

Introduction

The role of innovation is a highlight in organizations. The concept originated from an economic approach (Schumpeter, 1961) and was developed by several other studies. With emphasis on the innovation process as an essential condition for organizational development, innovation stands out as a factor that generates substantial changes in competitive positioning (Ahmed, 1998; Damanpour, 1991, 2006, 2009; Knox, 2002; Laursen & Salter, 2006; Teece, 2010; Rosenbusch, Brinckmann, & Bausch, 2011; Machado et al., 2013; Freitas Filho, Campos & Souza, 2015). The capacity for innovation in the organization has been studied to understand how it has developed in organizations (Ferreira, Marques, & Barbosa, 2007; Bruno-Faria & Fonseca, 2014; Dobni & Sand, 2018), characterizing the culture of innovation as part of organizational culture and, in this sense, it is necessary to deal with restrictive aspects of the culture rooted in the organization. It can also represent a barrier to innovation by shaping the standards with which people deal with novelties, individual initiatives, and collective actions (Kaasa & Vadi, 2010) while also involving perception and behaviors related to risks and opportunities. Getting used to behaviors and initiatives delimits the entrepreneurial spirit and, consequently, innovation, also indicating a relationship with innovative behavior and considers innovation in management system and innovation in production as main factors that affect the performance of innovation in the organization (Guan, Zhang, Zhao, Jia, & Guan, 2019). Innovation is also related to the generation of knowledge and collective learning, and, to this end, they depend on better interaction between partners and demonstrate the need to establish a relationship of cooperation and trust (Pitteri & Feldman, 2019), indicating companies need to build relationships focused on the capacity of innovation involving technological and attitude changes (Bag, Gupta, & Telukdarie, 2018).

In this context, the aim of this article is to present an instrument to measure the influence of innovative behavior and the culture of innovation in the performance of organizations, applied in the Brazilian musical instruments sector. Specifically, it was intended to measure the influence of the culture of innovation on innovative behavior, measure the influence of innovative behavior on organizational performance and measure the influence of the culture of innovation on organizational performance.

The purpose of this study contributes to the academic perspective regarding the relationship between these constructs according to the gap pointed out (Brettel & Cleven, 2011). We also sought a pragmatic justification with a focus on demonstrating to managers what influences of the culture of innovation and innovative behavior that can contribute to the improvement of performance, to direct managers to propose change actions.

The article is organized as follows: introductory part considering the theme, problem, objectives, and justifications. Next, the theoretical basis of the constructs, the method employed, the results and discussions and, finally, the conclusions followed by the references are presented.

Theoretical Approach

Innovative Behavior

Innovative behavior refers to the patterns with which people deal with news, individual initiatives, and collective actions, as well as understandings and behaviors related to risks and opportunities. The entrepreneurial spirit is highlighted as a factor of influence of innovative behavior (Kaasa & Vadi, 2010; Yuan & Woodman, 2010; Aryee et al., 2012; Kang & Lee, 2016; Wang, Yang & Xue, 2017; Guan et al., 2019).

Innovation is attributed to new workloads indicating that employees can absorb the greater demand for work generated by the innovative process if they perceive reward in their

development (Janssen, 2000; Herzog & Leker, 2010). For Yuan and Woodman (2010), employees who were less satisfied with the performance of their department or organization showed greater appreciation of the potential performance benefits presented by new processes, ideas, and technologies. Another study indicated that transformational leadership influences the increase in innovative behavior by encouraging followers to look for alternative options that propose innovative solutions (Aryee et al., 2012).

To improve the capacity for innovation in the organization, it is necessary to develop a learning culture, which can be obtained when the company provides an environment in which employees learn to share knowledge (Skerlavaj, Song & Lee, 2010; Martin-de-Castro et al., 2013) and communication between employees is indicated as a way of sharing knowledge and enabling absorption capacity, which indirectly influences innovative behavior (Kang & Lee, 2016; Wang, Yang & Xue, 2017).

The lack of involvement of the leaders in decision-making processes becomes a barrier to the generation of creative ideas, which can occur in organizations with decisions centered on managers (Dedahanov, Rhee & Yoon, 2017; Meissner & Shmatko, 2018).

Culture of innovation

The culture of innovation (CI) refers to a dynamic process, which creates a favorable environment for innovation to occur. Organizations should invest in such an environment with their own knowledge, cultural and social resources (Brettel & Cleven, 2011; Bruno-Faria & Fonseca, 2014; Dobni & Klassen, 2015; Martins & Zilbe, 2018).

