BBR
BRAZILIAN BUSINESS REVIEW

ARTICLE

# Scale of Organizational Structure Components (SOCS): Evidence of Validation of a Theoretical Model

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## ABSTRACT

This study aims to proposed and validate a scale of organizational structure components (SOSC) from the latent components identified in the exploratory study by Trigueiro-Fernandes (2014), inspired by the design parameters of Mintzberg (2012). The survey was conducted in 26 public and private organizational units. Confirmatory Factor Analysis was employed to assess the SOSC model properties and whether they fit the theory. The results show that the scale has acceptable goodness of fit, verifiable through adjustment indexes such as $\chi^2$/df, RMSEA, CFI, TLI, and SRMR, as well as composite reliability, convergent and discriminant validity tests. The identified organizational structure components were formalization, communication, decentralization, training and internalization, departmentalization, and hierarchy. The results allow us to infer that the structure is the means by which the interactions between people and processes are organized and as coordination mechanisms for achieving the organizational mission are identified.

## KEYWORDS

Organizational Structure, Component Scale, SOSC, Design Parameters

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Received: 07/22/2020.
Revised: 10/16/2020.
Accepted: 08/09/2021.
Published Online: 04/20/2022.
DOI: http://dx.doi.org/10.15728/bbr.2022.19.3.5.en

## 1. INTRODUCTION

Organizational Structure has attracted scholars interested in investigating it under different methodological approaches, both qualitative and quantitative (Joseph & Gaba, 2020). From the quantitative perspective, the motivation to obtain generalizable results stands out (Vallandro & Trez, 2013; Alves et al., 2010). These generalizable results should be based on theoretical constructs measured on valid and reliable foundations (Dess et al., 1993). This has been made possible through theoretical approaches that rely on the organizational structure configurations (Mintzberg, 2012, 1980; Drazin & Van de Ven, 1985; Fiss, 2007), highlighting the framework proposed by Mintzberg (Zendeh et al., 2012).

In Brazil, there is an important theoretical and empirical literature addressing the organizational structure by adopting configuration approaches (see Silva & Fernandes, 2019; Moreira et al., 2019; Toldo & Lopes, 2017; Neis, Pereira e Maccari, 2017; Hartmann et al., 2011; Picchiai & Sauma, 2014; Lima et al., 2014; Kich & Pereira, 2011; da Cunha et al., 2011; Aguiar & Martins, 2006; Faria & Fischer, 2001). In general, these studies use qualitative methodological approaches to understand the reality of their corresponding objects of study. As a result, the findings become contextualized to the researched phenomena themselves and, therefore, cannot be generalized.

Thus, to contribute to the literature on the subject, quantitative methodological approaches have also been employed to test the relationship between the organizational structure with other organizational aspects. In the international arena, Argyves et al. (2019) analyzed structural changes in organizational innovation dynamics, while Claver-Cortés et al. (2012) investigated the correlation between organizational structure characteristics and hybrid competitive strategies (cost leadership, differentiation, and focus), whereas Csaszar (2012) investigated the correlation between structure and organizational performance. In Brazil, some initiatives have also been taken in this direction, such as Santos et al. (2014), who related structure to organizational culture and people management. Added to that, some theses and dissertations have focused on this approach (see Trigueiro-Fernandes, 2019; Cervo, 2016; Dockhorn, 2016; Cardozo, 2015).

The empirical evidence previously highlighted is based on quantitative methodologies. However, they generally did not rely on propositions of theoretical constructs that fully encompass the design parameters proposed by Mintzberg (2012). Furthermore, we must highlight the significance of proposing measurable theoretical constructs on valid and reliable bases, similar to the direction been adopted in studies on organizational commitment, which have been used as references in this research. In such studies, the relevance of proposing, validating, and improving scales is also evidenced, as they allow to (i) generalize theoretical and empirical evidence; and (ii) replicate the model in order to verify its validity and reliability (Meyer & Allen, 1991; Medeiros, 2003; Klein et al., 2014; DeBode et al., 2013).

Given the above, this study aims to **propose and validate a scale of organizational structure components (SOSC)** based on latent components identified in the exploratory study by Trigueiro-Fernandes (2014), which, in turn, was inspired by the design parameters of Mintzberg (2012). To achieve the research objective, 966 valid cases were surveyed and applied to 10 organizational units of the private sector and 16 organizational units of the state and federal public sector. The data analysis method adopted to validate and relate the design parameters was Confirmatory Factor Analysis (CFA). The model was validated through the convergent, discriminant, and composite validity tests proposed by Pasquali (1997) and Marôco (2010).

In addition of the originality in proposing a structure scale, this study aims to contribute to three different ways: (i) the literature on organizational structure, as the results presented can be generalizable and replicable, and the constructs were based on theoretical models; (ii) the

professionals working in this field, given the possibility of using ECEO as a diagnostic tool to identify the behavior of design parameters, as well as helping to characterize the type of organizational structure; (iii) the decision-makers, since it allows to verify whether the parameters' behavior supports the organizational strategy.

## 2. THEORETICAL FRAMEWORK

### 2.1. Organizational Structure

Organizational structure is a relevant, broad, and multifaceted topic (Joseph & Gaba, 2020) and, therefore, no consensus has been reached, nor it has a single definition. Depending on the theoretical approach adopted, the structure can be understood from different perspectives that reflect its theoretical evolution.

