



CAN INNOVATION AND COMPLIANCE GO TOGETHER? A CONCEPTUAL FRAMEWORK

Inovação e compliance podem andar juntos? Uma estrutura conceitual

Alan Bandeira Pinheiro¹, Thicia Stela Lima Sampaio², Rubens Carlos Rodrigues³, Wilson Toshio Nakamura⁴

¹Universidade Federal do Paraná, ²Universidade Federal do Ceará, ³Universidade de Fortaleza, ⁴Universidade Presbiteriana Mackenzie

Email: thiciasampaio@gmail.com, alanbpinheiro@hotmail.com, rubenscarlos@fisica.ufc.br, wilson.nakamura@mackenzie.br

ABSTRACT

This essay aims to identify the points of congruence and divergence between the need for coexistence of compliance and innovation in companies. This essay discusses how innovation interferes with economic dynamics, and how compliance can be used to control and limit innovation. We identified factors that influence the highest level of compliance and that favor the innovative capabilities of companies. The joint analysis of these factors allowed the elaboration of eight theoretical propositions that connect compliance and innovation, being such coexistence is not an option for companies, but a necessity, exposing an antagonistic and symbiotic relationship between the two themes. We believe that this essay enriches the existing literature by connecting several research that, in a first analysis, do not establish a connection. We propose a conceptual framework with propositions to be empirically tested by future studies. In addition, we were able to expose that compliance has been a neglected term in academic research, requiring further studies on how organizations can benefit from it. We point out the various nuances of possibilities that the symbiotic relationship between compliance and innovation can give rise to. Companies that have innovative processes or partnerships for this purpose must implement compliance in their governance structure, but horizontally, defining people or sectors responsible for carrying out internal and external compliance in an active position, in the various stages of building innovation: development, testing and production. Managers should be aware that compliance should not be so rigid as to restrict freedom, self-direction and promote excessively high costs.

Keywords: Innovation, Compliance, Theory of Knowledge, Information Flow, Intellectual Capital, Risk.

ACEITO EM: 15/04/2024

PUBLICADO EM: 01/08/2024



INOVAÇÃO E COMPLIANCE PODEM ANDAR JUNTOS? UMA ESTRUTURA CONCEITUAL

Can innovation and compliance go together? A conceptual framework

Alan Bandeira Pinheiro¹, Thicia Stela Lima Sampaio², Rubens Carlos Rodrigues³, Wilson Toshiro Nakamura⁴

¹Universidade Federal do Paraná, ²Universidade Federal do Ceará, ³Universidade de Fortaleza, ⁴Universidade Presbiteriana Mackenzie

Email: thiciasampaio@gmail.com, alanbpinheiro@hotmail.com, rubenscarlos@fisica.ufc.br, wilson.nakamura@mackenzie.br

RESUMO

Este ensaio tem como objetivo identificar os pontos de congruência e divergência entre a necessidade de coexistência de compliance e inovação nas empresas. Este ensaio discute como a inovação interfere na dinâmica econômica e como o compliance pode ser usado para controlar e limitar a inovação. Identificamos fatores que influenciam o maior nível de compliance e que favorecem a capacidade inovadora das empresas. A análise conjunta desses fatores permitiu a elaboração de oito proposições teóricas que conectam compliance e inovação, sendo tal convivência não uma opção para as empresas, mas uma necessidade, expondo uma relação antagônica e simbiótica entre os dois temas. Acreditamos que este ensaio enriquece a literatura existente ao conectar várias pesquisas que, em uma primeira análise, não estabelecem conexão. Propomos um arcabouço conceitual com proposições a serem testadas empiricamente por estudos futuros. Além disso, pudemos expor que compliance tem sido um termo negligenciado nas pesquisas acadêmicas, necessitando de mais estudos sobre como as organizações podem se beneficiar dele. Apontamos as diversas nuances de possibilidades que a relação simbiótica entre compliance e inovação pode gerar. As empresas que possuem processos inovadores ou parcerias para esse fim devem implementar o compliance em sua estrutura de governança, mas de forma horizontal, definindo pessoas ou setores responsáveis pela execução do compliance interno e externo em posição ativa, nas diversas etapas da construção da inovação: desenvolvimento, teste e produção. Os gestores devem estar cientes de que o compliance não deve ser tão rígido a ponto de restringir a liberdade, a autodireção e promover custos excessivamente elevados.

Palavras-chave: Inovação, Conformidade, Teoria do Conhecimento, Fluxo de Informações, Capital Intelectual. Risco.

INTRODUCTION

The innovative process uses the flow of knowledge to generate new products/services that can be offered to society, via the globalized market. The nature of innovation is part of its indeterminism, producing a greater risk for companies and societies that make use of innovation as a competitive differential factor.

At this moment, compliance emerges, a facet of Corporate Governance, whose characteristic is to maintain the flow of the company's operations within compliance, according to norms, customs, and moral and ethical conduct of the agents who make decisions on behalf of the company, aiming to reduce risks of potential sanctions applied to companies. Thus, the search for differentiated competitiveness, through the innovative use of knowledge for the generation of differentiated products/services, cannot extrapolate formal conventions (game rules), which would break with the existing compliance in the environment in which the company is operating its innovative process, meaning that the ends cannot justify the means.

The pandemic situation established by the World Health Organization (WHO) in 2020, and the demand for the development of a vaccine that symbolized treatment for COVID-19 exposed the underlying conflict between compliance with the innovation process, and the time factor is a potentiator of this conflict, which could result in the safeguarding of millions of human lives.

Research that deals with innovation, whether as a process, as a result, or as a business characteristic, has not yet connected the theme of compliance, having as a link the risk factor linked to the indeterminism of innovation, which is a research gap that, through the recent context such as the pandemic is relevant to advance the discussion of how the theoretical perspectives of innovation and compliance can be complementary or competing, which in turn, can provide advances in a multidisciplinary way for both themes.

The aim is to identify points of congruence and divergence between the need for coexistence of compliance and innovation in companies. This essay addresses the theory of knowledge, the innovation - in a broad sense - and intellectual capital, focusing on innovative capital as a skill to explore how the innovation present in different segments and agents of the corporation can interfere with economic dynamics and the search of companies for environments conducive to the innovative process, questioning and elucidating whether compliance can be used as a way to control, limit and restrict the innovative process without prejudice to the advances desired by the innovation.

This essay envisions a new perspective regarding the interaction of these elements, as well as whether compliance can be only a barrier to innovation, which has as a means of realization the transfer and flow of knowledge (Kogut and Zander, 2003), or can be an ally to innovation. Thus, the following question has been made: *What are the implications that the need for compliance can interfere in the innovative capacity of companies?*

This essay exposes the recurrence of compliance in research on innovation. There is a difficulty in identifying the connection between these themes, given the dispersion and applicability of metrics and the use of compliance in research. In addition, we identify what we call internal and external compliance, and external compliance can be passive or active. This identification allowed us to highlight the importance of implementing both horizontal and vertical compliance sectors, aiming to align the entire innovation process chain, thus allowing a symbiosis between compliance and innovation.

We believe that this essay enriches the existing literature by connecting several research that, in a first analysis, do not establish a connection, but that, under the lens of promoting an environment favorable to the theory of the flow of knowledge, do. We propose a conceptual model with propositions to be empirically tested by future studies. In addition, we were able to expose that compliance has been a neglected term in academic research, requiring further studies on how organizations can benefit from it.

We point out the various nuances of possibilities that the symbiotic relationship between compliance and innovation can give rise to. The discussion carried out suggests the presence of two types of compliance: one internal and the other external. We suggest that companies that have innovative processes or partnerships for this purpose, implement compliance in their governance structure, but horizontally, defining people or sectors responsible for carrying out internal and external compliance in an active position, in the various stages of construction.

1 METHODOLOGY

The methodology used is classified as qualitative, exploratory in the form of a theoretical essay. Initially, we present in sections 3, 4 and 5, the key elements and protagonists of the discussion in their conceptual bases and multidisciplinary branches of connection.