A culture of innovation has been defined as a multidimensional context, which includes the intention to be innovative, necessary behaviors capable of influencing the market, an infrastructure to support innovation and an environment that promotes the implementation of innovation. By combining information and knowledge in the innovation process for application and use, the process may seem fragile, but it becomes complex when it integrates knowledge of customers and the market (Kratzer, Meissner & Roud, 2017). The culture established in the organization allows to create an environment with the necessary conditions for people's creativity to occur, translating into an innovative culture and indicating a competitive advantage (Viltard & Acebo, 2018).

Performance

Performance refers to the vision around strategic alignment and innovation, which correlate with optimal performance within a given sector of activity (Sharifirad & Ataei, 2012; Dobni & Klessen, 2015; Shahzad, Xiu & Shahbaz, 2017; Meissner & Shmatko, 2018).

An organization that has internally a strong and flexible climate of its culture motivates its employees in the participation of decision-making, in its concepts focused on innovation. This enables the organization to increase its innovation performance, which can be achieved by human resource development strategies and by improving research and development of organizational performance strategies in innovation (Shahzad, Xiu & Shahbaz, 2017). The culture of organizations is defended as a determinant in the innovative performance of companies (Meissner & Shmatko, 2018).

Performance can be measured from two strands: financial performance and market performance. Financial performance refers to indicators that measure return on sales while market performance is related to the effectiveness of marketing activities in organizations and can be measured through indicators such as attracting new stakeholders, customer value, customer satisfaction and desired growth range (Homburg & Pflesser, 2000; Gomes et al., 2017).

Relationship of constructs and model Innovative behavior and culture of innovation

For Hogan and Coote (2013), the culture of innovation is related to innovative behavior and can support organizational renewal. An understanding of organizational culture can help in the development of the innovative process and in the performance of the organization. A culture focused on innovation is aimed at rewarding individualism and discouraging uncertainty and evasion (Chen, Podolski & Veeraraghavan, 2017).

The study by Afsar and Badir (2016) confirmed that employees with innovative behaviors work at work focused on innovation, because they feel that they have greater compliance with their organization. This, in turn, should empower its employees to give them greater autonomy and responsibility in decision making. They understand, therefore, that they have control over their work environment, getting less absorbed and more creative. Such empowerment directs individuals to invest positively in their creative mental energies.

The study developed by Naranjo-Valencia, Jimenez-Jimenez and Sanz-Valle (2017) demonstrates the innovative behavior of employees influencing the radicality of product innovation. This means that the more innovative their behavior, the more innovation becomes radical. The findings point to a positive relationship between some organizational cultures and the radicality of product innovation, being demonstrated by the link between innovative behavior of the organization's employees and its culture.

For Pugas et al. (2017), there is a significant relationship between innovative behavior and the environment conducive to the generation of innovations. Employees understand the importance of a culture of innovation in organizations and this culture allows generating motivations necessary to create and maintain innovative behaviors in their environment.

The study developed by Solís and Mora-Esquivel (2019) demonstrates the development of tools that can be used in public institutions to evaluate how much organizational culture can promote innovative behavior by its employees, to facilitate innovation.

Hypothesis 1: The more focused on innovation, the more innovative the behavior of the individual will be.

Culture of innovation and Organization Performance

The results of the study developed by Rafailidis, Trivellas and Polychroniou (2017) point to the need for organizations to learn how to adapt for survival, growth and achieve business success. The continuous change directs companies in the search for balance between exploring their current competencies or by new opportunities through the creation and application of knowledge. The study indicates, therefore, that the organizational culture oriented to exploration has a positive impact on the performance of innovation, through the quality, capacity of the company, which reveals an implicit bonding mechanism.

The main objective of companies could be related to the development of an innovative organizational culture. The improvement of business performance is related to creative ideas, which can be transformed into innovative services, products or technologies in their markets. Innovation therefore represents an essential goal for companies and the organizational culture oriented to such innovation becomes their vehicle (Viltard & Acebo, 2018).

The findings of the study by Dabic et al.(2018) confirm that intangible and knowledge resource, emphasized by resource-based vision theories and knowledge-based theory, are essential to the strategic development of organizations from countries considered less innovative, with market-facing economics. The intangible resources, considered as intellectual capital and culture of innovation, were presented as decisive in the company's performance.