The configuration theory, developed by Mintzberg (2012), based on the author's reflections on structure and organizational strategy, has been adopted as a theoretical framework in this study. According to this, structure and organizational strategy relate to each other through configurations approach and contingency factors.

The debate on the relationship between strategy and organizational structure dates back to Chandler (1962) and has been a recurrent topic in literature. Harris and Ruefli (2000) state that one of the theoretical discussions on the subject regards the debate between the direction of the relationship between structure and strategy; that is, whether it is reciprocal or contingent (the latter is in line with Mintzberg's view on the issue). In revising other works, Harris and Ruefli (2000) came to argue that separating structure from strategy, or vice-versa, dissociates the means from the ends in decision making; on the other hand, when in a dynamic and complex environment, they can become reciprocal. This argument follows the theory of configurations since, according to Fiss (2007), this approach suggests that organizations can be understood as an interrelated set of structures and practices that result in the organizations' holistic and systemic view. Thus, configuration represents several specific and identifiable attributes whose importance should be analyzed together (Dess et al., 1993).

From Mintzberg's perspective on strategy and structure in the organizational context, Matheson (2009, p. 1149) clarifies that it is possible to understand organizations from the "total sum of the ways which the work is divided into tasks, and through this, it becomes possible to achieve coordination among them." That is, by combining different forms of harmonization with the divisions of work, Mintzberg (2012) points out that organizations have mechanisms that allow them to outline their structure configurations through nine design parameters, namely (i) job specialization, (ii) behavior formalization, (iii) training and indoctrination, (iv) unit grouping, (v) unit size, (vi) systems planning and control, (vii) liaison devices, (viii) vertical decentralization and (ix) horizontal decentralization.

For Drazin and Ven (1985), since the context in which organizations operate, and the structure must be adjusted to achieve satisfactory results, these factors must be included in the discussion, according to the contingency theory. I.e., it is assumed that organizational structures adapt to contingency factors so that their strategy is implemented (Chandler, 1962). Thus, there would not be a correct structure but one that best adapts to the contingency factors that the company has faced at a given moment in time in order to implement its strategy (Zendeh et al., 2012).

In this regard, Mintzberg (1980) argues that an organizational structure requires consistency between design parameters and contingency factors (size and age, technical system, environment, and power), and this relationship has a simultaneous direction. Therefore, it is essential to notice

that, upon searching for its mission effectiveness, an organization will adapt to some type of configuration at the expense of another so that there is a consistent alignment between the set of its elements since internal processes and the external environment must be in harmonized for the mission to be successful (Mintzberg, 1980).

A substantial body of empirical evidence has developed from this understanding of organizational structure according to Mintzberg's perspective. For example, Brazilian papers have identified structures such as "professional bureaucracy" in a philanthropic hospital as well as how this influences its risk management (Silva & Fernandes, 2019); "adhocracy" and "professional bureaucracy" were found as structures adopted by movie theaters located in the state of Rio Grande do Sul, Brazil, and the relationship of this with their film productions was verified (Toldo & Lopes, 2017); "machine bureaucracy" as a structure adopted by a packaging company (Hartmann et al., 2011); as well as consequences of the misalignment between strategy and structure in the performance of a company in the health sector (Picchiai & Sauma, 2014); the link between structure and competencies in companies that are connected with the Technology-Based Incubator of a Higher Education Institution located in the city of Fortaleza (Lima et al., 2014); in which ways to implement the strategic plan is impacted by structural, cultural, leadership and communication elements in a medical laboratory company (Kich & Pereira, 2011); how a Non-Governmental Organization (NGO) is structured (da Cunha et al., 2011); how the structure impacts an NGO on strategic cost management (Aguiar & Martins, 2006); the relationship between structural configuration and the achievement of institutional goals in a federal university (Moreira et al., 2019); and the structural changes in privatization processes in a telecommunication company (Faria & Fischer, 2001), among others.

In general, it is possible to verify that all national empirical evidence shares certain common features, among which three stand out: (i) type of research; (ii) structure identification criteria; and (iii) method. Regarding the type of research, the qualitative approach has been prevalent in identifying the organizational structure and its respective study objects. As for structure identification, the classifications are based on Mintzberg's theories. Regarding methods, the studies were characterized as case studies. When analyzing these characteristics together, we can infer that the analyses and conclusions developed were specific to their contexts.

To advance the theoretical and empirical literature about organizational structure further, generalizable, replicable, and quantitative research has to be developed, an aspect that has been highlighted in two frontlines: one as an opportunity for research development (Vallandro & Trez, 2013) and the other as a way to advance the results already found (Alves et al., 2010). Based on the studies previously mentioned, there is a demand for works addressing structures by adopting this approach in Brazil, especially concerning scale construction.

In view of the above, it is possible to draw a parallel among empirical evidence in the field of study of organizational commitment given the efforts for constructing valid and verifiable measurement scales. In Brazil, that is the case of the Organizational Commitment Bases Scale (EBACO), developed by Medeiros (2003) and widely used in literature as a multidimensional model of commitment, and EBACO-R, a refined EBACO, developed by Trigueiro-Fernandes et al. (2019).

In this sense, this study aims to contribute to Brazilian empirical evidence on the organizational structure by proposing a Scale of Organizational Structure Components (SOSC) based on design parameters found in the exploratory study by Trigueiro-Fernandes (2014), which, in turn, has been based on the design parameters suggested by Mintzberg (2012), which are discussed in the next section.

