000	Null
Idea realization	0.539	0.005	0.011	Null
Organization's creativity dependency	0.170	0.002	0.002	Null
M2				
Exploitative innovation strategy	0.388	0.019	0.032	Small
Explorative innovation strategy	0.433	0.006	0.011	Null
Idea realization	0.544	0.000	0.000	Null
Organization's creativity dependency	0.172	0.000	0.000	Null
M3				
Exploitative innovation strategy	0.400	0.007	0.012	Null
Explorative innovation strategy	0.432	0.007	0.012	Null
Idea realization	0.531	0.013	0.029	Small
Organization's creativity dependency	0.137	0.035	0.042	Small
M4				
Exploitative innovation strategy	0.399	0.019	0.013	Null
Explorative innovation strategy	0.434	0.006	0.009	Null
Idea realization	0.541	0.000	0.007	Null
Organization's creativity dependency	0.168	0.000	0.005	Null
M5				
Exploitative innovation strategy	0.396	0.011	0.019	Null
Explorative innovation strategy	0.437	0.002	0.004	Null
Idea realization	0.324	0.220	0.482	Large
M6				
Exploitative innovation strategy	0.324	0.083	0.140	Small
Explorative innovation strategy	0.342	0.097	0.173	Medium
Organization's creativity dependency	0.177	-0.005	-0.006	Null

M1: Belief control systems construct omitted from M0

M2: Boundary control systems construct omitted from M0

M3: Interactive control systems construct omitted from M0

M4: Diagnostic Control Systems construct omitted from M0

M5: Organization's creativity dependency construct omitted from M0

M6: Idea Realization construct omitted from M0

From M1 to M6 the effect size values of less the 0,15 and 0.02, respectively, show small effects or there is no measurable effect. In M5 the omission of Organization's creativity dependency as predecessor construct of Idea Realization leads to a substantial decline in the Idea Realization endogenous construct' R^2 value (0.320). Consequently, the f^2 effect size is large. In M6, when the Idea Realization is omitted, the Explorative Innovation Strategy R^2 value drops to 0.342, that indicates a medium effect on this endogenous latent variable.

We realized the blindfolding procedure (Construct Cross validated Redundancy) and verified results of each of the ten blindfolding rounds. Chin (1998) and Hair et al. (2022) refers that a good model demonstrates relevance when Q^2 is higher than zero. Therefore, Q^2 (1- SSE/SSO) coefficient are considerable higher for Idea realization variable, medium for Exploitative innovation strategy and Explorative innovation strategy Explorative innovation strategy variables and low for Organization's creativity dependency variable. We concluded that the model has predictive power relevance in relation to the endogenous latent variables (see table 16).

Table 16 Assessment of size of predictive power relevance

Endogenous latent variables	SSO	SSE	Q^2 (=1-SSE/SSO)	Size
Exploitative innovation strategy	1428.000	1068.346	0.252	Medium
Explorative innovation strategy	1428.000	1005.803	0.296	Medium
Idea realization	1428.000	852.847	0.403	Large
Organization's creativity dependency	1785.000	1624.452	0.090	Small

According to Danks and Ray (2008) and Hair et al. (2022), the PLS path model's predictive power should be at least equal to that of the linear regression model (LM), with ample improvements demonstrating increasing predictive power.

In table 17, the PLS_{predict} results report show all constructs's indicators have $Q^2_{\text{predict}} > 0$. Next, as recommended for those authors, we compare the RMSE (or the MAE) values with the naïve LM benchmark. Considering the RMSE as the default metric for interpreting the prediction error of the latent variable indicators, we verified that majority of indicators in the PLS-SEM analysis yield smaller prediction errors compared to the naïve LM benchmark. As a result, the model has medium predictive power.

Table 17 PLSpredict Results Report (PLS-SEM versus LM)

Dependent	PLS	LM	PLS	LM	PLS	LM	PLS	LM
construct's indicators	RMSE		MAE		MAPE		Q ² _predict	
Creativity_1	1.152	1.158	0.922	0.925	25.535	25.485	0.110	0.102
Creativity_2	1.766	1.794	1.405	1.426	39.575	40.284	0.093	0.064
Creativity_3	1.204	1.214	0.965	0.975	29.549	29.781	0.091	0.076
Creativity_4	1.987	2.004	1.619	1.620	41.398	41.868	0.007	-0.010
Creativity_5	1.238	1.250	1.011	1.013	31.728	31.670	0.133	0.116
Exploitative_1	0.948	0.955	0.718	0.716	21.585	21.230	0.263	0.253
Exploitative_2	1.112	1.117	0.864	0.872	27.489	27.567	0.152	0.144
Exploitative_3	1.036	1.046	0.824	0.834	23.117	23.307	0.192	0.177
Exploitative_4	1.359	1.349	1.108	1.111	46.781	45.991	0.100	0.113
Explorative_1	1.258	1.258	0.993	1.006	37.197	37.479	0.123	0.122
Explorative_2	1.107	1.104	0.891	0.882	31.221	30.705	0.237	0.241
Explorative_3	1.193	1.195	0.948	0.952	33.979	34.026	0.157	0.155
Explorative_4	1.092	1.097	0.875	0.875	28.842	28.595	0.223	0.217
Idea_1	1.114	1.120	0.861	0.865	27.046	27.176	0.139	0.130
Idea_2	1.110	1.122	0.884	0.896	25.768	26.048	0.210	0.193
Idea_3	1.116	1.127	0.894	0.896	25.637	25.681	0.217	0.202
Idea_4	1.001	1.005	0.784	0.782	21.358	21.122	0.253	0.246

4.2.3.1 Robustness tests

Firstly, we conducted a confirmatory factor analysis and included the estimation of the first-order factor of our model in JASP version 16.01.03. The table 18 shows some possible combinations of constructs in our model.

The fit of model 1, which corresponds to the main model, shows greater consistency when compared to the other alternatives.

In response to the need to test the theoretical framework and considering what is recommended by Hair et al. (2018) and Sarstedt et al. (2019), we focused on assessing the robustness of the structural model estimates. Initially, we investigated whether the specification of a non-linear effect yields a significant result. To do this, using PLS-SEM, we considered a polynomial model and added a quadratic term. According to Rigdon et al. (2010), this quadratic term is similar to an interaction term, which includes the interaction of the exogenous variable with itself. So, we comprise interaction terms to represent the quadratic effects between Interactive control systems, Belief control systems, Boundary control systems and Diagnostic control

systems on Organization's creativity dependency, Idea realization, Exploitative innovation strategy and Explorative innovation strategy; Organization's creativity dependency on Idea realization; and Organization's creativity dependency and Idea realization on Exploitative innovation strategy and Explorative innovation strategy.

Table 18 First-Order Construct-Confirmatory Factor Analysis

Criteria	Model 1	Model 2	Model 3	Model 4	Model 5
chi-square (χ^2)	1650.926*	2073.979*	3982.201*	1825.705*	1311.714*
Degrees of freedom (df)	499	506	512	506	260
Comparative Fit Index (CFI)	0.994	0.992	0.981	0.993	0.993
Tucker-Lewis Index (TLI)	0.993	0.991	0.980	0.992	0.992
Bentler-Bonett Non-normed Fit Index (NNFI)	0.993	0.991	0.980	0.992	0.992
Bentler-Bonett Normed Fit Index (NFI)	0.991	0.989	0.979	0.990	0.991
Parsimony Normed Fit Index (PNFI)	0.882	0.892	0.893	0.893	0.859
Bollen's Relative Fit Index (RFI)	0.990	0.988	0.977	0.989	0.990
Bollen's Incremental Fit Index (IFI)	0.994	0.992	0.981	0.993	0.993
Relative Noncentrality Index (RNI)	0.994	0.992	0.981	0.993	0.993
Goodness of fit index (GFI)	0.992	0.990	0.981	0.991	0.992
Root mean square error of approximation (RMSEA)	0.081	0.093	0.138	0.086	0.107

* Standardized coefficient with significance at the 0.05 level (two-tailed)

Model 1: exogenous latent variables (interactive control systems, belief control systems, boundary control systems and diagnostic control systems); mediators variables (organization's creativity dependency and idea realization); endogenous latent variables (exploitative innovation strategy and explorative innovation strategy).

Model 2: exogenous latent variables (interactive control systems and diagnostic control system combined, belief control systems and boundary control systems); mediators variables (organization's creativity dependency and idea realization); endogenous latent variables (exploitative innovation strategy and explorative innovation strategy).

Model 3: exogenous latent variables (interactive control systems and belief control system combined, and diagnostic control systems and boundary control systems combined); mediators variables (organization's creativity dependency and idea realization); endogenous latent variables (exploitative innovation strategy and explorative innovation strategy).

Model 4: exogenous latent variables (interactive control systems, belief control systems, boundary control systems and diagnostic control systems); mediators variables (organization's creativity dependency and idea realization); endogenous latent variables (exploitative innovation strategy and explorative innovation strategy combined).

Model 5: exogenous latent variables (interactive control systems, belief control systems, boundary control systems and diagnostic control systems); without mediators variables (organization's creativity dependency and idea realization); endogenous latent variables (exploitative innovation strategy and explorative innovation strategy).

The findings of bootstrapping procedure indicate that neither of the nonlinear effects is significant (table 19), except for the relationship between Belief control system and Exploitative innovation strategy. We can therefore conclude that the linear effects model tends to be robust.

In accordance with the procedures recommended by Sarstedt and Mooi (2019), we also used Ramsey's RESET test, which is a specific linearity test (Ramsey 1969; Cook and Weisberg 1983). We observe that neither the partial regression of Explorative innovation strategy on Interactive control systems, Belief control systems, Boundary control systems and Diagnostic control systems, Organization's creativity dependency and Idea realization ($F(26.653) = 0.261, p = 0.610$) nor the partial regression of Exploitative innovation strategy on Interactive control systems, Belief control systems, Boundary control systems and Diagnostic control systems, Organization's creativity dependency and Idea realization ($F(25.707) = 3.099, p = 0.079$) is subject to nonlinearities.

We also assessed the possibility of problems related to unobserved model endogeneity in a PLS-SEM structure. Based on Park and Gupta's (2012) Gaussian copula approach, which controls for endogeneity by directly modelling the correlation between an antecedent construct and the endogenous construct's error term, we used the procedure recommended by Hult et al. (2018) for identifying and treating endogeneity in PLS-SEM (Hult et al., 2018).

The table 20 shows four predictive constructions of Organization's creativity dependency, Idea realization, Exploitative innovation strategy and Explorative innovation strategy as potentially endogenous that produce nonsignificant copulas for all levers of control. According to Hult et al. (2018), we conclude that endogeneity is not present in the various combinations of Gaussian copulas approach included in this study, which offers the robustness of the structural model findings.

Following Hair et al. (2022) and Sarstedt et al. (2020), we applied a latent class approach - finite mixture partial least squares (FIMIX-PLS) - to assess whether the PLS path model is not influenced by unobserved heterogeneity and whether it correctly indicates the appropriate number of segments to retain from the data.

Table 19 Analysing the non-linear effects of the model

Nonlinear relationship	<i>p</i> value	<i>f</i> ²
(Interactive control systems x Interactive control systems) -> Exploitative innovation strategy	0.822*	0.000
(Interactive control systems x Interactive control systems) -> Explorative innovation_strategy	0.747*	0.000
(Interactive control systems x Interactive control systems) -> Idea realization	0.044**	0.017
(Interactive control systems x Interactive control systems) -> Organization's creativity dependency	0.443*	0.002
(Belief control systems x Belief control systems) -> Exploitative innovation_strategy	0.003	0.031
(Belief control systems x Belief control systems) -> Explorative innovation_strategy	0.192*	0.006
(Belief control systems x Belief control systems) -> Idea realization	0.652*	0.001
(Belief control systems x Belief control systems) -> Organization's creativity_dependency	0.342*	0.003
(Boundary control systems x Boundary control systems) -> Exploitative innovation_strategy	0.837*	0.000
(Boundary control systems x Boundary control systems) -> Explorative innovation_strategy	0.960*	0.000
(Boundary control systems x Boundary control systems) -> Idea realization	0.858*	0.000
(Boundary control systems x Boundary control systems) -> Organization's	0.325*	0.003
(Diagnostic control systems x Diagnostic control systems) -> Exploitative innovation_strategy	0.108*	0.008
(Diagnostic control systems x Diagnostic control systems) -> Explorative innovation_strategy	0.979*	0.000
(Diagnostic control systems x Diagnostic control systems) -> Idea realization	0.040**	0.018
(Diagnostic control systems x Diagnostic control systems) -> Organization's	0.332*	0.003
(Organization's creativity dependency x Organization's creativity dependency) ->	0.208*	0.004
(Organization's creativity dependency x Organization's creativity dependency) ->	0.619*	0.001
(Organization's creativity dependency x Organization's creativity dependency) -> Idea	0.140*	0.007
(Idea realization x Idea realization) ->		
Exploitative innovation strategy	0.150*	0.008
(Idea realization x Idea realization) ->		
Explorative innovation strategy	0.601*	0.001

**p* < 0.05 (two-tailed)

***p* < 0.01 (two-tailed)

Table 20 Results of endogeneity test using the Gaussian copula approach

Panel A

Combinations of multiple endogenous variables	Gaussian Copula Model 1		Gaussian Copula Model 2	
	Path coefficient	<i>p</i> value	Path coefficient	<i>p</i> value
^C Interactive control systems -> Exploitative innovation strategy	0.113	0.571		
^C Interactive control systems -> Explorative innovation strategy	0.150	0.449		
^C Interactive control systems -> Idea realization	-0.072	0.674		
^C Interactive control systems -> Organization's creativity dependency	0.186	0.357		
^C Organization's creativity dependency -> Exploitative innovation strategy	0.071	0.460		
^C Organization's creativity dependency -> Explorative innovation strategy	0.047	0.620		
^C Organization's creativity dependency -> Idea realization	0.060	0.505		
^C Idea realization -> Exploitative innovation strategy	-0.101	0.266		
^C Idea realization -> Explorative innovation strategy	-0.030	0.715		
^C Belief control systems -> Exploitative innovation strategy			0.232	0.455
^C Belief control systems -> Explorative innovation_strategy			-0.050	0.869
^C Belief control systems -> Idea realization			0.008	0.974
^C Belief control systems -> Organization's creativity dependency			0.349	0.284
^C Organization's creativity dependency -> Exploitative innovation strategy			0.064	0.511
^C Organization's creativity dependency -> Explorative innovation strategy			0.052	0.579
^C Organization's creativity dependency -> Idea realization			0.052	0.553
^C Idea realization -> Exploitative innovation strategy			-0.097	0.275
^C Idea realization -> Explorative innovation strategy			-0.007	0.936

^C indicates the copula term in the model

Model 1, endogenous variables: interactive control systems; organization's creativity dependency; and idea realization

Model 2, endogenous variables: belief control systems; organization's creativity dependency; and idea realization

Panel B

Combinations of multiple endogenous variables	Gaussian Copula Model 3		Gaussian Copula Model 4	
	Path coefficient	p value	Path coefficient	p value
^C Boundary control systems -> Exploitative innovation_strategy	0.013	0.934		
^C Boundary control systems -> Explorative innovation_strategy	0.068	0.631		
^C Boundary control systems -> Idea realization	0.070	0.613		
^C Boundary control systems -> Organization's creativity_dependency	0.314	0.140		
^C Organization's creativity dependency -> Exploitative innovation_strategy	0.073	0.458		
^C Organization's creativity dependency -> Explorative innovation_strategy	0.044	0.639		
^C Organization's creativity dependency -> Idea realization	0.042	0.643		
^C Idea realization -> Exploitative innovation_strategy	-0.087	0.330		
^C Idea realization -> Explorative innovation_strategy	-0.019	0.814		
^C Diagnostic control systems -> Exploitative innovation strategy			-0.147	0.213
^C Diagnostic control systems -> Explorative innovation strategy			-0.047	0.720
^C Diagnostic control_systems -> Idea realization			0.122	0.217
^C Diagnostic control systems -> Organization's creativity_dependency			0.085	0.515
^C Organization's creativity dependency -> Exploitative innovation strategy			0.066	0.485
^C Organization's creativity_dependency) -> Explorative innovation_strategy			0.048	0.610
^C Organization's creativity dependency -> Idea realization			0.047	0.592
^C Idea realization -> Exploitative innovation_strategy			-0.058	0.519
^C Idea realization) -> Explorative innovation_strategy			-0.001	0.993

^C indicates the copula term in the model

Model 3, endogenous variables: boundary control systems; organization's creativity dependency; and idea realization

Model 4, endogenous variables: diagnostic control systems; organization's creativity dependency; and idea realization

Assuming an effect size of 0.15, α at 0.05 and a power level of 80% in the input parameters (Hair et al., 2017), the minimum sample size requirement (80 observations) to estimate a maximum of four segments was computed. Following this, we reran FIMIX-PLS for each segment, using the same settings.

According to Sarstedt et al. (2011), the results of the fit indices for the one to four segment solutions are not unambiguous (see table 21). On the one hand, we observe that modified AIC with Factor 3 (AIC3) indicates a three-segment solution, whereas consistent AIC (CAIC) points to a one-segment solution.

According to Sarstedt et al. (2011), the results of the fit indices for the one to four segment solutions are not unambiguous (see table 21). On the one hand, we observe that modified AIC with Factor 3 (AIC3) indicates a three-segment solution, whereas consistent AIC (CAIC) points to a one-segment solution. On the other hand, we note that modified AIC with Factor 4 (AIC4) and Bayesian information criteria (BIC) identify the number of segment solutions differently, i.e. three-segment and two-segment, respectively.

Table 21 Fit indices for the one to four-segment solutions for the base model

Criteria	Number of segments			
	1	2	3	4
AIC (Akaike's information criterion)	3361.807	3235.510	3179.598	3147.345
AIC3 (modified AIC with Factor 3)	3386.807	3286.510	3256.598	3286.345
AIC4 (modified AIC with Factor 4)	3411.807	3337.510	3333.598	3425.345
BIC (Bayesian information criterion)	3458.750	3433.275	3478.183	3686.350
CAIC (consistent AIC)	3483.750	3484.275	3555.183	3825.350
HQ (Hannan-Quinn criterion)	3400.366	3314.170	3298.358	3361.731
MDL5 (minimum description length with factor 5)	4046.524	4632.333	5288.526	6954.371
LnL (LogLikelihood)	-1655.903	-1566.755	-1512.799	-1434.673
EN (normed entropy statistic)	n.a.	0.645	0.725	0.663
NFI (non-fuzzy index)	n.a.	0.699	0.725	0.640
NEC (normalized entropy criterion)	n.a.	126.736	98.124	120.198

Adapted from Sarstedt et al.(2019).

Note¹: Values in bold exhibit the best outcome per segment retention criterion.

Note²: AIC: Akaike's information criterion; AIC3: modified AIC with factor 3; AIC4: modified AIC with factor 4; BIC: Bayesian information criteria; CAIC: consistent AIC; HQ: Hannan Quinn criterion; MDL5: minimum description length with factor 5; LnL: Log Likelihood; EN: entropy statistic; NFI: non-fuzzy index; NEC: normalized entropy criterion; na: not available.

Additionally, minimum description length with factor 5 (MDL5) identifies the first segment. In short, the joint analysis does not unambiguously point to a specific solution. The table 22 shows the relative segment sizes in declining order per solution (or per row). These results allow us to assume that unobserved heterogeneity is not at a critical level, and therefore also allow us to conclude that this model can be considered robust.

Table 22 Relative segment sizes (N = 357)

Number of segments	Segment 1	Segment 2	Segment 3	Segment 4
1	1.000			
2	0.762	0.238		
3	0.660	0.225	0.115	
4	0.371	0.298	0.167	0.164

4.2.3.2 Mediation Analysis

We conducted a supplementary PLS-SEM mediating analysis to address context contingency and test the role of organization's creativity dependency and idea realization as mediating variables.

We considered the following propositions in this study:

Proposition P10 i): Organization's creativity dependency mediates the positive relationship between the use of Interactive control systems and Idea realization;

Proposition P10 ii): Organization's creativity dependency mediates the positive relationship between the use of Belief control systems and Idea realization;

Proposition P10 iii): Organization's creativity dependency mediates the positive relationship between the use of Boundary control systems and Idea realization;

Proposition P11 i): Organization's creativity dependency mediates the positive relationship between the use of Interactive control systems and Exploitative innovation strategy;

Proposition P11 ii): Organization's creativity dependency mediates the positive relationship between the use of Belief control systems and Exploitative innovation strategy;

Proposition P11 iii): Organization's creativity dependency mediates the positive relationship between the use of Boundary control systems and Exploitative innovation strategy;

Proposition P11 iv): Organization's creativity dependency mediates the positive relationship between the use of Interactive control systems and Explorative innovation strategy;

Proposition P11 v): Organization's creativity dependency mediates the positive relationship between the use of Belief control systems and Explorative innovation strategy;

Proposition P11 vi): Organization's creativity dependency mediates the positive relationship between the use of Boundary control systems and Explorative innovation strategy;

Proposition P12 i): Idea realization mediates the positive relationship between the use of Interactive control systems and Exploitative innovation strategy;

Proposition P12 ii): Idea realization mediates the positive relationship between the use of Belief control systems and Exploitative innovation strategy;

Proposition P12 iii): Idea realization mediates the positive relationship between the use of Boundary control systems and Exploitative innovation strategy;

Proposition P12 iv): Idea realization mediates the positive relationship between the use of Interactive control systems and Explorative innovation strategy;

Proposition P12 v): Idea realization mediates the positive relationship between the use of Belief control systems and Explorative innovation strategy;

Proposition P12 vi): Idea realization mediates the positive relationship between the use of Boundary control systems and Explorative innovation strategy;

Proposition P13: Organization's creativity dependency mediates the positive relationship between the use of Diagnostic control systems and Idea realization;

Proposition P14 i): Organization's creativity dependency mediates the positive relationship between the use of Diagnostic control systems and Exploitative innovation strategy;

Proposition P14 ii): Organization's creativity dependency mediates the positive relationship between the use of Diagnostic control systems and Explorative innovation strategy;

Proposition P15 i): Idea realization mediates the positive relationship between Organization's creativity dependency and Exploitative innovation strategy;

Proposition P15 ii): Idea realization mediates the positive relationship between Organization's creativity dependency and Explorative innovation strategy;

Proposition P16 i): Idea realization mediates the positive relationship between the use of Diagnostic control systems and Exploitative innovation strategy;

Proposition P16 ii): Idea realization mediates the positive relationship between the use of Diagnostic control systems and Explorative innovation strategy.

To test the significance of these path coefficients products, we run the bootstrap routine. We selected the results for the various relationships between latent variables that reveal the significance of the indirect effects.

As a result, table 23 indicates the significance level of the directs and indirect effects from interactive control systems via organization's creativity dependency to idea realization and from interactive control systems via organization's creativity dependency to exploitative innovation strategy.

Table 23 Mediation analysis through the Organization's creativity dependency variable

Relationships	Direct Effect	95% Confidence Interval of the Direct Effect	Significance $p < 0.05$	Indirect Effect (via Organization's creativity dependency)	95% Confidence Interval of the Indirect Effect	Significance $p < 0.05$
Interactive control_systems -> Idea realization	0.209	[0.069; 0.356]	Yes	0.173	[0.086; 0.269]	Yes
Interactive control_systems -> Exploitative innovation_strategy	0.147	[-0.007; 0.316]	No	-0.046	[-0.096; -0.006]	Yes

In the first case, interactive control systems exert a pronounced direct effect (0.209) and significant effect ($p < 0.05$) on idea realization. The indirect effect and the direct effect are both significant and point in the same direction, so we concluded that organization's creativity dependency variable complementary mediates that relationship. This result allows accepting P10i) *Organization's creativity dependency mediates the positive relationship between the use of Interactive control systems and Idea realization.*

In the latter case, the relationship between interactive control systems and the exploratory innovation strategy is not very robust (0.147) and statistically not significant. Therefore, we presumed that the dependence on the Organization's creativity dependency is partially mediating this relationship (Zhao et al., 2010) and viewed as inconsistent mediation (MacKinnon et al., 2000), since the indirect effect point in opposite direction (-0.046). Thus, we reject P11i)

Organization's creativity dependency mediates the positive relationship between the use of Interactive control systems and Exploitative innovation strategy.

Table 24 presents the analysis of the mediation assumed by the Idea realization variable. The relationship between interactive control systems variable and exploitative innovation strategy variable is statistically nonsignificant. Although it presents a slightly pronounced result (0.089), idea realization variable fully mediates that relationship, with $p < 0.05$. Therefore, we accept P12 i) *Idea realization mediates the positive relationship between the use of Interactive control systems and Exploitative innovation strategy.*

In the following case, the direct and indirect effects from interactive control systems to explorative innovation strategy are both positive, so the sign of their product is also positively significant ($\beta = 0.0149$; $p < 0.05$). Thus, idea realization is also referred as complementary mediation of this relationship. We also accept P12 iv) *Idea realization mediates the positive relationship between the use of Interactive control systems and Explorative innovation strategy.*

Table 24 Mediation analysis through the Idea Realization variable

Relationships	Direct Effect	95% Confidence Interval of the Direct Effect	Significance $p < 0.05$	Indirect Effect (via <u>Idea Realization</u>)	95% Confidence Interval of the Indirect Effect	Significance $p < 0.05$
Interactive control systems -> Exploitative innovation strategy	0.147	[-0.007; 0.316]	No	0.089	[0.027; 0.170]	Yes
Interactive control systems -> Explorative innovation strategy	0.154	[0.024; 0.310]	Yes	0.097	[0.028; 0.185]	Yes
Organization's creativity dependency -> Exploitative innovation strategy	-0.136	[-0.246; -0.019]	Yes	0.221	[0.139; 0.301]	Yes
Organization's creativity dependency -> Explorative innovation strategy	-0.070	[-0.183; 0.050]	No	0.240	[0.160; 0.319]	Yes

The relationship between Organization's creativity dependency and Exploitative innovation strategy has a negative path coefficient, not very robust (-0.136) but statistically significant. Therefore, we presumed that idea realization assumes a competitive mediation (both significant but point in opposite directions) (Hair et al., 2022; MacKinnon et al., 2000) and allows

accepting P15 i) *Idea realization mediates the positive relationship between Organization's creativity dependency and Exploitative innovation strategy.*

Finally, the mediation effect of idea realization in the relationship between organization's creativity dependency and explorative innovation strategy is indirect-only in this relationship, considering that the indirect effect is significant but the direct effect is not (Hair et al., 2022; MacKinnon et al., 2000), providing support to accept P15 ii) *Idea realization mediates the positive relationship between Organization's creativity dependency and Explorative innovation strategy.*

4.2.3.3 Moderation Analysis

In addition, we extended the original model by testing the moderating effect of some individual and contextual variables, namely: Openness to Experience; Transformational Leadership; Organizational Encouragement; Organizational Goal Clarity; and Discretionary slack. By introducing new constructs, we draw a path relationship from each newly added moderator variable to the explorative innovation strategy and exploitative innovation strategy constructs.

The measurement model results stem from stage 1 of the two-stage approach. In stage 1, the analysis is conducted to appreciate the main effect of the causal relationship between the independent variable and the dependent variable. The structural model results stem from stage 2 of the two-stage approach when all latent variables are measured with single items. In this stage, the analysis is conducted to appreciate the moderating effect of the moderator variable on the relationship between the independent variable and the dependent variable (Piaw, 2023; Hair et al., 2022).

Moderating Variable Openness to Experience

Regarding the formative moderating variable Openness to Experience, we proceed to analyze the reliability of the recommended by the literature (Hair et al., 2022) measures by evaluating

the formative measurement model. Firstly, we checked the collinearity of indicators by looking at the formative indicators' VIF values. Figure 8 displays the results of moderator analysis. The five indicators of the moderator construct are uniformly below the ideal threshold value of 3, which signifies they are not highly correlated to each other.

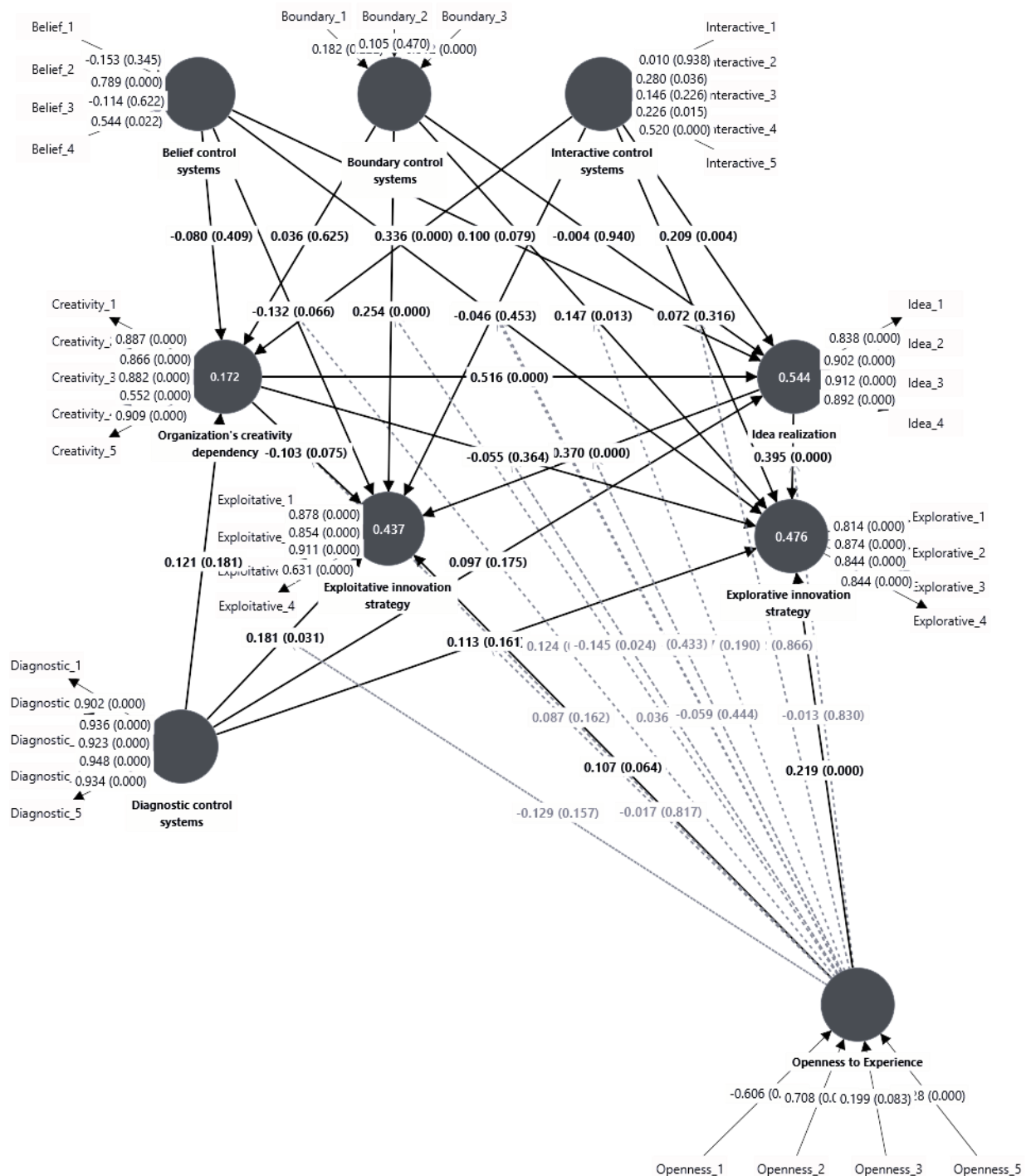


Figure 8 Openness to Experience Moderator Analysis Results

Through the bootstrapping procedure (Basic Bootstrapping, two tailed to 0.05 significance level), the significance and relevance of the outer weights were verified. Looking at the significance levels, we find that three out of five formative indicators are significant at a 5% level, namely Openness_1 ($p = 0.002$) and Openness_2 ($p = 0.000$) and Openness_5 ($p = 0.000$).

The results of the SmartPLS software also provide their outer loadings. For the indicators Openness_3 and Openness_4, very low outer loadings were obtained, 0.360 and -0.051 respectively. Despite the Openness_3 indicator is nonsignificant and having an outer loading below 0.50, we decide to retain the indicator by examining its theoretical relevance and the importance of its content in the construction of this construct (Hair et al., 2022). Following the recommendation of Cenfetelli and Bassellier (2009) and Hair et al. (2022), we decided to remove indicator Openness_4 from the formative measurement model due to its no significance and its outer loading below 0.10. These results tend to assume the lack of empirical support to guarantee the relevance of the indicator in the formation of this moderator construct.

We tested the size of the moderating effect for combinations of model constructs, centering our analysis on the interaction term that is significant (Openness to experience x Boundary control systems => Exploitative innovation strategy).

In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022). The output shows that there is a significant moderating effect of Openness to Experience ($\beta = -0.145$, $p = 0.024$) on the relationship between Boundary control systems and Exploitative innovation strategy, with a simple effect of $\beta = 0.254$, $p < 0.05$. This means that the strength of moderating variable does influence the strength of the path between Boundary control systems and Exploitative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = 0.213$, $p < 0.05$) or without ($\beta = 0.254$, $p < 0.05$) the moderator Openness to Experience is weaker ($\beta = -0.041$), yet significant. Therefore, the effect of Boundary control systems construct on Exploitative innovation strategy is marginally determined by the level of Openness to Experience in the population of this study.

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a small main effect of Boundary control systems on Exploitative Innovation Strategy ($\beta = 0.213$, $p < 0.05$, $f^2 = 0.035$) and a small effect of the moderator Openness to Experience on Exploitative Innovation Strategy ($\beta = 0.089$, $p > 0.05$, $f^2 = 0.009$).

The results show that the interaction term has a positive effect on Exploitative innovation strategy ($\beta = -0.145$, $p < 0.05$), whereas the simple effect of relationship between Boundary Control Systems on Exploitative Innovation Strategy is 0.254 for an average level of Openness to Experience. The following slope plot allows observing the two-way interaction effect (Figure 9).

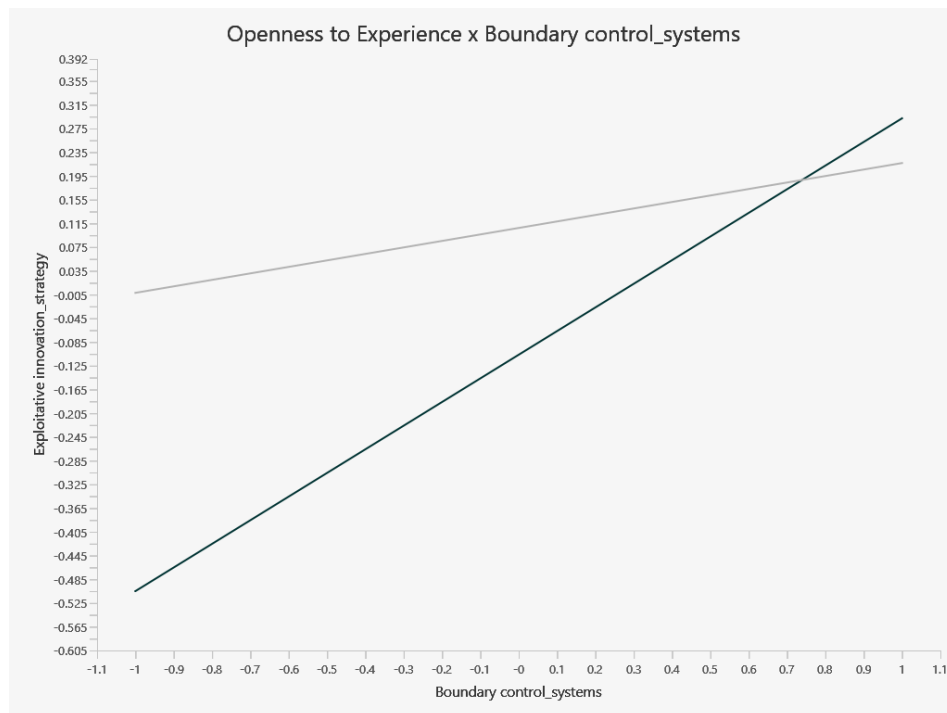


Figure 9 Moderating effect's plot – Openness to experience x Boundary control systems => Exploitative innovation strategy

The following slope plot allow observing the two-way interaction effects. The upper line represents the relationship between Boundary control systems and Exploitative innovation strategy for mean value of Openness to experience plus one standard deviation unit. For higher

levels of Openness to experience, the relationship between boundary control systems and exploitative innovation strategy decreases by the size of the interaction term. The lower line represents the stronger relationship between boundary control systems and exploitative innovation strategy for mean value of openness to experience minus one standard deviation unit, which it is increased by the size of the interaction term.

Running the bootstrapping procedure (Percentile Bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.024 for the path linking the interaction term and exploitative innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term's effect is [-0.274; -0.027]. As the confidence interval does not include zero, we suggest that the interaction effect is significant.

Thus, we conclude that the results provide appropriate support to assert that the moderating effect of openness to experience exerts a negative and significant effect on the relationship between boundary control systems and exploitative innovation strategy.

In the Smart PLS algorithm results report, the f^2 effect size of the interaction term (i.e., Boundary control systems x Openness to experience) shows a value of 0.018, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018).

These results do not provide support for accepting proposition **P17 iii)**: *Openness to experience positively moderates the relationship between Boundary Control Systems and Exploitative innovation strategy*. However, we found that it promotes improvements in the relationships established between boundary control systems and the innovation strategies pursued, i.e., we confirmed a moderate increase of the relationships between boundary control systems and exploitative innovation strategy and explorative innovation strategy ($\beta = 0.213, p < 0.01$; $\beta = 0.132, p < 0.01$, respectively).

The remaining propositions P17i); P17ii); P17iv); P17v); P17vi); P17vii); P17viii); P18i); P18ii); P19i); P19ii) were not supported.

Moderating Variable Transformational Leadership

Firstly, we examined the reliability of the recommended measures in order to evaluate the moderator variable's measurement model. All indicators of the moderating variable have an outer loading above 0.70 (between 0.762 and 0.937, $p < 0.05$). The changes recorded in the indicator loadings of the other constructs are marginal. For reliability, Cronbach's alpha scores for each variable of the model were higher than the recommended benchmark of 0.70 (Hair et al., 2006) and the moderator variable, particularly, assumed a value of 0.953. The composite reliabilities rho_a and rho_c of all constructs are larger than 0.70. The convergent validity assessment yields an AVE of 0.738, providing support for convergent validity of the Transformational Leadership moderator.

The use of the HTMT criterion clearly shows values below 0.85, verifying the discriminant validity (Henseler et al., 2015). The bootstrapping procedure confirmed that all construct combinations present HTMT values significantly lower than the conservative threshold of 0.85. (i.e., the confidence intervals' upper bound is smaller than that reference threshold). These results also clearly demonstrate the discriminant validity of the constructs.

Figure 10 displays the results of moderator analysis. We tested the size of the moderating effect for all combinations of model constructs. We focused our analysis on the interaction term that is significant, providing support for the existence of a moderating effect - Transformational leadership x Belief control systems. In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022).