Hypothesis 2: The more innovative the culture of innovation, the higher the organizational performance.

Innovative behavior and organizational performance

In the internal organizational environment, employees who are likely to take risks and experiment can contribute to innovative performance. Managers must act in continuous processes to improve resource exploration efficiency. Ambidextrous employees can use the lessons learned continue in their activities to help them innovate or implement new technologies (Do, Yeh & Madsen, 2016).

For Lekovic, Jelaca and Maric (2017), innovative behavior is essential to achieving organizational performance in a dynamic environment. Management must act in the development and implementation of new management practices that are difficult to imitate. Managers therefore act by promoting the development of the mentality as an agent of change focused on the implementation of processes and the promotion of a business-oriented culture in an innovative way, which can result in better development and growth of the business and increased profitability.

For Ubeda, Santos and Nagano (2017), there is a contribution of innovation management in the renewal of the company, for its dynamic and reciprocal relationships, through individual competencies. They emphasize the innovative performance being obtained from the organizational focus on the development of individual competencies, focused on guidelines in innovative management.

The study by Dedahanov, Rhee and Yoon (2017) demonstrated innovative behavior being mediated by the relations of formalization, centralization, and performance of organizational innovation. At higher levels of formalization and centralization, it did not prevent the organization from presenting innovative performance, although this association demonstrated a reduction in the ability of individuals to generate creative ideas, seek new processes, technologies, techniques, or product ideas, influencing the innovative behavior of employees.

In the study by Chen et al., (2018), the emphasis is on the establishment of a relational environment in which employees are valued and they, in turn, are committed to the organization, through innovative behavior. The study goes through the control variables, demonstrating that there is an influence on the innovation performance of manufacturing companies in China, but less significant.

The impact of innovative behavior on performance measured by Guan et al. (2019), from a micro perspective, demonstrates that an innovative management system has a significant impact on organizational performance growth.

The study developed by Khedhaouria, Nakara and Bahri (2020) emphasizes the growth of financial performance in small businesses, from a culture oriented to adhocracy and market cultures, through innovative and proactive behaviors. The contribution to literature consists in the defense of adhocracy and market culture, strongly and positively influencing the entrepreneurial orientation of small companies, which sustains financial performance from strategic orientations concerning innovative and proactive behaviors.

Hypothesis 3: The higher the innovative behavior, the higher the performance.

Based on the hypotheses, we seek to analyze the influence of innovative behavior and the culture of innovation on performance and, to achieve this objective, the research model was proposed (Figure 1).

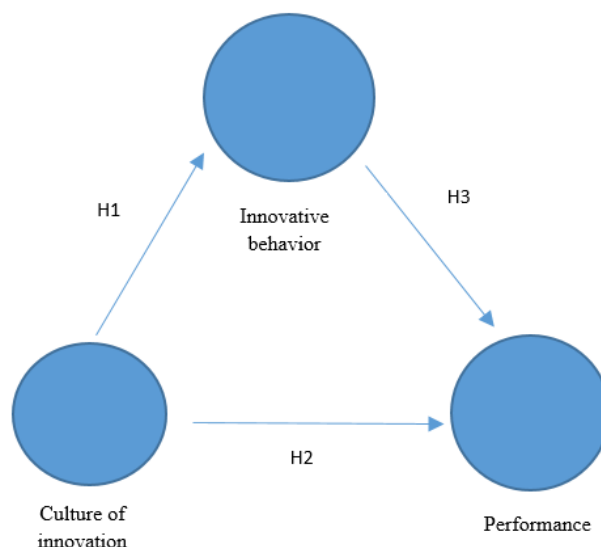


Figure 1: Model proposed
Source: Authors, 2021.

Method

The research can be classified as descriptive and quantitative. Primary data were collected from a structured questionnaire generated from the theoretical basis relevant to the constructs and variables of the proposed theoretical model, using a Likert scale. The sampling was non-probabilistic by accessibility and intentionality, which indicates that the sample was composed of professionals from companies in the segment of musical instruments and professional audio, in their units distributed throughout Brazil. The organizations are composed of the main industries and importers/distributors and are established in the states of São Paulo, Minas Gerais, Rio Grande do Sul, Santa Catarina, and Rio de Janeiro, mostly. A priori, the minimum sample of 107 questionnaires valid to be considered in the analysis, but the collection returned 150 valid answers.