### 2.2. Organizational Structure Components

The definition of the components to be analyzed is based on Trigueiro-Fernandes (2014) and Trigueiro-Fernandes et al., (2016). These studies relied on six components to define a structure and on Mintzberg's (2012) contingency theory as a theoretical framework. The nine design parameters were specifically adapted and defined by Mintzberg et al. (2006) into six structure components.

Table 1 summarizes and defines each of the components chosen. It also highlights the primary authors who justify their relevance in the studied context.

As shown in Table 1, the six components to be analyzed in this research are (1) formalization; (2) communication; (3) decentralization; (4) training and internalization; (5) departmentalization; and (6) hierarchy. These components are aligned to the nine design parameters proposed by Mintzberg (2012) and Mintzberg et al. (2006). This is because job specialization and behavior formalization are linked to formalization and hierarchy, while unit grouping and size are linked to departmentalization; liaison devices are related to communication; vertical and horizontal decentralization are connected to decentralization; and training and indoctrination are linked to training and internalization. Since the planning and control system did not produce a statistically significant construct in the exploratory study by Trigueiro-Fernandes et al. (2016), and by assuming that this is a variable closer to strategy than to structure, we chose to exclude it in this research.

Based on the theoretical strategy adopted, the following section will describe the method used to analyze the interrelationship of the latent components in the Organizational Structure.

## 3. RESEARCH METHODOLOGY

The objective of this research is to find evidence of validity and propose a Scale of Organizational Structure Components (SOSC) model based on the design parameters (components) found in the exploratory study of Trigueiro-Fernandes (2014). Therefore, the Confirmatory Factor Analysis (CFA) with the maximum likelihood estimator was adopted as a validation method.

To this end, we used primary data collected between 2014 and 2017 through interviews with 966 employees. They were chosen by convenience and from 26 organizational units. Out of the total respondents, 36.85% come from 10 organizational units from the private sector, whereas the remaining 63.15% come from 16 organizational units from the state and federal public sector. The private sector organizations are from areas such as commerce, education, hotel, and services. As for the public sector, they encompass areas such as Education, Art and Culture Support, Communication, Software Development, Entrepreneurship and Innovation, Distant Learning, Child Education, Higher Education, Control and Management, Research, Judicial Services, Production and Control of Foods and Medications, and Personnel Screening.

The survey consisted of four questions for each one of the six components, totaling 24 closed questions about Organizational Structure, as identified by Trigueiro-Fernandes (2014). The questions used the 6-point Likert scale as metrics, and its ends were "totally agree" and "totally disagree."

**Table 1**
*Latent Components of the Organizational Structure according to the Research*

| ORGANIZATIONAL STRUCTURE COMPONENTS | DEFINITION | AUTHORS (YEAR) |
|---|---|---|
| Formalization | It is the standardization process of organizational activities, or rather the effort to make the routines and behavior regulated and standardized. | Zey-Ferrell (1979); Hall (1984); Stoner & Freeman (1995); Mintzberg & Quinn (2001), Mintzberg, Lampel, Quinn & Ghoshal (2006), Mintzberg (2012); Vasconcellos & Hemsley (1997); Faria & Madeira (2011) Claver-Cortés et al. (2012). |
| Communication | A network through which information flows and allows the organization to work cohesively. | Zey-Ferrell (1979); Mintzberg & Quinn (2001); Mintzberg, Lampel, Quinn & Ghoshal (2006); Vasconcellos & Hemsley (1997); Daft (2008). |
| Decentralization | Power distribution through the organization; i.e., how far units on lower hierarchical levels will be able to decide or take part in the decision. | Zey-Ferrell (1979); Hall (1984); Stoner & Freeman (1995); Mintzberg & Quinn (2001), Mintzberg, Lampel, Quinn & Ghoshal (2006), Mintzberg (2012); Vasconcellos & Hemsley (1997); Faria and Madeira (2011); Claver-Cortés et al. (2012); Texeira et al. (2012). |
| Training and internalization | It is the process by which the system of values, norms, and behavioral standards in the organization is acquired. | Mintzberg & Quinn (2001), Mintzberg, Lampel, Quinn & Ghoshal (2006), Mintzberg (2012). |
| Departmentalization | It addresses the ways and the criteria adopted to organize positions in organizational units and departments. The communication process is centered on the unit and sets it apart from the rest. | Mintzberg & Quinn (2001), Mintzberg, Lampel, Quinn & Ghoshal (2006), Mintzberg (2012); Vasconcellos & Hemsley (1997); Daft (2008). |
| Hierarchy | It refers to the number of power systems in the organization (hierarchical levels, hierarchy-level variable) and how it determines the exercise of power among sectors and personnel (control amplitude, hierarchy-amplitude variable). The number of levels cannot be predefined, for it fits each organization's reality. | Pugh et al. (1968); Vasconcellos & Hemsley (2002); Daft (2008); Texeira et al. (2012). |

***Source:*** Adapted from Trigueiro-Fernandes (2014) and Trigueiro-Fernandes et al. (2016).

The following steps were verified as a preliminary step to the Confirmatory Factor Analysis (CFA): (a) the existence of multivariate normality, which was determined by skewness (Sk) and kurtosis (Ku) and kept within the tolerance limits mentioned by Kline (2015); (b) the existence of 57 outliers, measured by the Mahalanobis distance (MD), which were excluded from the database; (c) the absence of perfect multicollinearity among the variables; (d) the absence of null correlations between the latent factors and their respective observable variables, and standardized coefficient values greater than 1 or lower than -1.