The output shows that there is significant moderating effect of Transformational leadership ($\beta = 0.245$, $p = 0.019$) on the relationship between Belief control systems and Exploitative innovation strategy, with a simple effect of $\beta = -0.159$, $p < 0.05$. This means that the strength of moderating variable does influence the strength of the path between Belief control systems and Exploitative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = -0.126$, $p < 0.05$) or without ($\beta = -0.159$, $p < 0.05$) the moderator Transformational

leadership is too small ($\beta = 0.033$), yet significant. Therefore, the effect of Belief control systems construct on Exploitative innovation strategy is marginally determined by the level of Transformational leadership in the population of this study.

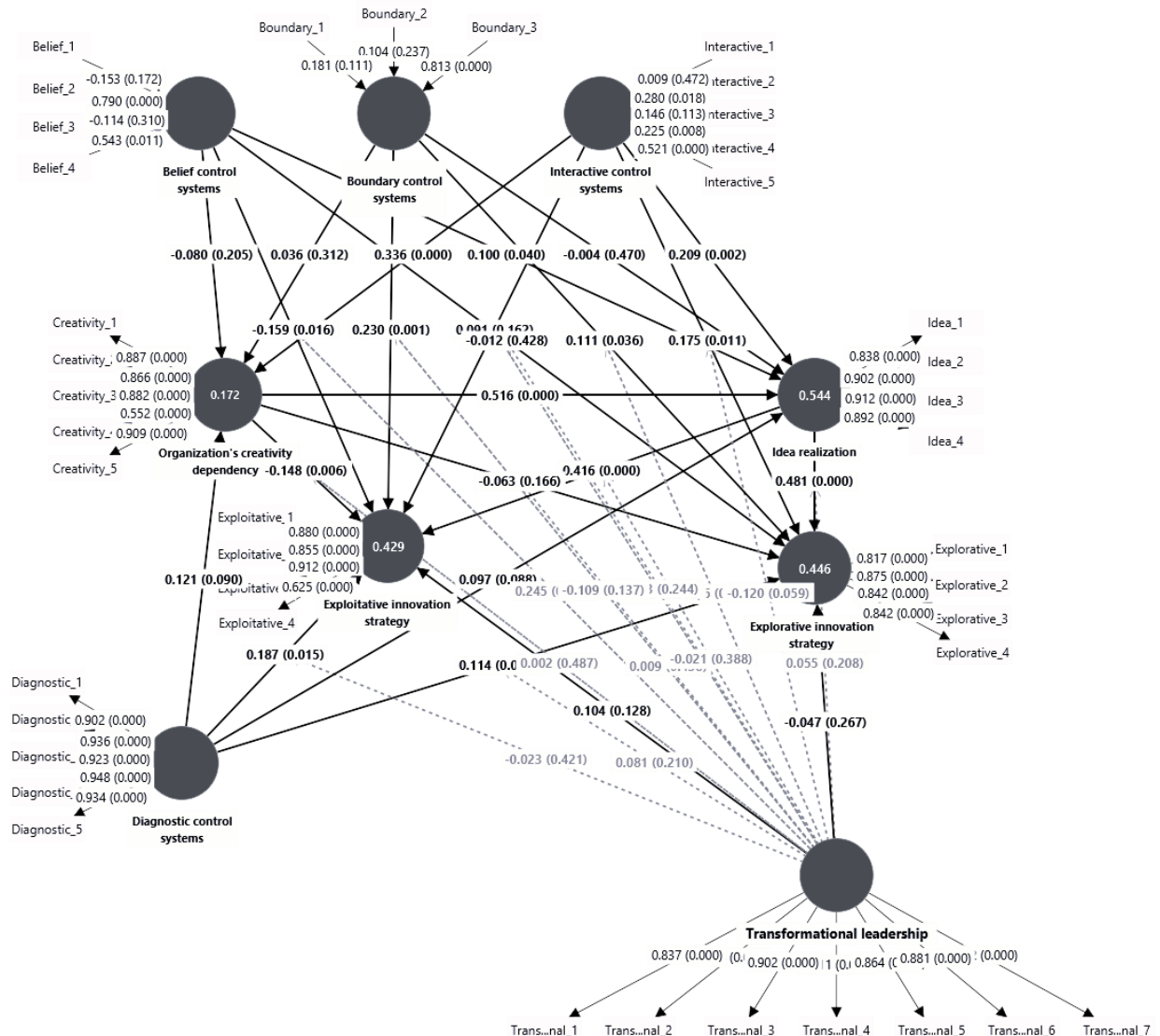


Figure 10 Transformational Leadership Moderator Analysis Results

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a small main effect of Belief control systems on Exploitative Innovation Strategy ($\beta = -0.126$, $p < 0.05$, $f^2 = 0.011$) and a small effect of the moderator Transformational leadership on Exploitative Innovation Strategy ($\beta = 0.062$, $p > 0.05$, $f^2 = 0.003$).

The results show that the interaction term has a positive effect on Exploitative innovation strategy ($\beta = 0.245, p < 0.05$), whereas the simple effect of Belief Control Systems on Exploitative Innovation Strategy is -0.159 for an average level of transformational leadership. The upper line (grey line) represents the relationship between Belief control systems and Exploitative innovation strategy for mean value of Transformational leadership plus one standard deviation unit. Thus, for higher levels of Transformational leadership, the relationship between belief control systems and exploitative innovation strategy decreases by the size of the interaction term. The lower line (black line) represents the relationship between belief control systems and exploitative innovation strategy for mean value of transformational leadership minus one standard deviation unit, which, with a negative steeper slope, symbolizes a low level of the moderator construct Transformational leadership, which is increased by the size of the interaction term. The following slope plot allows observing the two-way interaction effect (Figure 11).

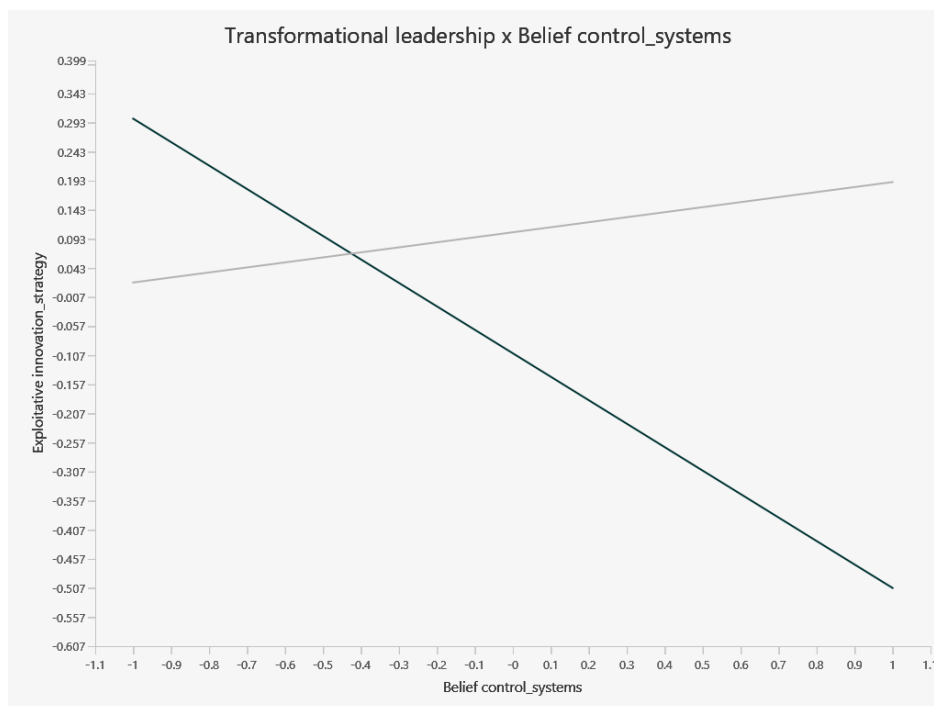


Figure 11 Moderating effect's plot - Transformational Leadership x Belief control systems

Running the bootstrapping procedure (percentile bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.019 for the path linking the interaction term and exploitative

innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term's effect is [0.066; 0.476]. As the confidence interval does not include zero, we suggest that the interaction effect is significant.

Thus, we conclude that the results provide appropriate support to state that the interaction effect exerts a significant and positive effect on the relationship between belief control systems and exploitative innovation strategy.

These results also provide support for accepting proposition P20 ii): *Transformational leadership positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.*

The remaining propositions P20i); P20iii); P20iv); P20v); P20vi); P20vii); P20viii); P21i); P21ii); P22i); P22ii) were not accepted.

We completed the analysis by the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term shows a value of 0.032, which tends to be seen as having a large effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018).

Moderating Variable Organizational Encouragement

The reliability of the measures recommended by the literature (Hair et al., 2022) was also analyzed by assessing the formative measurement model, considering the formative moderator variable organizational encouragement. First, we checked the collinearity of indicators by looking at the formative indicators' VIF values. Figure 12 displays the results of moderator analysis. The three indicators of the moderator construct are uniformly below the ideal threshold value of 3 (1.403, 2.007 and 1.696), which signifies they are not highly correlated to each other.

Through the bootstrapping procedure (basic bootstrapping, 0.05 significance level), the significance and relevance of the outer weights were verified. Looking at the significance levels,

we found that all formative indicators are significant at a 5% level, namely Organizational_1 ($p = 0.000$) and Organizational_2 ($p = 0.013$) and Organizational_3 ($p = 0.049$).

We also checked the inner VIF model of the relationships between the several constructs, including the organizational encouragement moderator, and the explorative innovation strategy and exploitative innovation strategy, concluding that all are below the cutoff criteria of 5 (Becker et al., 2012; Hair et al., 2022), which reveals that collinearity does not reach critical levels.

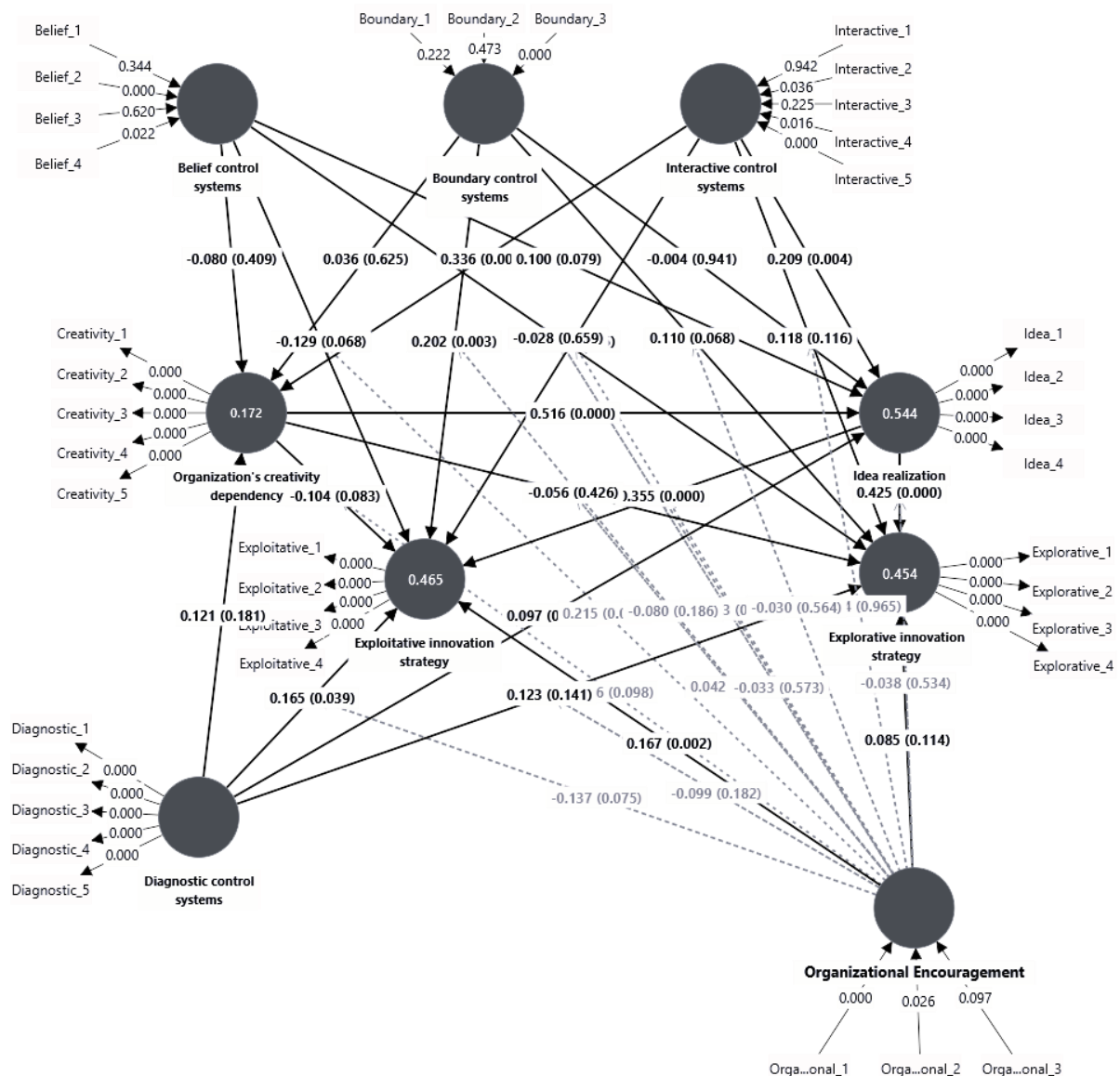


Figure 12 Organizational Encouragement Moderator Analysis Results

We tested the size of the moderating effect for all combinations of model constructs, centering our analysis on the interaction terms that are significant (Organizational Encouragement x Belief control systems => Exploitative innovation strategy and Organizational Encouragement x Belief control systems => Explorative innovation strategy).

In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022). The output shows that there is a significant moderating effect of Organizational encouragement ($\beta = 0.215, p = 0.001$) on the relationship between Belief control systems and Exploitative innovation strategy, with a simple effect of $\beta = -0.129, p = 0.034$. This means that the strength of moderating variable does influence the strength of the path between Belief control systems and Exploitative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = -0.138, p < 0.05$) or without ($\beta = -0.129, p < 0.05$) the moderator Organizational encouragement is weaker ($\beta = -0.009$), yet significant. Therefore, the effect of Belief control systems construct on Exploitative innovation strategy is determined by the level of Organizational encouragement in the population of this study.

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a small main effect of Belief control systems on Exploitative Innovation Strategy ($\beta = -0.138, p < 0.05, f^2 = 0.015$) and a small effect of the moderator Organizational encouragement on Exploitative Innovation Strategy ($\beta = 0.181, p < 0.01, f^2 = 0.035$).

The results show that the interaction term has a positive effect on Exploitative innovation strategy ($\beta = 0.215, p < 0.05$), whereas the simple effect of Belief Control Systems on Exploitative Innovation Strategy is -0.129 for an average level of Organizational encouragement. The following slope plot allows observing the two-way interaction effect (Figure 13).

The upper line (grey line) represents a stronger relationship between belief control systems and exploitative innovation strategy for mean value of organizational encouragement plus one standard deviation unit.

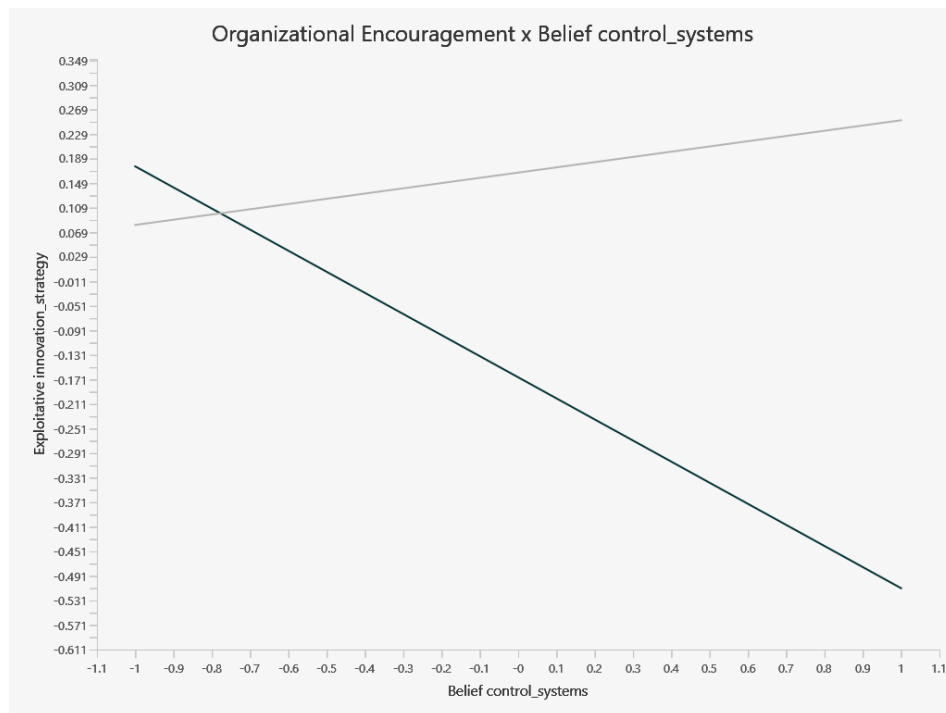


Figure 13 Moderating effect's plot - Organizational Encouragement x Belief control systems =>Exploitative innovation strategy

Thus, for higher levels of organizational encouragement, the relationship between belief control systems and exploitative innovation strategy decreases by the size of the interaction term. The lower line (black line) represents a relationship between belief control systems and exploitative innovation strategy for mean value of organizational encouragement minus one standard deviation unit, which, with a negative steeper slope, symbolizes a low level of the moderator construct organizational encouragement, which is increased by the size of the interaction term.

Running the bootstrapping procedure (Percentile Bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.001 for the path linking the interaction term and Exploitative innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term's effect is [0.095; 0.356].

Thus, we conclude that the results provide appropriate support to consider that the moderating effect of construct organizational encouragement exerts a positive and significant effect on the relationship between belief control systems and exploitative innovation strategy.

These results also provide support for accepting proposition P23 ii): *Organizational Encouragement positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.*

We completed the analysis by using the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term (i.e. Belief control systems x Organizational Encouragement) shows a value of 0.034, which tends to be seen as having a large effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018).

Next, we analyze the results obtained regarding the moderating effect of Organizational encouragement on the relationship between Belief control systems and Explorative innovation strategy. In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022). The output shows that there is significant moderating effect of Organizational encouragement ($\beta = 0.138$, $p = 0.034$) on the relationship between Belief control systems and Explorative innovation strategy, with a simple effect of $\beta = -0.028$, $p > 0.05$. This means that the strength of moderating variable influences the strength of the path between Belief control systems and Explorative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = -0.032$, $p > 0.05$) or without ($\beta = -0.028$, $p > 0.05$) the moderator Organizational encouragement is too small ($\beta = -0.004$) and isn't significant. Therefore, the effect of Belief control systems construct on Explorative innovation strategy is marginally determined by the level of Organizational encouragement in the population of this study.

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a small main effect of Belief control systems on Explorative Innovation Strategy ($\beta = -0.032$, $p > 0.05$, $f^2 = 0.001$) and a small effect of the moderator Organizational encouragement on Explorative Innovation Strategy ($\beta = 0.078$, $p < 0.05$, $f^2 = 0.007$).

The results show that the interaction term has a positive effect on Explorative innovation strategy ($\beta = 0.138$, $p < 0.05$), whereas the simple effect of Belief Control Systems on Explorative Innovation Strategy is -0.028 for an average level of Organizational encouragement. The following slope plot allows observing the two-way interaction effect (Figure 14).

The upper line represents the relationship between belief control systems and explorative innovation strategy for mean value of organizational encouragement plus one standard deviation unit. For higher levels of organizational encouragement, the relationship between belief control systems and explorative innovation strategy decreases by the size of the interaction term. The lower line represents the relationship between belief control systems and explorative innovation strategy for mean value of organizational encouragement minus one standard deviation unit, which, with a steeper slope, symbolizes a low level of moderator construct organizational encouragement, which it is also increases by the size of the interaction term.

Running the bootstrapping procedure (Percentile Bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.034 for the path linking the interaction term and Explorative innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term effect is [0.017; 0.274].

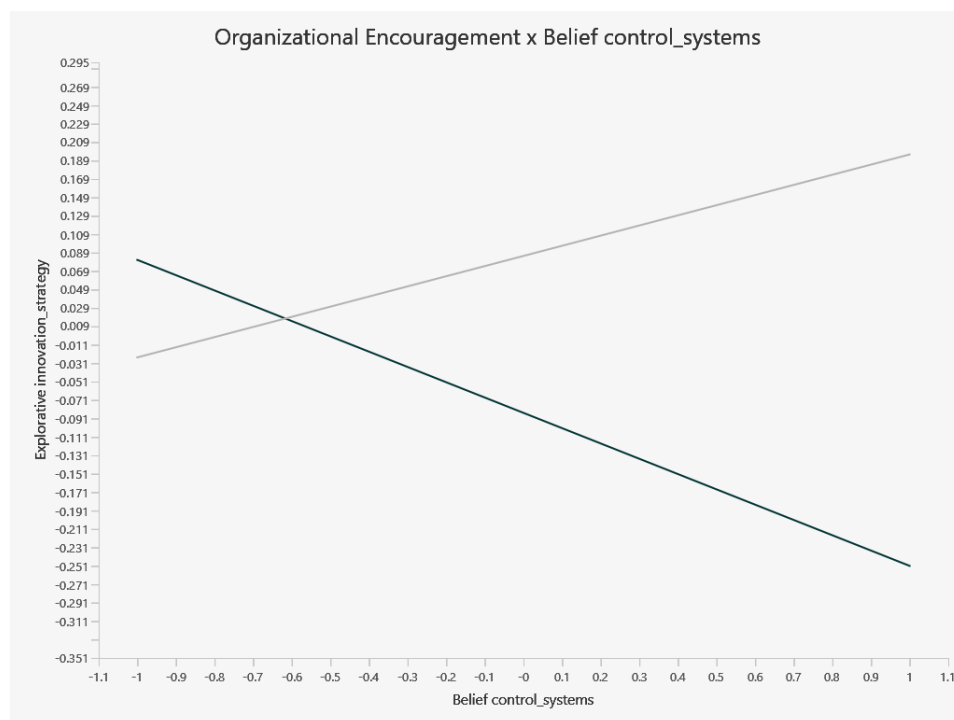


Figure 14 Moderating effect's splot - Organizational Encouragement x Belief control systems => Explorative innovation strategy

Thus, we conclude that the results provide appropriate support to affirm that the moderator construct organizational encouragement exerts a positive and significant effect on the relationship between belief control systems and explorative innovation strategy.

In the Smart PLS algorithm results report, the f^2 effect size of the interaction term (i.e. Belief control systems x Organizational Encouragement) shows a value of 0.014, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018).

Although these results provide support for accepting proposition P23 vi) *Organizational encouragement positively moderates the relationship between Belief control systems and Explorative innovation strategy*.

Contrary to expectations (e.g., Bedford, 2015), the results suggest that the moderating effect is a little more pronounced in the relationship between Belief control systems and Exploitative innovation strategy than in the relationship between Belief control systems and Explorative innovation strategy.

The remaining propositions P23i); P23iii); P23iv); P23v); P23vii); P23viii); P24i); P24ii); P25i); P25ii) were not accepted.

Moderating Variable Organizational Goal Clarity

Another point of analysis is to understand the moderating effect of the construct organizational goal clarity in the relationship between belief control systems and exploitative innovation strategy.

As first concern, we examined the consistency of the reliability of the measures to evaluate the moderator variable's measurement model. All indicators of the moderating variable have an outer loading above 0.70 (between 0.853 and 0.928). For reliability, Cronbach's alpha scores for each variable of the model were higher than the recommended benchmark of 0.70 (Hair et al., 2006) and the moderator variable, particularly, assumed a value of 0.929. The composite reliabilities rho_a and rho_c of all constructs are larger than 0.70. The convergent validity assessment yields an AVE of 0.825, providing support for convergent validity of the Organizational goal clarity moderator.

The bootstrapping procedure confirmed that all construct combinations present HTMT values significantly lower than the conservative threshold of 0.85. (i.e., the confidence intervals upper bound is smaller than that reference threshold). These results also clearly demonstrate the discriminant validity of the constructs. Figure 15 displays the results of moderator analysis.

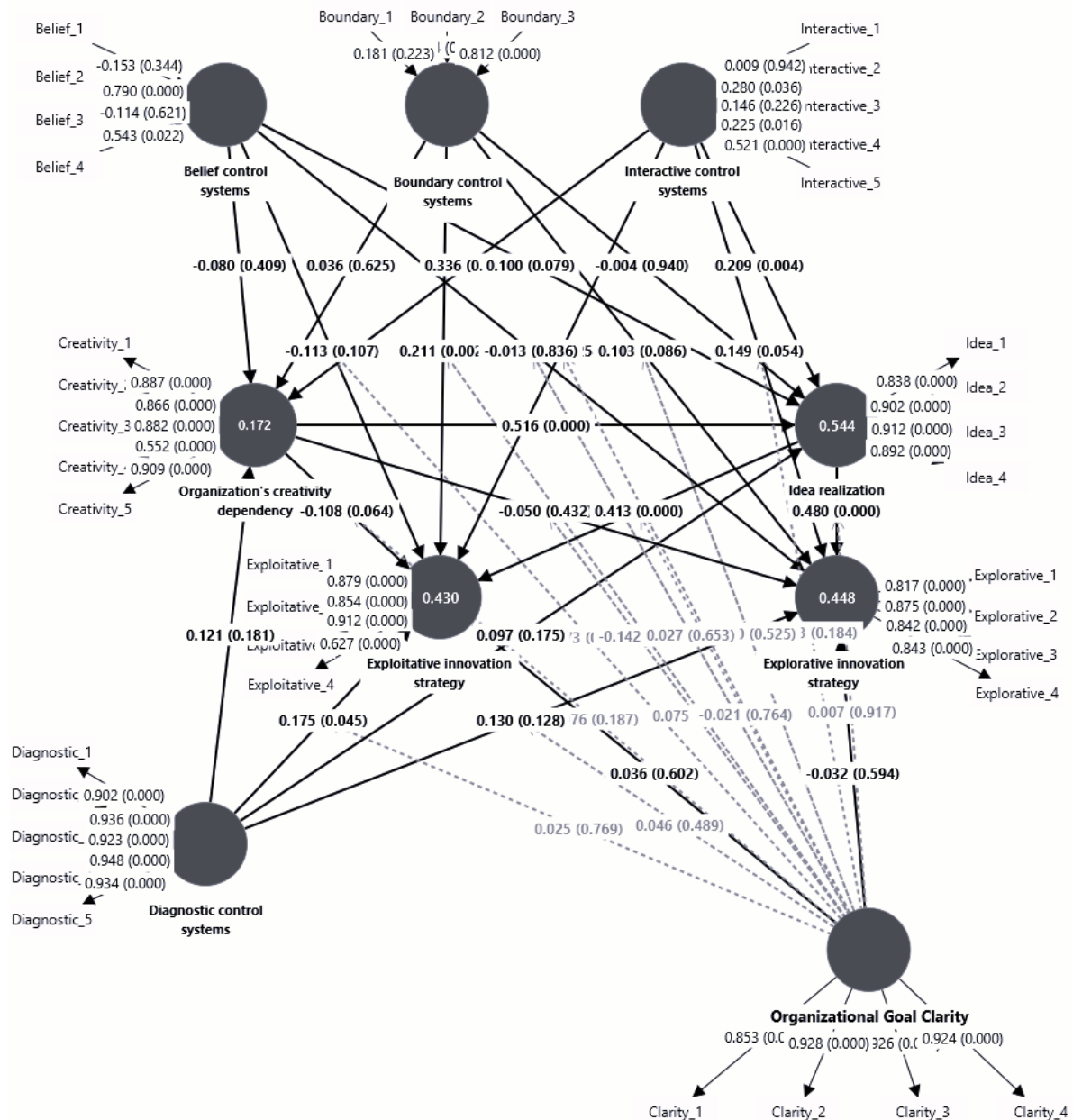


Figure 15 Organizational Goal Clarity Moderator Analysis Results

We tested the size of the moderating effect for all combinations of model constructs. We focused our analysis on the interaction term that is significant, providing support for the existence of a moderating effect (Organizational goal clarity x Belief control systems).

In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022). The output shows that there is a significant moderating effect of Organizational goal clarity ($\beta = 0.173$, $p = 0.027$) on the relationship between Belief control systems and Exploitative innovation strategy, with a simple effect of $\beta = -0.113$, $p > 0.05$. This means that the strength of moderating variable does influence the strength of the path between Belief control systems and Exploitative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = -0.117$, $p < 0.05$) or without ($\beta = -0.113$, $p > 0.05$) the moderator Organizational goal clarity is too small ($\beta = -0.004$), yet significant. Therefore, the effect of Belief control systems construct on Exploitative innovation strategy is marginally determined by the level of Organizational goal clarity in the population of this study.

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a small main effect of Belief control systems on Exploitative Innovation Strategy ($\beta = -0.117$, $p < 0.05$, $f^2 = 0.010$) and a small effect of the moderator Organizational goal clarity on Exploitative Innovation Strategy ($\beta = 0.048$, $p > 0.05$, $f^2 = 0.002$).

The results show that the interaction term has a positive effect on Exploitative innovation strategy ($\beta = 0.173$, $p < 0.05$), whereas the simple effect of relationship between Belief Control Systems on Exploitative Innovation Strategy is -0.113 for an average level of Organizational goal clarity. In exhibition 16 the three lines represent the relationship between Belief control systems and Exploitative innovation strategy. The following slope plot allows observing the two-way interaction effect (Figure 16).

The upper line (grey line) represents the relationship between belief control systems and exploitative innovation strategy for mean value of Organizational goal clarity variable plus one standard deviation unit. Thus, for higher levels of Organizational goal clarity, the relationship

between belief control systems and exploitative innovation strategy decreases by the size of the interaction term. The lower line (black line) represents relationship between belief control systems and exploitative innovation strategy for mean value of Organizational goal clarity minus one standard deviation unit, which, with a steeper slope, symbolizes a low level of the moderator construct Organizational goal clarity, which it is also increases by the size of the interaction term.

Running the bootstrapping procedure (percentile bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.027 for the path linking the interaction term and exploitative innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term's effect is [0.032; 0.344].

Thus, we conclude that the results provide appropriate support to state that the moderator construct Organizational goal clarity exerts a significant and positive effect on the relationship between belief control systems and exploitative innovation strategy. These results also provide support for accepting proposition P26 ii): *Organizational goal clarity positively moderates the relationship between Belief Control Systems and Exploitative innovation strategy.*

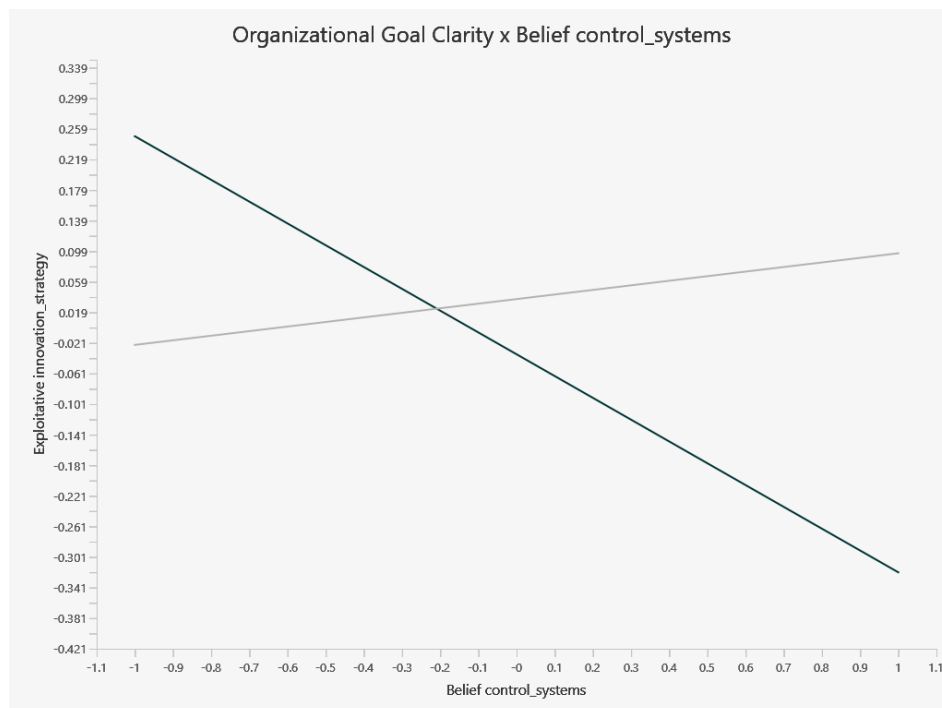


Figure 16 Moderating effect's plot - Organizational Goal Clarity x Belief control systems

We completed the analysis by the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term shows a value of 0.013, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). The remaining propositions P26i); P26iii); P26iv); P26v); P26vi); P26vii); P26viii); P27i); P27ii); P28i); P28ii) were not accepted.

Moderating Variable Discretionary slack

Lastly, we analyzed the moderating effect of the construct Discretionary slack in the relationship between belief control systems and exploitative innovation strategy. All indicators of the moderating variable have an outer loading above 0.70 (between 0.830 and 0.883). For reliability, Cronbach's alpha scores for each variable of the model were higher than the recommended benchmark of 0.70 (Hair et al., 2006) and the moderator variable, particularly, assumed a value of 0.884. The convergent validity yields an AVE of 0.742. The use of the HTMT criterion clearly shows values below 0.85, verifying the discriminant validity (Henseler et al., 2015).

The bootstrapping procedure confirmed that all construct combinations present HTMT values significantly lower than the conservative threshold of 0.85. (i.e., the confidence intervals upper bound is smaller than that reference threshold). These results also clearly demonstrate the discriminant validity of the constructs.

Figure 17 displays the results of moderator analysis. We tested the size of the moderating effect for all combinations of model constructs. We focused our analysis on the interaction term that is significant, providing support for the existence of a moderating effect (Discretionary slack x Idea realization).

In this regard, we analyzed the moderation model for the main effect of the causal relationship (stage 1 in the two Stage Approach) (Piaw, 2023; Hair et al., 2022). The output shows that there is a significant moderating effect of Discretionary slack ($\beta = -0.149$, $p = 0.030$) on the

relationship between Idea realization and Exploitative innovation strategy, with a simple effect of $\beta = 0.402, p < 0.05$. This means that the strength of moderating variable does influence the strength of the path between Idea realization and Exploitative innovation strategy. The difference in the strengths of this causal relationship with ($\beta = 0.424, p < 0.05$) or without ($\beta = 0.402, p < 0.05$) the moderator Discretionary slack is weaker ($\beta = 0.022$), yet significant. Therefore, the effect of Idea Realization construct on Exploitative innovation strategy is marginally determined by the level of Discretionary slack in the population of this study.

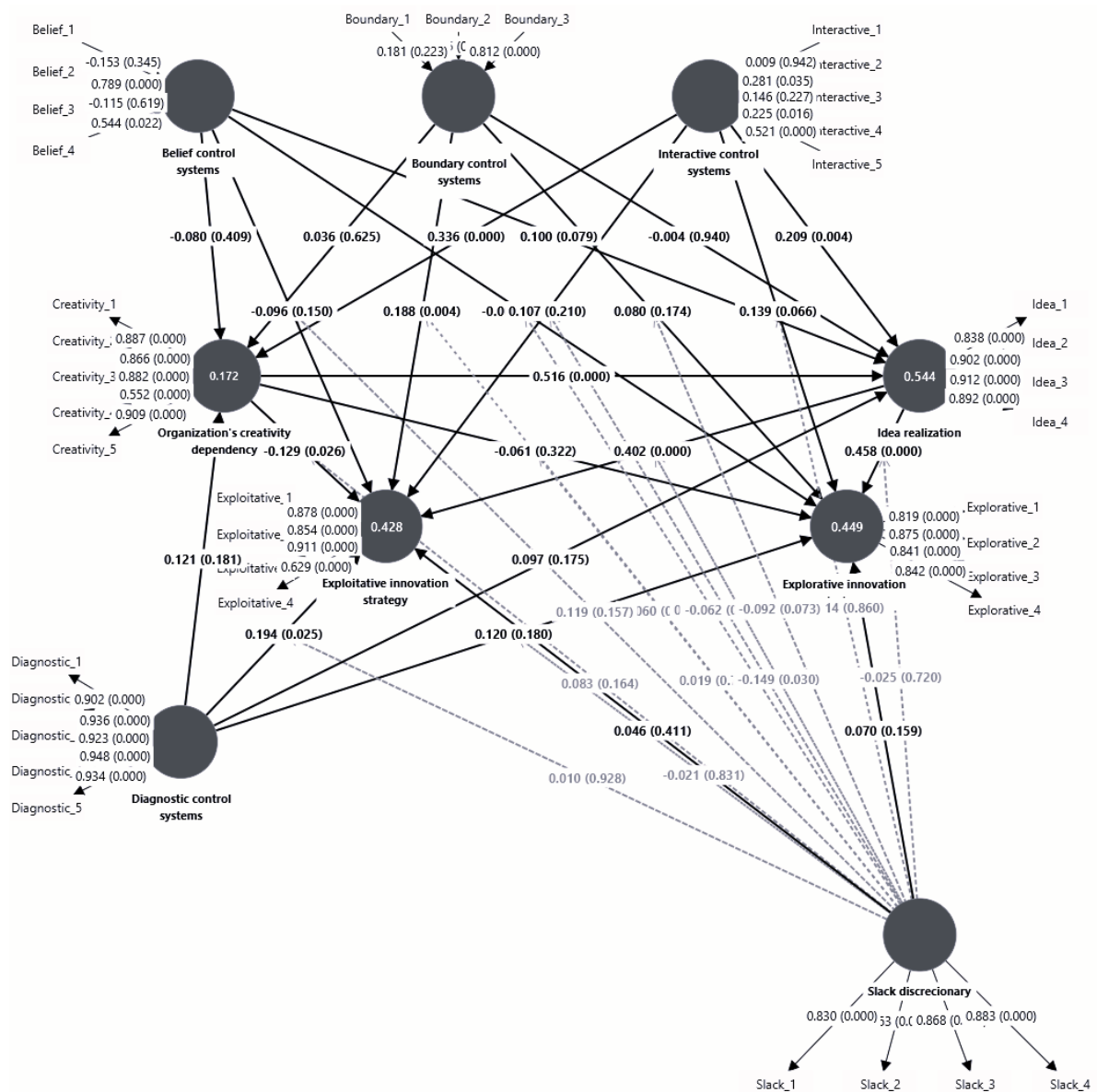


Figure 17 Discretionary slack Moderator Analysis Results

Focusing on the two-stage approach, the output of the PLS-SEM bootstrapping analysis in the stage 1 confirms that there was a large main effect of Idea Realization on Exploitative Innovation Strategy ($\beta = 0.424$, $p < 0.05$, $f^2 = 0.137$) and a small effect of the moderator Discretionary slack on Exploitative Innovation Strategy, however, not significant ($\beta = 0.035$, $p > 0.05$, $f^2 = 0.002$).

The results show that the interaction term has a positive effect on Exploitative innovation strategy ($\beta = -0.149$, $p < 0.05$), whereas the simple effect of Idea realization on Exploitative Innovation Strategy is 0.402 for an average level of Discretionary slack. The following slope plot allows observing the two-way interaction effect (Figure 18).