Initially, we carried out bibliographic research in 3 stages. In the first step, we searched the Scimago Journal & Country Rank (SJR) database for newspapers that in the 2021 ranking were included in the Platform, such as:

1. Ranking position: Q1 and Q2 stratum of the database;
2. Period of ranking position: 2021;
3. Area: Business, Management and Accounting;
4. Categories:
 - a) Strategy and Management (4 journals Q1, 14 journals Q2);
 - b) Management of technology and Innovation (1 journal Q1, 11 journals Q2);
 - c) Business and international management (3 journals Q1, 12 journals Q2);
 - d) Industrial relations (3 journals Q2);
 - e) Business, Management and Accounting (miscellaneous) (5 journals Q1, 12 journals Q2).
5. Region/countries: belonging to the OECD (Organization for Economic Cooperation and Development).
6. Access: open or hybrid

We chose the OECD region/countries filter due to the commitment and activism of this body and its member countries with Corporate Governance, which drives and correlates with compliance practices, especially countries that adopt the “comply or explain” method. In this first step, we identified 53 different journals, (9 Q1 rated journals, 44 Q2 rated journals), which corresponds to our research population. In the second stage, we searched in each of these journals for articles published from 2019 to June 2022 (analysis period), using as a search method keywords, initially in the title, and later in the abstract, and in the body of the text. The words that guided the search were used in five search steps:

1. innovation + compliance.
2. risk + innovation + compliance.
3. sustainability + innovation + compliance.
4. institutional theory + innovation + compliance
5. intellectual capital + innovation.

Based on the results, a preliminary reading of the texts was carried out, which constitutes a third stage of selection of articles, having been selected 20 papers, in 13 of the 53 journals of the target population, that showed potential to add the proposed discussion in line with the research question and purpose. 6 papers are from Q2 journals, and 15 papers are from Q1 journals. The core papers are identified in Table 1.

Table 1 - Core articles selected for discussion

	Journal		Title	Authors	Year
1	Management Science	1	Shaming for Tax Enforcement	Dwenger, N. and Treber, L.	2022
2	Marketing Science	2	Regulatory Spillovers and Data Governance: Evidence from the GDPR	Peukert, C., Bechtold, S., Batikas, M. and Kretschmer	2022
3	Organization Science	3	The Mechanisms and Components of Knowledge Transfer: The Virtual Special Issue on Knowledge Transfer Within Organizations	Argote, L., Guo, J., Park, S.S. and Hahl, O.	2022
		4	Responsibility and Organization Science: Integrating Micro and Macro Perspectives	Aguilera, R. V., Waldman, D.A. and Siegel, D.S	
		5	Alliance Governance Mechanisms in the Face of Disruption	Keller, A., Lumineau, F., Mellewigt, T. and Ariño, A	
4	Journal of Cleaner Production	6	Towards sustainable product development – Insights from testing and evaluating a profile model for management of sustainability integration into design requirements	Watz, M. and Hallstedt, S.I.	2022

		7	Effectiveness-equity tradeoffs in enforcing exclusionary supply chain policies: Lessons from the Amazonian cattle sector	Cammelli, F., Levy, S.A., Grabs, J., Valentim, J.F. and Garrett, R.D.	2021
5	Journal of Organization Design	8	Designing organized clusters as social actors: a meta-organizational approach	Lupova-Henry, E., Blili, S. and Dal Zotto, C.	2021
6	Journal of Innovation and Knowledge	9	Effects of digital public services on trades in green goods: Does institutional quality matter?	Ha, L.T. and Thanh, T.T.	2022
7	Eurasian Business Review	10	Business environment reforms, innovation and firm productivity in transition economies	Gogokhia, T. and Berulava, G.	2021
8	BRQ Business Research Quarterly	11	Theory, explanation, and understanding in management research	Joullié, J.E. and Gould, A.M.	2021
		12	Learning from foreign operation modes: The virtuous path for innovation	Villar, C., Pla-Barber, J. and Ghauri, P.	2020
9	Journal of Competitiveness	13	Assessing the Intermediary Role of Relationship Ending Capability and Dark Side Between Network Embeddedness and SMEs' Innovation Performance	Tian, H., Otchere, S. K., Dogbe, C. S. K., Addy, W. O., and Hammond, F.	2021
		14	The Impact of Proactive Environmental Strategy on Competitive and Sustainable Development of Organizations	Ahmed, R.R., Streimikiene, D. and Zheng, X.	
		15	New Product Creativity Mediating the Relationship Between Organizational Bricolage and the Competitive Advantage of SMEs	Tian, H. yun, Dogbe, C.S.K., Bamfo, B.A., Pomegbe, W.W.K. and Borah, P.S.	
10	Business Research / Schmalenbach Journal of Business Research	16	Learning to Litigate: The Relationship Between Past Litigation Experience and Litigation Outcomes in the Chinese Intellectual Property System	Andersen, K. V., Beukel, K. and Tyler, B. B.	2021
11	The Bottom Line	17	Intellectual capital, sustainable economic and financial performance and value creation in emerging markets: the case of Brazil	Jordão, R. V. D, Almeida, V. R.d., Novas, J	2022
		18	The role of knowledge management processes in leveraging competitive strategies to achieve firm innovativeness	Trivedi, K., and Srivastava, K. B.L.	2022
12	Journal of Theoretical and Applied Electronic Commerce Research	19	The Effect of Digital Orientation and Digital Capability on Digital Transformation of SMEs during the COVID-19 Pandemic	Rupeika-Apoga, R. Petrovska, K. and Bule, L.	2022
13	IIMB Management Review	20	Implications of emerging technologies on the future of work	Jaina, A. and Ranjana, S.	2020

The articles in Table 1 express what we call the “core” of the discussion, despite the use of “satellite” works which reinforce the arguments presented in the discussion. Although the filter is focused on publications from 2019 to 2022, some works cited in the essay extrapolate this period, aiming not to miss the occurrence of classic works.

Based with the state of the art, priority was given to research in journals of greater relevance or impact factor, only this criterion being softened when through the restriction of results and the novelty of the approach of these two themes in the light of the theory of the knowledge flow and intellectual capital.

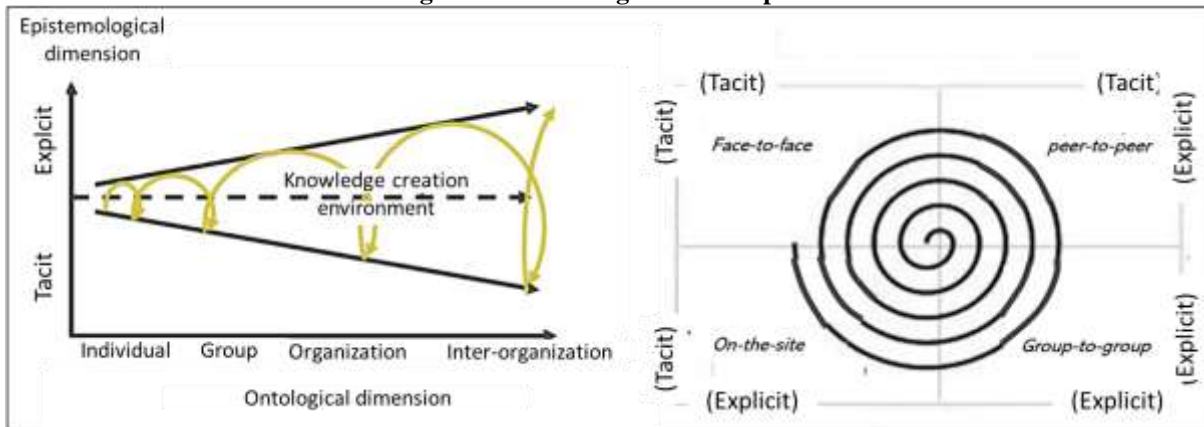
2 FIGHTING RING: THE THEORY OF KNOWLEDGE OR THE FLOW OF KNOWLEDGE

Dieng-Kuntz (2006, p. 79) approach knowledge management as "the management of activities and processes aimed at expanding the use and creation of knowledge of an organization". Gloet and Terziovski (2004) expand this meaning when they give knowledge flow management a competitive advantage, because the company that performs it has a greater capacity to develop and innovate in its segment of activity.

It is important to highlight, according to Setzer (2001), the elements related in the process of knowledge generation and management: i) the data (can be quantified and have formal representation); ii) the information (derived from the data and after the process of organization and analysis, with descriptive and qualitative characteristics, having usefulness); iii) knowledge (when information is transferred from a sender to a receiver).

Knowledge can be divided into two types: tacit (expertise, skills) and explicit (coded), whose interaction between both generate a spiral of knowledge that converges with each other through socialization (sharing of experiences), internalization (learning by doing), outsourcing (use of metaphors to dialogue tacit knowledge) and combination (process after outsourcing, adding, and merging various types of knowledge, tacit and explicit) (Oliveira Júnior, 2001). Figure 1 illustrates the model of generation, transfer and flow of knowledge proposed by Nonaka and Takeuchi (1997) as well as Nonaka and Konno (1998).

Figure 1 - Knowledge flow and spiral.