For the development of this research, the musical instruments sector was chosen as the main source of study. The sector includes producing organizations (Brazilian industries) and importers (international industries) of musical instrument products and professional audio in the market. According to Music Trades magazine (Musictrades, 2019) an international organization that operates with data publications on the world market in the music sector, the global market for musical instruments in 2017 was US\$ 18 billion. Of this total, US\$ 8.2 billion came from the USA and US\$ 6.4 from Europe; Brazil ranked 11th in the world rankings. Although with less global expressiveness, the music market is consolidated and especially in the Brazilian cultural scene. According to a study conducted by Anafima (National Association of the Music Industry), based on data from the Internal Revenue Service, the import of the musical instruments sector represented US\$75.5 million, an increase of 11.5% in 2018, compared to the same period in 2017. The sector also comprises the Brazilian music instruments industry, together with imports, the size of the market and its impact on the Brazilian economy. In 2018, the sector moved just over 2 billion reais, which corresponds to the average of 0.04% of Brazil's GDP in 2017 (Música & Mercado, 2020).

The sector under the research is therefore an essential part of the GDP of culture to be moved. Musical instruments and professional audio represent a means to produce songs, concerts, events, besides being present in the religious scene, through bands and sound.

The questions related to the innovative behavior construct were proposed by De Jong and Hartog (2010), in which three variables were considered: a) participatory leadership; b) external contacts and c) innovative results. For the construct culture of innovation, the model proposed by Brettel and Cleven (2011) was used, which includes: (a) orientation to technological innovation; (b) orientation to learning; (c) willingness to take risks; and (d) market orientation. To measure performance, we used the model developed by Gomes et al., (2017) through four indicators: public satisfaction, public value, attracting new customers and grow.

After data collection, the statistical software SmartPLS was used to analyze the research data, through structural equation modeling (SEM), to evaluate the influence of one variable on another and the relationship of variables in each construct.

Results

For the study, the normality of the distribution, the presence of discrepant data and absent data were preliminary analyzed. Kolmogorov-Smirnov and Shapiro-Wilks tests indicate that no variable has univariate normal distribution. Similarly, the normal multivariate distribution was not confirmed. Three cases of multivariate discrepant data were identified, maintained due to the reduced sample size. Finally, there were no missing data. All initial tests were successful.

After the initial analyses, structural equation modeling was evaluated using the PLS method, Smart PLS 3 software and the hypotheses were tested.

As can be observed, Cronbach's Alpha coefficient, as for Composite Reliability, exceeds the threshold of 0.7, suggested by Hair et al. (2014), attesting to reliability. The Average Extracted Variance (AVE), above 0.5 for almost all constructs, except Market Orientation, slightly below, combined with the significance of all indicators, confirm convergent validity. Second-order constructs are not considered (Table 1).

Table 1

Converged validity and reliability

	Alfa de Cronbach	rho_A	Composite Reliability	Average Variance Extracted (AVE)
AP	0.795	0.819	0.868	0.626
AR	0.838	0.857	0.886	0.611
CE	0.756	0.795	0.839	0.521
COMP	0.873	0.889	0.894	0.332
CULT	0.916	0.928	0.927	0.401
DES	0.825	0.832	0.884	0.656
IT	0.942	0.944	0.953	0.742
LP	0.909	0.920	0.929	0.654
OM	0.704	0.736	0.816	0.528
RI	0.745	0.744	0.831	0.496

Source: Search data.

Compared to the study by Brettel and Cleven (2011), the IT construct presented Cronbach's alpha of 0.84, while the index of the present study was 0.942; OM was 0.78 and, in the current research, it was 0.704; AP was 0.86; in the current one, 0.795; AR was 0.89, at the current, 0.838. Regarding the study by De Jong and Hartog (2010), the LP construct presented Cronbach's alpha of 0.87 and, in this research, it was 0.909; CE was 0.85, in the current, was 0.756; RI was 0.82, at the current time, it was 0.745. Therefore, the findings are close to each other.