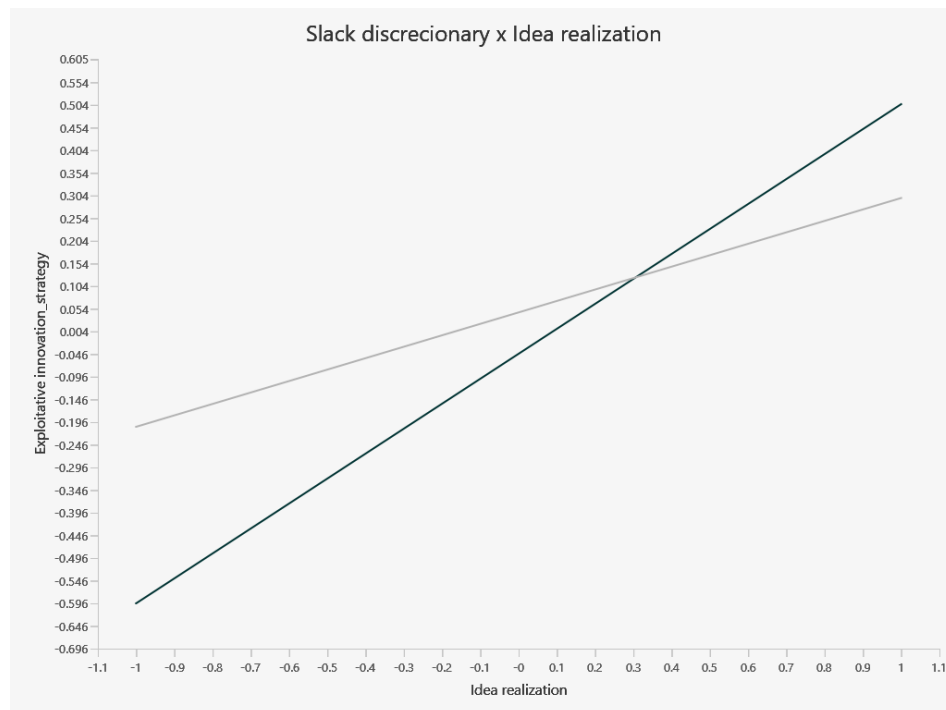


Figure 18 Moderating effect's plot - Discretionary Slack x Idea realization

The upper line represents the relationship between Idea realization and Exploitative innovation for mean value of Discretionary slack variable plus one standard deviation unit. Thus, for higher levels of Discretionary slack, the relationship between Idea realization and Exploitative innovation strategy decreases by the size of the interaction term. The lower line represents the relationship between Idea Realization and Exploitative innovation strategy for mean value of Discretionary slack minus one standard deviation unit, that is increased by the size of the

interaction term. Lower levels of Discretionary slack lead a stronger relationship between Idea realization and Exploitative innovation strategy.

Running the bootstrapping procedure (percentile bootstrap with 10000 subsamples, two tailed), we verify that p value = 0.030 for the path linking the interaction term and exploitative innovation strategy, and the 95% percentile confidence interval bias corrected of the interaction term's effect is [-0.279; -0.009].

Thus, we conclude that the results provide appropriate support to state that the moderating effect of Discretionary slack exerts a significant and negative effect on the relationship between Idea realization and exploitative innovation strategy.

We completed the analysis by the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term shows a value of 0.13, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018).

However, these results do not support proposition P31 i) *Discretionary slack positively moderates the relationship between Idea realization and Exploitative innovation strategy*.

The remaining propositions P29i); P29ii); P29iii); P29iv); P29v); P29vi); P29vii); P29viii); P30i); P30ii) and P31ii) were not accepted.

.

Combining Moderating Effects

After analyzing the results of the moderating effects, table 25 presents the regression results for the Exploitative innovation strategy and Explorative innovation strategy constructs. Models 1 and 3 represent the baseline regressions, which include the four levers of control and Organization's creativity dependency and Idea realization. Models 2 and 4 present the proposed interaction terms for exploitative (Transformational leadership x Belief control systems, Organizational Encouragement x Belief control systems, Organizational goal clarity x Belief

control systems, Openness to experience x Boundary control systems and Slack discretionary x Idea realization) and explorative (Transformational leadership x Belief control systems) innovation strategies.

Regarding the interaction terms represented in this table, only those that showed statistically significant results were shown. The interaction terms Transformational leadership x Belief control systems, Organizational Encouragement x Belief control systems and Organizational goal clarity x Belief control systems in model 2 of table 25 are positive and significant, providing support for P17ii) ($\beta = 0.245, p < 0.01$), P20ii) ($\beta = 0.215, p < 0.01$) and P23ii) ($\beta = 0.173, p < 0.05$), respectively. The interaction terms Openness to experience x Boundary control systems and Slack discretionary x Idea realization in model 2 are negative and significant, providing also support for P26iii) ($\beta = -0.145, p < 0.05$) and P31i) ($\beta = -0.149, p < 0.05$). In model 4 of table 25 the interaction term Organizational Encouragement x Belief control systems is positive and significant ($\beta = 0.138, p < 0.05$). P20vi) is supported.

In model 2, the inclusion of moderating effects mainly improves the relationship of boundary control systems and diagnostic control systems on Exploitative innovation strategy. In both model 2 and model 4, the interaction terms improve the goodness of model fit.

Table 25 Results of regressions for the exploitative and exploratory innovation strategies

Latent variables	Exploitative Innovation strategy						Explorative Innovation strategy					
	Model 1			Model 2			Model 3			Model 4		
	Coefficient	t value	p value	Coefficient	t value	p value	Coefficient	t value	p value	Coefficient	t value	p value
Levers of Control												
Interactive control systems	0.147	1.791	0.073***	0.017	0.184	0.854	0.154	2.134	0.033**	0.137	1.820	0.069***
Belief control systems	-0.112	1.694	0.090***	-0.158	2.238	0.025**	-0.021	0.340	0.734	-0.032	0.521	0.602
Boundary control systems	0.202	3.151	0.002*	0.230	3.400	0.001*	0.108	1.904	0.057***	0.105	1.849	0.064***
Diagnostic control systems	0.170	2.127	0.033**	0.211	2.376	0.018**	0.125	1.513	0.130	0.132	1.583	0.113
Mediators												
Organization's creativity dependency	-0.136	2.326	0.020**	-0.166	2.890	0.004*	-0.070	1.156	0.248	-0.080	1.270	0.204
Idea realization	0.428	5.839	0.000*	0.328	4.502	0.000*	0.465	6.570	0.000*	0.452	6.557	0.000*
Moderating effects												
<i>Interaction Terms</i>												
Transformational leadership x Belief control systems				0.245	2.353	0.009*						
Organizational Encouragement x Belief control systems				0.215	3.208	0.001*				0.138	2.124	0.034**
Organizational goal clarity x Belief control systems				0.173	2.208	0.027**						
Openness to experience x Boundary control systems				-0.145	2.251	0.024**						
Slack discretionary x Idea realization				-0.149	2.173	0.030**						
R^2	0.407			0.464			0.439			0.442		
Adj. R^2	0.397			0.438			0.429			0.429		

***Significant at the 0.10 level (two-tailed)

**Significant at the 0.05 level (two-tailed)

*Significant at the 0.01 level (two-tailed)

4.2.3.4 Multigroup Analysis

At this point, we set out to observe the possibility of heterogeneity in the different samples obtained from an aggregate level of data. The purpose is to check whether the differences found on specific groups are statically significant and meaningful and whether significantly negative or positive group-specific effects can cancel each other out when analyzed on the aggregate data level, suggesting the absence of a significant relationship (Hair et al., 2022).

4.2.3.4.1 *Moderating Effect of the Function Description*

Firstly, the moderation effect of the Function Description on the regression model was analyzed. The Management function has 186 respondents, the artistic and/or cultural direction function had 47 respondents, and those who responded as having both functions were 124. In our analysis, we decided not to consider the artistic and/or cultural direction function subgroup due to the consistency of their results.

We initially focused our attention on the five latent variables of the model, which are reflective variables. The analysis for validity and reliability was conducted with Consistent PLS-SEM algorithm and Consistent PLS-SEM bootstrapping procedures.

The results show that all indicators of the five measurement models of the complete data set, manager and both Functions achieve convergent validity for loading (loadings > 0.70 , $p < 0.05$), except the Creativity 4 indicator, which had loadings below 0.40 in the Complete data set and Both Functions, as well as the Exploitative 4 and Explorative 1 indicators, even so, with loads greater than 0.50 in all sets. As already mentioned, we decided to keep Creativity_4 in the model.

Moreover, there are significant effects of Diagnostic control systems -> Explorative innovation strategy ($\beta = 0.279$, $p < 0.01$; $\beta = 0.207$, $p < 0.05$; $\beta = 0.355$, $p < 0.01$); Diagnostic control systems -> Idea realization ($\beta = 0.319$, $p < 0.01$; $\beta = 0.362$, $p < 0.01$; $\beta = 0.223$, $p < 0.01$); Diagnostic control systems -> Organization's creativity dependency ($\beta = 0.391$, $p < 0.01$; $\beta = 0.480$, $p < 0.01$; $\beta = 0.260$, $p < 0.05$); Idea realization -> Exploitative innovation strategy ($\beta =$

0.582, $p < 0.01$; $\beta = 0.666$, $p < 0.01$; $\beta = 0.675$, $p < 0.01$); Idea realization -> Explorative innovation strategy ($\beta = 0.632$, $p < 0.01$; $\beta = 0.608$, $p < 0.01$; $\beta = 0.703$, $p < 0.01$); and Organization's creativity dependency -> Idea realization ($\beta = 0.595$, $p < 0.01$; $\beta = 0.586$, $p < 0.01$; $\beta = 0.659$, $p < 0.01$), for complete data set, manager and both Functions, respectively (see table 26).

Besides that, for the complete data set and both Functions, there are significant effects of Diagnostic control systems on Exploitative innovation strategy.

As demonstrated in the main model regarding the direct effects between its constructs,, there is a negative relationship between Organization's creativity dependence and Exploitative innovation strategy ($\beta = -0.218$, $p < 0.01$; $\beta = -0.108$, $p > 0.10$; $\beta = -0.470$, $p < 0.01$), as well as of Organization's creativity dependence on Explorative innovation strategy ($\beta = -0.154$, $p < 0.10$; $\beta = -0.084$, $p > 0.10$; $\beta = -0.254$, $p > 0.10$). However, in some cases the results are not significant.

Following, we analyzed the constructs internal consistency reliability and convergent validity. Each of the measurement constructs for the three sets analyzed had a Cronbach's alpha and composite reliability (rho_a and rho:c) greater than 0.70, indicating acceptable composite reliability. However, only the latent variable Diagnostic control systems showed values higher than the threshold of 0.90 in all sets. However, we decided to keep all the indicators of the construct.

We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that, on average, for the three sets analyzed, the constructs explain more than half of the variance of its indicators. The output also showed that the true five correlations for the complete data set, manager and both Functions are lower than 0.90. These procedures indicate acceptable convergent validity (Chin, 1998; Hulland, 1999).

Table 26 Analyzing the moderating effects of the Function Description group

Relationships	Complete data set		Manager		Both Functions	
	Path Coefficients	P Values	Path Coefficients	P Values	Path Coefficients	P Values
Diagnostic control systems -> Exploitative innovation_strategy	0.333	0.000*	0.117	0.217	0.526	0.000*
Diagnostic control systems -> Explorative	0.279	0.000*	0.207	0.026*	0.355	0.001*
Diagnostic control systems -> Idea realization	0.319	0.000*	0.362	0.000*	0.223	0.009*
Diagnostic control systems -> Organization's creativity_dependency	0.391	0.000*	0.480	0.000*	0.260	0.012*
Idea realization -> Exploitative innovation_strategy	0.582	0.000*	0.666	0.000*	0.675	0.000*
Idea realization -> Explorative innovation_strategy	0.632	0.000*	0.608	0.000*	0.703	0.000*
Organization's creativity_dependency -> Exploitative innovation_strategy	-0.218	0.006*	-0.108	0.360	-0.470	0.000*
Organization's creativity_dependency -> Explorative innovation_strategy	-0.154	0.055***	-0.084	0.496	-0.254	0.117
Organization's creativity_dependency -> Idea realization	0.595	0.000*	0.586	0.000*	0.659	0.000*

*** Significance at the 0.10 level (two-tailed)

** Significance at the 0.05 level (two-tailed)

* Significance at the 0.01 level (two-tailed)

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. These results indicate that, for all latent variables and for the four sets analyzed, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). All the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

Since this criterion is insufficiently consistent in detecting serious violations of discriminant validity (Henseler et al., 2015), the second method for testing discriminant validity – cross-loading criterion - was used and showed that not always most indicator loadings were higher than their respective cross loadings. This finding is identified in the Complete data set regarding the Exploitative_4 and Creativity_4 indicators; in the Manager set regarding the Exploitative_4, Explorative_1 and Creativity_4 indicators; in the Both Functions set regarding the Exploitative_4.

After establishing construct validity and reliability, we assessed whether multicollinearity exists among indicators of the model constructs. The outputs in the table below (table 27), by data subgroup, show above all that the indicators of the Diagnostic control systems variable violate the benchmark of collinearity statistics ($VIF < 5.0$) (Hair et al., 2022). This happens with the Diagnostic_2, Diagnostic_4 and Diagnostic_5 indicators for the Complete data set; Diagnostic_2, Diagnostic_3, Diagnostic_4 and Diagnostic_5 for the Manager set; and Diagnostic_4 and Diagnostic_5 indicators for the both functions set. The main alternative recommended by the literature would consider removing the indicators in reference (Piaw, 2023; Hair et al., 2022). It requires that the remaining indicators still sufficiently capture the construct's content from a theoretical perspective, something not occur in case of Diagnostic control systems construct, considering that most indicators in various subgroups offer values above the 5.0 threshold.

In structural equation modeling, in which latent variables are used, some authors (e.g. Benitez et al., 2020; Henseler et al., 2016; Henseler, 2017; Shuberth et al., 2023) argue that the overall model fit assessment is considered essential. “This assessment investigates whether the specified model is consistent with the data collected by exploiting constraints imposed on the observed variables’ model-implied variance–covariance matrix” (Shuberth et al., 2023).

According to Hair et al. (2022), the concept of fit – as defined in Covariance-based structural equation modeling – doesn’t apply to PLS-SEM considering that efforts to introduce model fit measures have generally been unsuccessful. Some arguments are remembered in defense of this point of view by Shuberth et al. (2023), namely:

- ✓ PLS-PM concentrates on estimating causal–predictive relationships (Hair et al., 2020);

- ✓ The evaluation of model fit using a distance function is not deemed useful in the PLS-PM (Hair et al., 2017, 2019a);
- ✓ “Fit indices based on the common factor model are not appropriate to assess a model estimated by PLS-PM” (Lohmöller, 1989:54);
- ✓ There are no suggested thresholds for fit indices in composite models (Hair et al., 2019b);
- ✓ Ambiguity exists regarding whether the fit assessment should be based on the estimated model or a model with a saturated structural model (Hair et al., 2019b);
- ✓ The bootstrap-based test for overall model fit does not reliably detect small misspecifications (Hair et al., 2020).

Table 27 Collinearity statistics (VIF) for data set

Indicators of the model constructs	Complete data set	Manager	Both Functions
Creativity_1	2.797	3.225	2.331
Creativity_2	2.803	3.664	2.494
Creativity_3	2.977	3.494	2.247
Creativity_4	1.326	1.467	1.215
Creativity_5	3.566	4.240	2.698
Diagnostic_1	3.642	4.070	3.581
Diagnostic_2	5.511	5.952	4.747
Diagnostic_3	4.853	5.236	4.219
Diagnostic_4	7.027	8.543	5.273
Diagnostic_5	5.741	6.195	5.423
Exploitative_1	2.403	2.532	2.057
Exploitative_2	2.390	3.003	1.951
Exploitative_3	3.321	3.708	2.790
Exploitative_4	1.275	1.375	1.183
Explorative_1	2.128	2.294	2.163
Explorative_2	2.418	2.519	2.383
Explorative_3	2.104	2.276	2.002
Explorative_4	2.153	2.505	1.784
Idea_1	2.079	2.430	1.717
Idea_2	3.111	2.857	3.325
Idea_3	3.455	3.009	4.658
Idea_4	2.972	3.385	2.712

Accordingly, we provide the values that result from assessing the fit model of the Function Description for data sets (table 28). The fit of the model with a saturated structural model and the estimated model is not identical. However, the estimated models for complete data set and the three functions achieve the model fit benchmarks [SRMR < 0.08; d_ULS > 0.05; d_G > 0.05; NFI > 0.90 (> 0.85 for small sample size); and RMS_theta > 0.12)], except for the NFI which presents values slightly above 0.80 for both types of functions.

Table 28 Assessment of the fit of the Function Description model

Criteria	Complete data set		Manager		Both Functions	
	Saturated model	Estimated model	Saturated model	Estimated model	Saturated model	Estimated model
SRMR	0.041	0.066	0.047	0.077	0.068	0.075
d_ULS	0.423	1.088	0.550	1.491	1.167	1.425
d_G	0.384	0.446	0.724	0.799	0.678	0.722
Chi-square	696.915	784.466	686.041	734.247	409.929	429.376
NFI	0.895	0.882	0.825	0.812	0.813	0.804

Determining measurement invariance across the groups is a procedure important before achieving the multigroup analysis. In fact, Hair et al. (2022) states that to make multigroup comparisons it is necessary to establish measurement invariance in order to ensure the validity of outcomes and conclusions of a given study. For this reason, we will apply the measurement invariance of composite models (MICOM) procedure, which requires establishing configural (i.e. equal parameterization and way of estimation) and compositional (i.e. similar composite scores) invariance (Henseler et al., 2016). If these two phases are confirmed and, therefore, this partial measurement invariance is settled, it allows us to then compare the path coefficient estimates across the groups. In addition, if composites have equal mean values and variances across the groups, full measurement invariance is also confirmed. Accordingly, the data of the different groups can be pooled, which permits moderator analyses. (Hair et al., 2022; Henseler et al., 2016).

The following are the outputs of MICOM procedure for Manager versus Both Functions (table 29), with the integration of all the core reflective and formative variables of the model.

Table 29 Assessing measurement invariance for the Manager subgroup versus Both Functions subgroup

Step 2					
	Original correlation	Correlation permutation mean	5.0%	Permutation <i>p</i> value	
Belief control systems	0.955	0.900	0.758	0.727	
Boundary control systems	0.972	0.943	0.833	0.636	
Diagnostic control systems	1.000	1.000	1.000	0.473	
Exploitative innovation_strategy	0.999	0.999	0.995	0.529	
Explorative innovation_strategy	0.999	0.999	0.998	0.297	
Idea realization	1.000	1.000	0.999	0.132	
Interactive control systems	0.893	0.956	0.900	0.038	
Organization's creativity_dependency	0.989	0.999	0.996	0.000	

Step 3a (means)					
	Original difference	Permutation mean difference	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	-0.095	0.003	-0.217	0.220	0.400
Boundary control systems	0.060	-0.003	-0.247	0.224	0.615
Diagnostic control systems	-0.187	0.006	-0.218	0.225	0.092
Exploitative innovation_strategy	-0.001	0.001	-0.229	0.226	0.994
Explorative innovation_strategy	-0.117	0.003	-0.241	0.232	0.324
Idea realization	-0.345	0.002	-0.244	0.236	0.002
Interactive control systems	-0.127	0.005	-0.221	0.234	0.258
Organization's creativity_dependency	-0.390	0.000	-0.217	0.213	0.000

Step 3b (variances)					
	Original difference	Permutation mean difference	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	0.205	0.003	-0.280	0.306	0.179
Boundary control systems	-0.050	-0.002	-0.290	0.277	0.707
Diagnostic control systems	-0.006	-0.001	-0.316	0.336	0.959
Exploitative innovation_strategy	-0.054	-0.001	-0.361	0.382	0.772
Explorative innovation_strategy	0.059	0.005	-0.299	0.331	0.720
Idea realization	0.195	0.005	-0.380	0.379	0.320
Interactive control systems	0.086	-0.008	-0.359	0.336	0.619
Organization's creativity_dependency	0.336	0.004	-0.346	0.360	0.065

We evaluated measurement invariance with respect to the Manager subgroup against Both Functions subgroup. The output of Step 2 shows that the original correlations of the composite scores from most measurement models are close or equal to 1 and exceed 5% quantile of the distribution of the composite score correlations. The permutation *p* values of Belief control systems, Boundary control systems, Diagnostic control systems, Exploitative innovation strategy, Explorative innovation strategy and Idea realization are not significant ($p > 0.05$).

Measurement invariance is achieved for Step 3b (variance). However, it isn't realized for Step 3a (mean) because the mean values of the original difference of Idea realization and Organization's creativity dependency fall outside the 2.5% and 97.5% confidence intervals and, therefore, the permutation p-values are significant ($p < 0.05$). Therefore, full measurement invariance is not achieved.

In conclusion, the outputs of MICOM show that partial measurement invariance was observed for Manager versus Both Functions. Thus, the data of the two subgroups can be combined, which permits comparing moderating effect between the two function subgroups using the PLS-MGA test (a one-tailed) (Hair et al., 2022; Henseler et al. 2009; Ringle et al., 2011).

Table 30 show that the outputs of this test reveal that there were no significant differences between Manager and Both Functions for all paths in the regression model.

These results show that the role of the participant does not affect the various constructs in the model.

Then, we checked whether the model can be implemented in the two Function Description subgroups by analysing the out-of-sample predictive powers (Q^2 predict) for the four dependent variables (see table 31 below).

Table 30 PLS-MGA test in the Function Description multigroup analysis

Relationships	Difference (Both performed by the same participant - Manager)	
	Paths Coefficients (PLS-MGA)	p -Value (1-tailed)
Belief control systems -> Exploitative innovation_strategy	0.023	0.444
Belief control systems -> Explorative innovation_strategy	-0.191	0.899
Belief control systems -> Idea realization	0.093	0.252
Belief control systems -> Organization's creativity dependency	0.169	0.239
Boundary control systems -> Exploitative innovation strategy	0.070	0.319
Boundary control systems -> Explorative innovation strategy	-0.084	0.736
Boundary control systems -> Idea realization	-0.045	0.626
Boundary control systems -> Organization's creativity dependency	-0.136	0.794
Diagnostic control systems -> Exploitative innovation strategy	0.288	0.081
Diagnostic control systems -> Explorative innovation strategy	0.238	0.132
Diagnostic control systems -> Idea realization	-0.195	0.831
Diagnostic control systems -> Organization's creativity dependency	-0.054	0.592
Idea realization -> Exploitative innovation_strategy	0.000	0.505
Idea realization -> Explorative innovation_strategy	0.136	0.274
Interactive control systems -> Exploitative innovation strategy	0.058	0.383
Interactive control systems -> Explorative innovation strategy	0.066	0.369
Interactive control systems -> Idea realization	0.018	0.454
Interactive control systems -> Organization's creativity dependency	-0.231	0.847
Organization's creativity_dependency -> Exploitative innovation strategy	-0.341	0.970
Organization's creativity_dependency -> Explorative innovation strategy	-0.175	0.805
Organization's creativity_dependency -> Idea realization	0.091	0.170

(*) Significant at the 0.05 level test (1-tailed)

Table 31 Out-of-sample predictive power for the dependent variables

Endogenous latent variables	Manager			Both Functions		
	Q^2_{predict}	RMSE	MAE	Q^2_{predict}	RMSE	MAE
Exploitative innovation strategy	0.201	0.906	0.703	0.314	0.847	0.647
Explorative innovation strategy	0.283	0.858	0.681	0.221	0.900	0.674
Idea realization	0.403	0.784	0.608	0.108	0.962	0.742
Organization's creativity dependency	0.242	0.880	0.700	-0.003	1.019	0.774

All the variables have positive Q^2_{predict} values, except for the Organization's creativity dependency in relation to the Both Functions subgroup. However, as recommended by Danks and Ray (2018), we compared the RMSE (or MAE) values with the naïve LM benchmark. Considering the RMSE as the default metric for interpreting the prediction error of the latent variable indicators, we verified that all the indicators in the PLS-SEM analysis produce smaller prediction errors compared to the naïve LM benchmark (see panels A and B in table 32).

As a result, the model has high predictive power (Hair et al., 2022). This means the regression model can be used to predict the effects of the exogenous latent variables Belief control system, Boundary control systems, Interactive control systems and Diagnostic control systems on the endogenous and target latent variables Exploitative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency in the cultural and creative organizations.

Table 32 PLSpredict results report (PLS-SEM versus LM) for the function description group

Panel A

Dependent Construct's Indicators	Manager				
	Q^2_{predict}	RMSE	MAE	LM_RMSE	LM_MAE
Exploitative_1	0.240	0.905	0.704	0.952	0.736
Exploitative_2	0.122	1.069	0.827	1.102	0.873
Exploitative_3	0.159	1.047	0.830	1.108	0.879
Exploitative_4	0.021	1.437	1.195	1.489	1.224
Explorative_1	0.116	1.299	1.032	1.364	1.051
Explorative_2	0.290	1.098	0.903	1.159	0.932
Explorative_3	0.201	1.056	0.828	1.100	0.835
Explorative_4	0.188	1.168	0.957	1.208	0.956
Idea_1	0.231	1.076	0.840	1.123	0.892
Idea_2	0.309	1.076	0.871	1.125	0.907
Idea_3	0.323	1.065	0.861	1.086	0.869
Idea_4	0.404	0.947	0.761	0.959	0.778
Creativity_1	0.234	1.124	0.915	1.157	0.940
Creativity_2	0.152	1.702	1.380	1.822	1.487
Creativity_3	0.217	1.174	0.921	1.225	0.948
Creativity_4	0.068	1.983	1.633	2.085	1.700
Creativity_5	0.191	1.228	0.993	1.299	1.053

Panel B

Dependent Construct's Indicators	Both Functions				
	Q^2_{predict}	RMSE	MAE	LM_RMSE	LM_MAE
Exploitative_1	0.255	1.029	0.738	1.073	0.793
Exploitative_2	0.209	1.161	0.926	1.278	0.991
Exploitative_3	0.158	1.092	0.836	1.130	0.884
Exploitative_4	0.156	1.348	1.057	1.474	1.138
Explorative_1	0.050	1.349	1.068	1.509	1.190
Explorative_2	0.147	1.111	0.849	1.240	0.938
Explorative_3	0.239	1.123	0.927	1.214	0.989
Explorative_4	0.160	1.146	0.885	1.248	0.948
Idea_1	0.011	1.207	0.940	1.286	0.995
Idea_2	0.092	1.147	0.918	1.205	0.968
Idea_3	0.072	1.168	0.926	1.252	0.974
Idea_4	0.143	0.990	0.772	1.029	0.783
Creativity_1	0.007	1.068	0.788	1.133	0.818
Creativity_2	-0.014	1.850	1.443	1.982	1.570
Creativity_3	-0.016	1.179	0.949	1.256	1.020
Creativity_4	-0.040	1.923	1.537	2.056	1.666
Creativity_5	0.028	1.276	1.040	1.375	1.116

Lastly, we extended our analysis by introducing the importance-performance map analysis (IPMA), which identifies the predecessors that have a relatively high relevance for the target constructs (Hair et al., 2022; Ring & Sarstedt, 2016) (see table 33).

The outputs of the IPMA show that the performance of all the predecessor variables was above 50 %, although there is ample room to improve the performance of these constructs. Furthermore, for both the Manager and Both functions (in the panels A and B), Idea realization and Interactive control systems play a more important role in enhancing Explorative and Exploitative innovation strategies. On the other hand, for these two subgroups, there is a very similar pattern of lower importance-performance for the predecessor variables Belief control system, Boundary control system and Diagnostic control systems and Organization's creativity dependency.

Looking at panel C we observe that for Manager and Both Functions, Interactive control systems and Organization's creativity dependency express an important role in improving Idea Realization when compared to the remaining predecessor variables.

Regarding the target Organization's creativity dependency construct, for all subgroups we should highlight the important weight of Interactive control systems in improving this construct. Even so, for the Manager and Both Functions subgroups, we find the remaining levers of control with a lower performance expression.

Table 33 Importance-performance map analysis for function description

Panel A

Predecessor constructs of Explorative Innovation strategy	Complete data set	Manager	Both Functions
Belief control systems	0.012	0.047	-0.029
Boundary control systems	0.112	0.105	-0.023
Diagnostic control systems	0.190	0.126	0.213
Idea realization	0.465	0.415	0.510
Interactive control systems	0.308	0.370	0.419
Organization's creativity dependency	0.170	0.190	0.157

Panel B

Predecessor constructs of Exploitative Innovation strategy	Complete data set	Manager	Both Functions
Belief control systems	-0.076	-0.056	0.061
Boundary control systems	0.204	0.121	0.138
Diagnostic control systems	0.222	0.160	0.248
Idea realization	0.428	0.486	0.440
Interactive control systems	0.265	0.327	0.274
Organization's creativity dependency	0.085	0.206	-0.041

Panel C

Predecessor constructs of Idea realization	Complete data set	Manager	Both Functions
Belief control systems	0.059	-0.036	0.135
Boundary control systems	0.014	0.070	-0.050
Diagnostic control systems	0.159	0.215	0.028
Interactive control systems	0.382	0.462	0.361
Organization's creativity dependency	0.516	0.489	0.571

Panel D

Predecessor constructs of Organization's creativity dependency	Complete data set	Manager	Both Functions
Belief control systems	-0.080	-0.175	-0.014
Boundary control systems	0.036	0.096	-0.034
Diagnostic control systems	0.121	0.129	0.080
Interactive control systems	0.336	0.470	0.241

4.2.3.4.2 *Moderating Effect of the Cultural and Creative Domains*

The moderation effect of the cultural and creative domains on the regression model was analyzed. The responses found in this segment illustrate a very asymmetric distribution between the various domains: performing arts ($n = 103$); interdisciplinary activities ($n = 59$); audiovisual and multimedia ($n = 42$); architecture ($n = 34$); advertising ($n = 33$); visual arts ($n = 28$); cultural heritage ($n = 26$); books and publications ($n = 20$); handicrafts ($n = 5$); libraries ($n =$

4); archives ($n = 3$). In our analysis, we only considered the first two domains because of the consistency of their results.

Focusing our attention on the five reflective variables, the results show that all indicators of the four measurement models of the complete data set, performing arts and interdisciplinary activities achieve convergent validity for loading (loadings > 0.70 , $p < 0.05$).

Moreover, the outputs show that all paths for the complete data set are significant ($p < 0.01$ and $p < 0.10$). The paths of Diagnostic control systems $\rightarrow$ Explorative innovation strategy ($\beta = 0.199$, $p < 0.10$), Diagnostic control systems $\rightarrow$ Idea realization ($\beta = 0.256$, $p < 0.01$) for the Performing arts are significant. We also verified that the paths of Diagnostic control systems $\rightarrow$ Organization's creativity dependency, Idea realization $\rightarrow$ Exploitative innovation strategy, Idea realization $\rightarrow$ Explorative innovation strategy and Organization's creativity dependency $\rightarrow$ Idea realization for the performing arts and interdisciplinary activities sets are robust and significant ($p < 0.01$) (see table 34).

In extension to the main model, there is a direct negative relationship between Organization's creativity dependence and Exploitative innovation strategy, as well as of Organization's creativity dependence on Explorative innovation for the complete data set, performing arts and interdisciplinary activities, even without statistical significance.

Following, we analyzed the constructs internal consistency reliability and convergent validity. Each of the measurement constructs for the three sets analyzed had a Cronbach's alpha and composite reliability (ρ_a and ρ_c) greater than 0.70, indicating acceptable composite reliability. However, only the latent variable Diagnostic control systems showed values higher than the threshold of 0.90 in all sets. However, we decided to keep all the indicators of the construct.

We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that for the three sets analyzed, on average, the constructs explain more than half of the variance of its indicators. The output also showed that the true five correlations for the complete data set, performing

arts, interdisciplinary activities and audiovisual and multimedia are lower than 0.90. These procedures suggest acceptable convergent validity (Chin, 1998; Hulland, 1999).

Table 34 Analyzing the moderating effects of the cultural and creative domains group

Relationships	Complete data set		Performing Arts		Interdisciplinary Activities	
	Path Coefficients	P Values	Path Coefficients	P Values	Path Coefficients	P Values
Diagnostic control systems -> Exploitative innovation strategy	0.333	0.000*	0.199	0.052***	0.306	0.152
Diagnostic control systems -> Explorative innovation strategy	0.279	0.000*	0.181	0.152	0.274	0.144
Diagnostic control systems -> Idea realization	0.319	0.000*	0.256	0.013**	0.234	0.196
Diagnostic control systems -> Organization's creativity dependency	0.391	0.000*	0.402	0.000*	0.693	0.000*
Idea realization -> Exploitative innovation strategy	0.582	0.000*	0.637	0.000*	0.654	0.025**
Idea realization -> Explorative innovation strategy	0.632	0.000*	0.662	0.000*	0.518	0.031**
Organization's creativity dependency -> Exploitative innovation strategy	-0.218	0.006*	-0.019	0.889	-0.190	0.513
Organization's creativity dependency -> Explorative innovation strategy	-0.154	0.055***	-0.082	0.534	0.080	0.740
Organization's creativity dependency -> Idea realization	0.595	0.000*	0.512	0.000*	0.642	0.000*

*** Significance at the 0.10 level (two-tailed)

** Significance at the 0.05 level (two-tailed)

* Significance at the 0.01 level (two-tailed)

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. These results indicate that, for all latent variable and for the three sets analyzed, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). All the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

The second method for testing discriminant validity – cross-loading criterion - was used and showed that not always most indicator loadings were higher than their respective cross load-

ings. This finding is identified in the complete data set regarding the Exploitative_4 and Creativity_4 indicators; in the performing arts dimension regarding the Creativity_4 indicator; and in the interdisciplinary activities dimension regarding the Creativity_4, Exploitative_4 and Exploitative_1 indicators.

After establishing construct validity and reliability, we assessed whether multicollinearity exists among indicators of the model constructs. The outputs in the table below (table 35), by data subgroup, show above all that the indicators of the Diagnostic control systems variable violate the benchmark of collinearity statistics ($VIF < 5.0$) (Hair et al., 2022).

Table 35 Collinearity statistics (VIF) for data set

Indicators of the model constructs	Complete data set	Performing Arts	Interdisciplinary Activities
Creativity_1	2.797	2.682	2.902
Creativity_2	2.803	3.127	1.778
Creativity_3	2.977	2.084	5.174
Creativity_4	1.326	1.141	1.612
Creativity_5	3.566	2.862	3.957
Diagnostic_1	3.642	2.838	5.680
Diagnostic_2	5.511	4.603	8.811
Diagnostic_3	4.853	5.836	7.518
Diagnostic_4	7.027	5.933	10.925
Diagnostic_5	5.741	4.481	6.943
Exploitative_1	2.403	1.916	3.131
Exploitative_2	2.390	2.241	3.430
Exploitative_3	3.321	3.078	3.966
Exploitative_4	1.275	1.473	1.671
Explorative_1	2.128	2.125	1.812
Explorative_2	2.418	2.153	2.824
Explorative_3	2.104	1.891	2.775
Explorative_4	2.153	1.998	2.072
Idea_1	2.079	2.073	3.335
Idea_2	3.111	3.321	3.901
Idea_3	3.455	2.677	4.697
Idea_4	2.972	2.108	3.498

This happens with the Diagnostic_2, Diagnostic_4 and Diagnostic_5 indicators for the Complete data set; Diagnostic_3 and Diagnostic_4 for the performing arts dimension; and Crea-

tivity_4, Diagnostic_2, Diagnostic_1 to Diagnostic_5 for the interdisciplinary activities dimension. The main alternative recommended by the literature would consider removing the indicators in reference (Piaw, 2023; Hair et al., 2022). It requires that the remaining indicators still sufficiently capture the construct's content from a theoretical perspective, something not occur in case of Diagnostic control systems construct, considering that most indicators in various subgroups offer values very close to and above the 5.0 threshold.

Next, we assessed the model fit of the cultural and creative domains under analysis (see table 36). Although the estimated models for complete data set and the three functions differ from the saturated models, they achieve the model fit benchmarks [SRMR < 0.08; d_ULS > 0.05; d_G > 0.05; NFI > 0.90 (> 0.85 for small sample size); and RMS_theta > 0.12], except for the NFI, which shows values close to 0.80 for both domains.

In summary, we can state that the two measurements models tend to achieve the benchmarks of construct validity and reliability and discriminant validity.

Table 36 Assessment of the fit of the cultural and creative domains model

	Complete data set		Performing Arts		Interdisciplinary Activities	
	Saturated model	Estimated model	Saturated model	Estimated model	Saturated model	Estimated model
SRMR	0.041	0.066	0.066	0.074	0.055	0.077
d_ULS	0.423	1.088	1.098	1.374	0.778	1.519
d_G	0.384	0.446	0.898	0.924	1.275	1.386
Chi-square	696.915	784.466	419.263	429.207	335.707	357.242
NFI	0.895	0.882	0.768	0.762	0.786	0.772

In view of the above results, we propose to apply the measurement invariance of composite models (MICOM) procedure, which requires establishing configural (i.e. equal parameterization and way of estimation) and compositional (i.e. similar composite scores) invariance (Henseler et al., 2016).

The following are the outputs of MICOM procedure for performing arts versus interdisciplinary activities (table 37), with the integration of all the core reflective and formative variables of the model.

We evaluated measurement invariance with respect to the performing arts subgroup against interdisciplinary activities subgroup. The output of Step 2 shows that the original correlations of the composite scores from most measurement models are close or equal to 1 and exceed 5% quantile of the distribution of the composite score correlations. The permutation p values of Belief control systems, Boundary control systems, Diagnostic control systems, Exploitative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency are not significant ($p > 0.05$).

Measurement invariance is not realized for Step 3a (mean) because the mean value of the original difference of Organization's creativity dependency falls outside the 2.5% and 97.5% confidence interval and, therefore, the permutation p -values are significant ($p < 0.05$). Additionally, the measurement invariance is not achieved for Step 3b (variance), for the Interactive control systems and Organization's creativity dependency constructs.

In conclusion, the outputs of MICOM show that partial measurement invariance was observed for performing arts versus interdisciplinary activities. Thus, the data of the two subgroups can be combined, which permits comparing moderating effect between the two domains using the PLS-MGA test (a one-tailed) (Hair et al., 2022; Henseler et al. 2009; Ringle et al., 2011).

Table 38 show that the outputs of this test reveal that there were no significant differences between interdisciplinary activities and performing arts for all paths in the regression model, except for the Interactive control systems -> Exploitative innovation strategy relationship.