Source: Developed by the authors (2023), adapted from Nonaka and Takeuchi (1997) as well as Nonaka and Konno (1998)

The framework propose that knowledge be analyzed in the epistemological perspective (contemplates the Tacit and explicit dimension) and ontological (from the individual to the interorganization) whose dimensions are interrelated, with the need for spaces that provide socialization (brainstorm), outsourcing (metaphors), internalization (generation of operational knowledge) and combination (diffusion and systematization), which transform tacit knowledge into explicit, spiral and continuous flow (Nonaka, 2007), in the environment where these actions take place there may be power disputes, compromising the efficiency of this framework, evidencing the importance of an environment favorable to knowledge transfer (Zhu, 2006).

3 PLAYER ONE: INNOVATION

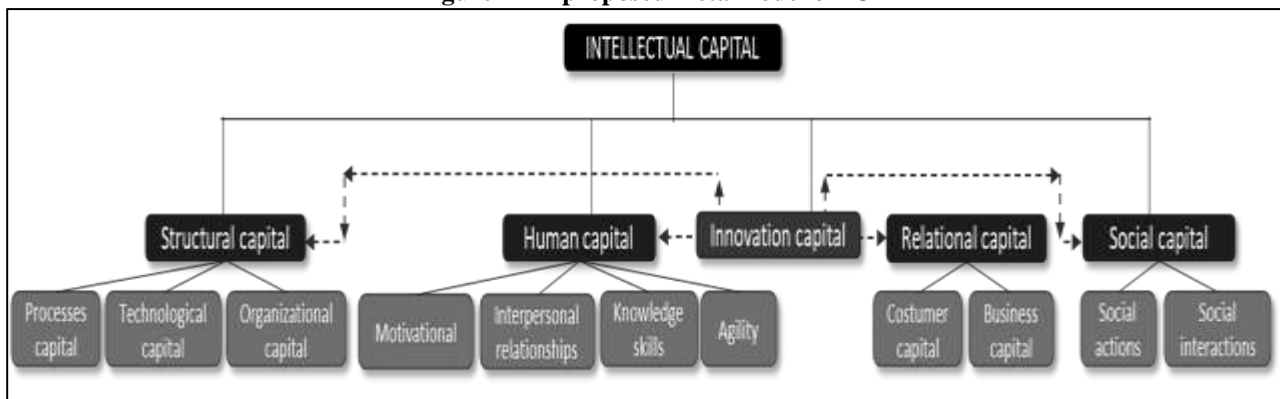
Since the 1960s the term innovation has emerged in the corporate scenario, gaining strength in the 20th century, through Schumpeterian thinking, presenting itself as a means of technological advancement by which corporations achieve greater financial returns, and the entrepreneur must devote time, in equal proportion, to the innovative actions and other demands of the company, leading into an economic and long-term development, enhancing the capitalist productive system (Schumpeter, 1982; Freeman and Soete, 2008).

The economic perspective captures the first category of innovation. The second category contemplates the innovative behavior of work, derived from the human capital used for the recognition of problems and generation of ideas, being necessary a propitious environment and employees with skills, knowledge, and creative ideas (Thongsri and Chang, 2019). Given the economic perspective, and the dynamism that innovation can generate in the production and consumption of society, one can analyze the impacts of innovation on the product life cycle (Kotler and Keller, 2006).

In this sense, the innovative process directly impacts the maturity and decline phase of the product, shortening them, as quickly a new product, improved or new, replaces, in total, the existing product, creating a dynamism in the economy, changing the duration of the phases of the product cycle, the organizational structure of corporations, since they need to constantly adapt to new scenarios generated by innovation (Dosi, Nelson and Winter, 2000), being understood as an answer to organizational questions, capable of transforming resources, tangible, and intangible, into a competitive advantage.

The innovation is part of structural capital, which in turn is one of the capitals that forge intellectual capital, which results from the aggregation, at different levels, of capital: structural, human, relational and social (Ferenhof *et al.*, 2015). Due to the growing number of disruptive technologies, human capital composition models, as proposed by Ferenhof *et al.* (2015) could be developed. Through the dynamism of social needs, IC models can also be changed to represent with greater reliability which capitals forge, in order of relevance, a metamodel of intellectual capital today. In Figure 3, we present a reinterpretation of the metamodel proposed by Ferenhof *et al.* (2015):

Figure 2 - A proposed meta model of IC



Source: Elaborated by the authors (2023), adapted from Ferenhof *et al.* (2015)

This proposal is in line with Chen *et al.* (2004), Wu *et al.* (2010), Liang *et al.* (2013) regarding the relevance of innovation as an innovative capital, in addition to considering the perspective of Bueno *et al.* (2011), that the innovative capital, when present, can exert a synergy with the other capitals, enhancing them, in each of its cores, that is, our meta model considers the existence of an interaction of innovative capital over the others, considering that innovative capital can adapt to the applicability of each of these capitals, without overlapping them, which suits the current context marked by the emergence of disruptive technologies and behaviors, through enhance social and relational capital which can be useful in the management and flow of information. The concept of innovation used in this research is broad, involving multiple aspects, covering all innovation capabilities in a company, whether operational, development, strategic, business, adaptation, or relating to managers, employees, and the product itself.

Our approach to innovation in this essay is broad, that is, we chose to work with the term innovation without a restriction while delimiting the term innovation as the result of the generation of a product, or an innovative process. In this way, our analysis and discussion look at the possibilities of innovation in its range of employability within the corporation, involving from innovative thinking (skill), the process and the generation (recreation) of products.

4 PLAYER TWO: COMPLIANCE

Compliance is an integral part of the Corporate Governance (CG) system and extrapolates the doctrinal themes of company management, addressing regulations of bodies as well as entities interested in good management, ethical performance, and compliance, establishing a relationship with the legal area of criminal, administrative, tax, civil and consumer law before the accountability of acts, facts, and conduct (Holt, 2006; Jensen and Meckling, 1976). Sectors that adopt the compliance signal a type of 'ethical mandate', with which they could prevent, detect, and blame for misconduct and legal problems in the relationships of owners and administrators with stakeholder).

The implementation of compliance practices aims to reduce the 'compliance risk', characterized by the risk of the company suffering sanctions, financial loss or reputation due to non-compliance with laws, regulations, and codes of conduct, internal and external to the organization. In addition to acting in the prevention of irregular conduct the assimilation of compliance culture and revision of regulations tend to minimize risks, errors, and the need for rework (Carvalho *et al.*, 2019).

The compliance emerges as a limiting, or even establishing minimum rules of ethical, moral, theoretical, and legal conduct, which must be addressed and observed during this process innovation, according to Stiegler (1998), intending to protect the company and its innovative employees, as well as ensuring that the company and its employees will not exceed limits to achieve the competitive advantage (intellectual property) they aim to.

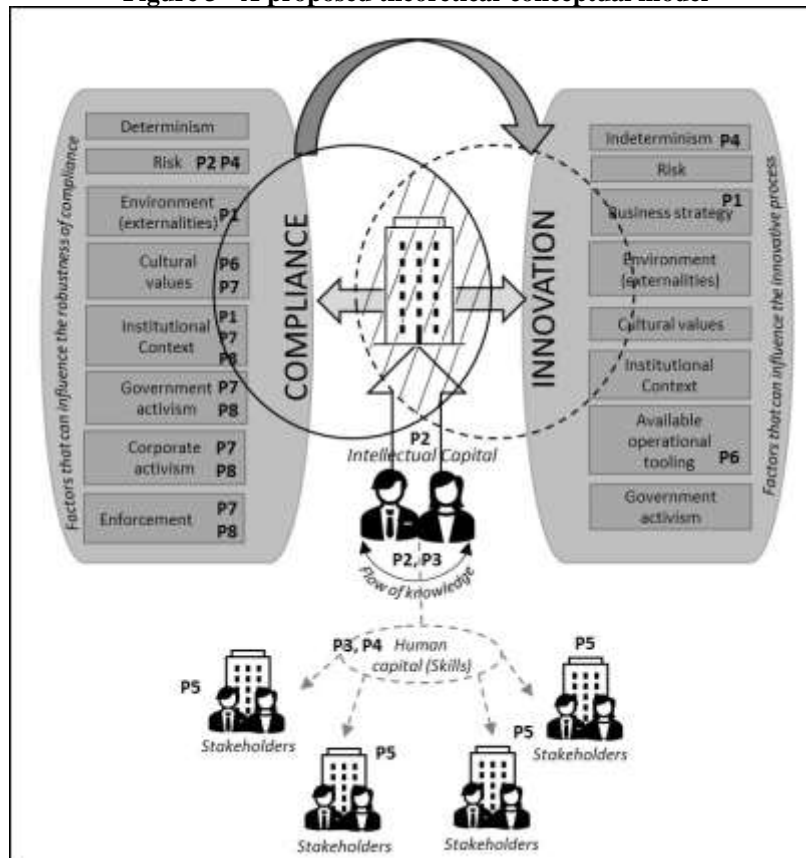
We emphasize that there is no consensus in the literature on the term compliance as a matter or discipline, being a theoretical definition or delimitation more the one we find within the scope of the study of corporate governance. In this way, the approach as a basis for maintaining our compliance in all its extension ranges from the areas of compliance: legal (government, sectoral and regional block rules); internal (manuals of conduct and procedures), external (in negotiation, contract rules, social and ethical).