Discriminant validity was assessed by the Fornell-Larcker criterion (Chin, 1998), as can be seen in Table 2. It is observed that the correlations between the constructs are lower than the

square root of the STROKE, described in the main diagonal. In this case, the correlations between the second-order constructs and their respective constructs are not considered. The HTMT (heterotrait-monotrait ratio of correlations) method was also used, following the suggestion of Henseler, Ringle and Sarstedt (2015), whose results are presented in Table 3. Except for some correlations between first and second order constructs, it is observed that all ratios are less than 0.85, the maximum value acceptable according to the conservative criterion. Their confidence intervals are also within acceptable limits. Therefore, both criteria confirm the discriminating validity.

Table 2

Discriminating validity.

	AP	AR	CE	COMP	CULT	DES	IT	LP	OM	RI
AP	0.791									
AR	0.420	0.781								
CE	0.011	0.034	0.722							
COMP	0.248	0.193	0.552	0.576						
CULT	0.703	0.664	0.087	0.349	0.634					
DES	0.480	0.300	0.035	0.373	0.604	0.810				
IT	0.473	0.389	0.079	0.312	0.898	0.584	0.861			
LP	0.267	0.120	0.127	0.842	0.292	0.374	0.261	0.809		
OM	0.458	0.446	0.149	0.320	0.783	0.423	0.625	0.248	0.727	
RI	0.135	0.224	0.539	0.831	0.279	0.267	0.246	0.479	0.251	0.704

Source: Search data.

Table 3

Discriminating validity. HTMT.

	AP	AR	CE	COMP	CULT	DES	IT	LP	OM	RI
AP										
AR	0,501									
CE	0,107	0,120								
COMP	0,327	0,240	0,790							
CULT	0,833	0,804	0,166	0,399						
DES	0,577	0,348	0,166	0,455	0,670					
IT	0,533	0,419	0,116	0,336	0,924	0,655				
LP	0,322	0,140	0,180	0,890	0,319	0,434	0,278			
OM	0,597	0,584	0,231	0,407	0,965	0,517	0,723	0,309		
RI	0,226	0,277	0,703	1,028	0,354	0,347	0,299	0,569	0,342	

Source: Search data.

Analysis of results

Once validity and reliability are attested, the structural model is analyzed, whose structural coefficients are presented in Table 4. The analysis of the Variance Inflation Factor did not indicate problems of colinearity between the antecedent constructs.

Table 4

Structural coefficients.

Relation	Coefficient	Statistic "t"	Significance
COMP -> CE	0.552	7.282	0.000
COMP -> DES (H3)	0.185	2.505	0.012
COMP -> LP	0.842	20.893	0.000
COMP -> RI	0.831	22.191	0.000
CULT -> AP	0.703	11.394	0.000
CULT -> AR	0.664	9.330	0.000
CULT -> COMP (H1)	0.349	4.755	0.000

CULT -> DES (H2)	0.540	8.117	0.000
CULT -> IT	0.898	53.010	0.000
CULT -> OM	0.783	19.764	0.000

Source: Search data.

From the results, it is observed that the first order constructs External Contacts, Participatory Leadership and Innovative Results have a positive and significant relationship with the second-order constructs Innovative Behavior, all with a significance of 0.000. Similarly, Orientation for Technological Innovation, Orientation for Learning, Orientation to Take Risks and Market Orientation are positively and significantly related to the second-order construct Culture of Innovation, also with a significance of 0.000.

The relationship between Culture of Innovation and Innovative Behavior has a coefficient equal to 0.349, with a significance of 0.000, confirming H1. The result confirms H1, that is, the more focused on innovation the organizational culture, the more innovative the behavior of the individual will be. It confirms that individuals are prone to be innovative when there are greater incentives in the cultural environment of the organization.

Culture of Innovation positively influences Performance, with a significance of 0,000, confirming H2. By the magnitude of the coefficient (0.540), this is the variable with the greatest influence on performance. The results indicate the confirmation of H2, that is, the more innovative the culture of innovation, the higher the performance. The search for performance improvement indicates that people are willing to act so that there is a strong innovation culture.

Innovative Behavior also has a positive influence on Performance, with a coefficient equal to 0.185, with a significance of 0.012, confirming H3. Compared to the Culture of Innovation, its effects on Performance are much smaller. Still, the result indicates that there is a propensity to make, in other words, people are predisposed to act so that there is innovative behavior, to contribute to performance improvement (Figure 2).