Table 37 Assessing measurement invariance for the performing arts subgroup versus interdisciplinary activities subgroup

Step 2					
	Original correlation	Correlation permutation mean	5.0%	Permutation <i>p</i> value	
Belief control systems	0.898	0.828	0.595	0.672	
Boundary control systems	0.897	0.915	0.757	0.300	
Diagnostic control systems	1.000	1.000	0.999	0.855	
Exploitative innovation_strategy	0.999	0.999	0.996	0.530	
Explorative innovation_strategy	0.999	0.998	0.995	0.473	
Idea realization	0.999	1.000	0.999	0.208	
Interactive control systems	0.932	0.896	0.773	0.663	
Organization's creativity_dependency	1.000	0.998	0.993	0.889	

Step 3a (means)					
	Original difference	Permutation mean difference	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	-0.091	0.004	-0.345	0.320	0.603
Boundary control systems	0.066	0.003	-0.339	0.340	0.689
Diagnostic control systems	-0.018	-0.002	-0.346	0.310	0.904
Exploitative innovation_strategy	0.154	-0.007	-0.351	0.336	0.332
Explorative innovation_strategy	0.249	-0.003	-0.332	0.328	0.147
Idea realization	0.321	-0.006	-0.329	0.317	0.051
Interactive control systems	0.212	-0.001	-0.353	0.343	0.227
Organization's creativity_dependency	0.507	-0.005	-0.348	0.321	0.002

Step 3b (variances)					
	Original difference	Permutation mean difference	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	0.056	0.023	-0.453	0.493	0.818
Boundary control systems	0.073	0.018	-0.362	0.390	0.705
Diagnostic control systems	-0.238	0.024	-0.415	0.475	0.275
Exploitative innovation_strategy	-0.357	0.028	-0.440	0.502	0.159
Explorative innovation_strategy	-0.173	0.008	-0.387	0.426	0.421
Idea realization	-0.544	0.024	-0.539	0.547	0.052
Interactive control systems	-0.546	0.021	-0.463	0.503	0.028
Organization's creativity_dependency	-0.487	0.013	-0.415	0.461	0.033

Table 38 PLS-MGA test in the cultural and creative domains multigroup analysis

Relationships	Difference (Interdisciplinary activities - Performing arts)	
	Paths Coefficients (PLS-MGA)	p - Value (1-tailed) ^(*)
Belief control systems -> Exploitative innovation strategy	0.297	0.060
Belief control systems -> Explorative innovation strategy	-0.071	0.645
Belief control systems -> Idea realization	-0.288	0.955
Belief control systems -> Organization's creativity dependency	-0.030	0.545
Boundary control systems -> Exploitative innovation strategy	-0.111	0.712
Boundary control systems -> Explorative innovation strategy	-0.057	0.623
Boundary control systems -> Idea realization	0.269	0.061
Boundary control systems -> Organization's creativity dependency	0.056	0.399
Diagnostic control systems -> Exploitative innovation strategy	-0.411	0.921
Diagnostic control systems -> Explorative innovation strategy	-0.121	0.671
Diagnostic control systems -> Idea realization	0.031	0.445
Diagnostic control systems -> Organization's creativity dependency	0.468	0.051
Idea realization -> Exploitative innovation strategy	-0.114	0.663
Idea realization -> Explorative innovation strategy	-0.128	0.683
Interactive control systems -> Exploitative innovation strategy	0.543	0.015*
Interactive control systems -> Explorative innovation strategy	0.326	0.107
Interactive control systems -> Idea realization	-0.068	0.602
Interactive control systems -> Organization's creativity dependency	-0.292	0.849
Organization's creativity dependency -> Exploitative innovation strategy	-0.119	0.636
Organization's creativity dependency -> Explorative innovation strategy	0.148	0.288
Organization's creativity_dependency -> Idea realization	0.090	0.342

^(*) Significant at the 0.05 level test (1-tailed)

These results show that the model in general tends not to be affected by the moderating effect of these two cultural and creative domains.

Then, we checked whether the model can be implemented in the two domains by analysing the out-of-sample predictive powers (Q^2_{predict}) for the four dependent variables (see table 39 below).

Table 39 Out-of-sample predictive power for the dependent variables

Endogenous latent variables	Performing arts			Interdisciplinary activities		
	Q^2_{predict}	RMSE	MAE	Q^2_{predict}	RMSE	MAE
Exploitative innovation strategy	0.098	0.973	0.760	0.311	0.864	0.692
Explorative innovation strategy	0.121	0.963	0.781	0.345	0.835	0.643
Idea realization	0.159	0.949	0.695	0.409	0.796	0.628
Organization's creativity dependency	0.111	0.959	0.780	0.331	0.843	0.662

All the variables have positive Q^2_{predict} values. However, as recommended by Danks and Ray (2018), we compared the RMSE (or MAE) values with the naïve LM benchmark. Considering the RMSE as the default metric for interpreting the prediction error of the latent variable indicators, we verified that all the indicators in the PLS-SEM analysis produce smaller prediction errors compared to the naïve LM benchmark (see Panels A and B in table 40).

Table 40 PLSpredict results report (PLS-SEM versus LM) for the domains group
Panel A

Dependent Construct's Indicators	Performing arts				
	Q^2_{predict}	RMSE	MAE	LM_RMSE	LM_MAE
Exploitative_1	0.154	0.894	0.692	1.043	0.805
Exploitative_2	-0.003	1.161	0.949	1.302	1.051
Exploitative_3	0.045	1.106	0.893	1.237	0.981
Exploitative_4	0.052	1.243	0.986	1.390	1.099
Explorative_1	0.061	1.324	1.049	1.400	1.091
Explorative_2	0.120	1.196	0.975	1.325	1.054
Explorative_3	0.080	1.166	0.906	1.234	0.953
Explorative_4	0.052	1.222	0.993	1.375	1.088
Idea_1	0.152	0.982	0.755	1.086	0.853
Idea_2	0.130	1.039	0.829	1.123	0.877
Idea_3	0.084	1.105	0.870	1.229	0.942
Idea_4	0.103	0.931	0.724	0.960	0.731
Creativity_1	0.106	0.987	0.777	1.039	0.841
Creativity_2	0.090	1.591	1.308	1.747	1.442
Creativity_3	0.051	1.033	0.846	1.175	0.924
Creativity_4	0.027	1.909	1.620	2.194	1.820
Creativity_5	0.072	1.105	0.869	1.237	0.957

Panel B

Dependent Construct's Indicators	Interdisciplinary activities				
	Q^2_{predict}	RMSE	MAE	LM_RMSE	LM_MAE
Exploitative_1	0.338	0.997	0.797	1.198	0.966
Exploitative_2	0.203	1.194	0.953	1.381	1.118
Exploitative_3	0.275	1.004	0.770	1.227	1.001
Exploitative_4	0.079	1.350	1.137	1.605	1.271
Explorative_1	0.061	1.379	1.106	1.767	1.411
Explorative_2	0.349	0.986	0.790	1.229	0.965
Explorative_3	0.288	1.107	0.907	1.311	1.077
Explorative_4	0.258	1.202	0.983	1.570	1.197
Idea_1	0.235	1.099	0.877	1.379	1.103
Idea_2	0.318	1.107	0.847	1.407	1.099
Idea_3	0.354	1.177	0.967	1.475	1.198
Idea_4	0.434	0.998	0.827	1.204	1.015
Creativity_1	0.332	1.137	0.918	1.311	1.094
Creativity_2	0.160	1.796	1.396	2.333	1.824
Creativity_3	0.255	1.187	0.943	1.447	1.203
Creativity_4	0.020	1.916	1.460	2.527	1.994
Creativity_5	0.368	1.038	0.869	1.174	0.965

As a result, the model has high predictive power (Hair et al., 2022). This means the regression model can be used to predict the effects of the exogenous latent variables Belief control system, Boundary control systems, Interactive control systems and Diagnostic control systems on the endogenous and target latent variables Exploitative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency in the cultural and creative organizations.

Lastly, we extended our analysis by introducing the importance-performance map analysis (IPMA), which identifies the predecessors that have a relatively high relevance for the target constructs (Hair et al., 2022; Ring & Sarstedt, 2016).

The outputs of the IPMA show that the performance of all the predecessor variables is below 50 %, except for Idea realization at the performing arts (in panel B of table 41, with 55,90%) and for Organization's creativity dependency at the interdisciplinary activities (in the panel C, with 50,20%). Therefore, there is ample room to improve the performance of these constructs.

Furthermore, for both the performing arts and interdisciplinary activities domains (in the panels A and B), Idea realization, Organization's creativity dependency and Interactive control systems play a more important role in enhancing Explorative and Exploitative innovation strategies. On the other hand, for these two subgroups, there is a very similar pattern of lower importance-performance for the predecessor variables Belief control system, Boundary control system and Diagnostic control systems.

Looking at panel C we observe that for performing arts and interdisciplinary activities domains, Organization's creativity dependency expresses an important role in improving Idea Realization when compared to the remaining predecessor variables. For interdisciplinary activities subgroup, we also highlight the important role that the Boundary control systems and Diagnostic control systems constructs also play in improving the performance of Idea Realization.

Regarding the target Organization's creativity dependency construct, for performing arts and interdisciplinary activities we should highlight the important weight of Interactive control systems ($\beta = 0.321$) and Diagnostic control systems ($\beta = 0.476$) in improving these constructs, respectively. Similarly, Boundary has a moderate effect on both subgroups. Even so, also for these two subgroups, belief control system maintains a lower performance expression.

Table 41 Importance-performance map analysis for dimension group

Panel A

Predecessor constructs of Explorative Innovation strategy	Complete data set	Performing arts	Interdisciplinary activities
Belief control systems	0.012	0.263	0.014
Boundary control systems	0.112	0.063	0.187
Diagnostic control systems	0.190	0.144	0.207
Idea realization	0.465	0.479	0.407
Interactive control systems	0.308	0.129	0.346
Organization's creativity dependency	0.170	0.195	0.307

Panel B

Predecessor constructs of Exploitative Innovation strategy	Complete data set	Performing arts	Interdisciplinary activities
Belief control systems	-0.076	0.014	0.102
Boundary control systems	0.204	0.146	0.181
Diagnostic control systems	0.222	0.283	0.007
Idea realization	0.428	0.559	0.468
Interactive control systems	0.265	0.092	0.457
Organization's creativity dependency	0.085	0.240	0.141

Panel C

Predecessor constructs of Idea realization	Complete data set	Performing arts	Interdisciplinary activities
Belief control systems	0.059	0.252	-0.043
Boundary control systems	0.014	0.038	0.352
Diagnostic control systems	0.159	0.095	0.372
Interactive control systems	0.382	0.259	0.089
Organization's creativity dependency	0.516	0.417	0.502

Panel D

Predecessor constructs of Organization's creativity dependency	Complete data set	Performing arts	Interdisciplinary activities
Belief control systems	-0.080	-0.083	-0.109
Boundary control systems	0.036	0.200	0.263
Diagnostic control systems	0.121	0.070	0.476
Interactive control systems	0.336	0.321	0.090

4.2.3.4.3 *Moderating Effect of the Legal Nature of Organization*

The moderation effect of the legal nature of organization on the regression model was analyzed. The responses found in this segment illustrate a very asymmetric distribution between the various legal natures: public foundation ($n = 5$); state public company ($n = 3$); non-profit association ($n = 118$); cooperative ($n = 14$); company ($n = 196$); private foundation ($n = 4$);

private institution of social solidarity ($n = 3$); non-governmental development organization ($n = 0$); and other ($n = 14$).

We initially focused our attention on the five latent variables of the model, which are reflective variables. The analysis for validity and reliability was conducted with Consistent PLS-SEM algorithm and Consistent PLS-SEM bootstrapping procedures.

The results show that all indicators of the five measurement models of the complete data set, company and non-profit association subgroups achieve convergent validity for loading (loadings > 0.70 , $p < 0.05$), except the Creativity 4 indicator, which had loadings below 0.40 in the Complete data set, company and non-profit association subgroups, as well as the Exploitative 4 and Explorative 1 indicators, even so, with loads greater than 0.50 in all sets. As already mentioned, we decided to keep Creativity_4 in the model.

Moreover, there are significant effects of Diagnostic control systems -> Exploitative innovation strategy ($\beta = 0.333$, $p < 0.01$; $\beta = 0.289$, $p < 0.01$; $\beta = 0.499$, $p < 0.01$); Diagnostic control systems -> Explorative innovation strategy ($\beta = 0.279$, $p < 0.01$; $\beta = 0.298$, $p < 0.01$; $\beta = 0.278$, $p < 0.05$); Diagnostic control systems -> Idea realization ($\beta = 0.319$, $p < 0.01$; $\beta = 0.348$, $p < 0.01$; $\beta = 0.193$, $p < 0.05$) ; Diagnostic control systems -> Organization's creativity dependency ($\beta = 0.391$, $p < 0.01$; $\beta = 0.410$, $p < 0.01$; $\beta = 0.388$, $p < 0.01$); Idea realization -> Explorative innovation strategy ($\beta = 0.632$, $p < 0.01$; $\beta = 0.682$, $p < 0.01$; $\beta = 0.482$, $p < 0.05$); and Organization's creativity dependency -> Idea realization ($\beta = 0.595$, $p < 0.01$; $\beta = 0.568$, $p < 0.01$; $\beta = 0.675$, $p < 0.01$) , for complete data set, company and non-profit association, respectively (see table 42).

Besides that, for the Complete data set and company subgroup there are significant effects of Idea realization on Exploitative innovation strategy ($\beta = 0.582$, $p < 0.01$; $\beta = 0.720$, $p < 0.01$), of Organization's creativity dependency on Exploitative innovation strategy ($\beta = -0.218$, $p < 0.01$; $\beta = -0.442$, $p < 0.01$) and of Organization's creativity dependency on Explorative innovation ($\beta = -0.154$, $p < 0.10$; $\beta = -0.271$, $p < 0.01$).

Table 42 Analyzing the moderating effects of the Legal Nature of Organization group

Relationships	Complete data set		Company		Non-profit Association	
	Path Coefficients	P Values	Path Coefficients	P Values	Path Coefficients	P Values
Diagnostic control systems -> Exploitative innovation strategy	0.333	0.000*	0.289	0.002*	0.499	0.000*
Diagnostic control systems -> Explorative innovation strategy	0.279	0.000*	0.298	0.001*	0.278	0.013**
Diagnostic control systems -> Idea realization	0.319	0.000*	0.348	0.000*	0.193	0.014**
Diagnostic control systems -> Organization's creativity dependency	0.391	0.000*	0.410	0.000*	0.388	0.000*
Idea realization -> Exploitative innovation strategy	0.582	0.000*	0.720	0.000*	0.274	0.132
Idea realization -> Explorative innovation strategy	0.632	0.000*	0.682	0.000*	0.482	0.015**
Organization's creativity_dependency -> Exploitative innovation strategy	-0.218	0.006*	-0.442	0.000*	0.137	0.408
Organization's creativity dependency -> Explorative innovation strategy	-0.154	0.055***	-0.271	0.008*	0.067	0.738
Organization's creativity dependency -> Idea realization	0.595	0.000*	0.568	0.000*	0.675	0.000*

*** Significance at the 0.10 level (two-tailed)

** Significance at the 0.05 level (two-tailed)

* Significance at the 0.01 level (two-tailed)

As demonstrated in the main model regarding the direct effects between its constructs,, there is a negative relationship between Organization's creativity dependence and Exploitative innovation strategy ($\beta = -0.218$, $p < 0.01$; $\beta = -0.442$, $p < 0.01$), as well as of Organization's creativity dependence on Explorative innovation strategy ($\beta = -0.154$, $p < 0.10$; $\beta = -0.271$, $p < 0.01$) for the complete data set and company subgroup.

Then, we analyzed the constructs internal consistency reliability and convergent validity. Each of the measurement constructs for the three sets analyzed had a Cronbach's alpha and composite reliability (rho_a and rho:c) greater than 0.70, indicating acceptable composite reliability. However, only the latent variable Diagnostic control systems showed values higher than the threshold of 0.90 in all sets. However, we decided to keep all the indicators of the construct.

We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that, on average, for

the three sets analyzed, the constructs explain more than half of the variance of its indicators. The output also showed that the true five correlations for the complete data set, company and non-profit association subgroups are lower than 0.90. These procedures indicate acceptable convergent validity (Chin, 1998; Hulland, 1999).

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. These results indicate that, for all latent variable and for the three sets analyzed, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). All the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

Since this criterion is insufficiently consistent in detecting serious violations of discriminant validity (Henseler et al., 2015), we used the cross-loading criterion which showed that not always most indicator loadings were higher than their respective cross loadings. This finding is identified in the complete data set, company and non-profit association subgroups regarding the Creativity_4 indicator; and in the complete data set and company subgroup regarding the Exploitative_4 indicator.

After establishing construct validity and reliability, we assessed whether multicollinearity exists among indicators of the model constructs. The outputs in the table below (table 43), by data subgroup, show that the indicators of the Diagnostic control systems variable violate the benchmark of collinearity statistics ($VIF < 5.0$) (Hair et al., 2022). This happens with the Diagnostic_2, Diagnostic_4 and Diagnostic_5 indicators for the complete data set and company subgroup; Diagnostic_2, Diagnostic_3 and Diagnostic_4 for the non-profit association subgroup. The main alternative recommended by the literature would consider removing the indicators in reference (Piaw, 2023; Hair et al., 2022). It requires that the remaining indicators still sufficiently capture the construct's content from a theoretical perspective, something not occur in case of Diagnostic control systems construct, considering that most indicators in various subgroups offer values above the 5.0 threshold.

Table 43 Collinearity statistics (VIF) for data set

Indicators of the model constructs	Complete data set	Company	Non-profit Association
Creativity_1	2.797	2.980	2.738
Creativity_2	2.803	2.869	2.949
Creativity_3	2.977	3.296	2.263
Creativity_4	1.326	1.322	1.244
Creativity_5	3.566	3.462	3.494
Diagnostic_1	3.642	3.455	3.846
Diagnostic_2	5.511	5.377	5.419
Diagnostic_3	4.853	4.402	5.912
Diagnostic_4	7.027	7.687	6.484
Diagnostic_5	5.741	7.001	4.989
Exploitative_1	2.403	2.238	2.941
Exploitative_2	2.390	2.287	2.521
Exploitative_3	3.321	3.377	3.596
Exploitative_4	1.275	1.155	1.492
Explorative_1	2.128	2.108	2.349
Explorative_2	2.418	2.147	2.725
Explorative_3	2.104	1.968	2.104
Explorative_4	2.153	2.203	2.069
Idea_1	2.079	1.690	2.687
Idea_2	3.111	2.806	3.741
Idea_3	3.455	3.432	3.162
Idea_4	2.972	3.084	2.428

Next, we assessed the model fit of the legal nature of organizations under analysis (see table 44). Although the estimated models for complete data set and the two legal nature subgroups differ from the saturated models, they achieve the model fit benchmarks [SRMR < 0.08; d_ULS > 0.05; d_G > 0.05; NFI > 0.90 (> 0.85 for small sample size); and RMS_theta > 0.12], except for the NFI, which shows values close to 0.80 for the company subgroup and values slightly above 0.80 for the non-profit association subgroup.

In view of the above results, we propose to apply the measurement invariance of composite models (MICOM) procedure, which requires establishing configural (i.e. equal parameterization and way of estimation) and compositional (i.e. similar composite scores) invariance (Henseler et al., 2016).

Table 44 Assessment of the fit of the Nature Legal of Organization model

Criteria	Complete data set		Company		Non-profit Association	
	Saturated	Estimated	Saturated	Estimated	Saturated	Estimated
SRMR	0.041	0.066	0.060	0.077	0.048	0.063
d_ULS	0.423	1.088	0.915	1.514	0.591	1.001
d_G	0.384	0.446	0.664	0.730	0.744	0.792
Chi-square	696.915	784.466	711.771	759.530	422.166	443.372
NFI	0.895	0.882	0.806	0.793	0.818	0.809

The following are the outputs of MICOM procedure for the company and non-profit association subgroups (table 45), with the integration of all the core reflective and formative variables of the model.

We evaluated measurement invariance with respect to the company subgroup against non-profit association subgroup. The output of Step 2 shows that the original correlations of the composite scores from most measurement models are close or equal to 1 and exceed 5% quantile of the distribution of the composite score correlations. The permutation p values of Belief control systems, Boundary control systems, Diagnostic control systems, Explorative innovation strategy and Organization's creativity dependency are not significant ($p > 0.05$), except for the Exploitative innovation strategy and Idea realization, which permutation p values are significant.

This means compositional invariance is established, and partial measurement invariance is achieved for most constructs, which permits the comparison of standardized path coefficients between the two legal natures using multigroup analysis.

Measurement invariance is realized for Step 3a (mean) because the mean value of the original difference of the eight measurement models falls inside the 2.5% and 97.5% confidence interval and, therefore, the permutation p -values are not significant ($p > 0.05$). Additionally, the measurement invariance is achieved for Step 3b (variance), except for the Interactive control systems construct. Therefore, full measurement invariance is not achieved.

Table 45 Assessing measurement invariance for the company subgroup versus non-profit association subgroup

Step 2					
	Original correlation	Correlation permutation mean	5.0%	Permutation <i>p</i> value	
Belief control systems	0.948	0.906	0.770	0.674	
Boundary control systems	0.975	0.955	0.865	0.597	
Diagnostic control systems	1.000	1.000	1.000	0.125	
Exploitative innovation_strategy	0.993	0.998	0.995	0.028	
Explorative innovation_strategy	1.000	0.999	0.998	0.867	
Idea realization	0.999	1.000	0.999	0.033	
Interactive control systems	0.921	0.950	0.887	0.168	
Organization's creativity_dependency	0.995	0.998	0.995	0.057	

Step 3a (means)					
	Original difference	Permutation mean	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	-0.116	-0.000	-0.236	0.222	0.326
Boundary control systems	-0.094	-0.004	-0.237	0.219	0.425
Diagnostic control systems	0.027	-0.001	-0.227	0.234	0.805
Exploitative innovation_strategy	0.111	-0.004	-0.225	0.220	0.309
Explorative innovation_strategy	0.183	-0.006	-0.225	0.209	0.105
Idea realization	0.022	-0.002	-0.223	0.229	0.842
Interactive control systems	-0.142	-0.002	-0.246	0.223	0.225
Organization's creativity_dependency	-0.020	-0.005	-0.229	0.229	0.843

Step 3b (variances)					
	Original difference	Permutation mean	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	0.305	0.003	-0.308	0.311	0.053
Boundary control systems	0.180	0.007	-0.264	0.287	0.220
Diagnostic control systems	0.204	0.002	-0.300	0.314	0.191
Exploitative innovation_strategy	-0.190	0.007	-0.344	0.356	0.336
Explorative innovation_strategy	-0.069	0.003	-0.324	0.346	0.678
Idea realization	0.053	0.010	-0.356	0.399	0.793
Interactive control systems	0.356	0.002	-0.319	0.319	0.033
Organization's creativity_dependency	0.177	0.016	-0.320	0.343	0.290

In conclusion, the outputs of MICOM show that partial measurement invariance was observed for the company versus non-profit association subgroups. Thus, the data of the two subgroups can be combined, which permits comparing moderating effect between the two legal nature of organization subgroups using the PLS-MGA test (a one-tailed) (Hair et al., 2022; Henseler et al., 2009; Ringle et al., 2011).

Table 46 PLS-MGA test in the legal nature of organization multigroup analysis

Relationships	Difference (Company - Non-profit Association)	
	Paths Coefficients (PLS-MGA)	p - Value (1-tailed)
Belief control systems -> Exploitative innovation_strategy	0.013	0.474
Belief control systems -> Explorative innovation_strategy	-0.177	0.855
Belief control systems -> Idea realization	-0.240	0.971
Belief control systems -> Organization's creativity_dependency	0.312	0.052
Boundary control systems -> Exploitative innovation_strategy	0.158	0.140
Boundary control systems -> Explorative innovation_strategy	0.234	0.050
Boundary control systems -> Idea realization	-0.022	0.571
Boundary control systems -> Organization's creativity_dependency	-0.373	0.991
Diagnostic control systems -> Exploitative innovation_strategy	-0.381	0.975
Diagnostic control systems -> Explorative innovation_strategy	-0.126	0.724
Diagnostic control systems -> Idea realization	0.160	0.189
Diagnostic control systems -> Organization's creativity_dependency	0.090	0.338
Idea realization -> Exploitative innovation_strategy	0.445	0.032*
Idea realization -> Explorative innovation_strategy	0.234	0.168
Interactive control systems -> Exploitative innovation_strategy	0.044	0.404
Interactive control systems -> Explorative innovation_strategy	0.117	0.270
Interactive control systems -> Idea realization	0.192	0.129
Interactive control systems -> Organization's creativity_dependency	-0.060	0.625
Organization's creativity_dependency -> Exploitative innovation_strategy	-0.545	0.992
Organization's creativity_dependency -> Explorative innovation_strategy	-0.367	0.934
Organization's creativity_dependency -> Idea realization	-0.146	0.912

(*) Significant at the 0.05 level test (1-tailed)

Table 46 shows that the outputs of this test reveal that there were no significant differences between interdisciplinary activities and performing arts for all paths in the regression model,

except for the Boundary control systems -> Explorative innovation strategy and Idea realization -> Exploitative innovation strategy relationships. These results suggest that the model tends not to be affected by the moderating effect of these two legal natures of organization.

Then, we checked whether the model can be implemented in the two subgroups by analysing the out-of-sample predictive powers (Q^2_{predict}) for the four dependent variables (see table 47 below).

Table 47 Out-of-sample predictive power for the dependent variables

Endogenous latent variables	Company			Non-profit Association		
	Q^2_{predict}	RMSE	MAE	Q^2_{predict}	RMSE	MAE
Exploitative innovation strategy	0.236	0.885	0.698	0.361	0.817	0.597
Explorative innovation strategy	0.296	0.847	0.660	0.192	0.918	0.707
Idea realization	0.308	0.842	0.644	0.181	0.928	0.686
Organization's creativity dependency	0.126	0.945	0.723	0.148	0.939	0.747

All the variables have positive Q^2_{predict} values. However, as recommended by Danks and Ray (2018), we compared the RMSE (or MAE) values with the naïve LM benchmark. Considering the RMSE as the default metric for interpreting the prediction error of the latent variable indicators, we verified that all the indicators in the PLS-SEM analysis produce smaller prediction errors compared to the naïve LM benchmark (see Panels A and B of table 48).

As a result, the model has high predictive power (Hair et al., 2022). This means the regression model can be used to predict the effects of the exogenous latent variables Belief control system, Boundary control systems, Interactive control systems and Diagnostic control systems on the endogenous and target latent variables Exploitative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency in the cultural and creative organizations.

Table 48 Out-of-sample predictive power for the dependent variables

Panel A

Dependent Construct's Indicators	Company				
	Q^2_{predict}	RMSE	MAE	LM_RMSE	LM_MAE
Exploitative_1	0.250	0.931	0.706	0.952	0.718
Exploitative_2	0.129	1.111	0.871	1.163	0.900
Exploitative_3	0.164	1.028	0.831	1.078	0.878
Exploitative_4	0.036	1.457	1.209	1.469	1.193
Explorative_1	0.113	1.268	1.027	1.320	1.070
Explorative_2	0.276	1.066	0.871	1.084	0.875
Explorative_3	0.245	1.058	0.866	1.111	0.902
Explorative_4	0.177	1.154	0.926	1.208	0.950
Idea_1	0.097	1.110	0.868	1.138	0.882
Idea_2	0.244	1.107	0.883	1.130	0.889
Idea_3	0.258	1.062	0.851	1.067	0.863
Idea_4	0.326	0.953	0.751	0.970	0.757
Creativity_1	0.115	1.164	0.905	1.194	0.922
Creativity_2	0.088	1.735	1.389	1.789	1.406
Creativity_3	0.084	1.186	0.940	1.196	0.919
Creativity_4	-0.027	1.978	1.595	2.068	1.690
Creativity_5	0.142	1.235	0.992	1.273	1.008

Panel B

Dependent Construct's Indicators	Non-profit Association				
	Q^2_{predict}	RMSE	MAE	LM_RMS E	LM_MAE
Exploitative_1	0.368	0.904	0.667	1.004	0.745
Exploitative_2	0.202	1.101	0.853	1.213	0.933
Exploitative_3	0.272	1.025	0.760	1.166	0.879
Exploitative_4	0.188	1.230	0.973	1.332	0.999
Explorative_1	0.071	1.360	1.047	1.519	1.174
Explorative_2	0.176	1.197	0.976	1.274	1.028
Explorative_3	0.155	1.184	0.912	1.251	0.950
Explorative_4	0.137	1.198	0.930	1.324	1.032
Idea_1	0.153	1.063	0.815	1.147	0.884
Idea_2	0.146	1.065	0.836	1.179	0.928
Idea_3	0.066	1.206	0.947	1.370	1.074
Idea_4	0.184	0.965	0.723	1.047	0.794
Creativity_1	0.120	1.049	0.833	1.119	0.914
Creativity_2	0.105	1.590	1.282	1.638	1.321
Creativity_3	0.102	1.118	0.889	1.220	0.983
Creativity_4	0.041	1.957	1.672	2.179	1.831
Creativity_5	0.116	1.158	0.959	1.279	1.045

Lastly, we extended our analysis by introducing the importance-performance map analysis (IPMA), which identifies the predecessors that have a relatively high relevance for the target constructs (Hair et al., 2022; Ring & Sarstedt, 2016).

The outputs of the IPMA show that the performance of all the predecessor variables is below 50 %, except for Idea realization at the company (in panel B of table 49, with 50,40%) and for Organization's creativity dependency at the non-profit association (in the panel C, with 59,10%). Therefore, there is ample room to improve the performance of all these constructs.

Furthermore, for both the company and non-profit association subgroups (in the panels A and B), Interactive control systems and Idea realization play a more important role in enhancing Explorative and Exploitative innovation strategies. Additionally, for the non-profit association subgroup (in the panels A and B), Boundary control systems, Diagnostic control systems and Organization's creativity dependency also contribute to a better performance of Explorative and Exploitative innovation strategies. On the other hand, for these two subgroups, there is a very similar pattern of lower importance-performance for the predecessor variable Belief control system.

Looking at panel C we observe that for public financing and own resources subgroups, Organization's creativity dependency and Interactive control systems express an important role in improving Idea Realization when compared to the remaining predecessor variables. For own resources subgroup, we highlight the moderate role that the Diagnostic control systems ($\beta = 0.247$) play in improving the performance of Idea Realization. For the non-profit associations subgroup, we also observe a moderate contribution from boundary control systems in the performance of that predecessor variable.

Regarding the target Organization's creativity dependency construct, for company and non-profit association subgroups we should highlight the important weight of Interactive control systems ($\beta = 0.281$ and $\beta = 0.321$, respectively). Similarly, for company subgroup, Diagnostic control systems have a moderate effect on the good behaviour of Organization's creativity dependency. For non-profit association subgroup, Boundary control systems ($\beta = 0.304$) pos-

itively indicate an important weight in improving the performance of the Organization's creativity dependency, which is balanced by the relevant negative weight of the belief control systems ($\beta = -0.232$).

Table 49 Importance-performance map analysis for legal nature of organization group

Panel A

Predecessor constructs of Explorative Innovation strategy	Complete data set	Company	Non-profit Association
Belief control systems	0.012	-0.034	0.121
Boundary control systems	0.112	0.149	0.076
Diagnostic control systems	0.190	0.136	0.177
Idea realization	0.465	0.484	0.350
Interactive control systems	0.308	0.394	0.244
Organization's creativity dependency	0.170	0.074	0.327

Panel B

Predecessor constructs of Exploitative Innovation strategy	Complete data set	Company	Non-profit Association
Belief control systems	-0.076	-0.007	-0.036
Boundary control systems	0.204	0.189	0.164
Diagnostic control systems	0.222	0.077	0.345
Idea realization	0.428	0.504	0.220
Interactive control systems	0.265	0.350	0.267
Organization's creativity dependency	0.085	-0.060	0.236

Panel C

Predecessor constructs of Idea realization	Complete data set	Company	Non-profit Association
Belief control systems	0.059	0.079	0.112
Boundary control systems	0.014	-0.095	0.155
Diagnostic control systems	0.159	0.202	0.042
Interactive control systems	0.382	0.423	0.302
Organization's creativity dependency	0.516	0.482	0.591

Panel D

Predecessor constructs of Organization's creativity dependency	Complete data set	Company	Non-profit Association
Belief control systems	-0.080	0.064	-0.232
Boundary control systems	0.036	-0.045	0.304
Diagnostic control systems	0.121	0.145	0.071
Interactive control systems	0.336	0.281	0.321

4.2.3.4.4 *Moderating Effect of the Financing Nature*

The moderation effect of the financing nature on the regression model was analyzed. The responses found in this segment illustrate a very asymmetric distribution between the two natures of financing: public financing (>50%) ($n = 71$); and own resources (>50%) ($n = 286$).

We initially focused our attention on the five latent variables of the model, which are reflective variables. The analysis for validity and reliability was conducted with Consistent PLS-SEM algorithm and Consistent PLS-SEM bootstrapping procedures.

The results show that all indicators of the five measurement models of the complete data set, public financing and own resources subgroups achieve convergent validity for loading (loadings > 0.70 , $p < 0.05$), except the Creative 4, which had loading below 0.40 in the complete data set and own resources subgroup, as well as the Exploitative 4 and Explorative 1 indicators, even so, with loads greater than 0.50 in all sets. As already mentioned, we decided to keep Creativity_4 in the model.

Moreover, there are significant effects of Diagnostic control systems $\rightarrow$ Idea realization ($\beta = 0.319$, $p < 0.01$; $\beta = 0.295$, $p < 0.01$; $\beta = 0.321$, $p < 0.01$); Diagnostic control systems $\rightarrow$ Organization's creativity dependency ($\beta = 0.391$, $p < 0.01$; $\beta = 0.362$, $p < 0.01$; $\beta = 0.404$, $p < 0.01$); Idea realization $\rightarrow$ Exploitative innovation strategy ($\beta = 0.582$, $p < 0.01$; $\beta = 0.644$, $p < 0.01$; $\beta = 0.581$, $p < 0.01$); Idea realization $\rightarrow$ Explorative innovation strategy ($\beta = 0.632$, $p < 0.01$; $\beta = 0.802$, $p < 0.01$; $\beta = 0.502$, $p < 0.01$); and Organization's creativity dependency $\rightarrow$

Idea realization ($\beta = 0.595, p < 0.01$; $\beta = 0.713, p < 0.01$; $\beta = 0.567, p < 0.01$) , for complete data set, public financing and own resources subgroups, respectively (see table 50).

Besides that, for the Complete data set and own resources subgroup there are significant effects of Diagnostic control systems on Exploitative innovation strategy ($\beta = 0.333, p < 0.01$; $\beta = 0.348, p < 0.01$), as well as of Diagnostic control systems on Explorative innovation strategy ($\beta = 0.279, p < 0.01$; $\beta = 0.302, p < 0.01$), and Organization's creativity dependency on Exploitative innovation strategy ($\beta = -0.218, p < 0.01$; $\beta = -0.227, p < 0.01$).

Table 50 Analyzing the moderating effects of the financing nature

Relationships	Complete data set		Public Financing		Own Resources	
	Path Coefficients	P Values	Path Coefficients	P Values	Path Coefficients	P Values
Diagnostic control systems -> Exploitative innovation strategy	0.333	0.000*	0.254	0.109	0.348	0.000*
Diagnostic control systems -> Explorative innovation strategy	0.279	0.000*	0.204	0.192	0.302	0.000*
Diagnostic control systems -> Idea realization	0.319	0.000*	0.295	0.000*	0.321	0.000*
Diagnostic control systems -> Organization's creativity dependency	0.391	0.000*	0.362	0.003*	0.404	0.000*
Idea realization -> Exploitative innovation strategy	0.582	0.000*	0.644	0.006*	0.581	0.000*
Idea realization -> Explorative innovation strategy	0.632	0.000*	0.802	0.001*	0.595	0.000*
Organization's creativity_dependency ·> Exploitative innovation strategy	-0.218	0.006*	-0.222	0.284	-0.227	0.008*
Organization's creativity dependency ·> Explorative innovation strategy	-0.154	0.055***	-0.283	0.185	-0.127	0.148
Organization's creativity dependency ·> Idea realization	0.595	0.000*	0.713	0.000*	0.567	0.000*

*** Significance at the 0.10 level (two-tailed)

** Significance at the 0.05 level (two-tailed)

* Significance at the 0.01 level (two-tailed)

Then, we analyzed the constructs internal consistency reliability and convergent validity. Each of the measurement constructs for the three sets analyzed had a Cronbach's alpha and composite reliability (rho_a and rho:c) greater than 0.70, indicating acceptable composite reliability. However, only the latent variable Diagnostic control systems showed values higher than the threshold of 0.90 in all sets. However, we decided to keep all the indicators of the construct.

We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that, on average, for the three sets analyzed, the constructs explain more than half of the variance of its indicators. The output also showed that the true five correlations for the complete data set, public financing and own resources subgroups are lower than 0.90. These procedures indicate acceptable convergent validity (Chin, 1998; Hulland, 1999).

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. These results indicate that, for all latent variable and for the three sets analyzed, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). All the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

Since this criterion is insufficiently consistent in detecting serious violations of discriminant validity (Henseler et al., 2015), we used the cross-loading criterion which showed that not always most indicator loadings were higher than their respective cross loadings. This finding is identified in the complete data set, public financing and own resources subgroups regarding the Creativity_4 indicator; in the complete data set and own resources subgroup regarding the Exploitative_4 indicator; and in the public financing subgroup regarding the Exploitative_2 indicator.

After establishing construct validity and reliability, we assessed whether multicollinearity exists among indicators of the model constructs. The outputs in the table below (table 51), by data group, show that the indicators of the Diagnostic control systems variable violate the benchmark of collinearity statistics ($VIF < 5.0$) (Hair et al., 2022). This happens with the Diagnostic_2, Diagnostic_4 and Diagnostic_5 indicators for the complete data set and company group; Diagnostic_2, Diagnostic_3 and Diagnostic_4 for the non-profit association group. The main alternative recommended by the literature would consider removing the indicators in reference (Piaw, 2023; Hair et al., 2022). It requires that the remaining indicators still sufficiently capture the construct's content from a theoretical perspective, something does

not occur in case of Diagnostic control systems construct, considering that most indicators in various groups offer values above the 5.0 threshold.

Table 51 Collinearity statistics (VIF) for data set

Indicators of the model constructs	Complete data set	Public Financing	Own Resources
Creativity_1	2.797	3.702	2.790
Creativity_2	2.803	3.957	2.642
Creativity_3	2.977	3.241	3.003
Creativity_4	1.326	1.527	1.326
Creativity_5	3.566	3.957	3.585
Diagnostic_1	3.642	4.360	3.534
Diagnostic_2	5.511	5.895	5.475
Diagnostic_3	4.853	7.084	4.592
Diagnostic_4	7.027	7.206	7.266
Diagnostic_5	5.741	5.953	5.910
Exploitative_1	2.403	3.287	2.263
Exploitative_2	2.390	2.330	2.429
Exploitative_3	3.321	4.123	3.207
Exploitative_4	1.275	1.793	1.230
Explorative_1	2.128	1.868	2.239
Explorative_2	2.418	2.171	2.492
Explorative_3	2.104	2.156	2.135
Explorative_4	2.153	2.185	2.246
Idea_1	2.079	2.755	2.009
Idea_2	3.111	2.968	3.197
Idea_3	3.455	3.886	3.421
Idea_4	2.972	3.863	2.885

Next, we assessed the model fit of the cultural and creative domains under analysis (see table 52). Although the estimated models for complete data set and the two financing nature subgroups differ from the saturated models, they achieve the model fit benchmarks [SRMR < 0.08; d_ULS > 0.05; d_G > 0.05; NFI > 0.90 (> 0.85 for small sample size); and RMS_theta > 0.12]. The smaller sample size of the financing nature subgroup did not allow the determination of some values of the model fit.