5 DISCUSSIONS: KNOCKOUT OR TECHNICAL DRAW? AFTER ALL, THERE MAY BE INNOVATION AT THE SAME TIME AS COMPLIANCE?

Companies that want to be known as innovative should observe, analyze and control (what is possible) the innovation process through identification and recognition of the social context in which they are inserted, or aim to insert themselves in their market share. Since the product/service derived from innovation tends to merge, that is, it is not enough to create an innovative product, but to create the rules of the game (compliance).

In this line of reasoning and based on the words used in the bibliographic research, we identified factors that can affect the robustness of compliance and the capacity for innovation, as well as the influence of the flow of knowledge and intellectual capital in the relationship to be established between compliance and innovation. Figure 3 expresses these interactions.

Figure 3 - A proposed theoretical-conceptual model



Source: Elaborated by the authors (2023)

We started the discussion by identifying the antagonistic relationship between compliance (determinism) and innovation (indeterminism), both being desired within the corporate environment, we can cite the case of the cryptocurrencies, created in 2010 using blockchain technology, aroused the attention of society, however, the high expenditure of fossil energy consumed in the mining of these caused to countries, such as China, in response to the pressures of the global environmental agenda, to harden the rules for cryptocurrency mining, leading several companies, who operated in the country, to "flee", aiming at the continuity of operations in an environment of lower compliance (Hull *et al.*, 2021; Schulz and Feist, 2021). The rise of the theme sustainability and concern for the environment is directly shocked by a consequence of the innovative process that alters the life cycle of products, shortening it: the disposal of goods, due to a greater existence of durable and semi-durable consumer goods (Njoroge *et al.*, 2019).

The antagonism of these two players can also be critically analyzed under the lens of corporate responsibility and irresponsibility. According to Aguilera, Waldman and Siegel (2022), the same company can be both responsible and irresponsible as it changes to whom this duty to be responsible is. In this way, when pursuing its strategic objectives, goals, and internal controls, through internal rules (compliance), the company is responsible to itself, but it may be being irresponsible to society and the environment. Such attitudes of the corporate body can be enhanced by the organizational ethical climate, involving motivating aspects such as the ability to do what is right, interest in the benefits of ethical action (empathy). Therefore, it must be distinguished that the pursuit of corporate objectives can supplant ethical actions or motivate the avoidance of environments wrapped in a high ethical climate, thus reducing the chance of regulatory or moral retaliation by the corporation.

Through the social appeal for greater mechanisms to lead companies to both innovative and sustainable behaviors, the regulations that support sustainable development elevate the role of compliance with the potential to reverse pecuniary losses (Dwenger and Treber, 2022).

The innovation process has been the increasing target of questions, which in certain cultures and contexts, provide a stiffening of the way that the innovative process can occur, or even requiring specific characteristics that the originating product must contain, as in the cases of environmental perspectives and risk theory for which the innovation process is harmful to the environment, once that it is based on the premise that the riskier the better can be the financial future returns.

That one of the positive aspects of the innovative process is the culture of knowledge, its transference, in the case of open innovation, and may impact on economic development with the generation of companies in places aligned with the innovative characteristics and more willing to take risks in their production system, such as Silicon Valley in the United States of America, and the Shenzhen region of China.

At this point, the relevance of the regional innovation environment (RIE) emerges, for which Zhu *et al.* (2022) address three dimensions that can characterize a RIE: i) factors; ii) political and iii) cultural and found empirical evidence that RIE can also influence the performance of scientists and developers, enhancing personal factors such as the propensity to seek career advancement and personal satisfaction, thus promoting behavior innovative.

As companies pursue their goals, countries are looking for ways to become economically competitive and attractive to investors by reforming aspects of the national business system. At this point, there is a distinction between microeconomic and macroeconomic aspects that are decisive for stimulating innovation, and these aspects are characteristic of the REI. Gogokhia and Berulava (2021) obtained results that reforms in the business environment (access to credit, access and provision of infrastructure, political and legal stability) in emerging economies with a view to bringing them closer to the business environment in which innovative companies operate, stimulate Research and Development (R&D) activities, and the level of innovation activities. In summary, the fewer financial, structural, political/legal obstacles, the greater the R&D and innovation activity.

In the light of the theory of the flow of knowledge, academic research that deals with determining factors of REI, whether macro or micro, internal and external to companies, including personal aspects - as factors that motivate scientists' propensity to innovate and developers - aim to promote the flow of knowledge as a result, desired by the various configurations of the REI, mainly in the ontological perspective.

The flow of knowledge is not only related to the innovation aspect, but also to the compliance aspect, as corporations learn better ways to establish contractual clauses or to check the safeguard of their assets, especially those of intellectual property, characteristic of the innovation.

In this sense, Andersen *et al.* (2021) researched the learning of dealing with intellectual property (IP) litigation in an emerging economy in terms of patent rights protection: China, involving the use of IP by persons

without authorization to do so, as well as the use of IP outside the agreed contractual rules. The results showed that corporations that have dealt with this type of litigation tend to have greater chances of success when they have previous experience of success in similar litigation. This signals the flow of ontological corporate learning, as well as better navigation through the contextual legal system. In this study, we observe the flow of knowledge in favor of better learning for compliance and reduction of compliance risk, involving aspects of innovation.

At this stage the company that aims to extrapolate its borders, analyzes the existing regulations and contexts in the intended environment, seeking to evaluate the level of interference that can exert both in the development phase and in the productive stage, due to legal restrictions (research, labor and environmental), characterizing a more rigid compliance environment or not, and whether this rule is consistent with greater oversight which effectively effective the rules stipulated to develop or launch on the market an innovative product.

Furthermore, consideration should be given to whether innovative open innovation environment with low compliance rigor, may imply risk for registration of patents of a portfolio or product, requiring the company to make greater expenses with security of strategic information and products that it develops, risking attracting companies with very bold research proposals, or even involved with illegalities, or with harmful potential to people and the environment, either by the productive form, or by the extraction and acquisition of them (Oliveira *et al.*, 2021).

Through this discussion we present proposition 1, 2 and 3:

P1: Pressures from outside and inside companies motivate imposing environmental compliance in favor of sustainability and may restrict the development and operational capacity, partial or total, of companies with an innovative profile.

P2: Compliance risk can be reduced through the flow of knowledge about the political/legal aspects of the environment, safeguarding assets for the generation of innovation.

P3: The search for risk mitigation through compliance restricts the innovative skills due to the restriction of indeterminism, which is a fundamental factor in the innovative process.

The use of knowledge to promote innovation fosters research, a fact already observed in countries such as China, Germany, which have joined industry 4.0 and approved MIC2025. In the United States, universities whose research have been more effective in transferring knowledge have shown an increase in employee salaries, a greater number of people involved in technology licensing, and a greater amount of capital available for research, either through donations, contracts, partnerships, public funding via greater government support (Arbix *et al.*, 2018). It should be emphasized the connection of innovation with knowledge because it is based on this and on people with creative skills, that a new use of existing knowledge in the generation of new or improved products and services.

Tian *et al.* (2021a) investigated how Small and Medium-sized Enterprises (SMEs) circumvent existing obstacles in REI, analyzing the innovative capacity of this niche of companies using the DIY strategy, suggesting a virtuous cycle in which the use of the do-it-yourself strategy favors the generation of new products which, in turn, give companies competitive advantages.

The creativity skills exercised in the organizational context and the interactions established in it, make it possible to face complex and challenging situations for reuse, discover new applications and utilities and re-signification of available materials and resources, which in turn leads to originality, without necessarily having created new materials and resources.

It is noticed that the flow of knowledge makes up the need for interaction between different people inside and outside the organization, requiring them to have social, human, and relational capital skills to circumvent corporate limitations of structural capital to innovation leads companies to relate in a network integration, but that this integration also has its harmful side, the so-called “dark side”, in terms of opportunism in business relationships and the ability of SMEs to remedy the negative effect, targeting the company's performance and innovative capacity (Tian *et al.*, 2021b).

In this vein, there is again, implicitly, the breach of conformity, in this case relational, which may be regulated in the contract. In turn, we see again that compliance in relation to business relationships can favor innovative performance, given that more adjusted contractual terms can avoid adverse selection as well as reduce the risk of opportunistic behavior in view of breach of contractual terms. Compliance does not reach non-formal network integrations, leaving the company more exposed to the risk of dark side effects.