At first, each latent dimension and their respective variables were analyzed individually through Confirmatory Factor Analysis, aiming to verify the variables adequacy for each design parameter (components of the Organizational Structure). To check the model adjustment, the following steps were considered: the Comparative Fit Index (CFI), which should be greater than 0.90; and the Standardized Root Mean Squared Residual (SRMR), which must be lower than 0.10 (Worthington & Whittaker, 2006). The consistency of each dimension was evaluated by Cronbach's alpha with a critical value of 0.7 as proposed by Marôco and Garcia-Marques (2006) and Hair et al. (2006). Then, the six design parameters that compose the model were analyzed along with CFA to evaluate global adjustment and the convergent, composite, and discriminant validities.

The convergent validity is responsible for giving greater consistency to the model since it highlights the presence of a significant correlation between the components and their observable variables. The validity evidence was determined using two different methods. The first method, recommended by Marôco (2010), suggests that the Average Variance Extracted (AVE) must be equal to or greater than 0.5 to identify evidence of validity. The second method, suggested by Pasquali (1997), shows the need that latent variables (structure components) have to express a significant correlation with each other since this relationship is outlined in theory. Additionally, the composite reliability aims to estimate the degree of consistency of the dimensions to their observable variables and, according to Marôco (2010), it must have a value that is equal to or greater than 0.7. Finally, to make the test more robust through the results' reliability and verifiability, discriminant validity was performed to verify whether "all constructs involved in the study are not just empirical reflection of each other" (Voorhees et al., 2016, p. 120).

## 4. RESULTS ANALYSIS AND DISCUSSION

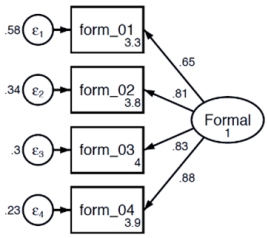
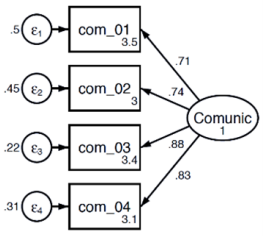
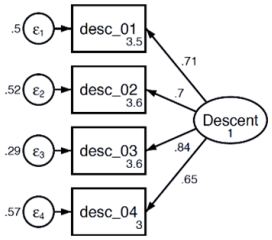
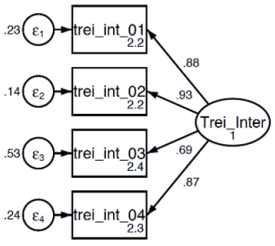
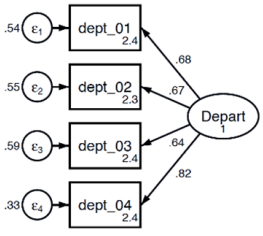
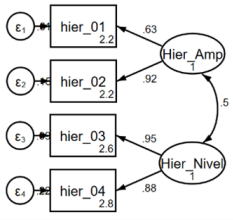
The data analysis method adopted in this research was Confirmatory Factor Analysis (CFA), and it was used at two moments. Firstly, it served the purpose of assessing the indexes' adequacy of each structure design parameter to their respective variables. Secondly, each design parameter was related to the others, thus creating the organizational structure model proposed in this research. Then, the convergent and composite validity in this model was tested, as expected in theory. It is important to emphasize that, after the analysis, the Hierarchy component, which was initially seen as one single design parameter, was divided into two, considering a better fit of the model and maintaining the theoretical alignment, as discussed below.

### 4.1. SOSC MODEL STRUCTURE

The CFI and SRMR indexes were adopted as adjustment measures between the correlations of design parameters. The Cronbach's alpha was used for the internal consistency of each parameter; that is, the correlations between all the variables that comprise a parameter and the McDonald's Omega (Peters, 2014), in a complementary way and with the same purpose. Table 2 presents these indexes as well as the measurement model with standardized loads.

**Table 2**

*Latent dimensions and adjustment and consistency indexes of the Organizational Structure components*

| Organizational Structure Components | | CFI | SRMR | Cronbach's Alpha | McDonald's Omega |
|---|---|---|---|---|---|
| Formalization |  | 0.910 | 0.051 | 0.860 | 0.858 |
| Communication |  | 0.968 | 0.031 | 0.906 | 0.904 |
| Decentralization |  | 0.989 | 0.018 | 0.872 | 0.872 |
| Training and Internalization |  | 0.989 | 0.015 | 0.948 | 0.949 |
| Departmentalization |  | 0.981 | 0.021 | 0.844 | 0.847 |
| Hierarchy (Amplitude and Level) |  | 0.985 | 0.015 | 0.787<br>0.900 | 0.782<br>0.898 |

***Source:*** Research data, 2019.

Table 2 shows that all the factor loads from the observable variables had a statistical significance (p-value ≤ 0.001) in relation to their construct. Furthermore, the adjustment indexes (CFI and SRMR) and the Cronbach's alpha met the reference parameters specified in Marôco (2010), Hair (2006), and Worthington and Whittaker (2006). According to the results estimated for each component of the organizational structure, the CFI values were greater than 0.90, the SRMR values were lower than 0.10, and the Cronbach's alpha values were greater than 0.70. Based on these indexes, the components can be explained by the latent dimension and by the variables to which they relate.

The model specified in this research, which adopted the exploratory results pointed out in the study by Trigueiro-Fernandes (2014), is comprised of seven latent dimensions that are organized into six design parameters from the Organizational Structure adapted by Mintzberg (2012): formalization; communication; decentralization; training and internalization; departmentalization; hierarchy (divided into the dimensions named hierarchy-amplitude and hierarchy-levels), and their respective observable variables.