Table 52 Assessment of the fit of the financing nature model

Criteria	Complete data set		Company		Non-profit Association	
	Saturated	Estimated	Saturated	Estimated	Saturated	Estimated
SRMR	0.041	0.066	0.060	0.077	0.048	0.063
d_ULS	0.423	1.088	0.915	1.514	0.591	1.001
d_G	0.384	0.446	0.664	0.730	0.744	0.792
Chi-square	696.915	784.466	711.771	759.530	422.166	443.372
NFI	0.895	0.882	0.806	0.793	0.818	0.809

In view of the above results, we propose to apply the measurement invariance of composite models (MICOM) procedure, which requires establishing configural (i.e. equal parameterization and way of estimation) and compositional (i.e. similar composite scores) invariance (Henseler et al., 2016).

The following are the outputs of MICOM procedure for the financing nature subgroups (table 53), with the integration of all the core reflective and formative variables of the model.

We evaluated measurement invariance with respect to the public financing subgroup against own resources subgroup. The output of Step 2 shows that the original correlations of the composite scores from most measurement models are close or equal to 1 and exceed 5% quantile of the distribution of the composite score correlations. The permutation p values of Belief control systems, Boundary control systems, Diagnostic control systems, Explorative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency are not significant ($p > 0.05$). This means compositional invariance is established, and partial measurement invariance is achieved for all constructs, which permits the comparison of standardized path coefficients between the two nature financing subgroups using multigroup analysis.

Full measurement invariance is not verified for Step 3a (mean). The mean value of the original difference of the seven measurement models falls inside the 2.5% and 97.5% confidence interval and, therefore, the permutation p -values are not significant ($p > 0.05$). However, the mean value of the original difference of the Organization's creativity dependency falls outside the confidence interval and the permutation p -value is significant ($p < 0.05$).

Table 53 Assessing measurement invariance for the public financing subgroup versus own re-sources subgroup

Step 2					
	Original correlation	Correlation permutation mean	5.0%	Permutation <i>p</i> value	
Belief control systems	0.948	0.906	0.770	0.674	
Boundary control systems	0.975	0.955	0.865	0.597	
Diagnostic control systems	1.000	1.000	1.000	0.125	
Exploitative innovation_strategy	0.993	0.998	0.995	0.028	
Explorative innovation_strategy	1.000	0.999	0.998	0.867	
Idea realization	0.999	1.000	0.999	0.033	
Interactive control systems	0.921	0.950	0.887	0.168	
Organization's creativity_dependency	0.995	0.998	0.995	0.057	

Step 3a (means)					
	Original difference	Permutation mean	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	-0.116	-0.000	-0.236	0.222	0.326
Boundary control systems	-0.094	-0.004	-0.237	0.219	0.425
Diagnostic control systems	0.027	-0.001	-0.227	0.234	0.805
Exploitative innovation_strategy	0.111	-0.004	-0.225	0.220	0.309
Explorative innovation_strategy	0.183	-0.006	-0.225	0.209	0.105
Idea realization	0.022	-0.002	-0.223	0.229	0.842
Interactive control systems	-0.142	-0.002	-0.246	0.223	0.225
Organization's creativity_dependency	-0.020	-0.005	-0.229	0.229	0.843

Step 3b (variances)					
	Original difference	Permutation mean	2.5%	97.5%	Permutation <i>p</i> value
Belief control systems	0.305	0.003	-0.308	0.311	0.053
Boundary control systems	0.180	0.007	-0.264	0.287	0.220
Diagnostic control systems	0.204	0.002	-0.300	0.314	0.191
Exploitative innovation_strategy	-0.190	0.007	-0.344	0.356	0.336
Explorative innovation_strategy	-0.069	0.003	-0.324	0.346	0.678
Idea realization	0.053	0.010	-0.356	0.399	0.793
Interactive control systems	0.356	0.002	-0.319	0.319	0.033
Organization's creativity_dependency	0.177	0.016	-0.320	0.343	0.290

Additionally, the measurement invariance is verified for Step 3b (variance), except for the Interactive control systems construct and Organization's creativity dependency. Therefore, full measurement invariance is not achieved. In conclusion, the outputs of MICOM show that partial measurement invariance was observed for the public financing versus own resources

subgroups. Thus, the data of the two groups can be combined, which permits comparing moderating effect between the two financing nature subgroups using the PLS-MGA test (a one-tailed) (Hair et al., 2022; Henseler et al., 2009; Ringle et al., 2011).

Table 54 show that the outputs of this test reveal that there were no significant differences between public financing and own resources subgroups for all paths in the regression model, except for the Diagnostic control systems -> Organization's creativity dependency relationship. These results suggest that the model tends not to be affected by the moderating effect of these two legal natures of organization.

Table 54 PLS-MGA test in the financing nature multigroup analysis

Relationships	Difference (Public financing - Own resources)	
	Paths Coefficients (PLS-MGA)	p - Value (1-tailed)
Belief control systems -> Exploitative innovation strategy	0.270	0.160
Belief control systems -> Explorative innovation strategy	0.300	0.144
Belief control systems -> Idea realization	-0.038	0.611
Belief control systems -> Organization's creativity dependency	-0.195	0.776
Boundary control systems -> Exploitative innovation strategy	0.179	0.202
Boundary control systems -> Explorative innovation strategy	-0.114	0.646
Boundary control systems -> Idea realization	-0.020	0.567
Boundary control systems -> Organization's creativity dependency	-0.108	0.712
Diagnostic control systems -> Exploitative innovation strategy	-0.327	0.902
Diagnostic control systems -> Explorative innovation strategy	-0.223	0.786
Diagnostic control systems -> Idea realization	0.122	0.243
Diagnostic control systems -> Organization's creativity dependency	0.583	0.008*
Idea realization -> Exploitative innovation_strategy	-0.213	0.715
Idea realization -> Explorative innovation_strategy	-0.337	0.871
Interactive control systems -> Exploitative innovation strategy	0.223	0.207
Interactive control systems -> Explorative innovation strategy	0.305	0.111
Interactive control systems -> Idea realization	-0.130	0.760
Interactive control systems -> Organization's creativity_dependency	-0.454	0.974
Organization's creativity_dependency -> Exploitative innovation_strategy	0.036	0.474
Organization's creativity_dependency -> Explorative innovation_strategy	0.202	0.214
Organization's creativity_dependency -> Idea realization	-0.032	0.609

(*) Significant at the 0.05 level test (1-tailed)

Then, we checked whether the model can be implemented in the two subgroups by analysing the out-of-sample predictive powers (Q^2_{predict}) for the four dependent variables (see table 55).

Table 55 Out-of-sample predictive power for the dependent variables

Endogenous latent variables	Company			Non-profit Association		
	Q^2_{predict}	RMSE	MAE	Q^2_{predict}	RMSE	MAE
Exploitative innovation strategy	0.236	0.885	0.698	0.361	0.817	0.597
Explorative innovation strategy	0.296	0.847	0.660	0.192	0.918	0.707
Idea realization	0.308	0.842	0.644	0.181	0.928	0.686
Organization's creativity dependency	0.126	0.945	0.723	0.148	0.939	0.747

All the variables have positive Q^2_{predict} values. However, as recommended by Danks and Ray (2018), we compared the RMSE (or MAE) values with the naïve LM benchmark. Considering the RMSE as the default metric for interpreting the prediction error of the latent variable indicators, we verified that all the indicators in the PLS-SEM analysis produce smaller prediction errors compared to the naïve LM benchmark (see Panels A and B of table 56).

Table 56 PLSpredict results report (PLS-SEM versus LM) for the financing nature group

Panel A

Dependent Construct's Indicators	Company				
	Q^2_{predict}	RMSE	MAE	<i>LM_RMSE</i>	<i>LM_MAE</i>
Exploitative_1	0.250	0.931	0.706	0.952	0.718
Exploitative_2	0.129	1.111	0.871	1.163	0.900
Exploitative_3	0.164	1.028	0.831	1.078	0.878
Exploitative_4	0.036	1.457	1.209	1.469	1.193
Explorative_1	0.113	1.268	1.027	1.320	1.070
Explorative_2	0.276	1.066	0.871	1.084	0.875
Explorative_3	0.245	1.058	0.866	1.111	0.902
Explorative_4	0.177	1.154	0.926	1.208	0.950
Idea_1	0.097	1.110	0.868	1.138	0.882
Idea_2	0.244	1.107	0.883	1.130	0.889
Idea_3	0.258	1.062	0.851	1.067	0.863
Idea_4	0.326	0.953	0.751	0.970	0.757
Creativity_1	0.115	1.164	0.905	1.194	0.922
Creativity_2	0.088	1.735	1.389	1.789	1.406
Creativity_3	0.084	1.186	0.940	1.196	0.919
Creativity_4	-0.027	1.978	1.595	2.068	1.690
Creativity_5	0.142	1.235	0.992	1.273	1.008

Panel B

Dependent Construct's Indicators	Non-profit Association				
	Q^2_{predict}	RMSE	MAE	LM_RMS_E	LM_MAE
Exploitative_1	0.368	0.904	0.667	1.004	0.745
Exploitative_2	0.202	1.101	0.853	1.213	0.933
Exploitative_3	0.272	1.025	0.760	1.166	0.879
Exploitative_4	0.188	1.230	0.973	1.332	0.999
Explorative_1	0.071	1.360	1.047	1.519	1.174
Explorative_2	0.176	1.197	0.976	1.274	1.028
Explorative_3	0.155	1.184	0.912	1.251	0.950
Explorative_4	0.137	1.198	0.930	1.324	1.032
Idea_1	0.153	1.063	0.815	1.147	0.884
Idea_2	0.146	1.065	0.836	1.179	0.928
Idea_3	0.066	1.206	0.947	1.370	1.074
Idea_4	0.184	0.965	0.723	1.047	0.794
Creativity_1	0.120	1.049	0.833	1.119	0.914
Creativity_2	0.105	1.590	1.282	1.638	1.321
Creativity_3	0.102	1.118	0.889	1.220	0.983
Creativity_4	0.041	1.957	1.672	2.179	1.831
Creativity_5	0.116	1.158	0.959	1.279	1.045

As a result, the model has high predictive power (Hair et al., 2022). This means the regression model can be used to predict the effects of the exogenous latent variables Belief control system, Boundary control systems, Interactive control systems and Diagnostic control systems on the endogenous and target latent variables Exploitative innovation strategy, Explorative innovation strategy, Idea realization and Organization's creativity dependency in the cultural and creative organizations.

Lastly, we extended our analysis by introducing the importance-performance map analysis (IPMA), which identifies the predecessors that have a relatively high relevance for the target constructs (Hair et al., 2022; Ring & Sarstedt, 2016).

The outputs of the IPMA show that the performance of all the predecessor variables is below 50 %, except for Idea realization at the public financing subgroup (in panels A and B of table 57, with 59,40% and 52,50%, respectively); for Interactive control systems (65,40%) and Organization's creativity dependency (52,20%) at the public financing subgroup and for Organization's creativity dependency (51%) at the own resources subgroup (in the panel C); and

Interactive control systems (62,10%) at the public financing subgroup (in the panel D). Therefore, there is ample room to improve the performance of all these constructs.

Furthermore, for both the public financing and own resources subgroups (in the panels A and B), Interactive control systems and Idea realization play a more important role in enhancing Explorative and Exploitative innovation strategies. Additionally, for the public financing subgroup (in the panel A), Boundary control systems ($\beta = 0.239$), Diagnostic control systems ($\beta = 0.215$) also contribute moderately to a better performance of Explorative innovation strategies.

In panel B, for the public financing subgroup, we highlight the importance of Diagnostic control systems ($\beta = 0.343$) in improving the performance of the Exploitative innovation strategy construct, while for the own resources subgroup we emphasise the more expressive contribution of boundary control systems to that performance.

Table 57 Importance-performance map analysis for financing nature group

Panel A

Predecessor constructs of Explorative Innovation strategy	Complete data set	Public Financing	Own Resources
Belief control systems	0.012	-0.136	0.035
Boundary control systems	0.112	0.239	0.106
Diagnostic control systems	0.190	0.215	0.179
Idea realization	0.465	0.594	0.443
Interactive control systems	0.308	0.281	0.324
Organization's creativity dependency	0.170	0.178	0.178

Panel B

Predecessor constructs of Exploitative Innovation strategy	Complete data set	Public Financing	Own Resources
Belief control systems	-0.076	-0.215	-0.038
Boundary control systems	0.204	0.090	0.223
Diagnostic control systems	0.222	0.343	0.175
Idea realization	0.428	0.525	0.428
Interactive control systems	0.265	0.312	0.286
Organization's creativity dependency	0.085	0.162	0.077

Panel C

Predecessor constructs of Idea realization	Complete data set	Public Financing	Own Resources
Belief control systems	0.059	0.177	0.042
Boundary control systems	0.014	0.071	-0.001
Diagnostic control systems	0.159	-0.146	0.247
Interactive control systems	0.382	0.654	0.296
Organization's creativity dependency	0.516	0.522	0.510

Panel D

Predecessor constructs of Organization's creativity dependency	Complete data set	Public Financing	Own Resources
Belief control systems	-0.080	0.057	-0.119
Boundary control systems	0.036	0.125	0.032
Diagnostic control systems	0.121	-0.256	0.247
Interactive control systems	0.336	0.621	0.228

Looking at panel C, as in the previous multigroup analysis, we observe that for public financing and own resources subgroups, Organization's creativity dependency and Interactive control systems express an important role in improving Idea Realization when compared to the remaining predecessor variables. For own resources subgroup, we highlight the moderate role that the Diagnostic control systems ($\beta = 0.247$) play in improving the performance of Idea Realization.

Regarding the Organization's creativity dependency target, for public financing and own resources subgroups we should highlight the important weight of Interactive control systems ($\beta = 0.621$ and $\beta = 0.228$, respectively) in improving the performance of that target construct.

4.2.3.4.5 *Moderating Effect of the Number of Employees*

The moderation effect of the number of employees on the regression model was also analysed. The responses found in this segment illustrate a very asymmetric distribution between the several subgroups of employees. The employee range of most participants varies from 0 to

25, with a $n = 299$. The other subgroups had a very small number of respondents, so their path coefficients in the regression model could not be compared with that subgroup. Therefore, we did not achieve the PLS-MGA test.

We focused our attention on the five latent variables of the model, which are reflective variables. The analysis for validity and reliability was conducted with Consistent PLS-SEM algorithm and Consistent PLS-SEM bootstrapping procedures.

The results show that all indicators of the five measurement models for the complete data set and for the 0 to 25 employees subgroup achieve convergent validity for loading (loadings > 0.70 , $p < 0.05$), except the Creative 4, which had loading below 0.40 in the complete data set and 0 - 25 employees subgroup, as well as the Exploitative 4 and Explorative 1 indicators, even so, with loads greater than 0.50 in all sets. As already mentioned, we decided to keep Creativity_4 in the model.

Moreover, there are significant effects of Diagnostic control systems on Exploitative innovation strategy ($\beta = 0.333$, $p < 0.01$; $\beta = 0.335$, $p < 0.01$); Diagnostic control systems on Explorative innovation strategy ($\beta = 0.279$, $p < 0.01$; $\beta = 0.244$, $p < 0.01$); Diagnostic control systems on Idea realization ($\beta = 0.319$, $p < 0.01$; $\beta = 0.342$, $p < 0.01$); Diagnostic control systems on Organization's creativity dependency ($\beta = 0.391$, $p < 0.01$; $\beta = 0.386$, $p < 0.01$); Idea realization on Exploitative innovation strategy ($\beta = 0.582$, $p < 0.01$; $\beta = 0.619$, $p < 0.01$); Idea realization on Explorative innovation strategy ($\beta = 0.632$, $p < 0.01$; $\beta = 0.667$, $p < 0.01$); Organization's creativity dependency on Exploitative innovation strategy ($\beta = -0.218$, $p < 0.01$; $\beta = -0.258$, $p < 0.01$); and Organization's creativity dependency on Idea realization ($\beta = 0.595$, $p < 0.01$; $\beta = 0.600$, $p < 0.01$) for complete data set and 0 to 25 employees subgroup, respectively (see table 58).

Then, we analyzed the constructs internal consistency reliability and convergent validity. Each of the measurement constructs for the two sets analyzed had a Cronbach's alpha and composite reliability (ρ_a and ρ_c) greater than 0.70, indicating acceptable composite reliability. However, only the latent variable Diagnostic control systems showed values higher than the threshold of 0.90 in all sets. However, we decided to keep all the indicators of the construct.

Table 58 Analyzing the moderating effects of the number of employees group

Relationships	Complete data set		0 -25 Employees	
	Path Coefficients	P Values	Path Coefficients	P Values
Diagnostic control systems -> Exploitative innovation strategy	0.333	0.000*	0.335	0.000*
Diagnostic control systems -> Explorative innovation strategy	0.279	0.000*	0.244	0.001*
Diagnostic control systems -> Idea realization	0.319	0.000*	0.342	0.000*
Diagnostic control systems -> Organization's creativity dependency	0.391	0.000*	0.386	0.000*
Idea realization -> Exploitative innovation strategy	0.582	0.000*	0.619	0.000*
Idea realization -> Explorative innovation strategy	0.632	0.000*	0.667	0.000*
Organization's creativity_dependency -> Exploitative innovation strategy	-0.218	0.006*	-0.258	0.006*
Organization's creativity dependency -> Explorative innovation strategy	-0.154	0.055**	-0.124	0.199
Organization's creativity dependency -> Idea realization	0.595	0.000*	0.600	0.000*

*** Significance at the 0.10 level (two-tailed)

** Significance at the 0.05 level (two-tailed)

* Significance at the 0.01 level (two-tailed)

We assessed the convergent validity of the measurement models by examining each construct's average variance extracted (AVE). Applying the same logic as the one used with the indicator reliability, all values found are higher than 0.50, which tells us that, on average, for the three sets analyzed, the constructs explain more than half of the variance of its indicators. The output also showed that the true five correlations for the complete data set and 0 to 25 employees subgroup are lower than 0.90. These procedures indicate acceptable convergent validity (Chin, 1998; Hulland, 1999).

We also assessed discriminant validity (Fornell & Larcker, 1981) by comparing the square roots of each construct's AVE value with the latent variable correlations. These results indicate that, for all latent variables and for the two sets analyzed, each construct shares more variance with its own indicators than with other constructs (Fornell & Larcker, 1981). All the square roots of AVE of all latent constructs were greater than the correlation coefficients, suggesting acceptable discriminant validity.

Since this criterion is insufficiently consistent in detecting serious violations of discriminant validity (Henseler et al. 2015), we used the cross-loading criterion which showed that not always most indicator loadings were higher than their respective cross loadings. This finding is identified in the complete data set and 0 to 25 employees' subgroup regarding the Creativity_4 and Exploitative_4 indicators.

After establishing construct validity and reliability, we assessed whether multicollinearity exists among indicators of the model constructs (see table 59).

Table 59 Collinearity statistics (VIF) for data sets

Indicators of the model constructs	Complete data set	0 to 25 Employees
Creativity_1	2.797	2.828
Creativity_2	2.803	3.162
Creativity_3	2.977	2.858
Creativity_4	1.326	1.261
Creativity_5	3.566	3.662
Diagnostic_1	3.642	3.711
Diagnostic_2	5.511	5.834
Diagnostic_3	4.853	4.925
Diagnostic_4	7.027	6.803
Diagnostic_5	5.741	5.841
Exploitative_1	2.403	2.353
Exploitative_2	2.390	2.456
Exploitative_3	3.321	3.375
Exploitative_4	1.275	1.223
Explorative_1	2.128	2.024
Explorative_2	2.418	2.385
Explorative_3	2.104	2.106
Explorative_4	2.153	2.057
Idea_1	2.079	1.953
Idea_2	3.111	3.036
Idea_3	3.455	3.600
Idea_4	2.972	3.010

The outputs by data group show that the indicators of the Diagnostic control systems variable violate the benchmark of collinearity statistics ($VIF < 5.0$) (Hair et al., 2022). This happens with the Diagnostic_2, Diagnostic_4 and Diagnostic_5 indicators for the two sets. The main

alternative recommended by the literature would consider removing the indicators in reference (Piaw, 2023; Hair et al., 2022). It requires that the remaining indicators still sufficiently capture the construct's content from a theoretical perspective, something not occur in case of Diagnostic control systems construct, considering that most indicators in various groups offer values above the 5.0 threshold.

Next, we assessed the model fit of the number of employees model under analysis (see table 60). Although the estimated models for complete data set and 0 to 25 subgroups differ from the saturated models, they achieve the model fit benchmarks [SRMR < 0.08; d_ULS > 0.05; d_G > 0.05; NFI > 0.90 (> 0.85 for small sample size); and RMS_theta > 0.12].

Table 60 Assessment of the fit of the number of employees model

	Complete data set		0 to 25 Employees	
	Saturated model	Estimated model	Saturated model	Estimated model
SRMR	0.041	0.066	0.043	0.065
d_ULS	0.423	1.088	0.458	1.057
d_G	0.384	0.446	0.403	0.468
Chi-square	696.915	784.466	607.098	684.244
NFI	0.895	0.882	0.892	0.878

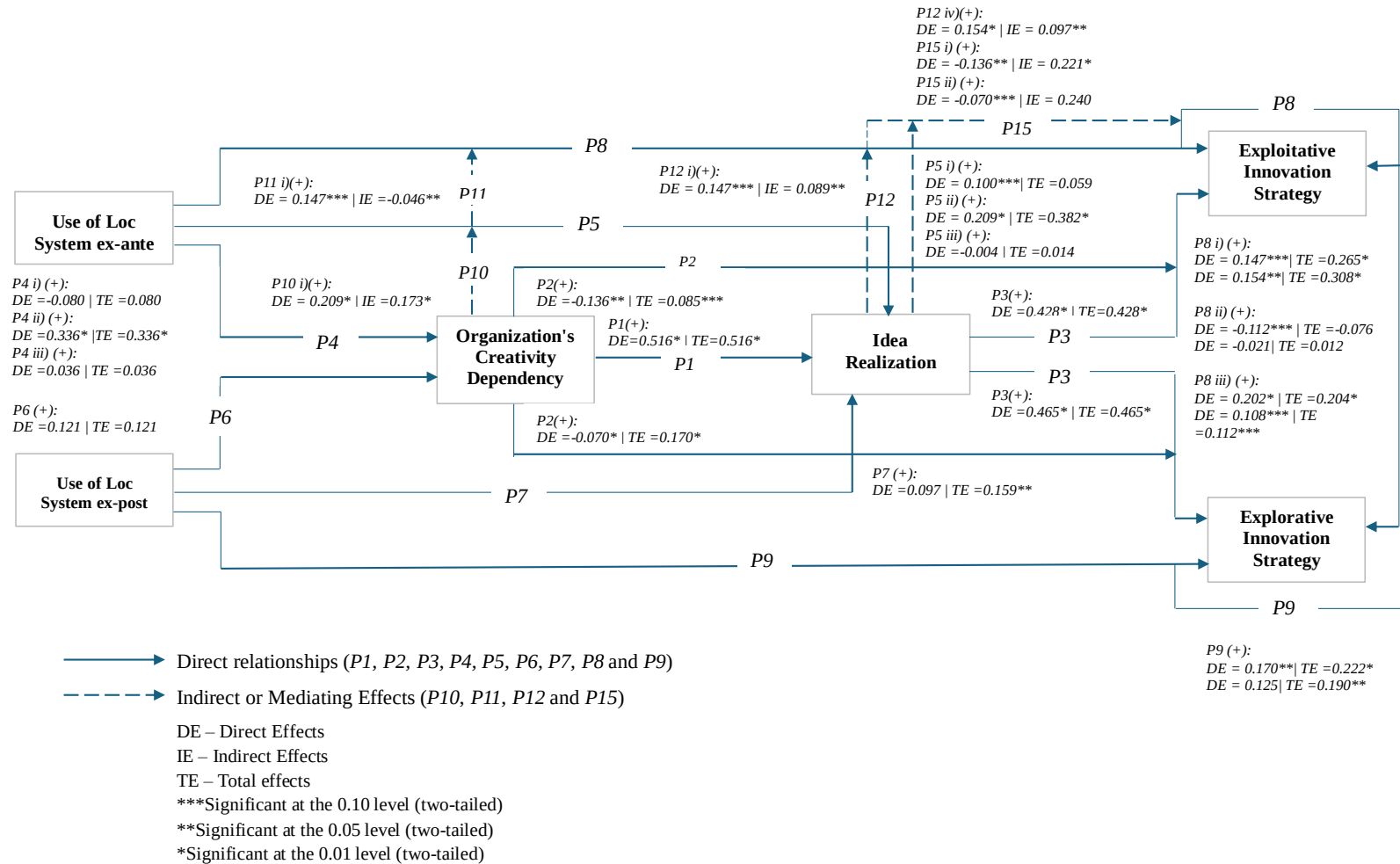
5. General Discussion of Results

The findings of this thesis contribute to the growing literature that investigates the role of management control systems (MCS) in creativity and innovation environments in relation to some study dimensions. We examined the use of MCS across different modes of innovation, and its effects when this relationship is mediated by organization's creativity dependency and Idea realization. Furthermore, we extend these findings to reinforce that creativity and implementation of ideas are two autonomous activities within the innovation process, and they have positive downstream consequences. The present study also advances the knowledge of the nature of these relationships by suggesting that the link between MCS and creativity and innovation can be complementarily understood by considering the simultaneous influence of both personality traits and context.

Let's make an initial reference to the base model of this study. We carried out firstly a confirmatory factor analysis for the proposed latent constructs (in table 18), and, according to the results, model 1 provides a significantly better fit than any of the alternatives, particularly in relation to the levers of control, when combined in different ways. When analyzing the Pearson Correlation, the four levers of control are significantly positively correlated (with correlation sizes between moderate and high). Although each lever of control has a varying level of importance, these levers move together and follow a systematic positive pattern (see table 5).

First, our findings indicate that among the three levers of ex-ante control – belief control, interactive control, and boundary control systems – only the interactive control system has a statistically significant positive association with the organization's creativity dependency ($\beta = 0.336, p < 0.05$). In the same constellation of levers of control, we observed that the relationship between both belief control ($\beta = 0.100, p < 0.10$) and interactive control ($\beta = 0.209, p < 0.05$) systems, and idea realization is positive and significant. Figure 19 exhibits the results of these and all other relationships between the different variables in the model.

Figure 19 Summary results of the research model



From the multigroup analysis carried out, we understood the significant weight that the interactive control systems have in improving the behaviour of the organization's creativity dependency variable. This occurs above all when the organization is led by a manager (47%), and less so when the leadership is exercised by someone with both management and cultural and/or artistic direction functions (24.10%). This is also true if the organization produces performing arts (32.10%) and less if it develops interdisciplinary activities (9%), or if the organization is mainly dependent on public funding (62.10%) and less if it is mainly financed by its own resources (22.80%). These values are moderately improved if the focus is placed on idea realization.

Thus, we found that the use of the interactive control system is promising in environments of intense creativity, which is consistent with the most organic form of control - stimulating the generation of new ideas and enhancing the expansion of opportunities and learning (Henri, 2006; Simons, 1995a; Ylinen & Gullkvist, 2014).

Much of the literature already produced is consensual in the sense that control tends to not facilitate creativity (Adler & Chen's, 2011; Ittner et al., 1997; Kachelmeier et al., 2008; Williamson, 2010). Some studies in the context of organizational and sociological theories find that the implementation of strict controls subjugates, or at least endanger, artistic and cultural values, generating resistance within organizations (Christiansen & Skaerbaek, 1997; Oakes & Oakes, 2016; Trevisan & Mouritsen, 2023).

The inconsistency of the result in relation to what is expected when the belief control system is used, can be supported by the perspective that, when the use of the belief control system is excessively emphasized in organizations that pursue an exploitative innovation strategy, it may lead to unintended effects. In these cases, there is a greater incentive to search for new opportunities that move away from the existing routines and skills (Bedford, 2015).

We also find that although enabling the use of boundary systems is positively related to the organization's creativity dependency, this relationship is not statistically significant ($\beta = 0.036, p > 0.10$). Enabling the use of boundary systems also does not occur when associated with idea realization ($\beta = -0.004, p > 0.10$). We converge on the idea that if a control system is implemented in an enabling way it might not be perceived as rigid and punishing, or if it is

used as a motivation tool it might not contain actions that diverge from this real intention (Akerlof & Kranton, 2008; Falk & Kosfeld, 2006; Koestner et al., 1984; Prendergast, 2008; Shalley et al., 2004; Tessier & Otley, 2012).

Contrary to our expectations, even though the ex-post lever of control – diagnostic control system – has a positive association with organization's creativity dependency ($\beta = 0.121$, $p > 0.10$), this is not statistically significant. In contrast, when we move out of the spectrum of creativity and into innovation, enabling the use of the diagnostic control system highlights a positive and significant association with idea realization ($\beta = 0.159$, $p < 0.05$). We believe that the result achieved tends to be explained by the perspective that enabling the use of the diagnostic control system can offer organizational members flexibility and adaptability in how they use the system and improve it (Adler, 2006; Adler, 2011).

We believe that the reduced explanatory power of the organization's creativity dependency construct in our study model (see table 13) might possibly be explained from the perspective that the innovative nature of an organization, specifically in the cultural and creative sector, does not necessarily require the existence of a creative work environment (Amabile et al., 1996), since it relies largely on employees' intrinsic motivation and self-control (e.g., Amabile, 1996; Cardinal, 2001; Grabner & Speckbacher, 2016; Hirst et al., 2011; Oldham & Cummings, 1996; Shalley et al., 2004). Wohl (2021:7) defines an “artist's creative vision as a bundle of formal and conceptual consistencies that they perceive as core and enduring in their bodies of work”. In this sense, collaborative circles ensured by external networks are seen as the fundamental driving force of innovations, where each artist produces their own work in a frequent exchange of ideas with other artists. These interactions not only shape the way in which creative products are generated but also legitimize this creative product as original to peers (Guetzkow et al., 2004; Wohl, 2021).

Our findings can also be interpreted in light of previous studies, which identify the intrinsic motivation and lack of task-specific cause/effect knowledge as the factors that help to understand the additional demand for control in creativity-dependent organizations, and the reluctance of their managers to use certain controls in such organizations (Grabner & Speckbacher, 2016). However, our findings illustrate that the use of organic control prevails in organizations that feed from actively creative environments. When we discuss our results regarding idea

realization, and therefore, innovation, they tend to support the postulate that an interactive use of MCS is reinforced with the moderate use of mechanistic control structures (especially belief control systems and diagnostic control systems), which fosters innovation (e.g., Speckbacher, 2017; Speklé et al., 2017).

Second, we assessed the role of environments dependent on creativity and innovation in this type of organization and suggested that their performance influences a particular strategy of innovation pursued. Research has predominantly focused on creativity and innovation as exclusively dependent variables (Khessina et al., 2018). We conceptualized the organization's creativity dependency and idea realization as mediators constructs and, in so doing, we suggest that both produce different effects on the mode of innovation pursued, which are equally important for the research in this field.

Creativity is considered in this study as a predictor of idea realization in convergence with literature (e.g., Axtell et al., 2000; Baer, 2012; Clegg et al., 2002; Janssen, 2001; Scott & Bruce, 1994), but they constitute distinct activities within the innovation process (e.g., Baer, 2012; Perry-Smith & Mannucci, 2017). The results of the structural model show that the total effects indicate a positive and significant relationship between organization's creativity dependency and idea realization ($\beta = 0.516, p < 0.05$). However, both the relationships established between organization's creativity dependency and exploitative innovation strategy ($\beta = 0.085, p < 0.10$), and between organization's creativity dependency and explorative innovation strategy ($\beta = 0.170, p < 0.05$) are fragile. In contrast, idea realization positively and significantly influences the exploitative innovation strategy ($\beta = 0.428, p < 0.05$) and the explorative innovation strategy ($\beta = 0.465, p < 0.05$). The omission of the organization's creativity dependency as a predecessor construct of idea realization leads to a substantial decline in the idea realization endogenous construct R^2 value (0.320). Consequently, the f^2 effect size is large. When idea realization is omitted, the explorative innovation strategy R^2 value drops to 0.324, with a small effect on this endogenous latent variable (see table 13), which indicates a medium effect on this endogenous latent variable. Our results tend to underline the distinct roles assumed by these constructs – the organization's creativity dependency and idea realization - suggesting that the promotion of an environment of mere generation of creative ideas should not presuppose their implementation or realization, corroborating the sense of the assertions and results already published (e.g. Baer, 2012; Perry-Smith & Mannucci, 2017).

To analyze the mediation roles of the variables organization's creativity dependency and idea realization, we selected the findings from the various relationships between latent variables that reveal the significance of the indirect effects. In the first case, interactive control systems exert a pronounced direct effect (0.209) and a significant effect ($p < 0.05$) on idea realization. The indirect effect and the direct effect are both significant and point in the same direction, so we concluded that the Organization's creativity dependency variable complementary mediates the relationship between the use of interactive control systems and idea realization (see table 16).

Then, we verified the mediation assumed by the idea realization variable (see table 17). The relationship between interactive control systems variable and exploitative innovation strategy variable is statistically nonsignificant. Although it presents a slightly pronounced result (0.089), idea realization variable fully mediates the positive relationship between the use of interactive control systems and exploitative innovation strategy, with $p < 0.05$. In contrast, the direct and indirect effects from the interactive control systems on explorative innovation strategy are both positive, so the sign of their product is also positively significant ($\beta = 0.0149$; $p < 0.05$). Thus, idea realization is referred to as a complementary mediation of the use of Interactive control systems and the explorative innovation strategy.

These results converge with studies already presented which show that in contexts of exploratory innovations, with high levels of uncertainty and strong emphasis on new knowledge creation, organic controls operate better indirectly through innovation (e.g., Ylinen & Gullkvist, 2014). This relationship is achieved through the stimulation of ideas, combined with flexibility and interaction between team members, which is seen as fundamental in exploratory innovations, rather than in environments where the focus is on project performance (Ylinen & Gullkvist, 2014).

Moreover, the direct relationship between the organization's creativity dependency and the exploitative innovation strategy has a negative path coefficient, not very robust (-0.136) but statistically significant. Idea realization assumes a competitive mediation (they point in opposite directions, but both are significant at the $p < 0.05$) (Hair et al., 2022; MacKinnon et al., 2000). This allows us to recognize that Idea realization mediates the positive relationship between organization's creativity dependency and exploitative innovation strategy. One the

other hand, the mediation effect of idea realization in the relationship between organization's creativity dependency and explorative innovation strategy is also partial or competitive in this relationship, considering that the indirect and direct effects are significant ($p < 0.05$), thus providing support to the acceptance that idea realization mediates the positive relationship between organization's creativity dependency and explorative innovation strategy. Our results are consensual with the literature that refers that the environment in a work context and the climate for creativity, particularly contribute to the organizational performance (Kuenzi & Schminke, 2009; Mumford & Hemlin, 2017).

Third, the current study extends the analysis of findings to exploitation and exploration separately, as they are two essentially different learning processes required for innovation, which require distinct organizational structures, contexts and strategies (Bedford, 2015; Daowadueng et al., 2023; Kane & Alavi, 2007; March, 1991; Raisch & Birkinshaw, 2008). Our results suggest that the effectiveness of the interactive control structures is dependent on the specific orientation of the innovation pursued by the organization. Specifically, the emphasis on the use of interactive control systems shows a more significant positive association with an explorative innovation strategy ($\beta = 0.308$, $p < 0.05$) than with an exploitative innovation strategy ($\beta = 0.265$, $p < 0.10$). Our results support this understanding for the performing arts (music, dance, theatre and other live performances), although not for interdisciplinary activities (handicrafts, and others of transversal nature). In fact, for the performing arts, which are more organic in nature, interactive control systems are a predecessor that is more relevant to the performance of an exploratory innovation strategy than an exploitative innovation strategy. This is consistent with arguments that the emphasis on the use of interactive control is associated with a better performance for organizations pursuing explorative innovation strategies, and therefore operating in environments of greater uncertainty, and not or to a much lesser extent for organizations involved in exploitative innovation processes (Ahrens & Chapman, 2004; Bedford, 2015; Chapman, 1997). The results further support the argument that for companies that follow an exploitative innovation mode, they use the information already available to support management and control decisions, disinvesting in more complex and diversified active roles of control and accounting (Daowadueng et al., 2023).

The results of the remaining levers of control systems ex-ante tend to be explained in terms of the perception that greater or lesser excessive controls may result in negative or positive

returns for organizations that pursue different innovation strategies. Contrary to our expectations, emphasis on the use of Belief control systems does not have a positive association with an exploitative innovation strategy ($\beta = -0.076$, $p > 0.10$) nor is it significant. In addition, the relationship of this lever of control is not significantly related to explorative innovation strategy ($\beta = -0.012$, $p > 0.10$). However, an emphasis on enabling the use of boundary control systems has a positively significant association with an exploitative innovation strategy ($\beta = 0.204$, $p < 0.05$) and a positively significant association with an explorative innovation strategy ($\beta = 0.112$, $p < 0.10$), although with a higher significance level. As mentioned by Bedford (2015), boundary control systems minimize risk exposure, and emphasize depth rather than scope in seeking opportunities, which is consistent with an exploitation environment. In short, our results do not provide the expected complementary effects of belief and boundary control systems. Instead, there is evidence that belief control systems do not have an association with the mode of innovation pursued. As emphasized by Tessier and Otley (2012), belief controls are primarily social. The values that are intrinsic to them, such as integrity, honesty and transparency, can be used as boundaries. Because such values are the foundations of an organization's code of conduct, these values are part of the boundary systems and, therefore, part of organizational boundaries (Simons, 1995a; Tessier & Otley, 2012).

Also, the emphasis on enabling the use of diagnostic control systems has a positively significant association with an exploitative innovation strategy ($\beta = 0.222$, $p < 0.05$) and likewise a positively significant association with an explorative innovation strategy ($\beta = 0.190$, $p < 0.05$).

To summarize our findings and in convergence with other studies (e.g. Bedford, 2015), the use of interactive control systems is found to be more significantly associated with exploratory innovation strategy organizations, while exploitative innovation strategy organizations tend to benefit from highlighting diagnostic and boundary systems.

According to the literature if, on the one hand, and regarding the intensity of use of controls, interactive controls facilitate and promote communication, focus attention and learning (Adler & Chen, 2011; Ferreira & Otley, 2009), and diagnostic controls represent controls that are observed when deviances from established goals are detected, on the other hand, strategic validity controls focus on strategic uncertainty and provide information to managers about the adequacy of their strategy (Tessier & Otley, 2012). In this sense, and from the perspective of

strategic performance controls, rather than just of performance measurement systems, any control could be used interactively or diagnostically (Tessier & Otley, 2012; Tuomela, 2005).

Additionally, the literature is consensual in arguing that the combined use of levers of control generates reinforcing effects that enhance performance benefits significantly (Mundy, 2010; Speklé et al., 2017; Tuomela, 2005; Widener, 2007). Except for the belief control system construct, our findings suggest interdependent relationships between the levers of control, with both acting in a complementary way.