Parnell *et al.* (2018) report that innovative business models generate creative destruction of old business models and generate distinct challenges for their leaders to solve. Among these challenges, the widespread mismanagement of information reported by Stone *et al.* (2018), and with the precarious capacity and timeliness of

adapting to new technologies or contexts, such as the digitization and management of information. The difficulty of adapting the business model to contemporary technologies can be an example of the lack of adequate tooling can make it difficult for the innovative process to be in compliance and risking being an impediment for companies to be able to establish partnerships with universities, or other companies, preventing the transfer of technologies and patent negotiation, because if there is no way to operationalize, there is no sense in transferring technology, generating impacts on the economic development of society, as well as stimulating research, and the flow of knowledge (Awa *et al.*, 2017).

Jain and Rajan (2020) raised the debate with senior industry leaders on the impact of innovation on digital transformation and jobs. The authors hypothesize that in certain uncertain environments, certain professions will be doomed to extinction with technological advances. In addition, leaders question the advancement of technological innovation in decisions, reporting the existence of a gap in accountability for decisions that may be made. For example, artificial intelligence may not reach nuances of sensitive and contemporary issues in its decision bases, such as issues of gender, ethnicity, etc. At this point, there is a gap, in which compliance can act, in the same way, the transition to innovative work environments may need temporary rules to ensure employee rights, avoiding litigation. Rupeika-Apoga *et al.* (2022) argue that digital capability, as well as digital orientation, are characteristics that have a positive impact on companies' revenue, a result that is in line with the research by Jordão *et al.* (2022), which found that intellectual capital positively influences the performance and value creation of companies with a structure of more intangible assets, which are usually companies with a greater innovative profile. These characteristics are in line with the various innovations that companies have experienced, especially in the COVID-19 pandemic, this period being an excellent example of coexistence between innovation in the work environment and compliance, preventing further employee losses. This pandemic period allowed employees and employers to establish new rules to be followed, in addition to existing labor relationships, and for both employees and employers to have and exercise guidance skills and digital capacity.

Returning to the debate promoted by Jain and Rajan (2020), which emphasizes that there is currently a search for skills and behaviors of employees with greater creative and cognitive capacity to adjust to what the research calls digital capacity and orientation, showing that one of the consequences of innovations in the corporate world flow into the search for specific intellectual capital. This reality was evidenced by the study by Trivedi and Srivastava (2022), which showed that knowledge management provides a differentiation for companies that adopt it, giving them greater competitiveness and innovation capacity. In other words, the search for greater competitiveness through greater innovation affects the desired professional profile and which companies have acted to manage this type of intangible asset intrinsic to their employee.

Regarding the integration between companies in favor of the flow of knowledge and innovation, Lupova-Henry *et al.* (2021) address the movement of these companies into regional groups, to which they attribute the term meta-organizations. The purpose of creating these meta-organizations revolves around targeted regional development, such as being an innovative and distinct pole from other regional organizations and breaking with existing constructs. The research takes a new look at the relevance of the formalities established between independent organizations, including the contribution, communication within and outside the grouping organizations and how much compliance with the grouping rules legitimizes them, distinguishes them, and strengthens them vis-à-vis other organizations and institutions (Lupova-Henry *et al.*, 2021). That is, in addition to having the power to have innovation as a common objective, the meta-organization itself becomes an organizational innovation.

Through this discussion we present propositions 4, 5 and 6:

P4: When innovative capital enhances human capital (skills) it can be a differential for the transfer of information (tacit to explicit, epistemological dimension) within the company as well as it can be a factor that increases its chances of establishing connections external to the company (dimension ontological) and obtain external resources (material, financial, intellectual).

P5: Compliance favors the network of connections between companies and research centers, favoring the transfer of knowledge and information between organizations, promoting innovation and new organizational designs.

P6: Innovative business models may suffer from the lack of operational tools, and poor information management in line with the rules risk reduction via compliance, restricts the innovative process due to greater aversion to operational risk, and cost-benefit analysis of incurring in compliance risk.

The government's performance, or government activism, is essential in the innovation process, besides being an exogenous factor for the development of competitiveness and can be a factor of leverage in the process of national innovation, especially in economic transitions (Thongsri and Chang, 2019). The aspect of legal uncertainty points out that in nations with the presence of an environment of political instability, political ties that could once generate benefits can generate costs for the company, preventing them from active in innovative actions (Ren *et al.*, 2022).

The corporate activism demanded by the network of connections established by companies and with the market, gives rise to the implementation of practices to meet the demands of stakeholders, making them submit to voluntary ESG rules to legitimize their compliance status. In this sense, Broadstock *et al.* (2020) state that the status of compliance with ESG practices favors the innovative capacity and value creation of companies under the discourse that “doing well by doing good”.

The research by Peukert *et al.* (2022) revealed that the performance of a block of countries (European Union) legislating for everyone under its jurisdiction, required that companies, especially technology companies or that deal with data from their consumers, adapt to the legislation, which created an international regulatory competitive advantage that favored larger companies may have a greater capacity to absorb litigation and pecuniary losses due to non-compliance with the legislation in force. This aspect directed the search for server customers to large technology companies. This study is interesting in the discussion for two aspects: it addresses governmental and tax activism in the European Union and demonstrates the impact of restrictive regulation on technology companies, the ones that most exercise innovation.

According to Jum'a *et al.* (2022) innovative sustainability practices are primarily implemented as a business strategy to meet customer demands, thus highlighting the implementation of a strategy for customer maintenance and loyalty, which through their values demonstrate a predilection for companies committed to sustainability. In this sense, the results of research by Ahmed, Streimikiene and Zheng (2021) suggest that corporate proactivity in alignment with environmental practices, when mediated by the coordinated action of governance (in which compliance is inserted) and sustainable technological innovation act as strong forces. determinants for performance improvement: product, strategic, financial, process and production.

Watz, Hallstedt (2022) through the profile model for management of sustainability integration into requirements for engineering design (PROSEQ) identified 4 company profiles, identifying strengths and weaknesses that influence the development of products aligned with sustainability. The results, with a focus on management, suggest that corporations need to transpose the compliance profile, and define policies from a high level at the strategic, tactical, and operational levels, and that include the perspective of the product life cycle. This guidance must be included in routines, manuals and internal codes of conduct and processes. That is, as much as the compliance profile must be extrapolated to the development of new products aligned with sustainability, compliance must be part of the planning to direct the objective to which one wants to reach. This compliance can enable a flow of strategic knowledge with less risk of opportunistic actions.

Cammelli *et al.* (2022) presented interesting results about the factor of cooperation and external coerciveness in sustainability and the ability to generate solutions in favor of the use of “forest-focused supply chain policies (FSPs)”. The results demonstrate that external coercivity by compliance exerts a distinct influence between the different levels of inspected companies. In this sense, companies with greater capacity to remain in compliance are positively influenced by external coerciveness and cooperation. However, companies with less capacity to remain in compliance show the opposite result, exposing that external coerciveness, even in a cooperative nature, can economically segregate companies that tuna in the same branch, strengthening the differences between the activity to form and the informal one, which becomes operationalized by companies with less capacity to enter compliance status.

In this study, the power of government activism for compliance favors inequality between companies, compromising balanced economic development and competitiveness. However, it is necessary to consider whether the ability of companies to adjust to compliance may be subject to the subjectivity of the moral and ethical alignment of the actors involved, and especially if companies with less capacity to comply, in addition to suffering coercive action receive motivation and training to understand how to implement compliance in their activities.

The results the research by Ha and Thanh (2022) indicate that the digital transformation promoted by innovation becomes more effective in better institutional environments, including in these institutional characteristics regulatory frameworks, accountability, control of corruption, the rule of law. In our analysis, the findings of this research suggest that better institutional environments (greater control of corruption, greater

accountability, the existence of regulatory frameworks and the rule of law) favor the pursuit of compliance (Le and Hoang, 2021).

To avoid the loss of power through an unstable political environment, the agents involved may incur at risk of compliance, and potentially increase the costs arising from acting in non-compliance with laws (permits, licenses), or even incurring illicit behavior, one of the aspects that make up the risk of compliance, which results in the corruption of agents to maintain their privileged position. Through this discussion, we present propositions 7 and 8:

P7: Greater government activism in regulating economic activities, greater enforcement, and cultural values aligned with ethical and moral conduct provide a more robust compliance, which restricts the innovative process due to the restriction of its indeterminism factor but reduce compliance risk (sanctions).

P8: Economic sectors that need to innovate their operations to meet external compliance coercion seek institutional environments with less tax compliance, whether coming from the government or corporate to develop and produce.