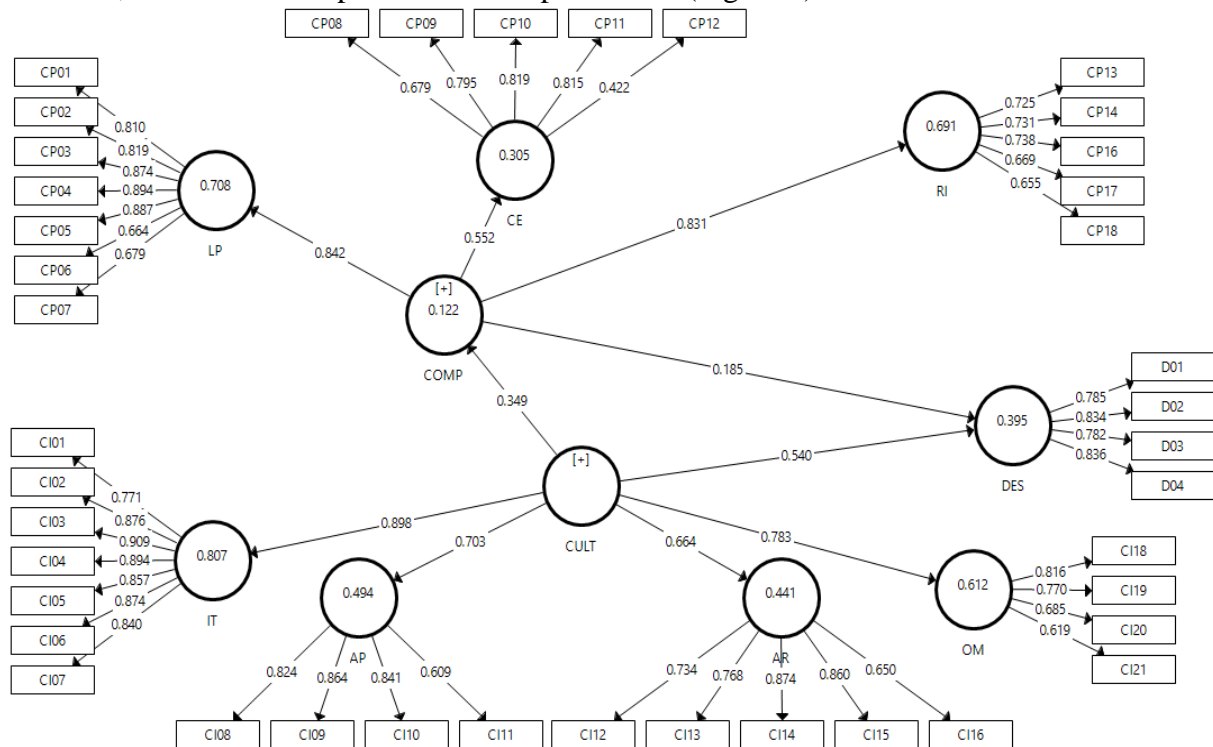


Figure 2: Tested Model

Source: Search data.

The positive relationship between the three first-order constructs and the Innovative Behavior construct can be highlighted, with LP (0.842) and RI (0.831) presenting a higher correlation. In the analysis of the Innovative Culture construct, although all first-order constructs have had a positive effect, the emphasis is on the IT (0.898) and OM (0.783) constructs. In particular, the variable CI03 presented the highest result among all the variables of the model, thus demonstrating a special attention that has been directed to the development of new technologies.

Table 5 shows the values of R^2 , f^2 and Q^2 . The adjusted coefficient of determination, R^2 , in the value of 0.387, indicates a moderate power of explanation. Therefore, approximately 39% of variance in Performance is explained by variations in Innovative Behavior and Innovation Culture. However, the size of the effect, measured by f^2 , indicates that the Innovation Culture construct has a substantially larger effect than the Innovative Behavior, a result already indicated by the value of the structural coefficient. Both Innovation Culture and Innovative Behavior have predictive relevance over Performance, given the Q^2 of 0.423 and 0.271, respectively.

Table 5
Power of explanatory and predictive relevance.

Construct	Q^2	f^2	R^2
COMP	0,271	0,050	
CULT	0,346	0,423	
			0,387

Source: Search data.

In summary, the measurement model proved to be robust, because all the loads of the indicators are significant at 0.000 and the first-order constructs are relevant to the formation of the second-order constructs. All three hypotheses proposed were confirmed, indicating that both Innovative Behavior and Innovation Culture are important antecedents of Performance.