In this area of analysis, we observed that when using multigroup analysis, the results generally indicated an absence of heterogeneity across the different samples obtained from the aggregate data. As a result, the data from each group's subgroups were combined, allowing us to compare the moderating effects between the respective subgroups using the PLS-MGA test (one-tailed). Specifically, we examined the function description group (comparing managers and participants with the roles of manager and artistic director subgroups), the cultural and creative domains group (comparing performing arts and interdisciplinary activities subgroups), the legal nature of organization group (comparing company and non-profit association subgroups), and the financing nature group (comparing public financing and own resources subgroups). These results suggest that the model is generally not influenced by the moderating effects of these subgroups.

This means the regression model can be used to predict the effects of the exogenous latent variables belief control system, boundary control systems, interactive control systems and diagnostic control systems on the endogenous and target latent variables exploitative innovation strategy, explorative innovation strategy, idea realization and organization's creativity dependency in the cultural and creative organizations.

The outputs of the IPMA show that the performance of all the predecessor variables regarding exploitative and explorative innovation strategy was above 50 %, indicating there is ample room to improve the performance of these constructs.

Lastly, we extended the original model by testing the moderating effect of both the openness to experience personality trait and the contextual variables - namely, transformational leadership, organizational encouragement, organizational goal clarity and discretionary slack - on the relationship between the levers of control and both the exploitative innovation strategy and the explorative innovation strategy, focusing our observations on the results of the interaction terms that prove to be significant.

The output shows that there is a significant moderating effect of the openness to experience ($\beta = -0.145, p = 0.024$) on the relationship between boundary control systems and exploitative innovation strategy, with a simple effect of $\beta = 0.254, p < 0.05$, for an average level of openness to experience. This means that the strength of the moderating variable influences the strength of the path between the boundary control systems and exploitative innovation strategy. The difference in the strengths of this causal relationship with the moderator openness to experience ($\beta = 0.213, p < 0.05$) or without it ($\beta = 0.254, p < 0.05$) is weaker ($\beta = -0.041$), yet significant. The results also evidence that the f^2 effect size of the interaction term (i.e., boundary control systems x openness to experience) shows a value of 0.018, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). Thus, the results provide appropriate support to assert that the moderator construct openness to experience exerts a marginally negative and significant effect on the relationship between boundary control systems and the exploitative innovation strategy, which does not allow us to support our proposition 17 i).

However, we found that it promotes improvements in the relationships established between boundary control systems and the innovation strategies pursued, i.e., we confirmed a moderate increase of the relationships between boundary control systems and exploitative innovation strategy and explorative innovation strategy ($\beta = 0.213, p < 0.01$; $\beta = 0.132, p < 0.01$, respectively).

Openness to experience individuals are described as curious, imaginative and creative, artistically sensitive, and responsive to unconventional and nonconformist perspectives (Costa & McCrae, 1992; Choi, 2011, Madrid et al., 2014; McCrae & Costa, 1997; McCrae, 1987). Still, one of the characteristics of this personality trait is that employees are interested in advancing

the learning curve, regardless of the opportunities coming from inside or outside the organization (Choi et al., 2014; Masood et al., 2022). According to Simons (1995a), without explicit boundaries, employees have the possibility to promote significant changes in their routines or get involved in the search for new opportunities and excessive experimentation, increasing the associated risk, operational discontinuity and the unnecessary use of resources. For this author, it is important to have systems of clearly sanctioning boundaries in response to situations in which employees propose to establish challenging performance goals, which are likely to violate pre-existing rules (Simons, 2000).

Transformational leadership has been the object of a notable number of prior studies (e.g., Burns, 1978; Ensley et al., 2006). That suggests that transformational leadership appeals to the ideals and morals of followers, inspiring them to reach their highest levels of achievement and take ownership of the goals of the group (Nguyen et al., 2017; Pearce et al., 2003; Phaneuf et al., 2016). Our outputs show that there is a significant moderating effect of transformational leadership ($\beta = 0.245$, $p = 0.019$) on the relationship between Belief control systems and the exploitative innovation strategy, with a simple effect of $\beta = -0.159$, $p = 0.031$, for an average level of transformational leadership. The f^2 effect size of the interaction term shows a value of 0.032, which tends to be seen as having a large effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). Therefore, our findings provide appropriate support to the conclusion that the effect of the belief control systems construct on the exploitative innovation strategy is marginally determined by the level of transformational leadership in the population of this study.

Through shared organizational values, belief systems promote variance-increasing behaviours, which are vital in exploratory innovation environments (Davila et al. 2009b). Shared values also help to promote exploitative activities, as they resolve conflicting interests and disagreements, facilitating joint action towards specific goals (Jansen et al., 2008). Our results show that transformational leadership will bring benefits mainly for companies pursuing exploitation. In addition, the moderating effect of the construct has a systemic impact on the improvement of other relationships. We confirmed a moderate increase of the relationships between belief, boundary and diagnostic control systems and exploitative innovation strategy ($\beta = -0.159$, $p < 0.05$; $\beta = 0.230$, $p < 0.05$; $\beta = 0.187$, $p < 0.05$, respectively), while also it between boundary and diagnostic control systems and the explorative innovation strategy (β

= 0,111, $p < 0.05$; $\beta = 0,114$, $p < 0.10$). Transformational leadership promotes the innovative potential of management control systems and, in line with recent studies (e.g., Hoai et al., 2022; Le & Le, 2023; Nguyen et al., 2017).

Organizational encouragement is a prominent concept debated in the literature and based on organizational-level factors related to organizational encouragement of divergent thinking – encouraging ideas and encouraging diversity (Amabile et al., 1996). Its focus centers on changing the individual's motivation by applying encouragement skills (Carns & Carns, 2006; Sweeney, 2009; Wong, 2015).

The moderating effect of organizational encouragement ($\beta = 0.215$, $p = 0.001$) is also significant on the relationship between belief control systems and exploitative innovation strategy, with a simple effect of $\beta = -0.129$, $p = 0.034$, for an average level of organizational encouragement. We completed the analysis by the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term shows a value of 0.034, which tends to be seen as having a large effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). These results provide an appropriate support to consider that the moderator construct organizational encouragement exerts a positive and significant effect on the relationship between belief control systems and exploitative innovation strategy.

In this line, the output also shows that there is a significant moderating effect of organizational encouragement ($\beta = 0.138$, $p = 0.034$) on the relationship between belief control systems and explorative innovation strategy, with a simple effect of $\beta = -0.028$, $p > 0.05$ for an average level of organizational encouragement. The f^2 effect size of the interaction term (i.e. belief control systems x organizational encouragement) shows a value of 0.014, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). The results provide appropriate support to affirm that the moderator construct organizational encouragement exerts a positive and significant effect on the relationship between belief control systems and explorative innovation strategy.

Organizational encouragement is particularly pronounced in a context of radical innovation, especially where there are still no new contexts for understanding new ideas within the com-

pany (Reid & de Brentani, 2004; Reid & de Brentani, 2015). Our findings highlight the moderating role of organizational encouragement in enabling the relationship between belief control systems and whatever innovation strategy is pursued. The findings suggest that the moderating effect is a little more pronounced in the relationship between belief control systems and exploitative innovation strategy than in the relationship between belief control systems and explorative innovation strategy. In contrast, in the relationship between other levers of control and innovation, it does not exhibit any significance as a moderating variable.

In this study, we also focus on the role of organizational goal clarity as a potential moderator in the association between belief control systems and exploitative innovation strategy. In line with the goal setting theory, goals are the desired states that employees in any company consciously strive to achieve (Locke & Latham, 2013; van der Hoek et al., 2018). Our results show that the interaction term has a positive effect on the exploitative innovation strategy ($\beta = 0.173$, $p < 0.05$), whereas the simple effect of the relationship between belief control systems on exploitative innovation strategy is -0.113 for an average level of organizational goal clarity. We completed the analysis by the moderator's f^2 effect size. In the Smart PLS algorithm results report, the f^2 effect size of the interaction term shows a value of 0.013 , which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). In this sense, we conclude that the results provide appropriate support to state that the moderator construct organizational goal clarity exerts a significant and positive effect on the relationship between belief control systems and exploitative innovation strategy. These results tend to be consistent with another study which shows that the existence of clear project goals is especially related to performance in exploitative activities (Stetler & Mats Magnusson, 2015).

Finally, we analyzed the moderating effect of discretionary slack on the relationship between levers of control, organization's creativity dependency and idea realization, and exploitative and explorative innovation strategies. The perceived availability of discretionary resources provides more opportunities for creative behaviours within an organizational context (Bourgeois, 1981), promoting untried ideas and approaches with a higher level of risk and uncertainty (Andrews & Smith, 1996; Mishina et al., 2004; Sharfman et. al. 1988)

The results only show that there is a significant moderating effect of discretionary slack ($\beta = -0.149$, $p = 0.030$) on the relationship between idea realization and exploitative innovation

strategy, with a simple effect of $\beta = 0.402$, $p < 0.05$ for an average level of discretionary slack. This means that the strength of the moderating variable does influence the strength of the path between idea realization and exploitative innovation strategy. The difference in the strengths of this causal relationship with the moderator discretionary slack ($\beta = 0.424$, $p < 0.05$) or without it ($\beta = 0.402$, $p < 0.05$) is weaker ($\beta = 0.022$), yet significant. The f^2 effect size of the interaction term shows a value of 0.13, which tends to be seen as having a medium effect. (Aguinis et al., 2005; Hair et al., 2022; Kenny, 2018). Thus, we conclude that the results provide appropriate support to state that the moderator construct discretionary slack exerts a significant and negative effect on the relationship between idea realization and exploitative innovation strategy.

Research on creativity emphasizes that new ideas emerge instantaneously from a process of generation and development that is often unplanned (Andrews & Smith, 1996). The implementation phase of the innovation process can also change from what was planned and requires adaptability in response to the ambiguity of the internal and external environments (Moorman and Miner, 1998). The flexibility of the discretionary slack makes it easily redeployed to alternative uses when new opportunities arise, which links it positively to specific product innovation characteristics, namely, radicalness (Troilo et al., 2014). The results of more recent studies agree that sufficient resource availability has an increasingly negative relationship with exploitation, and an increasingly positive relationship with exploration (Tabesh et al., 2019). On the other hand, when slack resources are used as a moderating effect (e.g., Leyva-de la Hiz et al., 2019), their action is more positive when the organization has lower levels of slack, and less positive when slack levels are higher. Our results suggest consistency with this behaviour as a moderating variable. Lower levels of discretionary slack lead to a stronger relationship between Idea realization and exploitative innovation strategy.

6. Conclusions and Reflections

6.1 Main Conclusions

Our study takes place in the context of contingency-based research (Chenhall, 2003; Hall, 2016), tracing the role of the interactive use of management control systems in organizations, whose competitive advantage relies heavily on the creativity of their core employees and its relationship with the formulation of distinct innovation strategies (exploitative or explorative innovation). According to Chenhall (2003), the research on management control systems recognizes the managers' ability to make strategic choices that allow them to situate their organizations in specific environments. The present study seeks to reduce the ambiguity of research on management control in the context of cultural and creative organizations. Cultural and creative industries, along with the broader creative economy, have become increasingly prominent in the research literature due to their significant role in fostering economic and social development (Woronkowicz, 2021). Organizations in this sector hold a high-level of innovative capacity and enable the creation of an environment that encourages the emergence of creative ideas to produce new products, processes or systems (Ginting et al., 2019).

In this sense, the evidence obtained allows us to answer our research questions, revisiting the results of our propositions and providing a brief indication of the most important findings concerning three questions.

First, through the base research model, we dedicate ourselves to explaining whether management control can positively coexist with creativity and idea implementation. By analyzing the full range of levers, we conclude that in this study the use of interactive control systems is promising in environments of intense creativity, which is consistent with the most organic form of control - stimulating the generation of new ideas and enhancing the expansion of opportunities and learning (Henri, 2006; Simons, 1995a; Ylinen & Gullkvist, 2014). From the multigroup analysis carried out, we understood the significant weight that the interactive control systems have in improving the behaviour of the organization's creativity dependency variable. This occurs above all when the organization is led by a manager (47%), and less so

when the leadership is exercised by someone with both management and cultural and/or artistic direction functions (24.10%). This is also true if the organization produces performing arts (32.10%) and less if it develops interdisciplinary activities (9%), or if the organization is mainly dependent on public funding (62.10%) and less if it is mainly financed by its own resources (22.80%). These values are moderately improved if the focus is placed on the idea realization.

Belief, boundary and diagnostic systems show an independent behaviour in relation to organizational environments with high reliance on employee creativity. The exploratory and cross-sectional natures of this study limit the ability to make claims about the direction of causality in the relationships between the various control levers. However, we conclude that by introducing the importance-performance map analysis (IPMA) by groups, we can suggest that there is a significant margin of improvement in performance of the organization's creativity dependency construct by strengthening the contributions of the use of boundary and diagnostic control systems. In the same range of levers, we observed that there is an association between both the belief control and the interactive control systems and idea realization, since, when we discuss our findings regarding the realization of the idea, and therefore, innovation, they tend to support the argument that the interactive use of MCS is reinforced with the moderated and less coercive use of mechanistic control structures, which fosters innovation (Davila & Dittillo, 2017; Speckbacher, 2017; Speklé et al., 2017). We suggest, for example, the use of diagnostic control in a bidirectional system, by ex-ante incorporation of information on deviations for corrective actions (ex-post), allowing the organization and its employees to have an adequate perception of the importance and usefulness of this lever of control. From the perspective of strategic performance controls, rather than just performance measurement systems, any control could be used interactively or diagnostically (Tessier & Otley, 2012; Tuomela, 2005).

The second research question leads us to study the existence of an association between the levers of control and the followed innovation strategy in a context of high unpredictability, whether of an explorative or exploitative mode. In the context of specialized innovation, the results of this research allow us to conclude that the levers of control coexist in environments of dynamic tension. Interactive controls prevail in organizations that pursue an exploratory

innovation strategy, with lower expressiveness in exploitative innovation structures. In opposition, diagnostic and boundary control systems exhibit a positive association with both modes of innovation, showing a greater association with exploitative innovation strategies, and therefore confirming our propositions. In this way, the results obtained confirm our propositions, except for belief control, which expresses a negative and significant association with the exploitative innovation strategy but exhibits an independent behaviour in exploratory innovation environments.

According to Mundy (2010), achieving a balance between competing uses of management control systems is neither an end goal in itself nor a fixed concept for managers. Their efforts are continually challenged by changing priorities, complex issues, and emerging information. For cultural and creative organizations with exploitative and explorative innovation the results suggest that the levers of control act interdependently and as complementary controls. But they also suggest that their balance can be adapted to the conditions and policies followed by the organization.

We believe we have strengthened the architecture of this model by introducing the organization's creativity dependency and idea realization constructs that are distinct activities within the innovation process, with the former being a predictor of the latter (e.g. Baer, 2012; Perry-Smith & Mannucci, 2017). Our results tend to underline the distinct roles assumed by these mediator constructs - organization's creativity dependence and idea realization - suggesting that the promotion of an environment of mere generation of creative ideas should not presuppose their implementation or realization, corroborating the sense of the assertions and results already published (e.g., Baer, 2012; Perry-Smith & Mannucci, 2017). So, we essentially conclude that an organization's creativity dependency complementary mediates the relationship between the use of interactive control systems and idea realization; idea realization fully mediates the positive relationship between the use of interactive control systems and exploitative innovation strategy; idea realization acts as complementary mediator between the use of Interactive control systems and explorative innovation strategy; idea realization acts as competitive mediator on the positive relationship between an organization's creativity dependency and exploitative innovation strategy; and idea realization fully mediates the positive relationship between an organization's creativity dependency and explorative innovation strategy. These findings corroborate studies already presented which show that especially in contexts

of exploratory innovations, with high levels of uncertainty, strong emphasis on stimulation of ideas, and new knowledge creation, organic controls operate better indirectly through innovation (e.g., Ylinen & Gullkvist, 2014).

The third reason focuses on understanding whether individual and contextual factors facilitate the relationship between control and innovation, since we suggest they raise the explanatory capacity of the organizational characteristics that significantly influence the performances of the constructs under study. We extended the base research model by testing the moderating effect of the openness to experience personality trait and of the contextual variables - namely, transformational leadership, organizational encouragement, organizational goal clarity and discretionary slack - on the relationship between the levers of control, and the exploitative innovation strategy and the explorative innovation strategy, focusing our observations on the results of the interaction terms that prove to be significant.

To summarize, given that only a few propositions were supported, we would like to highlight the main results. The moderating effect of openness to experience on the relationship between boundary control systems and the exploitative innovation strategy is significant, with an average level of openness to experience. Thus, the results provide appropriate support to assert that the moderator construct openness to experience exerts a marginally negative and significant effect on the relationship between boundary control systems and exploitative innovation strategy. However, we confirmed a moderate increase of the relationships between boundary control systems and exploitative innovation strategy and explorative innovation strategy.

The moderating effect of transformational leadership on the relationship between belief control systems and the exploitative innovation strategy is significant, for an average level of transformational leadership. Therefore, our findings provide appropriate support that the effect of Belief control systems construct on exploitative innovation strategy is marginally determined by the level of transformational leadership in the population of this study. This moderating effect has a systemic impact on the improvement of other relationships – between belief, boundary and diagnostic control systems and exploitative innovation strategy and between boundary and diagnostic control systems and the explorative innovation strategy.

The moderating effect of organizational encouragement also is significant on the relationship between belief control systems and exploitative innovation strategy and explorative innovation strategy, for an average level of organizational encouragement, respectively. These results provide appropriate support to consider that the moderator construct organizational encouragement exerts a marginally positive and significant effect on both mentioned relationships. The findings suggest that the moderating effect is a little more pronounced in the relationship between belief control systems and exploitative innovation strategy than in the relationship between belief control systems and explorative innovation strategy.

The moderating effect of organizational goal clarity on the relationship between belief control systems and exploitative innovation strategy is significant, for an average level of organizational goal clarity. We conclude that the results provide appropriate support to state that the moderator construct organizational goal clarity exerts a marginally significant and positive effect on the relationship between belief control systems and exploitative innovation strategy.

The moderating effect of discretionary slack on the relationship between Idea realization and Exploitative innovation strategy is significant, for an average level of discretionary slack. Thus, the results provide appropriate support to state that the moderator construct discretionary slack exerts a significant and negative effect on the relationship between Idea realization and exploitative innovation strategy.

The choice to introduce person-context interactions was based on the argument that individuals with certain personal characteristics are more likely to value and benefit from the rewards and opportunities provided by specific contextual factors, and, consequently, to demonstrate greater creativity when these are combined (Shalley et al., 2004). Analyzing the results of the moderating effects together, we conclude that they have a less expected effect on the relationship established between the use of interactive control systems and the innovation strategy followed. In fact, the magnitude of the intensity of this relationship is reduced, making it independent when faced with an exploitative innovation strategy.

6.2 Theoretical Implications

In this section, we intend to highlight some theoretical implications that arise from this research. The framework presented for this study positions this doctoral thesis in the context of management accounting, enhancing a few more neglected areas of knowledge, namely, creativity and innovation. In this sense, the first contribution is the extension of Simons' (1995) LOC framework, Hambrick and Mason's (1984) study to research on creativity, and different innovation strategies, which conceptualize these relationships with the participation of individual and contextual variables.

The second implication focuses on the contingency context in which this study takes place. In a strategic dimension, the performance control system addresses strategic uncertainties. This system consists of a set of controls that evaluate whether the organization's strategy is effectively aligned with its vision (Tessier & Otley, 2012). Accordingly, the main purpose of this system is "to signal the need to review strategies" (Ferreira & Otley, 2009: 274). Under changing conditions, the proposal to integrate a set of mediating and moderating variables seen as more adequate may offer a more appropriate fit to a control activity support model in view of its innovation strategies.

The third issue emerging from this study is related to the use of management control systems. The literature is consistent about the relationship of interdependence and complementarity verified when using management control systems, whose attributes are also demonstrated in this study by the systemic effect generated by the moderating variables or when also analyzed in multigroup analysis (e.g., Bedford, 2015; Chenhall et al., 2010; Frow et al., 2010; Marginson, 2002; Mundy, 2010; Speklé et al., 2017, Widener, 2007). However, the perception of control seems to be removed when we relate the levers of control to creativity and the implementation of the idea. The implementation stage of the innovation process may also deviate from the original plan, requiring flexibility to adapt itself to the uncertainties of both the internal and external environments (Moorman & Miner, 1998). Our investigation suggests significant evidence to encourage reflection on the degree of intensity in the use of management control systems in environments of dynamic tension, by conferring them supplementarily and adaptability.

6.3 Implications for Practice

We also find some issues emerging from this study, which appear to represent implications for practice. The first is to understand the adaptability of cultural and creative organizations to control management systems. These organizations require a constant combination of artistic and managerial dimensions, in a challenge to overcome the difficulties of monitoring and controlling the non-linear creative processes and their impact on competitive advantage (Hotho & Champion, 2011; Lampel et al., 2000; Landoni et al., 2020; Tschang, 2005). As there is little literature revealing their interest in and knowledge of the management control practiced, this exercise could prove to be a valuable contribution to the knowledge of the sector.

A second implication is that the evidence suggests that creativity and interactive control systems can coexist. The evidence for the other levers of control shows no significance. Some studies in the context of organizational and sociological theories find that the implementation of strict controls subjugates, or at least endangers, artistic and cultural values, generating resistance within organizations (Christiansen & Skaerbaek, 1997; Oakes & Oakes, 2016; Trevisan & Mouritsen, 2023). The inconsistency of the result regarding what is expected when using belief, limit and diagnostic control systems can be supported by the idea that if a control system is not implemented in a facilitating way it can be perceived as rigid and punitive, or if it is not used as a motivational tool it can contain actions that diverge from this real intention (Akerlof & Kranton, 2008; Falk & Kosfeld, 2006; Koestner et al., 1984; Prendergast, 2008; Shalley et al., 2004; Tessier & Otley, 2012). Even so, from the multigroup analysis carried out, we understood the significant weight that each lever of control has in improving organizations whose competitive advantage relies heavily on the creativity of their main employees. It revealed a path of learning and awareness towards adopting levers of control that provide autonomy support (belief control) and structure (boundary and diagnostic controls).

The final contribution for practice regards the potential value of the use of individual and contextual constructs in facilitating the relationships between levers of control and the exploitative and explorative innovation strategies. Even if the possibility of promoting a trade-off between the set of variables presented is considered, we believe that their integration awakens

the organizations to knowledge management processes, privileging the capacity for organizational innovation, transforming knowledge and ideas into better or new products, processes and systems.

6.4 Limitations of the Study

Like any research, this study is not without some limitations. The first limitation is cross-sectional design - we cannot infer causal relationships. Indeed, it is possible that the relationship is bidirectional. The data we obtained only allows us to establish the existence or absence of associations between constructs. As always, we encourage future researchers to explore our propositions through a longitudinal study. This approach could offer insights over time into how the use of control levers can be enhanced and, to that extent, the impact of changes on the innovation strategy as it evolves. Additionally, it may reveal how the moderating effect of individual and contextual variables becomes significant. Additionally, another potential avenue of research would be to investigate these phenomena at multiple levels, such as work groups, teams, or units.

The second limitation concerns the number of interviews conducted in the qualitative study, which ideally should have been higher. The ongoing context of the COVID-19 pandemic in 2021 made it particularly difficult to contact and schedule interviews with additional organizations. Consequently, we chose not to extend this phase of the study for too long. From the set of interviews conducted, we gathered reports on organizational perspectives and practices that shared many aspects in common. However, we believe that future research should aim for a more representative sample to reduce potential bias stemming from differences in organizational structure, size and longevity.

The third limitation arises from the fact that, in the context of the quantitative study, our analysis may be constrained to the perspective of a single key respondent per organization. This option means that the results may have been influenced by non-controlled factors specific to the participants with those roles in the organization, hence the findings may not fairly represent the organizations studied. This introduces the potential risk of common method variance

(CMV). Nevertheless, to assess potential common method bias problems, Podsakoff et al. (2003) recommend we employed Harman's (1976) single-factor test. The test result shows that the first factor accounts for less than 50% of the overall variance explained (Podsakoff & Organ, 1986), i.e., 42.92%, thereby indicating that common method variance presumably does not have a bearing on the results. Future research could address this limitation by conducting multilevel analyses, such as multi-actor case studies or surveys, comparing managers' perspectives with those of subordinates or other stakeholders in evaluating a specific management control (Janka et al., 2020).

A final limitation relates to the contingency perspective on which this exploratory study is based. Although some organizations in the sample may be undergoing strategic changes, the number and core areas of intervention are unknown. New research agendas could investigate how management control systems play a role in transitioning between exploitative and exploratory innovation modes. Additionally, while this study distinguishes between exploration and exploitation based on the strategic priorities an organization places on specific innovation goals, it does not directly account for the different learning processes, patterns and knowledge search, nor the company's resources and capabilities that are conceptually linked to these modes of innovation (Mundy, 2010; Bedford, 2015).

6.5 Potential Areas for Future Research

This study opens several potential avenues for further research. First, future studies could attempt to replicate the research in other countries. Doing so would be crucial to determine if the findings are consistent across different contexts, and if the results are unaffected by country-specific factors.

Second, it will be important for future studies to adopt a multilevel and longitudinal perspective. Including the perspective of project managers or team members would offer greater insight into the factors shaping the design of management control systems, as employees are key players in initiating changes to processes and procedures.

Third, in this vein, conducting longitudinal studies would be crucial for understanding how organizations strike a balance between the controlling and enabling uses of management control systems and creativity over a longer period.

Fourth, it would be highly relevant to understand and explore the interaction between strategy formulation and implementation concerning innovation modes—whether exploitative, explorative, or ambidextrous—while also gathering insights from both senior and middle managers. Future studies might also benefit from incorporating additional perspectives, such as those of top management, to better understand how the recognition of emerging strategies influences innovation strategy formulation (Kopmann et al., 2017).

Lastly, a potential area for future research could explore how formal and informal governance mechanisms mediate the relationship between management control systems and the organization's strategic direction, particularly in relation to innovation.

7. References

- Abernethy, M.A., & Stoelwinder, J.U. (1991). Budget use, task uncertainty, system goal orientation and subunit performance: a test of the fit hypothesis in not-for-profit hospitals. *Accounting, Organizations and Society*, 16, 105-119.
- Abernethy, M. A., & Brownell, P. (1997). Management control systems in research and development organizations: The role of accounting, behaviour and personnel controls. *Accounting, Organizations and Society*, 22(3-4), 233-248.
- Abernethy, M. A., & Brownell, P. (1999). The role of budgets in organizations facing strategic change: an exploratory study. *Accounting, organizations and society*, 24(3), 189-204.
- Adler, P., Goldoftas, B., & Levine, D. (1999). Flexibility versus efficiency? A case study of model changeovers in the Toyota production system. *Organization Science*, 10, 43–68.
- Adler, P. S. (2006). Beyond hacker idiocy: A new community in software development. In C. Heckscher & P. S. Adler (Eds.), *The firm as a collaborative community: Reconstructing trust in the knowledge economy*, 198–259. Oxford University Press.
- Adler, P. S., & Chen, C. X. (2011). Combining creativity and control: Understanding individual motivation in large-scale collaborative creativity. *Accounting, organizations and society*, 36(2), 63-85.
- Ageron, B., Bentahar, O. and Gunasekaran, A. (2020). Digital supply chain: challenges and future directions. In *Supply Chain Forum: An International Journal*, 21(3), 133-138.
- Aguinis, H., Beaty, J. C., Boik, R. J., & Pierce, C. A. (2005). Effect size and power in assessing moderating effects of categorical variables using multiple regression: a 30-year review. *Journal of Applied Psychology*, 90(1), 94-107.
- Ahrholdt, D. C., Gudergan, S. P., & Ringle, C. M. (2019). Enhancing loyalty: When improving consumer satisfaction and delight matters. *Journal of Business Research*, 94, 18-27.
- Ahrens, T., & Chapman, C. S. (2004). Accounting for flexibility and efficiency: A field study of management control systems in a restaurant chain. *Contemporary Accounting Research*, 21(2), 271-301.

- Ahrholdt, D. C., Gudergan, S. P., & Ringle, C. M. (2019). Enhancing loyalty: When improving consumer satisfaction and delight matters. *Journal of Business Research*, 94, 18-27.
- Alharbi, I. B., Jamil, R., Mahmood, N. H. N., & Shaharoun, A. M. (2023). Transformational leadership's impact on organizational innovation: The mediating role of management control system. *Global Business Review*, 24(6), 1418-1433.
- Akerlof, G. A., & Kranton, R. E. (2008). Identity, supervision, and work groups. *American Economic Review*, 98(2), 212-217.
- Ali, S., Wu, W., & Ali, S. (2022). Adaptive marketing capability and product innovations: the role of market ambidexterity and transformational leadership (evidence from Pakistani manufacturing industry). *European Journal of Innovation Management*, 25(4), 1056-1091.
- Alvarez, G., Pilbeam, C. and Wilding, R. (2010), "Nestlé Nespresso AAA sustainable quality program: an investigation into the governance dynamics in a multi-stakeholder supply chain network". *Supply Chain Management: An International Journal*, 15(2), 165-182.
- Amabile, T. M. (1983a). Social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology*, 45(2), 357–376.
- Amabile, T. M. (1983b). *The Social Psychology of Creativity*. Springer-Verlag.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behaviour*, 10(1), 123-167.
- Amabile, T. M. (1996). *Creativity in context: Update to "the social psychology of creativity."* Boulder, CO, Westview Press.
- Amabile, T. M., & Pillemer, J. (2012). Perspectives on the Social Psychology of Creativity. *Journal of Creative Behaviour*, 46(12), 1–25.
- Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management*, 40(5): 1297-1333.
- Andrews, J., & D. C. Smith (1996). In search of the marketing imagination: Factors affecting the creativity of marketing products for mature products. *Journal of Marketing Research*, 33(May), 87-174.

- Andriopoulos, C., & Lewis, M. W. (2009). Exploitation-exploration tensions and organizational ambidexterity: Managing paradoxes of innovation. *Organization science*, 20(4), 696-717.
- Anthony, R. N. (1965). *Planning and Control Systems: A Framework for Analysis*. Division of Research, Harvard Business School.
- Araujo-Cabrera, Y., Suarez-Acosta, M. A., & Aguiar-Quintana, T. (2017). Exploring the influence of CEO extraversion and openness to experience on firm performance: The mediating role of top management team behavioural integration. *Journal of Leadership & Organizational Studies*, 24(2), 201-215.
- Arena, M. J., & Uhl-Bien, M. (2016). Complexity leadership theory: Shifting from human capital to social capital. *People and Strategy*, 39(2), 22. Stew & L. L. Cummings (Eds.), *Research in Organizational Behaviour*, 123-167. JAI.
- Armenakis, A. A., Harris, S. G., & Mossholder, K. W. (1993). Creating readiness for organizational change. *Human relations*, 46(6), 681-703.
- Atuahene-Gima, K. (2005). Resolving the capability–rigidity paradox in new product innovation. *Journal of Marketing*, 69(4), 61-83.
- Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., & Harrington, E. (2000). Shopfloor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, 73(3), 265-285.
- Baer, M., & Oldham, G. R. (2006). The curvilinear relation between experienced creative time pressure and creativity: moderating effects of openness to experience and support for creativity. *Journal of Applied Psychology*, 91(4), 963.
- Baer, M. (2010). The strength-of-weak-ties perspective on creativity: a comprehensive examination and extension. *Journal of Applied Psychology*, 95(3), 592.
- Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, 55(5): 1102-1119.
- Baird, K., Su, S. and Munir, R. (2019). Levers of control, management innovation and organisational performance. *Pacific Accounting Review*, 31(3), 358-375.

- Bakhshi, H., McVittie, E., & Simmie, J. (2008). *Creating Innovation: Do the creative industries support innovation in the wider economy?* (pp. 1-40). Nesta.
- Barnett, H. G. (1953). *Innovation: the basis of cultural change*, McGraw Hill.
- Barros, R. S., & Ferreira, A. (2019). Bridging management control systems and innovation: the evolution of the research and possible research directions. *Qualitative Research in Accounting and Management*, 16(3), 342-372.
- Bartlett, C. A., & Ghoshal, S. (1993). Beyond the M-form: Toward a managerial theory of the firm. *Strategic Management Journal*, 14(S2), 23-46.
- Bass, B. M., Waldman, D. A., Avolio, B. J., & Bebb, M. (1987). Transformational leadership and the falling dominoes effect. *Group & Organization Studies*, 12(1), 73-87.
- Bass, B. M., & Avolio, B. J. (1994). Transformational leadership and organizational culture. *The International Journal of Public Administration*, 17(3-4), 541-554.
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Lawrence Erlbaum Associates.
- Baum, J. R., & Wally, S. (2003). Strategic decision speed and firm performance. *Strategic Management Journal*, 1107-1129.
- Baumann, O., Schmidt, J., & Stieglitz, N. (2019). Effective search in rugged performance landscapes: A review and outlook. *Journal of Management*, 45(1), 285-318.
- Becker, S. W., & Whisler, T. L. (1967). The innovative organization: A selective view of current theory and research. *The Journal of Business*, 40(4), 462-469.
- Becker, J. M., Klein, K., & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long range planning*, 45(5-6), 359-394.
- Becker, J. M., Ringle, C. M., Sarstedt, M., & Völckner, F. (2015). How collinearity affects mixture regression results. *Marketing Letters*, 26, 643-659.
- Bedford, D. S. (2015). Management control systems across different modes of innovation: Implications for firm performance. *Management Accounting Research*, 28, 12-30.

- Benitez, J., Henseler, J., Castillo, A., & Schuberth, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & management*, 57(2), 103168.
- Benner, M. J., & Tushman, M. L. (2002). Process management and technological innovation: A longitudinal study of the photography and paint industries. *Administrative Science Quarterly*, 47(4), 676–706.
- Benner, M. J., & Tushman, M. L. (2003). Exploitation, exploration, and process management: The productivity dilemma revisited. *Academy of Management Review*, 28(2), 238-256.
- Benner, M. J., & Tushman, M. L. (2015). Reflections on the 2013 Decade Award - “Exploitation, exploration, and process management: The productivity dilemma revisited” ten years later. *Academy of management review*, 40(4), 497-514.
- Bhaumik, P. K. (2018). Operations management and innovation. *Global Business Review*, 19(3_suppl), viii–viii.
- Birkinshaw, J., & Gupta, K. (2013). Clarifying the distinctive contribution of ambidexterity to the field of organization studies. *Academy of Management Perspectives*, 27(4), 287-298.
- Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, 29(8), 709-737.
- Bisbe, J., Batista-Foguet, J. M., & Chenhall, R. (2007). Defining management accounting constructs: A methodological note on the risks of conceptual misspecification. *Accounting, Organizations and Society*, 32(7-8), 789-820.
- Bisbe, J., & Malagueño, R. (2009). The choice of interactive control systems under different innovation management modes. *European Accounting Review*, 18(2), 371–405.
- Bourgeois III, L. J. (1981). On the measurement of organizational slack. *Academy of Management Review*, 6(1), 29-39.
- Brislin, R. W. (1976). Comparative research methodology: Cross-cultural studies. *International Journal of Psychology*, 11(3), 215-229.
- Brun, E., Sætre, A. S., & Gjelsvik, M. (2008). Benefits of ambiguity in new product development. *International Journal of Innovation and Technology Management*, 5(03), 303-319.

- Brun, E. & Sætre, A.S. (2009). Managing Ambiguity in New Product Development Projects. *Creativity and Innovation Management*, 18, 24-34.
- Burgelman, R. A. (1991). Intraorganizational ecology of strategy making and organizational adaptation: Theory and field research. *Organization Science*, 2(3), 239-262.
- Burgelman, R.A. (2002). *Strategy is destiny: How strategy-making shapes a company's future*. Free Press.
- Burns, T., & Stalker, G. M. (1961). The management of innovation. London. *Tavistock Publishing*. Cited in Hurley, RF and Hult, GTM (1998). *Innovation, Market Orientation, and Organisational Learning: An Integration and Empirical Examination*. *Journal of Marketing*, 62(4), 42-54.
- Burns, J.M. (1978). *Leadership*. Harper and Row.
- Cai, W., Wu, J., & Gu, J. (2021). From CEO passion to exploratory and exploitative innovation: the moderating roles of market and technological turbulence. *Management Decision*, 59(6), 1363-1385.
- Campbell, D. T. (1960). Blind variation and selective retention in creative thought as in other knowledge processes. *Psychological Review*, 67: 380-400.
- Cao, Q., Gedajlovic, E., & Zhang, H. (2009). Unpacking organizational ambidexterity: Dimensions, contingencies, and synergistic effects. *Organization Science*, 20(4), 781-796.
- Cardinal, L. B. (2001). Technological innovation in the pharmaceutical industry: The use of organizational control in managing research and development. *Organization science*, 12(1), 19-36.
- Cardinal, L. B., Sitkin, S. B., & Long, C. P. (2004). Balancing and rebalancing in the creation and evolution of organizational control. *Organization science*, 15(4), 411-431.
- Carless, S. A., Wearing, A. J., & Mann, L. (2000). A short measure of transformational leadership. *Journal of Business and Psychology*, 14, 389-405.
- Carns, M. R., & Carns, A. W. (2006). A review of the professional literature concerning the consistency of the definition and application of Adlerian encouragement. In S. Slavik & J. Carlson (Eds.), *Readings in the theory of individual psychology*, 277-293. Taylor & Francis.

- Carroll, J. (1967). A note on departmental autonomy and innovation in medical schools. *The Journal of Business*, 40(4), 531-534.
- Castañer, X., & Campos, L. (2002). The determinants of artistic innovation: Bringing in the role of organizations. *Journal of Cultural Economics*, 26(1), 29-52.
- Caves, R. E. (2000). *Creative industries: Contracts between art and commerce*. Cambridge, MA: Harvard University Press.
- Cenfetelli, R. T., & Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *MIS quarterly*, 689-707.
- Chandy, R. K., & Tellis, G. J. (1998). Organizing for radical product innovation: The overlooked role of willingness to cannibalize. *Journal of Marketing Research*, 35(4), 474-487.
- Chandy, R. K., & Tellis, G. J. (2000). The incumbent's curse? Incumbency, size, and radical product innovation. *Journal of Marketing*, 64(3), 1-17.
- Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and Society*, 22(2), 189-205.
- Chen, G., & Kanfer, R. (2006). Towards a systems theory of motivated behaviour in work teams. *Research in Organizational Behaviour*, 27: 223-276.
- Chen, C.X., Williamson, M.G. & Zhou, F.H. (2012). Reward System Design and Group Creativity: An Experimental Investigation. *The Accounting Review*, 87, 1885-1911.
- Chen, L., & Manley, K. (2014). Validation of an instrument to measure governance and performance on collaborative infrastructure projects. *Journal of Construction Engineering and Management*, 140(5), 04014006.
- Chenhall, R. H., & Morris, D. E. I. G. A. N. (1995). Organic decision and communication processes and management accounting systems in entrepreneurial and conservative business organizations. *Omega*, 23(5), 485-497.
- Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28(2-3), 127-168.