5.1 Theoretical contributions

We believe that this essay enriches the existing literature by connecting several research that, in a first analysis, do not establish a connection, but that, under the lens of promoting an environment favorable to the theory of the flow of knowledge, do connect. In addition, we were able to expose that compliance has been a neglected term in academic research, but which in turn is indirectly presented under other nomenclatures, thus exposing a research gap to be explored.

In this way, compliance as a single factor, that is, in a concise way, lacks more empirical research in addition to greater conceptual definitions, including the uniformity of nomenclature in the literature would allow a better traceability of the progress of the theme and of the various networks of disciplinary connections by she established. This aspect compromises academic language and as reported by Joullié and Gould (2021, p. 11) “[...] *management research requires appreciation of the spectrum of conventional usages of the terms (and their consequences) to which one subjects others and to which one is subjected*”.

We point out the various nuances of possibilities that the symbiotic relationship between compliance and innovation can give rise to, arguing that the analysis can be complex as new elements are inserted into the REI, and mainly because there are aspects of high subjective content that are difficult to capture by empirical studies, such as employees' skills, sense of responsibility as well as their aspirations, in addition, we saw the recurrence of the ethical environment in influence, but mainly we observed that there are reports of the presence, even if mentioned implicitly, of compliance as a facet governance, present in different stages and through different business relationships, whether in formal governance or in relational governance (Keller *et al.*, 2021).

The discussion carried out suggests the presence of two types of compliance: one internal and one external. The internal being the one defined among the various stakeholders internal to the corporation, outlining and aligning corporate expectations with career, goals, results, confidentiality, safeguarding assets. In turn, external compliance, reaches stakeholders external to the company, and in two positions: the company as an active subject, exercising compliance, and the company as a passive subject undergoing compliance.

In the case of divergences where the symbiosis between compliance and innovation can be harmed, external compliance is presented in the passive position, as this represents a greater externality factor that can subject the company to the restriction of its capacity and innovative activity, increasing its risk of compliance.

As a beneficial symbiosis, there is internal compliance and external compliance in an active position, in which, whether through formal or relational governance, they can align the desires of the parties involved, from scientists to developers, such as harmonious action with business partners in clusters. regional, or between institutions (university-company), avoiding adverse selection and greater exposure to the opportunism of the “dark side”.

It is relevant to highlight that the promotion of innovation via flow, knowledge transfer goes through compliance regarding how the transfer of knowledge will be operationalized, identifying methods, mechanisms, channels, and the people involved, and at this relevant point we highlight the characteristics peculiar to each organizational design, and the environment in which the organization is involved. In this way, a compliance model for the transfer of knowledge to safeguard innovation is not presented as a rigid model, a single recipe, but adaptable to the organizational and social culture (Argote *et al.*, 2022).

In addition to this relevant contribution, which refines the look, and calls the research to a fundamental aspect of business relationships, in this case the formal or relational contract and the relevance of compliance within the much-studied Corporate Governance System, but mainly compliance in governance relational corporate, this essay points out that the various perspectives to explain common factors between the two themes, but which can exert different influences, such as:

- ✓ Compliance can confer legitimacy and credibility of information, and risk reduction may incur within an innovative process. However, it can restrict knowledge transfer, restricting the exercise of innovative capabilities;
- ✓ We present the theoretical existence of a close antagonistic relationship between compliance and innovation, and the existing antagonism can be softened through innovative capital as an accelerating agent in solving challenges and creating solutions;
- ✓ Government activism in regulating economic activities, as well as corporate activism, can undermine corporate innovation by increasing the need for compliance;
- ✓ Cultural values and the environment in which the corporation is inserted or intends to be inserted may be aligned with greater sustainability practices and ethical and moral support, which can restrict the determinism factor of innovation, which requires a greater degree of freedom and self-management direction;
- ✓ The interface of the elements that make up the intellectual capital must be factors to be observed to create an environment conducive to the flow of information and consequent transfer of knowledge, tacit to explicit, as well as from the epistemological dimension to the ontological dimension;
- ✓ The determinism of compliance, whether imposed via institutional factors, government or corporate activism are real challenges, and increasingly present in the corporate environment, and the identification of innovative capital, a factor that can contribute to generating solutions for the coexistence of compliance and innovation.
- ✓ Compliance signals credibility, ethical support and sustainable commitment to consumers who are attentive to current demands such as sustainability, but who also do not give up innovative products, with the combination of compliance and innovation being a strategic factor for attracting and retaining customers.

5.2 Practical contributions

In this sense, we suggest that companies that have innovative processes or partnerships for this purpose, implement it in their governance structure, but in a horizontal way, defining people or sectors responsible for carrying out internal and external compliance in an active position, in the various stages of construction. of innovation: from its development to its testing, to production. The form of horizontal structuring allows for greater timeliness and capacity for autonomy in the different stages, giving more adjusted compliance systems, and with greater power of response and adaptation.

In turn, we suggest passively implementing external compliance within the governance structure in a vertical way, as these externalities come from partners, government, or civil society oversight institutions, and therefore must have a representative of the corporation to monitor compliance of these relationships and identify, especially the point of interruption to protect the company's assets.

In addition, we suggest that companies' compliance actions and practices, especially those dealing with sustainability, be exposed to the public, to legitimize their operations in compliance status, creating a differentiated image among other companies, and this status may be through advertising campaigns, space highlighted in their reports, or through obtaining specific certifications. The signaling of compliance when making the market becomes, as with an innovation, a competitive advantage, as it can allow the corporation to reach a differentiated audience of customers - with greater rigor (Njoroge *et al.*, 2019). For example, consumers of vegan products or those who choose products from companies that experiment with animals. Other managerial contributions that our essay provides are:

- ✓ Compliance must be carried out in a manner adjusted to the company's business model and the business strategy desired by managers. Compliance should not be so rigid as to curtail freedom, self-direction, and excessively high compliance costs;

- ✓ Companies must have ways of updating (external courses, internal training, giving employees time to study and improve) on the regulatory rules applicable to the business model and economic activity performed;
- ✓ The company can encourage updates on compliance, as well as innovative skills and technologies, and seek knowledge through remunerative advantages, meritorious recognition, awards;
- ✓ The company that seeks innovation must have assessments to identify managers and employees with innovative capital, greater social behaviors and relational skills to strengthen connections;
- ✓ The company can promote the innovative capital of its employees through training, and make use of internal collaborators who have innovative capital, creating means to transfer their knowledge to others (tacit to explicit);
- ✓ Social business interactions with stakeholders via social and relational behavior of managers can be beneficial to business and the business strategy for obtaining investments, and this factor should be desired and encouraged in corporations (ontological dimension) to expand the network of strategic connections;
- ✓ Managers must be aware and updated on technologies that stimulate the flow of information between key sectors to allow the transfer of knowledge. Organizations must be attentive to the identification and retention of strategic information, avoiding biases in the use of information.

Research on innovation has addressed emerging economies in its scope, however the critical survey by Demirkan *et al.* (2019) indicates that the characteristics desired by emerging economies lack a holistic view, which we agree. This research aligns with his criticism, seeking to connect innovation and compliance. Finally, we understand that emerging economies are a target audience in the consumption, search, and dissemination of innovation, with the motivation of attracting foreign investment and economic growth (Demirkan *et al.*, 2019). Temel *et al.* (2021) argue that although innovation is a characteristic desired by emerging economies and that cooperation plays a relevant role in increasing innovation in emerging economies, the quantity (level) of established cooperation must be considered, aiming that the excess does not harm the result, thus weakening the relationships. In other words, a balance must be sought between the search for innovation and the number of cooperative relationships. We believe that compliance applicable to bilateral cooperative relationships can contribute to reducing the chances of relationships being fruitless. In this sense, these economies should seek to consolidate and encourage compliance practices in companies already installed and in companies prospecting for installation, to ensure growth that meets global demands and pressures from supranational bodies, such as the OECD and the UN. Therefore, for these economies, the coexistence of innovation and compliance is not a possibility, but a reality, requiring government participation and encouragement to provide this symbiotic coexistence. As suggestions we can list:

- ✓ Identification of regional potential for innovation (whether personal, material or geographical);
- ✓ Identification of ethnographic capabilities that can be used or adapted for the innovative search, such as whether cultural characteristics align with sustainable consumption or digital consumption perspectives;
- ✓ Projects for state financial support for industries and companies to have an operational structure (tools, machinery) that are in line with the objectives of national development and growth;
- ✓ Legal regulations to limit behavior and curb opportunism and corporate deviations that distance themselves from national goals of innovative growth and compliance;
- ✓ Instruments for monitoring the compliance of business activity (in various matters, mainly labor and environmental compliance), in order to avoid damage to the national image;
- ✓ Partnerships and groups of cooperation and dialogue between companies, society and government in order to rule behavior without restricting economic freedom, but only guide it responsibly in the midst of common goals;
- ✓ Focus on the establishment of international relations and diplomacy aiming at the exchange of learning and knowledge with developed nations and with an innovative profile, with a view to internalizing knowledge;
- ✓ Connect and foster partnerships between research institutions and the corporate sector, such as academic spin-offs, giving rise to national prototypes;
- ✓ Strengthen means by which the local workforce can be inserted into regional opportunities, gaps, and potential, through qualification aimed at stimulating innovative capital;

- ✓ Retention of scientists, promoting the appreciation of the flow of knowledge motivated by the search for innovation.