The division of the "Hierarchy" design parameter into two latent dimensions (see Table 2) followed Daft's view (2008) on subordination regulation, according to which the component concerning Hierarchy must address the way or the rule that determines the exercise of power between sectors and personnel (here classified as hierarchy-amplitude), besides hierarchic levels (hierarchy-level). This view is supported by Teixeira et al. (2012), when mentioning Burns and Stalker (1961) to define the perspective about hierarchic levels, whereas Walton (1985) explained the concept of control amplitude linked to the dimension related Hierarchy-Amplitude. Thus, upon testing the internal consistency, the dimension concerning Hierarchy-Levels had a Cronbach's alpha of 0.91, and the dimension concerning Hierarchy-Amplitude had a Cronbach's alpha of 0.73. Both dimensions also met the CFI and SRMR adjustment criteria.

#### *4.1.1. The SOSC model*

Figure 1 shows the CFA of the model suggested – SOSC, the values of all the standardized factor loads were statistically significant among the latent and observable variables. Moreover, the correlations between the latent dimensions show the possibility of the model's convergent validity based on Pasquali's criteria (1997).

The results of the indexes that assessed the SOSC model adjustment quality are shown in Table 3.

The adjustment indexes shown in Table 3 assess the model's quality; for example, the $X^2/df$ was 4.57. On the other hand, the SRMR index had a value of 0.047, indicating low error representativeness and, thus, a superior model adjustment. In general, most of the values are considered robust by literature (Tabachinick et al., 2007; Marôco, 2010).

As for the CFI and TLI indexes, they presented values of 0.93 and 0.92, respectively, indicating a good fit (Marôco, 2010). In the category of population discrepancy indexes, RMSEA reached 0.06, indicating that the model has a good adjustment of means and variances when compared to the population model.

In general terms, the estimated SOSC model is robust both in terms of the components' consistency and all its interrelationships. Therefore, it adequately represents the theoretical correlations discussed in the literature on organizational structure. The following section shows the SOSC model validity evidence and the discussion on the interrelationships of the Organizational Structure's latent components.