- Chenhall, R. H. & Moers, F. (2015). The role of innovation in the evolution of management accounting and its integration into management control. *Accounting, Organizations and Society*, 47, 1–13.
- Chin, W.W. (1998) The Partial Least Squares Approach to Structural Equation Modeling. *Modern Methods for Business Research*, 2, 295-336.
- Chin, W., Cheah, J. H., Liu, Y., Ting, H., Lim, X. J., & Cham, T. H. (2020). Demystifying the role of causal-predictive modeling using partial least squares structural equation modeling in information systems research. *Industrial Management & Data Systems*, 120(12), 2161-2209.
- Choi, M. (2011). Employees' attitudes toward organizational change: A literature review. *Human Resource Management*, 50(4), 479–500.
- Choi, D., Oh, I.S. & Colbert, A. E., (2014). Personality traits and organizational commitment across cultures: A meta-analysis. *Academy of Management Proceedings*, 2014(1), 13794–13794.
- Christiansen, J. K., & Skærbæk, P. (1997). Implementing budgetary control in the performing arts: games in the organizational theatre. *Management Accounting Research*, 8(4), 405-438.
- Chyung, S. Y., Roberts, K., Swanson, I., & Hankinson, A. (2017). Evidence-based survey design: The use of a midpoint on the Likert scale. *Performance Improvement*, 56(10), 15-23.
- Clark, S. M., Gioia, D. A., Ketchen, D. J., & Thomas, J. B. (2010). Transitional identity as a facilitator of organizational identity change during a merger. *Administrative Science Quarterly*, 55(3), 397-438.
- Clegg, S.R., Pitsis, T.S., Rura-Polley, T., & Marosszeky, M. (2002). Governmentality matters: designing an alliance culture of inter-organizational collaboration for managing projects. *Organization Studies*, 23(3), 317-337.
- Çokpekin, Ö., & Knudsen, M. P. (2012). Does organizing for creativity really lead to innovation?. *Creativity and innovation management*, 21(3), 304-314.
- Cook, R. D., & Weisberg, S. (1991). Sliced inverse regression for dimension reduction: Comment. *Journal of the American Statistical Association*, 86(414), 328-332.

- Cools, M., Stouthuysen, K., & den Abbeele, A. V. (2017). Management Control for Stimulating Different Types of Creativity: The Role of Budgets. *Journal of Management Accounting Research*, 29(3): 1-21.
- Costa, P.T. & McCrae, R.R. (1992). *Revised NEO personality inventory (NEO PI-R) and NEO five-factor inventory (NEO-FFI) professional manual*. Psychological Assessment Resources.
- Costa, P. T. Jr & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, 13(6), 653-665.
- Csaszar, F. A., & Siggelkow, N. (2010). How much to copy? Determinants of effective imitation breadth. *Organization Science*, 21(3), 661-676.
- Curtis, E., & Sweeney, B. (2017). Managing different types of innovation: mutually reinforcing management control systems and the generation of dynamic tension. *Accounting and Business Research*, 47(3), 313-343.
- D'Aveni, R., (1994). *Hypercompetition: Managing the Dynamics of Strategic Maneuvering*. Free Press.
- Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*, 9(2), 284-295.
- Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34(3), 555-590.
- Danks, N. P., & Ray, S. (2018). Predictions from partial least squares models. In *Applying partial least squares in tourism and hospitality research* (pp. 35-52). Emerald Publishing Limited.
- Daowadueng, P., Hoozée, S., Jorissen, A., & Maussen, S. (2023). Do costing system design choices mediate the link between strategic orientation and cost information usage for decision making and control?. *Management Accounting Research*, 61, 100854.
- Dasí, À., Iborra, M., & Safón, V. (2015). Beyond path dependence: Explorative orientation, slack resources, and managerial intentionality to internationalize in SMEs. *International Business Review*, 24(1), 77-88.
- Davila, A. (2000). An empirical study on the drivers of management control systems design in new product development. *Accounting, Organizations and Society*, 25(4-5), 383-409.

- Davila, A., (2005). *The promise of management control systems for innovation and strategic change*, in Chapman, C.S. (Ed.) *Controlling Strategy: Management Accounting, and performance measurement* (37-61). Oxford University Press.
- Davila, A., Foster, G., & Li, M. (2009a). Reasons for management control systems adoption: Insights from product development systems choice by early-stage entrepreneurial companies. *Accounting, Organizations and Society*, 34(3-4): 322-347.
- Davila, A., Foster, G., & Oyon, D. (2009b). Accounting and control, entrepreneurship and innovation: venturing into new research opportunities. *European Accounting Review*, 18(2), 281-311.
- Davila, A., & Ditillo, A. (2017). Management control systems for creative teams: Managing stylistic creativity in fashion companies. *Journal of Management Accounting Research*, 29(3), 27-47.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. Springer Science & Business Media.
- DeFillippi, R., Grabher, G., & Jones, C. (2007). Introduction to paradoxes of creativity: managerial and organizational challenges in the cultural economy. *Journal of Organizational. Behavior*, 28(5), 511-521.
- Dempster, A. (2006). Risky business: the art of managing creative ventures. *Cultural Industries: The British Experience in International Perspective*, Humboldt-Universität zu Berlin, Edoc-Server, 209-234.
- Denti, L., & Hemlin, S. (2012). Leadership and innovation in organizations: A systematic review of factors that mediate or moderate the relationship. *International Journal of Innovation Management*, 16(3), 1240007.
- Dewar, R. D., & Dutton, J. E. (1986). The adoption of radical and incremental innovations: An empirical analysis. *Management science*, 32(11), 1422-1433.
- Di Novo, S., Fazio, G., Sapsed, J., and Siepel, J. (2022). Starving the golden goose? Access to finance for innovators in the creative industries. *Journal of Cultural Economics*, 46, 345-386.
- Diener, E. & Lucas, R. E. (2023). Personality traits. In R. Biswas-Diener & E. Diener (Eds), *Noba textbook series: Psychology*. Champaign, IL: DEF publishers.

- Dinkmeyer, D., & Losoncy, L. (1996). *The skills of encouragement: Bringing out the best in yourself and others*. St. Lucie Press.
- Direção-Geral das Atividades Económicas (2018). *Indústrias Culturais e Criativas sinopse*. DGAE
- dos Santos Baraldi, A. A., & Tudda, L. (2011). Teorias para desenvolvimento da criatividade individual e organizacional. *Revista Administração em Diálogo-RAD*, 13(1), 116-131.
- Du, X., H. Zhang, S. Zhang, A. Zhang, & B. Chen. (2021). Creativity and Leadership in the Creative Industry: A Study from the Perspective of Social Norms. *Frontiers in Psychology*, 12, 1–10.
- Duncan, R. B. (1976). The ambidextrous organization: Designing dual structures for innovation. *The Management of Organization Design*, 1(1), 167-188.
- Dutt, N., & Joseph, J. (2019). Regulatory uncertainty, corporate structure, and strategic agendas: Evidence from the US renewable electricity industry. *Academy of Management Journal*, 62(3), 800-827.
- Dutta, S., Lanvin, B., León, L. R., & Wunsch-Vincent, S. (2024). *Global Innovation Index 2024: Unlocking the Promise of Social Entrepreneurship*. World Intellectual Property Organization.
- Eikhof, D. R., & Haunschild, A. (2006). Lifestyle meets market: Bohemian entrepreneurs in creative industries. *Creativity and Innovation Management*, 15, 234-241.
- Egan, T. M. (2005). Factors influencing individual creativity in the workplace: An examination of quantitative empirical research. *Advances in Developing Human Resources*, 7(2), 160-181.
- Eggers, J. P., & Kaul, A. (2018). Motivation and ability? A behavioural perspective on the pursuit of radical invention in multi-technology incumbents. *Academy of Management Journal*, 61(1), 67-93.
- Egri, C. P., & Frost, P. J. (1991). Shamanism and change: Bringing back the magic in organizational transformation. *Research in Organizational Change and development*, 5, 175-221.
- ENEI [Estratégia Nacional Especialização Inteligente]. Retrieved from <https://www.ani.pt/media/5238/enei-2014.pdf>

- English, T. (2001). Tension analysis in international organizations: a tool for breaking down communication barriers. *The International Journal of Organizational Analysis*, 9(1), 58-83.
- Ensley, M. D., Pearce, C. L., & Hmieleski, K. M. (2006). The moderating effect of environmental dynamism on the relationship between entrepreneur leadership behaviour and new venture performance. *Journal of Business Venturing*, 21(2), 243-263.
- European Union (2022). *Measuring the cultural and creative sectors UE*. Brussels. Available at: <https://www.measuring-ccs.eu/the-measuring-ccs-consortium-publishes-the-final-report/>
- Ekvall, G. (1996). Organizational climate for creativity and innovation. *European journal of work and organizational psychology*, 5(1), 105-123.
- Fagerberg, J. (2005). *The Oxford handbook of innovation*. Oxford University Press.
- Falk, A., & Kosfeld, M. (2006). The hidden costs of control. *American Economic Review*, 96(5), 1611-1630.
- Farjaudon 1, A. L., & Soulerot 2, M. (2011). La gestion du dilemme exploitation/exploration en pratique: le cas d'une entreprise de produits de grande consommation. *Revue Management et Avenir*, 2, 13-32.
- Farndale, E., Scullion, H., & Sparrow, P. (2010). The role of the corporate HR function in global talent management. *Journal of World Business*, 45(2), 161-168.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.
- Fossey, E., Harvey, C., McDermott, F., & Davidson, L. (2002). Understanding and evaluating qualitative research. *Australian & New Zealand Journal of Psychiatry*, 36(6), 717-732.
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: Na extended framework for analysis. *Management Accounting Research*, 20, 263-282.
- Ford, C. M. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review*, 21, 1112-1142.
- George, J. M. (2007). Creativity in organizations. *The Academy of Management Annals*. 1(1), 439-477.
- Gephart Jr, R. P. (2004). Qualitative research and the Academy of Management Journal. *Academy of Management Journal*, 47(4), 454-462.

- Ghemawat, P., & Ricart Costa, J. E. I. (1993). The organizational tension between static and dynamic efficiency. *Strategic management journal*, 14(S2), 59-73
- Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of management Journal*, 47(2), 209-226.
- Ginting, Y. M., Rahman, H., & Devianto, D. (2019). Innovation and Knowledge Management System in Creative Industry: A systematic Literature Review Using Metaanalysis. *KnE Social Sciences*, 585-601.
- Glaser, B. G., & Strauss, A. L. (1965). Discovery of substantive theory: A basic strategy underlying qualitative research. *American Behavioural Scientist*, 8(6), 5-12.
- Godart, F. C., Maddux, W. W., Shipilov, A. V., & Galinsky, A. D. (2015). Fashion with a foreign flair: Professional experiences abroad facilitate the creative innovations of organizations. *Academy of Management Journal*, 58(1), 195-220.
- Gonzalez-Mulé, E., Courtright, S. H., DeGeest, D., Seong, J. Y., & Hong, D. S. (2016). Channeled autonomy: The joint effects of autonomy and feedback on team performance through organizational goal clarity. *Journal of Management*, 42(7), 2018-2033.
- Gordon, I. R., & McCann, P. (2005). Innovation, agglomeration, and regional development. *Journal of Economic Geography*, 5(5), 523-543.
- Grabner, I. (2014). Incentive system design in creativity-dependent firms. *The Accounting Review*, 89(5), 1729-1750.
- Grabner, I., & Speckbacher, G. (2016). The cost of creativity: A control perspective. *Accounting, Organizations and Society*, 48, 31-42.
- Granovetter, M. (1985). Economic action and social structure: The problem of embeddedness. *American journal of sociology*, 91(3), 481-510.
- Green, S. G., Welsh, M. A., & Dehler, G. E. (2003). Advocacy, performance, and threshold influences on decisions to terminate new product development. *Academy of Management Journal*, 46(4), 419-434.
- Greve, H. R. (2007). Exploration and exploitation in product innovation. *Industrial and corporate change*, 16(5), 945-975.

- Gschwantner, S., & Hiebl, M. R. (2016). Management control systems and organizational ambidexterity. *Journal of Management Control*, 27, 371-404.
- Guetzkow, J., Lamont, M., & Mallard, G. (2004). What is Originality in the Humanities and the Social Sciences?. *American Sociological Review*, 69(2), 190-212.
- Gupta, A. K., Smith, K. G., & Shalley, C. E. (2006). The interplay between exploration and exploitation. *Academy of management journal*, 49(4), 693-706.
- Haaland, S. & Christiansen, N. D. (2002). Implications of trait-activation theory for evaluating the construct validity of assessment center ratings. *Personnel Psychology*, 55(1), 137–163.
- Hage, J. T. (1999). Organizational innovation and organizational change. *Annual review of sociology*, 25(1), 597-622.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks, CA: Sage.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Thiele, K. O. (2017). Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *Journal of the Academy of Marketing Science*, 45, 616-632.
- Hair, J.F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2018). *Advanced issues in partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019a). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24.
- Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019b). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing*, 53(4), 566-584.
- Hair Jr, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110.
- Hair, J.F., G.T.M. Hult, C.M. Ringle, & M. Sarstedt (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)*. 3rd ed. Sage Publications.
- Hall, M. (2016). Realising the richness of psychology theory in contingency-based management accounting research. *Management Accounting Research*, 31, 63-74.

- Hammond, M.M., Neff, N.L., Farr, J.L., Schwall, A.R., & Zhao, X. (2011). Predictors of individual level innovation at work: A meta-analysis. *The Psychology of Aesthetics, Creativity, and the Arts*, 5, 90-105.
- Hagemann, M. (2022). Does Current Popular Leadership Literature Show a Preference for Transformational Leadership? *Managing Global Transitions*, 20(4), 335-351.
- Handke, C. W. (2004). Measuring innovation in media industries: Insights from a survey of German record companies. *Humboldt-Universität zu Berlin und Erasmus Universiteit Rotterdam*.
- Hansen, M. T. (2002). Knowledge networks: Explaining effective knowledge sharing in multiunit companies. *Organization science*, 13(3), 232-248.
- Harman, H. H. (1976). *Modern factor analysis*. University of Chicago Press.
- Harter, J.K., Schmidt, F.L., & Hayes, T.L. (2002). Business-unit-level relationships between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology*, 87, 268–279.
- Harvey, S. (2014). Creative synthesis: Exploring the process of extraordinary group creativity. *Academy of Management Review*, 39, 324-343.
- Hauck, A. J., Walker, D. H. T., Hampson, K. D., and Peters, R. J. (2004). Project alliancing at national museum of Australia—collaborative process. *Journal of Construction Engineering and Management*, 130(1), 143-152.
- He, Z. L., & Wong, P. K. (2004). Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization science*, 15(4), 481-494.
- Heine, E. C., Stouten, J., & Liden, R. C. (2023). Providing service during a merger: the role of organizational goal clarity and servant leadership. *Journal of Business Ethics*, 184(3), 627-647.
- Henderson, R. M., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative science quarterly*, 9-30.
- Hennessey, B.A., & Amabile, T.M. (2010). Creativity. *Annual Review of Psychology*, 61, 569–598.

- Henri, J. F. (2006). Management control systems and strategy: A resource-based perspective. *Accounting, Organizations and Society*, 31(6), 529-558.
- Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In *New challenges to international marketing* (pp. 277-319). Emerald Group Publishing Limited.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115-135.
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International marketing review*, 33(3), 405-431.
- Henseler, J. (2017). Partial least squares path modeling. *Advanced methods for modeling markets*, 361-381.
- Herrmann, P., & Nadkarni, S. (2014). Managing strategic change: The duality of CEO personality. *Strategic Management Journal*, 35(9), 1318-1342.
- Hirst, G., Van Knippenberg, D., Chen, C.-H., & Sacramento, C. A. (2011). How does bureaucracy impact individual creativity? A cross-level investigation of team contextual influences on goal orientation-creativity relationships. *Academy of Management Journal*, 54(3), 624-641.
- Hoai, T. T., Hung, B. Q., & Nguyen, N. P. (2022). The impact of internal control systems on the intensity of innovation and organizational performance of public sector organizations in Vietnam: the moderating role of transformational leadership. *Heliyon*, 8(2), 1-10.
- Holmqvist, M. (2004). Experiential learning processes of exploitation and exploration within and between organizations: An empirical study of product development. *Organization science*, 15(1), 70-81.
- Homan, A. C., Hollenbeck, J. R., Humphrey, S. E., Van Knippenberg, D., Ilgen, D. R., & Van Kleef, G. A. (2008). Facing differences with an open mind: Openness to experience, salience of intragroup differences, and performance of diverse work groups. *Academy of Management Journal*, 51(6), 1204-1222.

- Howell, J. M., & Avolio, B. J. (1993). Transformational leadership, transactional leadership, locus of control, and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of Applied Psychology*, 78(6), 891.
- Howkins, J. (2001). *The creative economy: How people make money from ideas*. Penguin.
- Hu, J., & Liden, R. C. (2011). Antecedents of team potency and team effectiveness: An examination of goal and process clarity. *Journal of Applied Psychology*, 96: 851-862.
- Hu, S., He, Z. L., Blettner, D. P., & Bettis, R. A. (2017). Conflict inside and outside: Social comparisons and attention shifts in multidivisional firms. *Strategic Management Journal*, 38(7), 1435-1454.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic management journal*, 20(2), 195-204.
- Hult, G. T. M., Hair Jr, J. F., Proksch, D., Sarstedt, M., Pinkwart, A., & Ringle, C. M. (2018). Addressing endogeneity in international marketing applications of partial least squares structural equation modeling. *Journal of International Marketing*, 26(3), 1-21.
- Im, S., & Workman Jr, J. P. (2004). Market orientation, creativity, and new product performance in high-technology firms. *Journal of Marketing*, 68(2), 114-132.
- Instituto Nacional de Estatística (2022). Estatísticas da Cultura – 2021. Instituto Nacional de Estatística, I.P. Available in https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=18212178&PUBLICACOESstema=55554&PUBLICACOESmodo=2&xlang=pt
- Ittner, C. D., Larcker, D. F., & M. V. Rajan (1997). The choice of performance measures in annual bonus contracts. *The Accounting Review*, 72, 231–255.
- Janka, M., Heinicke, X., & Guenther, T. W. (2020). Beyond the “good” and “evil” of stability values in organizational culture for managerial innovation: the crucial role of management controls. *Review of Managerial Science*, 14(6), 1363-1404.
- Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management Science*, 52(11), 1661-1674.

- Jansen, J. J., George, G., Van den Bosch, F. A., & Volberda, H. W. (2008). Senior team attributes and organizational ambidexterity: The moderating role of transformational leadership. *Journal of Management Studies*, 45(5), 982-1007.
- Jansen, J. J., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism. *The Leadership Quarterly*, 20(1), 5-18.
- Janssen, O. (2000). Job demands, perceptions of effort-reward fairness, and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, 73; 287-302.
- Janssen, O. (2001). Fairness perceptions as a moderator in the curvilinear relationship between job demands, and job performance and job satisfaction. *Academy of Management Journal*, 44, 1039-1050.
- Jarvis, C. B., Mackenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30, 199-218.
- Javed, B., Khan, A. K., Arjoon, S., Mashkoor, M., & Haque, A. U. (2020). Openness to experience, ethical leadership, and innovative work behaviour. *The Journal of Creative Behaviour*, 54(1), 211-223.
- Jay, J. (2013). Navigating paradox as a mechanism of change and innovation in hybrid organizations. *Academy of Management Journal*, 56: 137-159.
- Jeffcutt, P. & Pratt, A.C. (2002). Managing creativity in the cultural industries. *Creativity & Innovation Management*, 11(4): 225-233.
- Jeffcutt, P. (2004). Knowledge relationships and transactions in a cultural economy: Analysing the creative industries ecosystem. *Media International Australia*, 112(1), 67-82.
- Jones, C., Lorenzen, M., and Sapsed, J. (2015). Creative industries. *The Oxford handbook of creative industries*, 3-32.
- Joreskog, K. G. & Wold, H. (1982). The ML and PLS techniques for modelling with latent variables: Historical and comparative aspects. In K. G. Joreskog & H. Wold (Eds.) *Systems under indirect observation*, Part I (pp. 263-270). North Holland.

- Jørgensen, B., & Messner, M. (2009). Management control in new product development: The dynamics of managing flexibility and efficiency. *Journal of Management Accounting Research*, 21(1), 99-124.
- Joseph, J., Klingebiel, R., & Wilson, A. J. (2016). Organizational structure and performance feedback: Centralization, aspirations, and termination decisions. *Organization Science*, 27(5), 1065-1083.
- Joshanloo, M. (2023). Reciprocal relationships between personality traits and psychological well-being. *British Journal of Psychology*, 114(1), 54-69.
- Judge, T. A., & Cable, D. M. (1997). Applicant personality, organizational culture, and organization attraction. *Personnel Psychology*, 50(2), 359-394.
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: a qualitative and quantitative review. *Journal of Applied Psychology*, 87(4), 765.
- Kachelmeier, S. J., Reichert, B. E., & Williamson, M. G. (2008). Measuring and motivating quantity, creativity, or both. *Journal of Accounting Research*, 46(2), 341-373.
- Kachelmeier, S. J., & Williamson, M. G. (2010). Attracting creativity: The initial and aggregate effects of contract selection on creativity-weighted productivity. *The Accounting Review*, 85(5), 1669-1691.
- Kane, G. C., & Alavi, M. (2007). Information technology and organizational learning: An investigation of exploration and exploitation processes. *Organization Science*, 18(5), 796-812.
- Kanter, R. M. (1983). Frontiers for strategic human resource planning and management. *Human Resource Management*, 22(1-2), 9-21.
- Kanter, R. M. (1988). When a thousand flowers bloom: Structural, collective, and social conditions for innovation in organization. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behaviour*, 10: 169–211. JAI.
- Kaufman, J. C. (2016). *Creativity 101*. 2nd edition. Springer Publishing Company.
- KEA European Affairs (2009). The impact of culture on creativity. Study prepared for the European commission, directorate general for education and culture. KEA European Affairs.

- Kelley, T., & Kelley, D. (2013). *Creative confidence: Unleashing the creative potential within us all*. Crown Currency.
- Keller, J., Burkhardt, P., & Lasch, R. (2021). Informal governance in the digital transformation. *International Journal of Operations & Production Management*, 41(7), 1060-1084.
- Kenny, D. A. (2018). *Moderation*. Retrieved from <http://davidakenny.net/cm/moderation.htm>
- Khalili, A. (2016), Linking transformational leadership, creativity, innovation, and innovation supportive climate, *Management Decision*, 54(9), 2277-2293
- Kim, C., & Bettis, R. A. (2014). Cash is surprisingly valuable as a strategic asset. *Strategic Management Journal*, 35(13), 2053-2063.
- Kirner, E., Armbruster, H., Kinkel, S., & Som, O. (2011). Continuous improvement processes in manufacturing enterprises as an enabler of process innovation. *International Journal of Manufacturing Technology and Management*, 22(3), 207-218.
- Khessina, O. M., Goncalo, J. A., & Krause, V. (2018). It's time to sober up: The direct costs, side effects and long-term consequences of creativity and innovation. *Research in Organizational Behaviour*, 38, 107-135.
- Knight, K. E. (1967). A descriptive model of the intra-firm innovation process. *The Journal of Business*, 40(4), 478-496.
- Knudsen, T., Levinthal, D. A., & Winter, S. G. (2014). Hidden but in plain sight: The role of scale adjustment in industry dynamics. *Strategic Management Journal*, 35(11), 1569-1584.
- Knott, A. M. (2001). The dynamic value of hierarchy. *Management Science*, 47(3), 430-448.
- Knott, A. M. (2002). Exploration and exploitation as complements. *The strategic Management of Intellectual Capital and Organizational Knowledge*, 339-358.
- Knott, A. M., & Turner, S. F. (2019). An innovation theory of headquarters value in multibusiness firms. *Organization Science*, 30(1), 19-39.
- Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behaviour: The differential effects of controlling vs. informational styles on intrinsic motivation and creativity. *Journal of Personality*, 52(3), 233-248.
- Konrad, E. D. (2013). Cultural entrepreneurship: The impact of social networking on success. *Creativity and Innovation Management*, 22, 307-319.

- Kopmann, J., Kock, A., Killen, C. P., & Gemünden, H. G. (2017). The role of project portfolio management in fostering both deliberate and emergent strategy. *International Journal of Project Management*, 35(4), 557-570.
- Kotter, J.P., & Heskett, J.L. (1992). *Corporate culture and performance*. The Free Press.
- Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1), 1-49.
- Kruis, A.M., Speklé, R.F., & Widener, S.K. (2016). “The levers of control framework: an exploratory analysis of balance”, *Management Accounting Research*, 32, 27-44.
- Kuenzi, M., & Schminke, M. (2009). Assembling fragments into a lens: A review, critique, and proposed research agenda for the organizational work climate literature. *Journal of Management*, 35, 634–717.
- Kwan, L. Y., Leung, A. K., & Liou, S. (2018). Culture, creativity, and innovation. *Journal of Cross-Cultural Psychology*, 49(2), 165-170.
- Lampel, J., Lant, T., & Shamsie, J. (2000). Balancing act: Learning from organizing practices in cultural industries. *Organization Science*, 11(3), 263-269.
- Langfield-Smith, K. (1997). Management control systems and strategy: a critical review. *Accounting, Organizations and Society*, 22(2), 207-232.
- Langfield-Smith, K. (2008). Strategic management accounting: how far have we come in 25 years? *Accounting, Auditing and Accountability Journal*, 21(2), 204-228.
- Laranja, M., Edwards, J., Pinto, H., & Foray, D. (2020). *Implementation of smart specialisation strategies in Portugal: An assessment*. Publications Office of the European Union.
- Le, P. B., & Le, H. M. (2023). Stimulating exploitative and exploratory innovation through transformational leadership and knowledge management capability: the moderating role of competitive intensity. *Leadership & Organization Development Journal*, 44(8), 1037-1056.
- Lee, D., Lee, J., & Kim, S. Y. (2023). Paving the Way for Interpersonal Collaboration in Telework: The Moderating Role of Organizational Goal Clarity in the Public Workplace. *Review of Public Personnel Administration*, 0734371X231190324.

- Lenferink, S., Arts, J., Tillema, T., van Valkenburg, M., & Nijsten, R. (2012). Early contractor involvement in dutch infrastructure development: Initial experiences with parallel procedures for planning and procurement. *Journal of Public Procurement*, 12(1), 4-42.
- Leonard-Barton, D. (1992). Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal*, 13(S1), 111-125.
- Levie, F., Burke, C. M., & Lannon, J. (2017). Filling the gaps: an investigation of project governance in a non-governmental organisation's response to the Haiti earthquake disaster. *International Journal of Project Management*, 35(5), 875-888.
- Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic Management Journal*, 14(S2), 95-112.
- Levinthal, D. A. (1997). Adaptation on rugged landscapes. *Management science*, 43(7), 934-950.
- Levitt, T. (1966). Innovative imitation. *Harvard Business Review*, 44(5): 63-70.
- Le Theule, M. A., & Lupu, I. (2016). Publishing without editors or authors? Competing logics, circulation, and cultural creation in a publishing firm. *Critical Perspectives on Accounting*, 38, 14-33.
- Lewis, R. L., Sutton, N., & Brown, D. A. (2024). How senior managers use interactive control to manage strategic uncertainties: An attention-based view. *Management Accounting Research*, 62, 100864.
- Leyva-de la Hiz, D. I., Ferron-Vilchez, V., & Aragon-Correa, J. A. (2019). Do firms' slack resources influence the relationship between focused environmental innovations and financial performance? More is not always better. *Journal of Business Ethics*, 159(4), 1215-1227.
- Li, W., Bhutto, T. A., Nasiri, A. R., Shaikh, H. A., & Samo, F. A. (2018). Organizational innovation: The role of leadership and organizational culture. *International Journal of Public Leadership*, 14(1), 33-47.
- Lill, P., Wald, A., & Munck, J. C. (2021). In the field of tension between creativity and efficiency: a systematic literature review of management control systems for innovation activities. *European Journal of Innovation Management*, 24(3), 919-950.

- Lieberson, S. (2000). *A matter of taste: How names, fashions, and culture change*. Yale University Press.
- Locke, E. A., Latham, G. P., & Erez, M. (1988). The determinants of goal commitment. *Academy of Management Review*, 13(1), 23-39.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice Hall.
- Locke, E. A., & Latham, G. P. (2013). *New developments in goal setting and task performance*. Routledge.
- Lohmöller, J. B., & Lohmöller, J. B. (1989). Predictive vs. structural modeling: Pls vs. ml. *Latent variable path modeling with partial least squares*, 199-226.
- Lopez-Valeiras, E., Gonzalez-Sanchez, M. B., & Gomez-Conde, J. (2016). The effects of the interactive use of management control systems on process and organizational innovation. *Review of Managerial Science*, 10, 487-510.
- Love, P. E. D., Mistry, D., & Davis, P. R. (2010). Price competitive alliance projects: Identification 512 of success factors for public clients. *Journal of Construction Engineering and Management*, 136(9), 947-956
- Lu, Y., Cai, W., & Bi, X. (2022). Effects of human-social capital congruence and environmental dynamism on dynamic of encouragement and organizational innovation in new ventures. *Frontiers in Psychology*, 13, 848977.
- Lubatkin, M. H., Simsek, Z., Ling, Y., & Veiga, J. F. (2006). Ambidexterity and performance in small-to medium-sized firms: The pivotal role of top management team behavioural integration. *Journal of Management*, 32(5), 646-672.
- Lukas, B. A., & Ferrell, O. C. (2000). O efeito da orientação para o mercado na inovação de produtos. *Jornal da academia de ciências de marketing*, 28(2), 239-247.
- MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention science*, 1, 173-181.
- Madrid, H.P., Patterson, M.G., Birdi, K.S., Leiva, P.I., & Kausel, E.E. (2014). The role of weekly high-activated positive mood, context and personality in innovative work behaviour: A multilevel and interactional model. *Journal of Organizational Behaviour*, 35(2), 234-256.

- Madrid, H., & Patterson, M. G. (2016). Creativity at work as a joint function between openness to experience, need for cognition and organizational fairness. *Learning and Individual Differences*, 51, 409–416.
- Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22(5), 387-401.
- Mansfield, E. (1963). Intrafirm rates of diffusion of an innovation. *The Review of Economics and Statistics*, 45, 348-359.
- March, J. G., & Simon, H. A. (1958). *Organizations*. Wiley.
- March, J. G. (1991). Exploration and exploitation in organization learning. *Organization Science*, 2(1), 71-87.
- March, J.G. (1973). *The technology of foolishness*. In: Levitt, H.J., Pondy, L.R.(Eds.), *Readings in Managerial Psychology*. University of Chicago Press.
- Marginson, D. E. (2002). Management control systems and their effects on strategy formation at middle-management levels: evidence from a UK organization. *Strategic Management Journal*, 23(11), 1019-1031.
- Marinova, E., and Borza, A. (2015). Entrepreneurship and innovation management in the cultural and creative industries. *Managerial Challenges of the Contemporary Society*, 8(2), 1–6.
- Martyn, P., Sweeney, B., & Curtis, E. (2016). Strategy and control: 25 years of empirical use of Simons' Levers of Control framework. *Journal of Accounting & Organizational Change*, 12(3), 281-324.
- Mason, C. H., & Perreault Jr, W. D. (1991). Collinearity, power, and interpretation of multiple regression analysis. *Journal of marketing research*, 28(3), 268-280.
- Masood, K., Jafri, S. K. A., & Sarfaraz, A. (2022). Openness to experience, normative commitment and job search behaviours of IT professionals. *City University Research Journal*, 12(1), 47-60.
- Mateus, A. (2014). A cultura e a criatividade na internacionalização da economia portuguesa. *Lisboa: Secretário de Estado da Cultura, Gabinete de Estratégia, Planeamento e Avaliação Culturais*.

- Matsuo, M. and Matsuo, T. (2017). The effect of diagnostic and interactive uses of management control systems and managerial coaching on reflection in teams. *Journal of Accounting and Organizational Change*, 13(3), 410-424.
- McCarthy, I. P., & Gordon, B. R. (2011). Achieving contextual ambidexterity in R&D organizations: a management control system approach. *R&d Management*, 41(3), 240-258.
- McCauley, A. (1999). Entrepreneurial instant exporters in the Scottish arts and crafts sector. *Journal of International Marketing*, 3, 67–82.
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, 52(6), 1258.
- McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, 52(1), 81.
- McCrae, R. R., & Costa Jr, P. T. (1997). Personality trait structure as a human universal. *American Psychologist*, 52(5), 509.
- McDermott, C. M., & O'connor, G. C. (2002). Managing radical innovation: an overview of emergent strategy issues. *Journal of Product Innovation Management: an international publication of the product development & management association*, 19(6), 424-438.
- McGrath, R. G. (2001). Exploratory learning, innovative capacity, and managerial oversight. *Academy of Management Journal*, 44(1), 118-131.
- Measuring the Cultural and Creative Sectors Consortium. (2022). *Measuring the Cultural and Creative Sectors in the EU. Final Report*. European Commission. Available in <https://www.measuring-ccs.eu/>
- Mietzner, D., & Kamprath, M. (2013). A competence portfolio for professionals in the creative industries. *Creativity and Innovation Management*, 22, 280–294.
- Miller, K. D., Zhao, M., & Calantone, R. J. (2006). Adding interpersonal learning and tacit knowledge to March's exploration-exploitation model. *Academy of Management Journal*, 49(4), 709-722.
- Mintzberg, H., & Waters, J. A. (1985). Of strategies, deliberate and emergent. *Strategic management journal*, 6(3), 257-272.
- Mintzberg, H. (1994). *The rise and fall of strategic planning*. The Free Press.

- Mirabeau, L., Maguire, S., (2014). From autonomous strategic behaviour to emergent strategy. *Strategic Management Journal*, 35: 1202-1229.
- Mishina, Y., Pollock, T. G., & Porac, J. F. (2004). Are more resources always better for growth? Resource stickiness in market and product expansion. *Strategic Management Journal*, 25(12), 1179–1197.
- Moeran, B., & Christensen, B. T. (2013). *Exploring creativity: Evaluative practices in innovation, design, and the arts*. Cambridge University Press.
- Moll, J. (2015). Special issue on innovation and product development. *Management Accounting Research*, 28, 2-11.
- Moorman, C., & A. S. Miner (1998). The convergence of planning and execution: Improvisation in new product development. *Journal of Marketing*, 62(July), 1–20.
- Morwood, R., Scott, D., and Pitcher, I. (2008). *Alliancing A Participant's Guide: Real Life Experiences for Constructors, Designers, Facilitators and Clients*. AECOM.
- Mol, M. J. & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research*, 62, 1269–1280.
- Mu, J., Bao, Y., Sekhon, T., Qi, J. and Love, E. (2018). Outside-in marketing capability and firm performance. *Industrial Marketing Management*, 75, 37-54.
- Mueller, V., Rosenbusch, N., & Bausch, A. (2013). Success patterns of exploratory and exploitative innovation: A meta-analysis of the influence of institutional factors. *Journal of Management*, 39(6), 1606-1636.
- Müller, K., Rammer, C., & Trüby, J. (2009). The role of creative industries in industrial innovation. *Innovation*, 11(2), 148-168.
- Mumford, M. D., & Hemlin, S. (Eds.). (2017). *Handbook of research on leadership and creativity*. Edward Elgar Publishing.
- Mundy, J. 2010. Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organizations and Society*, 35(5): 499-523.
- Myszkowski, N., Storme, M., & Tavani, J. L. (2019). Are reflective models appropriate for very short scales? Proofs of concept of formative models using the Ten-Item Personality Inventory. *Journal of personality*, 87(2), 363-372.

- Nadkarni, S. & Herrmann, P. O. L. (2010). CEO personality, strategic flexibility, and firm performance: The case of the Indian business process outsourcing industry. *Academy of Management Journal*, 53(5), 1050-1073.
- Naranjo-Gil, D., & Hartmann, F. (2007). Management accounting systems, top management team heterogeneity and strategic change. *Accounting, Organizations and Society*, 32(7-8), 735-756.
- Nelson, R. R. E., & Winter, S. G. (1982). *An evolutionary theory of economic change*. Harvard University Press.
- Nguyen, T. T., Mia, L., Winata, L., & Chong, V. K. (2017). Effect of transformational-leadership style and management control system on managerial performance. *Journal of Business Research*, 70: 202-213.
- Nogare, C. D., & Murzyn-Kupisz, M. (2022). Do museums foster innovation through engagement with the cultural and creative industries? *Journal of Cultural Economics*, 45: 671–704.
- Nohria, N., & Gulati, R. (1996). Is slack good or bad for innovation? *Academy of Management Journal*, 39(5), 1245–1264.
- Nonaka, I. (1991). A empresa criadora de conhecimento. *Harvard Business Review*, Novembro/Dezembro, 1-10.
- Nwachukwu, C., & Vu, H. M. (2020). Strategic flexibility, strategic leadership and business sustainability nexus. *International Journal of Business Environment*, 11(2), 125-143.
- O'Reilly III, C. A., & Tushman, M. L. (2013). Organizational ambidexterity: Past, present, and future. *Academy of Management Perspectives*, 27(4), 324-338.
- Oakes H. & Oakes, S. (2016). Accounting colonization and austerity in arts organisations. *Critical Perspectives on Accounting*, 38, 34-53.
- Obloj, T., & Zenger, T. (2017). Organization design, proximity, and productivity responses to upward social comparison. *Organization Science*, 28(1), 1-18.
- Oldham, G. & Cummings, A. (1996). Employee creativity: Personal and contextual factors at work. *Academy of Management Journal*, 39(3): 607–634.
- Osborn, C. S. (1998). Systems for sustainable organizations: emergent strategies, interactive controls and semi-formal information. *Journal of Management Studies*, 35(4), 481-509.

- Osborn, R. N., & Marion, R. (2009). Contextual leadership, transformational leadership and the performance of international innovation seeking alliances. *The Leadership Quarterly*, 20(2), 191-206.
- Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, 31, 45–62.
- Otley, D., & Fakiolas, A. (2000). Reliance on accounting performance measures: dead end or new beginning? *Accounting, Organizations and Society*, 25(4-5), 497-510.
- Ouchi, W. G. (1979). A conceptual framework for design of organizational control mechanisms. *Management Science*, 25(9), 833-848.
- Ouchi, W. (2006). The relationship between organizational structure and organizational control. *Administrative Science Quarterly*, 22(1), 95–1.
- Pamungkas, B. C., Brahmasari, I. A., & Ratih, I. A. B. (2023). The Effect Of Transformational Leadership, Organizational Culture, And Management Control System On Employee Performance With Organizational Commitment As The Intervening Variable At CV Makmur Jaya Abadi Surabaya City. *Journal of Economics, Finance and Management Studies*, 6, 429-437.
- Park, S., & Gupta, S. (2012). Handling endogenous regressors by joint estimation using copulas. *Marketing Science*, 31(4), 567-586.
- Park, Y. J., Matkin, D. S., & Marlowe, J. (2017). Internal control deficiencies and municipal borrowing costs. *Public Budgeting & Finance*, 37(1), 88-111.
- Patel, P. C., Messersmith, J. G., & Lepak, D. P. (2013). Walking the tightrope: An assessment of the relationship between high-performance work systems and organizational ambidexterity. *Academy of management journal*, 56(5), 1420-1442.
- Patterson, M. G., West, M. A., Shackleton, V. J., Dawson, J. F., Lawthom, R., Maitlis, S., & Wallace, A. M. (2005). Validating the organizational climate measure: links to managerial practices, productivity and innovation. *Journal of Organizational Behaviour*, 26(4), 379-408.
- Paulus, P. B. (2002). Different ponds for different fish: a contrasting perspective on team innovation. *Applied Psychology: An International Review*, 51, 394–399.