CONCLUSION

Our research innovated by exposing the fundamental antagonism between compliance and innovation and contributes in a way to expand the theoretical perspectives, questions and interdisciplinary connections that may arise in which we can conclude that even if they differ, the two themes must coexist in the corporate environment, which creates challenges to be overcome by management, based on the propositions of our conceptual theoretical model.

The compliance can be an obstacle, but more realistically the coexistence of compliance with innovation creates a legal, social, and cultural security environment among the players involved, favoring the transfer and flow of knowledge necessary for innovation.

It is also added that companies can choose to cross their borders to carry out innovative processes, aiming to escape the limiting aspects that their environment requires, as well as may need to produce the prototype of the product from the innovative process in a specific location, in order to reduce production costs, as well as incurring lower compliance risks, or have access to technology transfer that increases your production processes, or in locations that offer better partnerships for access to knowledge or development of research or conducting experiences. Another factor is to point out that compliance companies can have easier access to the transfer of knowledge from a public research institution, as well as easier access to sectoral financing promoted by the government.

It can also be concluded that the theory of knowledge flow in conjunction with innovation provides a need to identify the types of knowledge existing within the organization, as well as identify the people that hold this knowledge. This need is justified by the search of companies in the internalization of this knowledge, promoting the flow of this knowledge among the various employees at various hierarchical levels, inside and outside the organization.

The need to create means of coexistence between innovation and compliance can be a competitive advantage for emerging economies. In this way, countries that promote innovation together with compliance mechanisms can stand out in obtaining foreign investments and reliability for the exchange of knowledge with developed economies, as compliance can configure as a guaranteeing mechanism in the established relationship, protecting both the knowledge-giving economy as the receiver of knowledge.

Our main criticism of this study is aimed at harmonizing the search for innovation allied to studies that deal with compliance in its various areas that can relate to innovative processes or with the consequences of innovations created and offered by companies, directing a broad look, and holistic. That is, more than informing about how and what factors can lead to the achievement of competitive advantages and obtaining the innovative characteristic for the corporation, one must consider how these movements of changes can be mitigated, or how the transition to the innovative context it can occur with less damage to cooperative relationships, job security for employees and scientists, as well as for society and the environment.

These factors are relevant given the current scenario, experienced since mid-2019, exposed the need for business management, as well as government laws - as representatives of regulatory bodies' policies - to have devices that flexibilize compliance's need and rigor, keeping it at an acceptable but still safe level. It should be highlighted that this type of flexibilization protocol alone represents a preventive measure, protecting the program/compliance system from itself.

Despite the contributions, this work has limitations, however the fact that it is a qualitative work creates conceptual bases and questions capable of generating research ideas that address quantitative aspects to empirically investigate the theories and analyses made here.

Finally, it is suggested that future studies seek to empirically test whether an environment with low compliance rigor achieves better economic performance from the innovation process through the transfer and flow of knowledge, as well as whether environments with low compliance rigor are more conducive to the open innovation model, or if the lack of legal enforcement of these environments enhances the closed innovation model.

REFERENCES

- Aguilera, R. V., Waldman, D.A. and Siegel, D.S. (2022). Responsibility and Organization Science: Integrating Micro and Macro Perspectives. *Organization Science*, 33(1), 483–494. <https://doi.org/10.1287/orsc.2021.1518>
- Ahmed, R.R., Streimikiene, D. and Zheng, X. (2021). The Impact of Proactive Environmental Strategy on Competitive and Sustainable Development of Organizations. *Journal of Competitiveness*, 13(4), 5–24. <https://doi.org/10.7441/joc.2021.04.01>
- Andersen, K. V., Beukel, K. and Tyler, B. B. (2021). Learning to Litigate: The Relationship Between Past Litigation Experience and Litigation Outcomes in the Chinese Intellectual Property System. *Schmalenbach Journal of Business Research*, 73, 479–500. <https://doi.org/10.1007/s41471-021-00118-4>
- Arbix, G., Miranda, Z., Toledo, D. C. de, and Zancul, E. de S. (2018). Made in China 2025 e Indústria 4.0: a difícil transição chinesa do catching up à economia puxada pela inovação, *Tempo Social*, 30(3), 143-170. <https://doi.org/10.11606/0103-2070.ts.2018.144303>
- Argote, L., Guo, J., Park, S.S. and Hahl, O. (2022). The Mechanisms and Components of Knowledge Transfer: The Virtual Special Issue on Knowledge Transfer Within Organizations. *Organization Science*, 33(3), 1232–1249. <https://doi.org/10.1287/orsc.2022.1590>
- Awa, H. O., Ukoha, O., and Igwe, S. R. (2017). Revisiting technology-organization-environment (T-O-E) theory for enriched applicability. *The Bottom Line*, 30(1), 2–22. <https://doi.org/10.1108/bl-12-2016-0044>
- Broadstock, D. C., Matousek, R., Meyer, M., and Tzeremes, N G. (2020). Does corporate social responsibility impact firms' innovation capacity? The indirect link between environmental & social governance implementation and innovation performance. *Journal of Business Research*, 119, 99-110. <https://doi.org/10.1016/j.jbusres.2020.10.061>
- Bueno, E., Del Real, H., Fernández, P., Longo, M., Merino, C., Murcia, C. and Salmador, M.P. (2011). Modelo Intellectus: Medición Y Gestión Del Capital Intelectual. *Documentos Intellectus*, 9/10, 1-76.
- Cammelli, F., Levy, S.A., Grabs, J., Valentim, J.F. and Garrett, R.D. (2022). Effectiveness-equity tradeoffs in enforcing exclusionary supply chain policies: Lessons from the Amazonian cattle sector. *Journal of Cleaner Production*, 332, 130031. <https://doi.org/10.1016/j.jclepro.2021.130031>
- Carvalho, et al. (Org.) (2019). *Manual de Compliance*. Rio de Janeiro: Forense.
- Chen, J., Zhu, Z. and Xie, H. Y. (2004). Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual Capital*, 5(1), 195-212. <https://doi.org/10.1108/14691930410513003>
- Demirkan, I., Yang, Q., and Jiang, C.X. (2019). Corporate entrepreneurship of emerging market firms: current research and future directions. *New England Journal of Entrepreneurship*, 22(1), 5-30. <https://doi.org/10.1108/NEJE-04-2019-0024>
- Dieng-Kuntz, R. (2006). Corporate semantic webs. In: Schwartz, D. (Ed.). *Encyclopedia of knowledge management*, Hershey: Idea Group Publishing.
- Dosi, G., Nelson, R., and Winter, S. G. (2000). Introduction: the nature and dynamics of organizational capabilities. In: Dosi, G., Nelson, R., and Winter (Ed.). *Nature & dynamics of organizational capabilities*. New York: Oxford University Press, 1-22.
- Dwenger, N. and Treber, L. (2022). Shaming for Tax Enforcement, *Management Science*, No. June, 0–32. <https://doi.org/10.1287/mnsc.2021.4295>
- Ferenhof, H.A., Durst, S., Zaniboni Bialecki, M. and Selig, P.M. (2015). Intellectual capital dimensions: state of the art in 2014. *Journal of Intellectual Capital*, 16(1), 58-100. <https://doi.org/10.1108/JIC-02-2014-0021>
- Freeman, C., and Soete, L. (2008). *A economia da inovação industrial*, Campinas: Unicamp Editora.
- Gloet, M., and Terziowski, M. (2004). Exploring the relationship between knowledge management practices and innovation performance. *Journal of Manufacturing Technology Management*, 15(5), 402-409. <https://doi.org/10.1108/17410380410540390>
- Gogokhia, T. and Berulava, G. (2021). Business environment reforms, innovation and firm productivity in transition economies. *Eurasian Business Review*, Springer International Publishing, 11(2), 221–245. <https://doi.org/10.1007/s40821-020-00167-5>
- Ha, L.T. and Thanh, T.T. (2022). Effects of digital public services on trades in green goods: Does institutional quality matter?, *Journal of Innovation and Knowledge*, Elsevier Espana, 7(1), 100168. <https://doi.org/10.1016/j.jik.2022.100168>