Results Discussion

For the discussion of the results, the relationships between the constructs, the hypotheses proposed for the research and the authors who worked on this relationship were listed (Table 6).

Table 6
Relations, hypotheses, and main theoretical background

Relations	Hypotheses	Authors
Culture of innovation and innovative behavior	The culture of innovation positively influences the innovative behavior of the individual, in an organization.	Hogan e Coote (2013); Afsar e Badir (2016); Chen, Podolski e Veeraraghavan (2017); Naranjo_Valencia, Jimenez-Jimenez e Sanz-Valle (2017); Pugas, Ferreira, Herrero e Pata (2017); Solís e Mora-Esquivel (2019).
Culture of innovation and performance	The culture of innovation positively influences performance in an organization.	Brettel e Cleven (2011); Rafailidis, Trivellas e Polychroniou (2017); Gomes et al. (2017); Viltard e Acebo (2018); Dabic, Laznjak, Smallbone e Svarc (2018)

<p>Innovative behavior and performance</p>	<p>positively influences performance in an organization.</p>	<p>De Jong e Hartog (2010); Do Yeh e Madsen (2016); Lekovic, Jelaca e Maric (2017); Ubada, Santos e Nagano (2017); Rafaillidis, Trivellas e Polychroniou (2017); Dedahanov, Rhee e Yoon (2017); Chen, Jiang, Tang e Cooke (2018); Guan et al. (2019); Khedhouria, Nakara e Bahri (2020)</p>
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Source: Search data.

Previous studies allow us to establish a comparison with this study. Through the theoretical basis, it is possible to validate the proposed hypotheses and reinforce the importance of the relationship between constructs.

The results were consistent with previous studies. As demonstrated by Brettel and Cleven (2011), the performance reflects, in a positive way, in organizations that present pro-activity in adopting and using new technologies, that understand the importance of continuous learning, that are attentive to market orientation, considering needs and trends, and that are willing to take risks. These factors contribute to an innovative culture, aiming at the desired performance.

The study by De Jong and Hartog (2010) showed a positive relationship in the correlation between the three LP, CE and RI constructs and innovative behavior. It demonstrated that autonomy, participation in decision-making and the encouragement of employees to generate and implement ideas increase motivation through participatory leadership. Regarding the CE construct, the authors reinforce the need to explore a network of relationships external to the organization so that there is individual innovation, emphasizing the difficulty in being innovative being isolated or surrounded only by people from the organization itself. The RI construct has also been confirmed, demonstrating innovative results as an important antecedent of innovative behavior, directing you to better performance.

In the performance aspect, Gomes et al. (2017) emphasize that the adoption of a culture that enables innovation can represent success for the organization. Innovation has the potential to be developed by combining an organizational culture with a more participatory management style, with flexibility in its structure, with facilitation of communication and teamwork, with qualified employees and with tolerance to assume risks and occasional failures.

Through the coefficient $R^2 = 0.387$, we have, as a general result of the research, the validation of all hypotheses, i.e., H1, H2 and H3, which demonstrates almost 40% positive influence of performance through the constructs Innovative Behavior and Culture of Innovation.

Conclusion

According to the context presented above, this research arose from the need to expand studies on aspects of innovation, which has been highlighted in the context of changes for organizations.

During the research, it was noticed the existence of many studies developed, considering the constructs proposed for this research in isolation or correlating only two of them. It was observed the need to develop a study that jointly treated the three constructs, thus, we sought to develop the work considering the innovative behavior and culture of innovation present in the organizational context, to understand how they interfere performance.

The greatest contribution to the literature is the correlation between the three constructs and development in a sector that had not yet presented such a study. The research was directed

to the Brazilian musical instruments and professional audio sector. The study was based on the research question: "What is the influence of innovative behavior and the culture of innovation on the performance of organizations in the Brazilian musical instruments sector"?

To achieve the proposed objectives and answer the research question, an online questionnaire was used, elaborated from the theoretical framework, in which the authors presented other measurement studies considering the proposed constructs. The format used allowed the quantitative research, covering 15 Brazilian states and a sample of 142 respondents. The focus of the research was industries and companies that operate in the distribution of musical instruments and professional audio products in the Brazilian market. The return of the questionnaires occurred in greater numbers by the group of professionals in the commercial sector, more than 90%. Most of the people who participated in the survey were micro, small and medium-sized companies in relation to the number of employees, representing 92.3% of the sample.