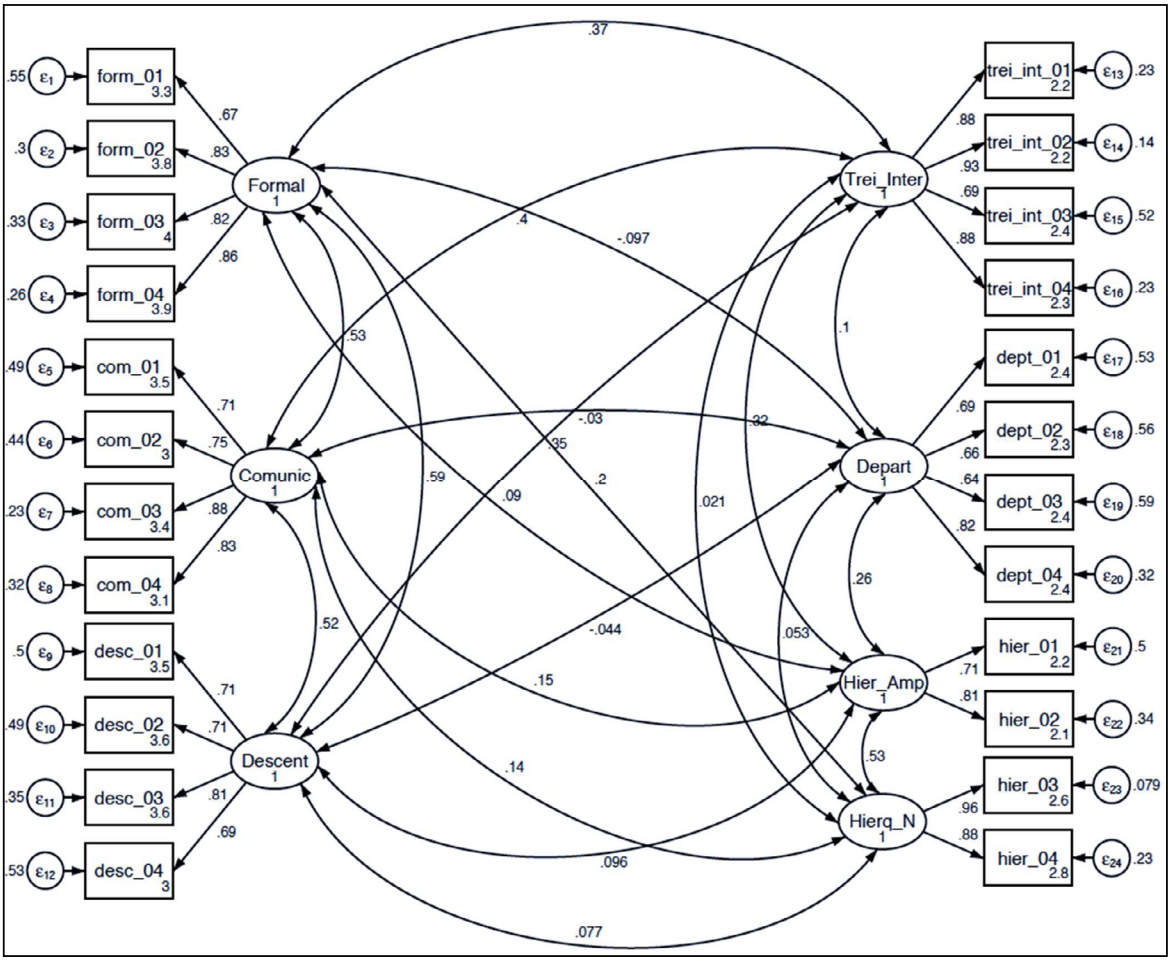



***Figure 1.*** SOSC's Confirmatory Factor Analysis
***Source:*** Research data, 2019.

**Table 3**
*SOSC Model Adjustment Indexes*

| Adjustment Index | Reference Value (Marôco, 2010) | SOSC Model |
|---|---|---|
| $\chi^2$/df | ≤ 2 (good) / [2;5] (acceptable) | 4.57 |
| RMSEA | ≤ 0.08 | 0.06 |
| CFI | ≥ 0.90 | 0.93 |
| TLI | ≥ 0.90 | 0.92 |
| SRMR | < 0.10 | 0.05 |

***Source:*** Research Data, 2019.

## 4.2. SOSC Model Validity Evidence

Before presenting the analyses of the correlations between the structural components in the SOSC model, it is crucial to analyze the evidence of its validity. This was done through convergent validity, composite reliability, and discriminant validity tests.

The SOSC model met the adjustment requirements proposed by Marôco (2010) by presenting all the AVE values equal to or greater than 0.5, as indicated in Table 4, except for the latent dimension concerning "departmentalization," which had a borderline value of 0.498. In addition, the SOSC model also showed a composite reliability value of CR > 0.7, confirming the consistency of the variables with their respective factor.

**Table 4**
*Convergent Validity and Composite Reliability Indexes of the SOSC model*

| Latent Dimensions | AVE (≥ 0.5) | CR (≥ 0.7) |
|---|---|---|
| Formalization | 0.63 | 0.87 |
| Communication | 0.63 | 0.87 |
| Decentralization/Centralization | 0.53 | 0.82 |
| Training and Internalization | 0.72 | 0.91 |
| Departmentalization | 0.50 | 0.80 |
| Hierarchy – Levels | 0.58 | 0.73 |
| Hierarchy – Amplitude | 0.85 | 0.92 |
| SOSC Model | 0.62 | 0.97 |

***Source:*** Research Data, 2019.

Moreover, the convergent validity was verified through the requirements suggested in Pasquali (1997), according to which the correlation among latent variables must be statistically significant. Table 5 shows that all the correlations were statistically significant at 1%, confirming the model's convergent validity.

**Table 5**
*Correlation matrix of the Organizational Structure's latent dimensions and Discriminant Validity*

| Latent Dimensions | Formaliz. | Commun. | Decent. | Training and Intern. | Depart. | Hierarchy Levels | Hierarchy Amplitude |
|---|---|---|---|---|---|---|---|
| Formalization | **0.79** | | | | | | |
| Communication | 0.59*** | **0.79** | | | | | |
| Decentralization | 0.67*** | 0.59*** | **0.73** | | | | |
| Training and Intern. | 0.40*** | 0.43*** | 0.39*** | **0.85** | | | |
| Departmentalization | -0.11*** | -0.04*** | -0.05*** | 0.12*** | **0.70** | | |
| Hierarchy – Levels | 0.22*** | 0.15*** | 0.09*** | 0.02*** | 0.06*** | **0.76** | |
| Hierarchy – Amp. | 0.12*** | 0.18*** | 0.12*** | 0.40*** | 0.31*** | 0.60*** | **0.92** |

***Source:*** Research data, 2019.
*** Statistical significance at 1% probability.

The discriminant validity was verified by the criterion suggested by Fornell and Larcker (1981), in which the AVE square root of each latent variable must be higher than the correlation among the factors. This can be seen in the correlation matrix shown in Table 5, where, in the main diagonal (in bold), the AVE square roots were calculated for each latent variable, and, below them, the coefficient values of the correlations among the factors. From the information presented, it can be concluded that there is discriminant validity since the AVE square roots were higher than the correlations in all the factors.

Therefore, the first stage of data analysis aimed to present the SOSC validity evidence results through the criteria defined by Marôco (2010), Pasquali (1997), and Fornell and Larcker (1981). After verifying convergent validity, composite reliability, and discriminant validity evidence (Tables 4 and 5), it became possible to analyze the design parameters (or components) defined for SOSC from their factor loadings (see Figure 1) and based on literature (Mintzberg, 2012, especially), presented below.

### 4.3. Analysis of SOSC model components

The SOSC model allowed us to understand the organizational structure as the context that organizes the interactions between personnel and processes and the mechanisms to coordinate them to achieve the organization's goals. Resuming the structure components according to Trigueiro-Fernandes (2014) and Trigueiro-Fernandes et al. (2016), the structure was understood in two dimensions: personnel and processes. Concerning personnel, it deals with the relationships of power (centralization and decentralization), authority (hierarchy), and communication. Concerning processes, they deal with sequencing, formalizing, and integrating all the tasks (departmentalization and training and internalization) that form the organization. To deepen the understanding acquired from the SOSC model, each of the components of the ECEO model and their interactions was analyzed in light of the organizational structure configurations approach.

#### *4.3.1. Formalization*

The purpose of Formalization is to reduce variability on the execution of tasks by standardizing them so that their control is simplified and, therefore, enables greater organizational efficiency (Zey-Ferrell, 1979; Vasconcellos & Hemsley, 1997; Seiffert & Costa, 2007; Faria & Madeira, 2011; Claver-Cortés et al., 2012; Mintzberg, 2012).