- Holt, G. E. (2006). SOX: “best practices” or too much accountability. *The Bottom Line*, 19(3), 139–145. <https://doi.org/10.1108/08880450610682554>
- Hull, J., Gupta, A., and Kloppenburg, S. (2021). Interrogating the promises and perils of climate cryptogovernance: Blockchain discourses in international climate politics. *Earth System Governance*, 9, 100117. <https://doi.org/10.1016/j.esg.2021.100117>
- Jain A., and Ranjan S. (2020). Implications of emerging technologies on the future of work. *IIMB Management Review*, 32(4), 2020, 448-454. <https://doi.org/10.1016/j.iimb.2020.11.004>
- Jensen, M., and Meckling, W. (1976). Theory of the firm: managerial behavior, agency cost, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
- Jordão, R.V.D., Almeida, V.R.D., and Novas, J. (2022). Intellectual capital, sustainable economic and financial performance and value creation in emerging markets: the case of Brazil. *The Bottom Line*, 35(1), 1-22. <https://doi.org/10.1108/BL-11-2021-0103>
- Joullié, J.E. and Gould, A.M. (2021). Theory, explanation, and understanding in management research. *BRQ Business Research Quarterly*, 1–14. <https://doi.org/10.1177/23409444211012414>
- Jum'a, L., Zimon, D., Ikram, M., and Madzík, P. (2022). Towards a sustainability paradigm; the nexus between lean green practices, sustainability-oriented innovation and Triple Bottom Line. *International Journal of Production Economics*, 24, 108393. <https://doi.org/10.1016/j.ijpe.2021.108393>
- Keller, A., Lumineau, F., Mellewigt, T. and Ariño, A. (2021). Alliance governance mechanisms in the face of disruption. *Organization Science*, 32(6), 1542–1570. <https://doi.org/10.1287/orsc.2021.1437>
- Kogut, B., and Zander, U. (2003). Knowledge of the firm and the evolutionary theory of the multinational corporation. *Journal of International Business Studies*, 5(1), 516-529. <https://doi.org/10.1057/palgrave.jibs.8490248>
- Kotler, P., and Keller, K. (2006). *Administração de Marketing*, 12 edição, São Paulo: Pearson Prentice Hall.
- Le, H. T., and Hoang, D. P. (2021). Economic sanctions and environmental performance: The moderating roles of financial market development and institutional quality. *Environmental Science and Pollution Research*, 22, 19657–19678 doi:10.1007/s11356-021-17103-3.
- Liang, C.J., Chen, T.Y. and Lin, Y.L. (2013). How do different business models affect intellectual capital? *Journal of Intellectual Capital*, 14(2), 176-191. <https://doi.org/10.1108/14691931311323832>
- Lupova-Henry, E., Blili, S. and Dal Zotto, C. (2021). Designing organised clusters as social actors: a meta-organisational approach. *Journal of Organization Design*, Springer International Publishing, 10(1), 35–54. <https://doi.org/10.1007/s41469-021-00092-5>
- Njoroge, M., Anderson, W., and Mburu, O. (2019). Innovation strategy and economic sustainability in the hospitality industry. *The Bottom Line*, 32(4), 253–268. <https://doi.org/10.1108/bl-03-2019-0080>
- Nonaka, I. (2007). The Knowledge-creating Company, *Harvard Business Review*, 1, 162-171.
- Nonaka, I., and Konno, N. (1998). The Concept of “Ba”: Building a Foundation for Knowledge Creation. *California Management Review*, 40(3), 40-54. <https://doi.org/10.2307/41165942>
- Nonaka, I., and Takeuchi, H. (1997). *Criação de Conhecimento na Empresa*, 12a. Edição. Rio de Janeiro: Campus.
- Oliveira, R. T. de, Verreynne, M., Steen, J, and Indulska, M. (2021). Creating value by giving away: A typology of different innovation revealing strategies. *Journal of Business Research*, 127, 137-150. <https://doi.org/10.1016/j.jbusres.2021.01.038>
- Oliveira Júnior, M. M. (2001). *Gestão Estratégica do Conhecimento: Integrando Aprendizagem, Conhecimento e Competências*. São Paulo: Atlas.
- Parnell, B., Stone, M., and Aravopoulou, E. (2018). How leaders manage their business models using information. *The Bottom Line*, 31(2), 150–167. <https://doi.org/10.1108/bl-04-2018-0017>
- Peukert, C., Bechtold, S., Batikas, M. and Kretschmer, T. (2022). Regulatory Spillovers and Data Governance: Evidence from the GDPR. *Marketing Science*, June, 0–23. <https://doi.org/10.1287/mksc.2021.1339>
- Ren, S., He, D., Yan, J., Zeng, H., and Tan, J. (2022). Environmental labeling certification and corporate environmental innovation: The moderating role of corporate ownership and local government intervention. *Journal of Business Research*, 140, 556-571. <https://doi.org/10.1016/j.jbusres.2021.11.023>
- Rupeika-Apoga, R., Petrovska, K., and Bule, L. (2022). The Effect of Digital Orientation and Digital Capability on Digital Transformation of SMEs during the COVID-19 Pandemic. *Journal of Theoretical and Applied Electronic Commerce Research*, 17(2), 669-685. <https://doi.org/10.3390/jtaer17020035>

- Schulz, K., and Feist, M. (2021). Leveraging blockchain technology for innovative climate finance under the Green Climate Fund, *Earth System Governance*, 7, 100084. <https://doi.org/10.1016/j.esg.2020.100084>
- Schumpeter, J.A. (1982). *Teoria do desenvolvimento econômico*, São Paulo: Editora Abril.
- Setzer, V. W. (2001). *Dado, Informação, Conhecimento e Competência*. In: Setzer, V. W. (Org). *Os Meios Eletrônicos e a Educação. Uma Visão Alternativa*. São Paulo: Escrituras, Coleção Ensaio Transversais.
- Stiegler, B. (1998). *Technics and time 1*, Stanford, Stanford University Press.
- Stone, M., Aravopoulou, E., Evans, G., Aldhaen, E., Parnell, Brett D. (2018). From information mismanagement to misinformation – the dark side of information management. *The Bottom Line*, 32(1), 47-70. <https://doi.org/10.1108/BL-09-2018-0043>
- Temel, S., Mention, A.-L. and Yurtseven, A.E. (2021). Cooperation for innovation: more is not necessarily merrier. *European Journal of Innovation Management*. <https://doi.org/10.1108/EJIM-10-2020-0392>
- Thongsri, N., and Chang, A.K. (2019). Interactions Among Factors Influencing Product Innovation and Innovation Behaviour: Market Orientation, Managerial Ties, and Government Support. *Sustainability*, 11(2793), 21-32. <https://doi.org/10.3390/su11102793>
- Tian, H., Otchere, S. K., Dogbe, C. S. K., Addy, W. O., and Hammond, F. (2021a). New Product Creativity Mediating the Relationship Between Organizational Bricolage and the Competitive Advantage of SMEs. *Journal of Competitiveness*, 13(4), 151–166. <https://doi.org/10.7441/joc.2021.04.09>
- Tian, H. yun, Dogbe, C.S.K., Bamfo, B.A., Pomegbe, W.W.K. and Borah, P.S. (2021b). Assessing the intermediary role of relationship ending capability and dark side between network embeddedness and SMEs' innovation performance. *Journal of Competitiveness*, 13(1), 146–163. <https://doi.org/10.7441/joc.2021.01.09>
- Trivedi, K., and Srivastava, K.B.L. (2022). The role of knowledge management processes in leveraging competitive strategies to achieve firm innovativeness. *The Bottom Line*, 35(2/3), 53-72. <https://doi.org/10.1108/BL-06-2021-0071>
- Watz, M. and Hallstedt, S.I. (2022). Towards sustainable product development – Insights from testing and evaluating a profile model for management of sustainability integration into design requirements. *Journal of Cleaner Production*, 346, 131000. <https://doi.org/10.1016/j.jclepro.2022.131000>
- Wu, H.Y., Chen, J.K. and Chen, I.S. (2010). Innovation capital indicator assessment of Taiwanese Universities: A hybrid fuzzy model application. *Expert Systems with Applications*, 37(2), 1635-1642. <https://doi.org/10.1016/j.eswa.2009.06.045>
- Zhu, Y., Liu, J., Lin, S. and Liang, K. (2022). Unlock the potential of regional innovation environment: The promotion of innovative behavior from the career perspective, *Journal of Innovation & Knowledge*, 7(3), 100206. <https://doi.org/10.1016/j.jik.2022.100206>
- Zhu, Z. (2006). Nonaka meets Giddens: A critique; Knowledge. *Management Research & Practice*, 4(2), 106-115. <https://doi.org/10.1057/palgrave.kmrp.8500091>