The specific objectives were revisited and confronted with the hypotheses and with the results found, emphasizing that they were fulfilled through the theoretical framework of the proposed methodology, which is the technique of structural equation modeling. There were also empirical verifications that supported the research, which led to the reflection of the effects derived from the relationships between the latent variables of the model.

When the first specific objective was verified, it was empirically found that the use of the concepts of culture of innovation contributes positively to the innovative behavior, favoring aspects of an environment conducive to innovation. It has been proven, statistically, that this relationship is positive and contributes significantly to innovative behavior. Brettel and Cleven (2011) consider the culture of innovation an intangible resource and suggest research that misunderstands the relationship between it and innovative behavior. The research has advanced by measuring this relationship and presenting that there is a positive effect. In other words, the innovative behavior of the individual is related to a pro-innovation organizational culture.

Analyzing the second specific objective, the effects of innovative behavior on performance were verified. It was evidenced by statistical analysis that there is a positive relationship between innovative behavior and performance in organizations, although to a lesser extent than innovative culture. The findings show that the variable CP15, belonging to the first-order construct RI (innovative results), did not present consistent results in terms of validity and reliability, therefore, and was withdrawn from the analysis, opposing the original model, analyzed by De Jong and Hartog (2010). The model advanced in this construct, confirming the validity of the other variables and presented one of them inconsistent.

In the verification of the third specific objective, there was empirical finding regarding the effects of the culture of innovation on performance. Among the three constructs that form the basis of the research, this relationship presented the strongest positive relationship. The results showed that the culture of innovation represented 0.540 of positive and statistically significant relationship for the model. In other words, the culture of innovation explains 54% of the variation in performance. The results are consistent with the Brettel and Cleven model (2011), except for the variable CI17, which refers to the first-order construct OM (market orientation). This variable was excluded from the model because it did not present consistent results of validity and reliability.

The study advanced in front of the locus, demonstrating the relationship between the two constructs culture of innovation and innovative behavior, influencing performance. This work contributed to the research gap presented by measuring the relationship between the three constructs. Although the search for the database returned 70 jobs in the interaction of the three keywords, it was noticed that the research did not directly develop the relationship between

them. The analysis of the studies allowed the identification of many studies that deal only with the interaction between two of the constructs measured here.

In this sense, our results fill the research gap and effectively contribute to the academy, demonstrating the results measured through the Structural Equation Modeling (SEM) together of the three constructs, presenting, as a general result of the research, the validation of all hypotheses. This result demonstrated almost 40% positive influence of performance through the constructs innovative behavior and culture of innovation.

Thus, it is considered that the research contributed by demonstrating the results in a specific sector of the economy, the Brazilian musical instruments, and professional audio sector, since no study on the theme had been developed previously, which demonstrates the novelty of the research for the academy.

Limitations

Despite the contributions and implications provided by this research, its results should be interpreted, considering the limitations of the empirical study. Although descriptive research deepens the knowledge of reality and seeks to recognize certain factors, the arguments presented should not be generalized.

The study could act more comprehensively, considering the innovation variables cited by the authors Muylder et al. (2014); Machado and Vansconcellos (2007); Van de Ven, Angle and Poole (2000), although analyzed were not measured in this research, but could contribute significantly to the understanding of aspects of innovation in organizations. It is suggested that such variables can be incorporated and tested in other future models.

Suggestion for further studies

It is believed that this research will contribute to academia and the literature on innovation about the culture of innovation and innovative behavior, and may open precedents for other future quantitative studies, which propose to investigate such influences in organizations. As a suggestion for future research, it is recommended to apply the proposed model in other Brazilian sectors or international organizations of various segments, to validate the conclusions extracted in this study. Other studies may contribute with different propositions or validate the results presented here, exploring validation for academia.

As two variables did not meet the model, CP15 and CII7, it is suggested complementary studies that can demonstrate that they would be valid in other contexts.

It is also worth mentioning that the model developed and tested does not exhaust the discussions and it was carried out in an atypical period of pandemic by COVID-19. It is considered that this scenario of current isolation may have contributed to the thinking of innovation in the context of the culture and behavior of the individual. Thus, it is suggested to conduct new comparative studies at another time, in the same sector in a post-pandemic scenario.

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