This understanding supports the results found in SOSC, which show the significant and robust correlation of the component formalization with the communication, decentralization and training, and internalization components. In this sense, the results reveal that communication becomes easier with the creation of standards (rules). This, in turn, allows it to increase the levels of power distribution (decentralization) since the operational rules are defined.

On the other hand, for this to be possible, people must have internalized these standards of action. As a way of verifying this association, it was possible to identify the significant relationship, even if it has low magnitude, with the two dimensions of the hierarchy component, which validates the assumption that formalization can occur by position, workflow, and rules, as indicated by Mintzberg (2012).

Finally, it was possible to identify, even if it has low magnitude, the inverse relationship between formalization and departmentalization, as expected. This means that the increase in the division of sectors in the organization tends to make the formalization process more difficult.

#### *4.3.2. Communication*

In organizational structure literature, communication is understood as the network through which the information that allows the organization's operation to function in an integrated manner flows (Zey-Ferrell, 1979; Mintzberg & Quinn, 2001; Mintzberg et al., 2006; Vasconcellos & Hemsley, 1997; Daft, 2008).

This definition supports the results found in this study because a direct relationship (and statistically significant at different magnitudes) of communication was estimated with the components formalization, decentralization, training and internalization, and hierarchy (levels and

amplitude). This shows that communication is facilitated based on the definition of standardized norms, which, through proper training and internationalization processes, allows information to spread out through all the hierarchical levels in the organization, culminating in the correct form and measure according to the power distribution.

Just as it happened in its correlation to formalization, the component concerning departmentalization also showed an inverted correlation to communication, which is explained in theory by the fact that departments can create a very harsh culture of personnel sector appropriation, losing focus on the institutional process, as highlighted by Mintzberg (2012): as departmentalization increases, it becomes more difficult to communicate information correctly.

### *4.3.3. Decentralization*

Decentralization is the distribution of power throughout the organization, i.e., the extent to which lower hierarchical level units can decide or participate in the decision-making. In other words, decentralization or centralization point to where the decision-making power is located in the organization (Hall, 1984; Stoner & Freeman, 1995; Vasconcellos & Hemsley, 1997; Claver-Cortés et al., 2012; Teixeira et al., 2012; Mintzberg, 2012). Therefore, decentralization is an important organizational management mechanism since, from the correct delegation of authority, each person or organizational unit is allowed to focus on activities where they can employ their best performance to contribute to the organizational result.

Based on this, it is essential that the delegation of authority is aligned with an effective communication process, standardization of activities, internalization of organizational values, in addition to adjustment with the correct definition of hierarchical levels and exercise of power between sectors. All these issues explain the direct relationship, evidenced in the SOSC model, between the components of communication, formalization, training and internalization and hierarchy.

The departmentalization component had a low and negative correlation to decentralization, which is in line with the literature. Seifert and Costa (2007) and Mintzberg (2012) remind us that when the number of departments increases, the process of decentralization becomes more complex since there is a greater number of managers in the structure.

### *4.3.4. Training and internalization*

The component concerning training and internalization deals with the process through which the system of values, norms, processes, and behavioral patterns in the organization is acquired (Mintzberg & Quinn, 2001; Mintzberg, Lampel, Quinn & Ghoshal, 2006; Seifert & Costa, 2007; Mintzberg, 2012).

All the components had a positive correlation to training and internalization, which was expected, according to the literature. As this component contributes to the formation of the skill coordination mechanism and is responsible for internalizing the information disseminated by the communication system (a factor that is simplified by the implementation of the correct level of formalization and consequently becomes paramount to allow the delegation of authority to occur without prejudice to the organization's values, norms and processes), the argument presented converges with the strong relationship verified in the SOSC model between formalization, communication, decentralization and hierarchy-amplitude.

Departmentalization showed a positive, low-magnitude correlation with the component discussed herein, which also complies with the theory. This is justified to the extent that the

departments can collaborate to the internal values and norms in the identification process from the organizational unit (sector).

Finally, it is worth adding that the correlation with the latent dimension hierarchy-levels was the lowest in the study, despite being statistically significant. The literature on the subject does not point to a strong relationship between the number of hierarchical levels and the training and internalization process in organizations.

### *4.3.5. Departmentalization*

Departmentalization addresses the form and the criteria adopted to organize positions into organizational units and departments (Vasconcellos & Hemsley, 1997; Mintzberg & Quinn, 2001; Daft, 2008; Mintezberg, 2012).

Based on the literature, departmentalization is a process that can create a set of inter-sectorial barriers and subcultures in the organization, which can imply an emphasis on the activities and internal problems of the department (sector), distancing itself from the other objectives and problems of the organization (Mintzberg, 2012). It is worth noting that the process of organizing the activities into sectors is necessary but increasing the number of sectors may cause some of the problems described previously.

In this sense, the SOSC model showed a negative correlation between departmentalization and formalization, communication, and decentralization components. On the other hand, it presented a positive correlation to the training and internalization components (which was discussed in the previous paragraph) and hierarchy (levels and amplitude), as pointed in literature as well, since hierarchical levels are formed by sectors that make the organization and, thus, like the hierarchy-amplitude, its perspective is based on the organizational units' internal issues.