- Pearce, C.L., Sims, H.P., Cox, J.F., Ball, G., Schnell, E., Smith, K.A., Trevino, L. (2003). Transactors, transformers and beyond: a multi-method development of a theoretical typology of leadership. *Journal of Management Development*, 22(4), 273-307.
- Pelz, D. C. (1985). Innovation complexity and the sequence of innovating stages. *Science Communication*, 6, 261–291.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. In (3rd Edition ed.). Blackwell.
- Perry-Smith, J. E., & Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of management review*, 42(1), 53-79.
- Peteraf, M. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14(3), 179–191.
- Phaneuf, J., Boudrias, J., Rousseau, V., & Brunelle, E. (2016). Personality and transformational leadership: The moderating effect of organizational context. *Personality and Individual Differences*, 102, 30–35.
- Piaw, C. Y, (2023). A Step-by-step guide: PLS-SEM data analysis using SmartPLS 4. Researchtree Education Published.
- Pierce, J. L., & Delbecq, A. L. (1977). Organization structure, individual attitudes and innovation. *Academy of Management Review*, 2(1): 27-37.
- Posen, H.E, D.A. Levinthal. (2012). Chasing a moving target: Exploitation and exploration in dynamic environments. *Management Science*, 58(3), 587-601.
- Podsakoff, P. M., & Organ, D. W. (1986). Self reports in organizational research: Problems and prospects. *Journal of Management*, 12, 531–544
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviours and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviours. *The Leadership Quarterly*, 1(2), 107-142.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioural research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879-903.

- Poppo, L., & Zenger, T. (2002). Do formal contracts and relational governance function as substitutes or complements?. *Strategic Management Journal*, 23(8), 707-725.
- Prendergast, C. (2008). Intrinsic motivation and incentives. *American Economic Review*, 98(2), 201-205.
- Quinn, J. B. 1985. Managing innovation: controlling chaos. *Harvard Business Review*, May-June, 73–84.
- Ramsey, J. B. (1969). Tests for specification errors in classical least-squares regression analysis, *Journal of the Royal Statistical Society, Series B*, 31, 350-71.
- Rank, J., Pace, V.L., & Frese, M. (2004). Three avenues for future research on creativity, innovation, and initiative. *Applied Psychology: An International Review*, 53, 518–528.
- Raisch, S., & Birkinshaw, J. (2008). Organizational ambidexterity: Antecedents, outcomes, and moderators. *Journal of Management*, 34(3), 375-409.
- Raisch, S., Birkinshaw, J., Probst, G., & Tushman, M. L. (2009). Organizational ambidexterity: Balancing exploitation and exploration for sustained performance. *Organization science*, 20(4), 685-695.
- Rank, J., Pace, V. L., & Frese, M. (2004). Three avenues for future research on creativity, innovation, and initiative. *Applied Psychology*, 53(4), 518-528.
- Reid, S. E., & De Brentani, U. (2004). The fuzzy front end of new product development for discontinuous innovations: A theoretical model. *Journal of Product Innovation Management*, 21(3), 170-184.
- Reid, S. E., & de Brentani, U. (2015). Building a measurement model for market visioning competence and its proposed antecedents: Organizational encouragement of divergent thinking, divergent thinking attitudes, and ideational behaviour. *Journal of Product Innovation Management*, 32(2), 243-262.
- Reinecke, J., Van Bommel, K., & Spicer, A. (2017). When orders of worth clash: negotiating legitimacy in situations of moral multiplexity. *Research in the Sociology of Organizations*, 52, 33–72.

- Reis, E. D., & Ribeiro, G. (2010). Contribuição ao Estudo das Dimensões da Criatividade e sua Relação com o Ensino de Tecnologia. *Instituto Federal de Educação, Ciência E Tecnologia de São Paulo*, 11(1), 31-37.
- Rigdon, E. E., Ringle, C. M., & Sarstedt, M. (2010). Structural modeling of heterogeneous data with partial least squares. *Review of Marketing Research*, 255-296.
- Ringle, C. M., Sarstedt, M., & Zimmermann, L. (2011). Customer satisfaction with commercial airlines: The role of perceived safety and purpose of travel. *Journal of Marketing Theory and Practice*, 19(4), 459-472.
- Ringle, C. M., & Sarstedt, M. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Industrial management & data systems*, 116(9), 1865-1886.
- Rivkin, J. W., & Siggelkow, N. (2003). Balancing search and stability: Interdependencies among elements of organizational design. *Management Science*, 49(3), 290-311.
- Robertson, P. L., Casali, G. L., & Jacobson, D. (2012). Managing open incremental process innovation: absorptive capacity and distributed learning. *Research policy*, 41(5), 822-832.
- Rockness, H. O., & Shields, M. D. (1984). Organizational control systems in research and development. *Accounting, Organizations and Society*, 9(2), 165-177.
- Rogers, E. M. (1995). *Diffusion of innovations*. 4th edition. Free Press.
- Rodan, S. (2005). Exploration and exploitation revisited: Extending March's model of mutual learning. *Scandinavian Journal of Management*, 21(4), 407- 428.
- Rossiter, J. R. (2002). The C-OAR-SE procedure for scale development in marketing. *International Journal of Research in Marketing*, 19(4), 305-335.
- Rumelt, R. P. (1984). Towards a strategic theory of the firm. *Competitive Strategic Management*, 26(3), 556-570.
- Ryan, J. C., & Tipu, S. A. (2013). Leadership effects on innovation propensity: A two-factor full range leadership model. *Journal of Business Research*, 66(10), 2116–2129.
- Samad, S. (2012). The influence of innovation and transformational leadership on organizational performance. *Procedia-Social and Behavioural Sciences*, 57, 486–493.

- Sarros, J. C., Cooper, B. K., & Santora, J. C. (2008). Building a climate for innovation through transformational leadership and organizational culture. *Journal of leadership & Organizational Studies*, 15(2), 145-158.
- Sarstedt, M., Henseler, J., & Ringle, C. M. (2011). Multigroup analysis in partial least squares (PLS) path modeling: Alternative methods and empirical results. In *Measurement and research methods in international marketing* (pp. 195-218). Emerald Group Publishing Limited.
- Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair Jr, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105-115.
- Sarstedt, M., Hair Jr, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian marketing journal*, 27(3), 197-211.
- Sarstedt, M., Mooi, E., Sarstedt, M., & Mooi, E. (2019). Regression analysis. *A concise guide to market research: The process, data, and methods using IBM SPSS Statistics*, 209-256.
- Sarstedt, M., Hair Jr, J. F., Nitzl, C., Ringle, C. M., & Howard, M. C. (2020). Beyond a tandem analysis of SEM and PROCESS: Use of PLS-SEM for mediation analyses!. *International Journal of Market Research*, 62(3), 288-299.
- Schneider, B. (1987). The people make the place. *Personnel psychology*, 40(3), 437-453.
- Schumpeter, J. A. (1961). *The Theory of Economic Development: An Inquiry Into Profits, Capital, Credit, Interest, and the Business Cycle*. Transl. by Redvers Opie. Oxford University Press.
- Schuberth, F., Rademaker, M. E., & Henseler, J. (2023). Assessing the overall fit of composite models estimated by partial least squares path modeling. *European Journal of Marketing*, 57(6), 1678-1702.
- Schumpeter, J. A. (1982). The "Crisis" in Economics-Fifty Years Ago. *Journal of Economic Literature*, 20(3): 1049-1059.
- Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behaviour: A path model of individual innovation in the workplace. *Academy of Management Journal*, 37, 580-607.

- Scott, S. G., and Bruce, R. A. (1994), October. Creating innovative behaviour among R&D professionals: the moderating effect of leadership on the relationship between problem-solving style and innovation. In *Proceedings of 1994 IEEE International Engineering Management Conference-IEMC'94*, 48-55. IEEE.
- Sedita, S. R., & Paiola, M. U. (2009). *Il management della creatività: reti, comunità e territori*. CEDAM.
- Sethi, R., D. C. Smith, & W. Park. (2001). Cross-functional product development teams, creativity, and the innovativeness of new consumer products. *Journal of Marketing Research*, 38(February), 73–85.
- Sengul, M., & Gimeno, J. (2013). Constrained delegation: Limiting subsidiaries' decision rights and resources in firms that compete across multiple industries. *Administrative Science Quarterly*, 58(3), 420-471.
- Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here?. *Journal of Management*, 30(6), 933-958.
- Shalley, C. E., & Zhou, J. (2008). Organizational creativity research: A historical overview. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity*, 331, 3–32. Erlbaum.
- Sharfman, M. P., Wolf, G., Chase, R. B., & Tansik, D. A. (1988). Antecedents of organizational slack. *Academy of Management Review*, 13(4), 601–614.
- Sheppard, M. (2020). The relationship between discretionary slack and growth in small firms. *International Entrepreneurship and Management Journal*, 16(1), 195-219.
- Schutz, A. (1967). *The phenomenology of the social world*. Northwestern University Press.
- Sidhu, J. S., Volberda, H. W., & Commandeur, H. R. (2004). Exploring exploration orientation and its determinants: Some empirical evidence. *Journal of Management Studies*, 41(6), 913-932.
- Siggelkow, N. and Levinthal, D. A. (2003). Temporarily divide to conquer: centralized, decentralized, and reintegrated organizational approaches to exploration and adaptation. *Organization Science*, 14, 650–69.

- Siggelkow, N., & Rivkin, J. W. (2006). When exploration backfires: Unintended consequences of multilevel organizational search. *Academy of Management Journal*, 49(4), 779-795.
- Simons, R. (1987). Accounting control systems and business strategy: an empirical analysis. *Accounting, Organizations and Society*, 12(4), 357-374.
- Simons, R. (1990). The role of management control systems in creating competitive advantage: New perspectives. *Accounting, Organizations and Society*, 15(1-2): 127-143.
- Simons, R. (1991). Strategic orientation and top management attention to control systems. *Strategic Management Journal*, 12(1): 49-62.
- Simons, R., (1995a). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Harvard Business School Press.
- Simons, R. (1995b). Control in an age of empowerment. *Harvard Business Review*, March/April, 80-88.
- Simons, R. (2000). *Performance Measurement and Control Systems for Implementing Strategy*. Prentice Hall.
- Simons, R. (2013). *Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal*. Harvard Business Review Press.
- Simsek, Z. (2007). CEO tenure and organizational performance: An intervening model. *Strategic Management Journal*, 28(6), 653-662.
- Simsek, Z., Heavey, C., Veiga, J. F., & Souder, D. (2009). A typology for aligning organizational ambidexterity's conceptualizations, antecedents, and outcomes. *Journal of Management Studies*, 46(5), 864-894.
- Simsek, Z. (2009). Organizational ambidexterity: Towards a multilevel understanding. *Journal of Management Studies*, 46(4), 597-624.
- Sharfman, M. P., Wolf, G., Chase, R. B., & Tansik, D. A. (1988). Antecedents of organizational slack. *Academy of Management review*, 13(4), 601-614.
- Smith, W. K., & Tushman, M. L. (2005). Managing strategic contradictions: A top management model for managing innovation streams. *Organization Science*, 16(5), 522-536.
- Speckbacher, G. 2017. Creativity research in management accounting: a commentary. *Journal of Management Accounting Research*, 29(3), 49-54.

- Speklé, R., Van Elten, H. J., & Widener, S. K. (2017). Creativity and Control: A paradox. Evidence from the levers of control. *Behavioural Research in Accounting*, 29(2), 73-96.
- Sotiriadou, P., Brouwers, J., & Le, T. A. (2014). Choosing a qualitative data analysis tool: A comparison of NVivo and Leximancer. *Annals of Leisure Research*, 17(2), 218-234.
- Steele, L. M., McIntosh, T., & Higgs, C. (2017). Intrinsic motivation and creativity: Opening up a black box. In *Handbook of research on leadership and creativity* (pp. 100-130). Edward Elgar Publishing.
- Stern, M. J., Dillman, D. A., & Smyth, J. D. (2007). *Visual design, order effects, and respondent characteristics in a self-administered survey*. Nebraska: Sociology Department, Faculty Publications.
- Sternberg R. J., Lubart T. I. (1991). Creating creative minds. *The Phi Delta Kappan*, 72, 608-614.
- Stetler, K. L., & Magnusson, M. (2015). Exploring the tension between clarity and ambiguity in goal setting for innovation. *Creativity and Innovation Management*, 24(2), 231-246.
- Stettner, U., & Lavie, D. (2014). Ambidexterity under scrutiny: Exploration and exploitation via internal organization, alliances, and acquisitions. *Strategic Management Journal*, 35(13), 1903-1929.
- Staw, B. M. (1990). An evolutionary approach to creativity and innovation. In M. West & J. L. Farr (Eds.), *Innovation and creativity at work: Psychological and Organizational Strategies*. Wiley.
- Stetler, K. L., & Magnusson, M. (2015). Exploring the tension between clarity and ambiguity in goal setting for innovation. *Creativity and Innovation Management*, 24(2), 231-246.
- Stoneman, J. (2010). Why Did Saigyō Become a Monk? An Archeology of the Reception of Saigyō's "Shukke". *Japanese language and literature*, 44(2), 69-118.
- Stouten, J., Rousseau, D. M., & De Cremer, D. (2018). Successful organizational change: Integrating the management practice and scholarly literatures. *Academy of Management Annals*, 12(2), 752-788.

- Street, J., Laing, D., & Schroff, S. (2018). Regulating for creativity and cultural diversity: the case of collective management organisations and the music industry. *International Journal of Cultural Policy*, 24(3), 368-386.
- Sweeney, T. J. (2009). *Adlerian counseling and psychotherapy: A practitioner's approach*. Taylor & Francis.
- Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journal*, 49(4), 633-642.
- Suifan, T. S., Abdallah, A. B., & Al Janini, M. (2018). The impact of transformational leadership on employees' creativity: The mediating role of perceived organizational support. *Management Research Review*, 41(1), 113-132.
- Suh, T. (2007). *Summary Brief The Impact of Organizational Creativity and Encouragement on Advertiser's Learning*.
- Svensson, G., Ferro, C., Høgevold, N., Padin, C., Varela, J. C. S., & Sarstedt, M. (2018). Framing the triple bottom line approach: Direct and mediation effects between economic, social and environmental elements. *Journal of Cleaner Production*, 197, 972-991.
- Tabesh, P., Vera, D., & Keller, R. T. (2019). Unabsorbed slack resource deployment and exploratory and exploitative innovation: How much does CEO expertise matter?. *Journal of Business Research*, 94, 65-80.
- Tarakci, M., Ateş, N. Y., Floyd, S. W., Ahn, Y., & Wooldridge, B. (2018). Performance feedback and middle managers' divergent strategic behaviour: The roles of social comparisons and organizational identification. *Strategic Management Journal*, 39(4), 1139-1162.
- Tan, M., & Xia, Q. (2024). Curious, unconventional and creative: CEO openness and innovation ambidexterity. *Technology Analysis & Strategic Management*, 36(5), 1054-1066.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.
- Teece, D. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28(13), 1319-1350.
- Tempelaar, M. P., & Rosenkranz, N. A. (2019). Switching hats: The effect of role transition on individual ambidexterity. *Journal of Management*, 45(4), 1517-1539.

- Terry, D. J., & Jimmieson, N. L. (2003). A stress and coping approach to organisational change: Evidence from three field studies. *Australian Psychologist*, 38(2), 92-101.
- Tessier, S., & Otley, D. (2012). A conceptual development of Simons' Levers of Control framework. *Management Accounting Research*, 23(3): 171-185.
- Tett, R. P. & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, 88(3), 500–517.
- Thompson, V. A. (1965). Bureaucracy and innovation. *Administrative Science Quarterly*, 5(June), 1-20.
- Torres, A. M. (2002). Marketing networks as a form of strategic alliance among craft enterprises. *International Journal of Nonprofit and Voluntary Sector Marketing*, 7, 229–243.
- Trevisan, P., & Mouritsen, J. (2023). Compromises and compromising: Management accounting and decision-making in a creative organisation. *Management Accounting Research*, 60, 100839.
- Tripon, A. (2015). Requirements on organizational encouragement and resources for the development of entrepreneurial creativity in a glocal social–ecological system case study. *Procedia Economics and Finance*, 32, 906-913.
- Troilo, G., De Luca, L. M., & Atuahene-Gima, K. (2014). More innovation with less? A strategic contingency view of slack resources, information search, and radical innovation. *Journal of Product Innovation Management*, 31(2), 259-277.
- Tuomela, T. S. (2005). The interplay of different levers of control: a case study of introducing a new performance measurement system. *Management Accounting Research* 16, 293–320.
- Turner, K. L., & Makhija, M. V. (2006). The role of organizational controls in managing knowledge. *Academy of Management Review*, 31(1), 197-217.
- Turok, I. (2003). Cities, clusters and creative industries: The case of film and television in Scotland. *European Planning Studies*, 11, 549–565.
- Tushman, M. L., & O'Reilly III, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review*, 38(4), 8-29.

- ul Musawir, A., Abd-Karim, S. B., & Mohd-Danuri, M. S. (2020). Project governance and its role in enabling organizational strategy implementation: A systematic literature review. *International Journal of Project Management*, 38(1), 1-16.
- Ünay, F. G., & Zehir, C. (2012). Innovation intelligence and entrepreneurship in the fashion industry. *Procedia-Social and Behavioural Sciences*, 41, 315-321.
- Ungureanu, T. S. (2020). Optimal Resource Allocation to Exploration and Exploitation in Hierarchical Structures. In *Academy of Management Proceedings* (Vol. 2020, No. 1, p. 21013). Academy of Management.
- Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science*, 32(5): 590-607.
- Van den Bosch, F. A., Volberda, H. W., & De Boer, M. (1999). Coevolution of firm absorptive capacity and knowledge environment: Organizational forms and combinative capabilities. *Organization science*, 10(5), 551-568.
- Van der Meer-Kooistra, J., & Scapens, R.W. (2015). Governing product codevelopment projects: The role of minimal structures. *Management Accounting Research*, 28, 68-91.
- van der Hoek, M., Groeneveld, S., & Kuipers, B. (2018). Goal setting in teams: Goal clarity and team performance in the public sector. *Review of Public Personnel Administration*, 38(4), 472–493.
- Van der Stede, W. A. (2001). Measuring ‘tight budgetary control’. *Management Accounting Research*, 12(1), 119-137.
- Vargas, M. I. R. (2015). Determinant factors for small business to achieve innovation, high performance and competitiveness: Organizational learning and leadership style. *Procedia - Social and Behavioural Sciences*, 169, 43–52.
- Vermeulen, P. A., Van Den Bosch, F. A., & Volberda, H. W. (2007). Complex incremental product innovation in established service firms: A micro institutional perspective. *Organization Studies*, 28(10), 1523-1546.
- Visser, J. D., & Scheepers, C. B. (2022). Exploratory and exploitative innovation influenced by contextual leadership, environmental dynamism and innovation climate. *European Business Review*, 34(1), 127-152.

- Wacker, J. G., Yang, C., & Sheu, C. (2016). A transaction cost economics model for estimating performance effectiveness of relational and contractual governance: Theory and statistical results. *International Journal of Operations & Production Management*, 36(11), 1551-1575.
- Waldman, D. A., & Bass, B. M. (1991). Transformational leadership at different phases of the innovation process. *Journal of High Technology Management Research*, 2(2), 169–180.
- Wang, X. H., & Howell, J. M. (2010). Exploring the dual-level effects of transformational leadership on followers. *Journal of Applied Psychology*, 95(6), 1134.
- Wang, C. J., & Tsai, C. Y. (2014). Managing innovation and creativity in organizations: an empirical study of service industries in Taiwan. *Service Business*, 8(2): 313-335.
- Wang, H., Rispens, S., & Demerouti, E. (2022). Boosting creativity in functional diverse work groups: The importance of help-seeking behaviour and openness to experience. *European Journal of Work and Organizational Psychology*, 31(5), 768-780.
- Wernerfelt, B. (1984). A Resource-based View of the Firm. *Strategic Management Journal*, 5(2), 171-180
- West, M. A. 2002. Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation in work groups. *Applied Psychology: An International Review*, 51: 355– 424.
- Wickramasinghe, D. & Alawattage, C. (2007). *Management accounting change: approaches and perspectives*, Routledge,.
- Widener, P. (2007). Benefits and burdens of transnational campaigns: A comparison of four oil struggles in Ecuador. *Mobilization: An International Quarterly*, 12(1), 21-36.
- Williamson, R. A. (2010). Surgical management of bisphosphonate induced osteonecrosis of the Sjaws. *International Journal of Oral and Maxillofacial Surgery*, 39(3), 251-255.
- Winter, S. G., & Szulanski, G. (2001). Replication as strategy. *Organization science*, 12(6), 730-743.
- Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991-995.
- Wright, C., Sturdy, A., & Wylie, N. (2012). Management innovation through standardization: Consultants as standardizers of organizational practice. *Research Policy*, 41(3), 652-662.

- Wohl, H. (2021). Innovation and creativity in creative industries. *Sociology Compass*, 16(2), 1-11.
- Wolfe, R. A. (1995). Human resource management innovations: Determinants of their adoption and implementation. *Human Resources Management*, 34, 313-327.
- Wong, Y. J. (2015). The psychology of encouragement: Theory, research, and applications. *Counseling Psychologist*, 43, 178-216.
- Womack, J. P., Jones, D. T., & Roos, D. (2007). *The machine that changed the world: The story of lean production-Toyota's secret weapon in the global car wars that is now revolutionizing world industry*. Simon and Schuster.
- Woodman, R.W., & Schoenfeldt, L.F. (1990). An interactionist model of creative behaviour. *Journal of Creative Behaviour*, 24, 279-290
- Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, 18(2), 293-321.
- Woronkiewicz, J. (2021). Arts, entrepreneurship, and innovation. *Journal of Cultural Economics*, 45(4), 519-526.
- Yamakawa, P., & Ostos, J. (2011). Relación entre innovación organizacional y desempeño organizacional. *Universidad & Empresa*, 13(21), 93-115.
- Ylinen, M. & Gullkvist, B. (2014). The effects of organic and mechanistic control in exploratory and exploitative innovations. *Management Accounting Research* 25(1): 99- 122.
- Yuan, F. & Woodman, R. W. 2010. Innovative behaviour in the workplace: The role of performance and image outcome expectations. *Academy of Management Journal*, 53(2): 323-342.
- Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), 197-206.
- Zhao, X. H., & Chen, L. W. (2013). Governance mechanism of relational risks in supply chain. *Advanced Materials Research*, 711, 779-783.
- Zhou, K. Z., Gao, G. Y., & Zhao, H. (2017). State ownership and firm innovation in China: An integrated view of institutional and efficiency logics. *Administrative Science Quarterly*, 62: 375-404.

Zwikael, O., & Smyrk, J. (2015). Project governance: Balancing control and trust in dealing with risk. *International Journal of Project Management*, 33(4), 852-862.

Appendices

Appendix A

Interview Guide

[General guidelines for the interviewee's prior knowledge]

This research project proposes as its main goal, to understand how Management Control Systems – at their different levels of control – and the Governance model practiced relate to creativity and innovation in cultural and creative organizations.

The aim is to obtain information in a more analytical manner, and using your organization as the unit of analysis, on the following aspects:

- ☐ Understand the relationship between existing/used control systems and the promotion of creativity and innovation.
- ☐ Understand the innovation strategy pursued; whether for example to seek new knowledge, or, for example, to provide incremental benefits to what already exists based on the existing knowledge;
- ☐ Understand how the adopted leadership style, organizational culture, and other organizational characteristics impact the relationship between management control, and creativity and innovation.

Taking as a reference, not the organization, but the project as the unit of analysis:

- ☐ Understand the governance model adopted and how it influences creative and innovation projects;
- ☐ Understand how the governance model and the use of control systems/mechanisms interact with each other.

Lisbon, March 10th, 2021

Interview Guide

Identifying elements:

Organization:

Role of interviewee:

Years of Experience in the role/related roles:

Number of employees:

Unit of analysis: the organization

Block 1: Creativity

1. What is the main factor that fuels the artistic production activity?
2. How would you describe the importance of creativity in this organization?
3. What is the organizational culture regarding the idea generation process?

Block 2: Implementing the Idea | Strategy for Innovation

4. How is the process of converting ideas into actions promoted, how is this implementation systematized?
5. What strategy is followed regarding innovation?
6. How does it develop in each dimension?

Block 3: Personal and Contextual Factors

7. How would you characterize the organization's leadership, regarding the values and principles advocated?
8. How would you characterize the organization's leadership, regarding the teams and employees?
9. Does the organization consider communicating the organizational strategy and objectives important?
10. How is the organization's resource allocation management carried out?

Block 4: Management Control Systems – Levels of Control

11. Does the organization consider activity planning important?

12. What is the aim of this planning regarding the employees?
13. How does the Organization convey its values, principles and guidelines?
14. Does the organization express concern about the need to delimit the areas of intervention and activity of its employees?
15. What instrument does it use for this delimitation and what does it communicate them?
16. Does the organization use any tools to plan and monitor performance? What are the purposes?

Unit of analysis: the project

Block 5: Governance

17. Are key suppliers/providers and customers involved in sharing the risk of a project?
18. Are there any sharing of financial gains and losses, and are agreements established to that effect?
19. Is there any form of penalty and reward?
20. From your perspective, how can a leader of a given project be characterized?
21. For what purpose are meetings/workshops established?
22. Is there any key element/stakeholder that keeps the project active besides the leader?
23. How is internal communication processed and formalized between project participants?

Appendix B



Início

No âmbito da Tese de Doutoramento em Gestão do doutorando Nuno Estanqueiro Dias, sob a orientação do Prof. Doutor Tiago Cruz Gonçalves, vimos solicitar a Vossa importante colaboração no preenchimento de um questionário que tem como objetivo **"Estudar as Relações dos Sistemas de Controlo de Gestão e da Governança com a Criatividade e a Inovação em Organizações Culturais e Criativas"**.

Os dados recolhidos são de carácter anónimo e confidencial, sendo utilizados exclusivamente para fins académicos, pelo que não serão dirigidos para qualquer outro propósito após a conclusão do estudo.

Qualquer esclarecimento adicional pode ser concedido através do endereço: nuno.dias@phd.iseg.ulisboa.pt

Antecipadamente gratos.

Default Question Block

Função do Responsável pelo Preenchimento

- ☐ Gestor/a
☐ Diretor/a Artístico/a

- ☐ Ambas as anteriores

Domínio da Atividade da Organização

- ☐ Património cultural (museus, lugares históricos, sítios arqueológicos, património intangível)
- ☐ Arquivos
- ☐ Bibliotecas
- ☐ Livros e Publicações
- ☐ Artes Visuais (artes plásticas, fotografia, design)
- ☐ Artes do Espetáculo (música, dança, teatro e outros espetáculos ao vivo)
- ☐ Audiovisual e multimédia (cinema, rádio, televisão, vídeo, gravações, trabalhos multimédia, videojogos)
- ☐ Arquitetura
- ☐ Publicidade
- ☐ Artesanato
- ☐ Interdisciplinar

Natureza Jurídica

- ☐ Fundação Pública
- ☐ E.P.E. - Empresa Pública do Estado
- ☐ Associação sem Fins Lucrativos
- ☐ Cooperativa
- ☐ Empresa
- ☐ Fundação Privada
- ☐ IPSS - Instituição Particular de Solidariedade Social
- ☐ ONGD - Organização Não Governamental para o Desenvolvimento
- ☐ Outra

Número de Colaboradores da Organização

- ☐ 1 - 25
- ☐ 26 - 50
- ☐ 51 - 100
- ☐ 101 - 250

- ☐ 251 - 500
- ☐ 501 - 1000
- ☐ > 1000

Natureza do Financiamento

- ☐ Financiamento Público superior a 50%
- ☐ Recursos Próprios/Receitas Próprias superiores a 50%

Block 1

Tendo presente a sua organização, e relativamente à criatividade, classifique os seguintes itens de 1 a 6.

A criatividade é fonte primária de criação de valor para a organização.

1 Nunca ② ③ ④ ⑤ 6 Sempre

A criatividade é a nossa maior fonte de rendimento.

1 Nunca ② ③ ④ ⑤ 6 Sempre

O sucesso do produto depende principalmente da criatividade dos nossos colaboradores.

1 Nunca ② ③ ④ ⑤ 6 Sempre

A vantagem competitiva depende principalmente da capacidade criativa dos colaboradores.

1 Nunca 2 3 4 5 6 Sempre

A criatividade é o principal fator de input.

1 Nunca 2 3 4 5 6 Sempre

Transformamos ideias inovadoras em ações úteis.

1 Nunca 2 3 4 5 6 Sempre

Procuramos introduzir ideias inovadoras no ambiente de trabalho de forma sistemática.

1 Nunca 2 3 4 5 6 Sempre

Trabalhamos ativamente na tentativa de testar novas ideias.

1 Nunca 2 3 4 5 6 Sempre

Focamo-nos em promover os elementos positivos das novas ideias.

1 Nunca 2 3 4 5 6 Sempre

Block 5

Considerando a sua organização, e no que se refere à inovação, classifique os seguintes itens de 1 a 6.

Produzimos/prestamos produtos/serviços de baixo custo.

1 Ênfase muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada ☐

Procuramos ser os primeiros no mercado com novos produtos/serviços.

1 Ênfase muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada ☐

Desenvolvemos capacidades de nova geração nos nossos produtos/serviços.

1 Ênfase muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada ☐

Experimentamos novos produtos/serviços.

1 Ênfase muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada ☐

Apresentamos frequentemente novos produtos/serviços.

1 Ênfase muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada

Melhoramos a qualidade dos produtos/serviços existentes.

1 Ênfase muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada

Promovemos frequente e incrementalmente alterações nos produtos/serviços existentes.

1 Ênfase muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada

Melhoramos a eficiência dos produtos/serviços existentes que disponibilizamos.

1 Ênfase muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada

Promovemos os nossos produtos/serviços em novos mercados.

1 Ênfase muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Ênfase muito elevada

Block 2

Tendo presente as características da sua organização, classifique os seguintes itens de 1 a 6:

Preferimos os métodos tradicionais a que estamos habituados.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo plenamente ☐

Acreditamos que a diversidade é um aspeto fundamental na organização.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo plenamente ☐

O que entendemos ser certo ou errado pode não ser assim considerado por outras pessoas e organizações.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo plenamente ☐

Acreditamos que é melhor mantermo-nos fiéis aos nossos princípios do que termos a mente aberta.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo plenamente ☐

As pessoas devem respeitar os valores tradicionais e não questioná-los.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo plenamente ☐

Tendo presente as características da sua organização, classifique os seguintes itens de 1 a 6:

A cultura organizacional estimula a criatividade.

1 Não de todo ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extremamente ☐

As ideias são julgadas de forma justa e construtiva.

1 Não de todo ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extremamente ☐

O trabalho criativo é recompensado e reconhecido.

1 Não de todo ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extremamente ☐

Tendo presente as características da sua organização, classifique os seguintes itens de 1 a 6:

Os elementos das nossas equipas têm um bom entendimento sobre o que a nossa organização se propõe realizar.

1 Muito impreciso ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Muito preciso ☐

A direção futura da organização é claramente comunicada aos elementos das nossas equipas.

https://tedisboa.co1.qualtrics.com/Q/EditSection/Blocks/Ajax/GetSurvey/PrintPreview?ContextSurveyID=8V_sJToCEbD4M9Zumi&ContextLibrar... 8/21

1 Muito impreciso ② ③ ④ ⑤ 6 Muito preciso

Os elementos das nossas equipas estão bem cientes dos planos de longo prazo e da direção da organização.

1 Muito impreciso ② ③ ④ ⑤ 6 Muito preciso

Há um forte entendimento entre os elementos das equipas sobre o caminho que está a ser seguido pela organização.

1 Muito impreciso ② ③ ④ ⑤ 6 Muito preciso

Tendo presente as características de liderança da sua organização, classifique os seguintes itens de 1 a 6:

O líder comunica uma visão clara e positiva do futuro.

1 Nem um pouco 2 3 4 5 6 Frequentemente
○ ○ ○ ○ ○ são sempre

O líder trata a equipa como indivíduos, apoia e incentiva o seu desenvolvimento.

1 Nem um pouco 2 3 4 5 6 Frequentemente
○ ○ ○ ○ ○ são sempre

O líder promove o encorajamento e o reconhecimento dos colaboradores.

1 Nem um pouco ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Frequentemente
senão sempre ☒

O líder promove a confiança, o envolvimento e a cooperação entre a equipa.

1 Nem um pouco ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Frequentemente
senão sempre ☒

**O líder incentiva a reflexão sobre novos modos de pensar os problemas e
questiona o *status quo*.**

1 Nem um pouco ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Frequentemente
senão sempre ☒

**O líder é claro sobre os valores que defende em coerência com o seu
comportamento.**

1 Nem um pouco ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Frequentemente
senão sempre ☒

O líder incute orgulho e respeito nos outros, sendo uma fonte de inspiração.

1 Nem um pouco ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Frequentemente
senão sempre ☒

Tendo presente as características da sua organização, no que se refere à gestão dos recursos, classifique os seguintes itens de 1 a 6:

Detemos recursos que não estão comprometidos e que podem ser utilizados para financiar iniciativas estratégicas a curto prazo.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Detemos uma grande quantidade de recursos disponíveis a curto prazo para financiar as nossas iniciativas.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Não teremos dificuldades em obter recursos a breve trecho para apoiar novas iniciativas estratégicas.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Detemos recursos substanciais à disposição da Organização para financiar novas iniciativas estratégicas.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Block 3

Tendo presente a experiência da sua organização, em que medida a gestão de topo utiliza instrumentos previsionais e de acompanhamento do desempenho para os seguintes itens, classificando-os de 1 a 6:

Proporcionar recorrente e frequentemente uma agenda para as atividades da gestão de topo.

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Proporcionar recorrente e frequentemente uma agenda para as atividades subordinadas.

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Permitir o desafio continuo e a discussão de dados, pressupostos e planos de ação subjacentes com colaboradores e pares.

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Centrar a atenção nas incertezas estratégicas (isto é, nos fatores que podem invalidar a estratégia corrente ou proporcionar oportunidades para novas iniciativas estratégicas).

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Incentivar e facilitar o diálogo e a partilha de informações com os colaboradores.

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada

Identificar variáveis críticas de desempenho (isto é, fatores que indicam a realização da estratégia corrente).

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada

Definir metas para variáveis críticas de desempenho.

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada

Monitorizar o progresso relativamente a metas críticas de desempenho.

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada

Fornecer informações com vista a corrigir desvios em relação a metas de desempenho predefinidas.

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada

Rever áreas críticas de desempenho.

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Tendo presente a experiência da sua organização, em que medida são considerados os seguintes itens, classificando-os de 1 a 6:

São invocados os códigos de conduta ou declarações similares para definir um comportamento apropriado?

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Existem políticas ou diretrizes que estabelecem áreas específicas para, ou limites de, procura de oportunidades e experimentação?

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

A gestão de topo comunica ativamente os riscos e as atividades que devem ser evitados pelos colaboradores?

1 Extensão muito baixa ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

São aplicadas sanções ou punições a colaboradores que se envolvem em riscos e atividades fora da política organizacional, independentemente do resultado?

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

São os valores, objetivos e a direção das unidades estratégicas de negócio expressos em documentos formais (por exemplo, cartas de missão/valores, declarações, orientações)?

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

A gestão de topo comunica ativamente os valores fundamentais aos colaboradores?

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

São utilizadas declarações formais de valores no sentido de criarem compromisso com a visão de longo prazo da gestão de topo?

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

São utilizadas declarações formais de valores para motivar e orientar os colaboradores na procura de novas oportunidades?

1 Extensão muito baixa ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Extensão muito elevada ☐

Block 4

Tendo presente como unidade de análise o **projeto**, e de acordo com a experiência da sua organização, considere os seguintes itens, classificando-os de 1 a 6:

Qualquer que seja a margem de lucro gerada em virtude de menores custos operacionais, é a mesma partilhada de forma justa entre os stakeholders que participam no projeto.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Qualquer que seja a parcela de perda que se verifique em virtude de custos operacionais excessivos, é a mesma partilhada de forma justa entre os stakeholders que participam no projeto.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os diferentes stakeholders partilham proporções iguais do lucro em face de menores custos operacionais ocorridos no projeto.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os diferentes stakeholders partilham proporções iguais da perda em face de desvios ocorridos no projeto.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

O risco global de cada stakeholder é limitado no valor da perda da sua participação no projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

É estabelecido um acordo para reconhecer que as partes (os diferentes stakeholders) partilham coletivamente do risco do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Existem mecanismos de incentivo para cumprimento das metas do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os stakeholders estimam coletivamente o custo esperado do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os principais stakeholders estão sujeitos a sanção pecuniária em caso de incumprimento das datas de conclusão do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os principais stakeholders suportam exclusivamente o risco do aumento dos custos do projeto.

1 Discordo
totalmente

2

3

4

5

6 Concordo
totalmente

Tendo presente como unidade de análise o **projeto**, e de acordo com a experiência da sua organização, considere os seguintes itens, classificando-os de 1 a 6:

Os gestores de projeto detêm fortes competências de comunicação.

1 Discordo
totalmente

2

3

4

5

6 Concordo
totalmente

Os gestores de projeto detêm fortes competências de logística.

1 Discordo
totalmente

2

3

4

5

6 Concordo
totalmente

Os gestores de projeto tomam decisões numa base do «melhor para o projeto».

1 Discordo
totalmente

2

3

4

5

6 Concordo
totalmente

Os gestores de projeto incentivam a cooperação entre as partes.

1 Discordo
totalmente

2

3

4

5

6 Concordo
totalmente

Os gestores de projeto procuram obter consensos em toda a cadeia do processo de tomada de decisão.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Os gestores de projeto envolvem-se efetivamente com as partes interessadas da comunidade.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

Quando apropriado, os workshops/reuniões tidos no contexto do projeto envolvem um vasto conjunto de participantes.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

São realizados workshops/reuniões para avaliação pós-revisão do projeto.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

São realizados workshops/reuniões para o desenvolvimento da inovação.

1 Discordo totalmente ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☐

São realizados workshops/reuniões para a integração dos principais stakeholders.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☒

Os workshops/reuniões são conduzidos por um moderador independente ao projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☒

Há um gestor de relacionamento interpessoal que promove a cooperação nas fases iniciais do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☒

Há um gestor de relacionamento interpessoal que mantém a cooperação ao longo da vida do projeto.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☒

São utilizadas ferramentas de comunicação (por exemplo, uma matriz de expectativas) que permita que os stakeholders participantes num determinado projeto alinhem os respetivos compromissos entre si.

1 Discordo totalmente ☒ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 Concordo totalmente ☒

https://tedsboa.co1.qualtrics.com/Q/EditSection/Blocks/GetSurvey/PrintPreview?ContextSurveyID=SV_aJToCEbD4MIZumi&ContextLib... 23/21

Powered by Qualtrics