### *4.3.6. Hierarchy*

Hierarchy refers to the number of power instances (hierarchical levels) in the organization and the way it determines the exercise of power between sectors and personnel (Pugh et al., 1968; Vasconcellos & Hemsley, 2002; Daft, 2008; Texeira et al., 2012).

As previously discussed, hierarchy was addressed in two latent dimensions (hierarchy-levels and hierarchy-amplitude) since it enables superior theoretical adequacy and interpretation of results. Thus, as expected, the correlation between the two dimensions, hierarchy-levels, and hierarchy-amplitude, was one of the highest in the model, corroborating the idea that they constitute a single factor. Indeed, even when tested as a single factor, they have an acceptable Cronbach's alpha.

Another important remark about these components is that, although they have different magnitudes, the two dimensions had the same type of correlation to the remaining components in the model. Therefore, the magnitudes of correlation to the other components are among the lowest in the study, especially the dimension concerning hierarchy-levels, which, according to Vasconcellos and Hemsley (2002) and Daft (2008), is justified by the fact that the number of hierarchical levels cannot be predefined, for it must adapt to each organization's reality.

## 5. CONCLUSIONS

This research aimed to validate a conceptualization model of the Organizational Structure based on the latent components identified by Trigueiro-Fernandes (2014). Therefore, theoretically speaking, it is in line with Mintzberg's (2012) configuration approach, according to which the dimensions concerning the organization's design must be logically configured as consistent internal

groups. Moreover, it is in line with Faria and Fischer (2001), who defend the organizations' need to achieve learning and adaptability, which are treated to format the intensity of each component in the organizational structure's model.

According to the results presented, and considering the context studied, formalization was predominantly characterized by the need to standardize processes and organizational units; communication, because it is a strong integrating element strengthened by informational systems; decentralization, because of the need to bring the solution to a problem close to its origin and delegate authority and activities to emphasize the most critical issues; training and internalization, primarily because of the search for the qualification that favors the internalization of values and enables more autonomy; departmentalization, which comes as a creative process in the sectors through the organization of activities; and hierarchy, because of the number of power instances (hierarchical levels) in the organization and how it determines the exercise of power between sectors and personnel.

Through Confirmatory Factor Analysis, we found that the Scale of Organizational Structure Components (SOSC) achieved goodness of fit, which was assessed through the evidence of its validity. Also, we found that the scale fits the theory, according to the convergent validity criteria and composite reliability by Pasquali (1997) and Marôco (2010), and the discriminant validity by Fornell and Larcker (1981).

Based on the SOSC model, the organizational structure is defined as the context that organizes the interactions between personnel and processes, as well as the coordination mechanisms used to achieve the organization's goals. Regarding personnel, it deals with relations of power, authority, and communication. Regarding processes, it deals with sequencing, formalizing, and integrating all the tasks that form the organization. Since this is a new scale, it is vital that other studies should examine the SOSC's validity evidence in diverse cultures and economic sectors.

As research limitations, we can point to the lack of a multigroup analysis that could confirm the homogeneous behavior of the SOSC scale, regardless of different profiles of groups or sectors. This was not carried out in this study because according to the literature on Organizational Structure, we understand that the different sectors can have the same type of structure, and a single sector can bring together several types of structures (see Mintzberg, 2012; Daft, 2008; Vasconcellos and Hemsley, 1997). Therefore, the sector was not adopted to segregate the sample even as a control variable. Additionally, the absence of antecedent and consequent analysis is highlighted. However, despite these limitations, SOSC will allow future studies to diagnose the organizational structure and enable the association between the organizational structure with other organizational aspects, such as commitment, performance, engagement, and quality, among others.

This study, in addition to being pioneering in proposing a scale of structure, intended to contribute to three distinct axes, namely (i) the literature on organizational structure, (ii) the professionals working in the field, and (iii) decision-makers. As a suggestion for future studies, it is crucial to develop path analysis between the six latent components to assess possible causal relationships among them. It is also valid to verify the relationship capacity of these six components as influencing elements of the organizational structure, such as commitment, strategy, environment, size, technology, and strategic choice, for example. It is also recommended that this scale should be replicated in other samples in different contexts, such as sectorial, regional, and cultural so that its generalization and replicability can be verified.

## REFERENCES

Aguiar, A. B., & Martins, G. A. (2006). A teoria das estruturas organizacionais de Mintzberg e a gestão estratégica de custos: um estudo nas ONGs paulistas. *Revista Contabilidade & Finanças - USP*, *17*(1), 51-64.

Alves, C. A., Pizzinatto, N. K., & Gonçalves, M. N. (2010). A importância estratégica dos relacionamentos de negócios em redes de empresas: Uma visão baseada no RBV - Resource Based View. *Revista Brasileira de Marketing*, *9*(2), 166-189.

Argyres, N., Silverman, B., & Rios, L. A. (2019). *Organizational change and the dynamics of innovation: Formal R&D structure and intrafirm inventor networks*. Working Paper.

Burns, T., & Stalker, G. M. (1961). *The management of innovation*. London: Tavistock.

Cardozo, É. A. A. (2015). *A maturidade da estrutura organizacional e dos processos como direcionadores do desempenho.* Tese [Doutorado em Administração]. Universidade de São Paulo.

Cervo, C. S. (2016). *Relações entre liderança autêntica, capital psicológico e engajamento no trabalho: análise da influência da estrutura organizacional*. Tese [Doutorado em Psicologia]. Universidade Federal do Rio Grande do Sul.

Chandler, A. D., Jr. (1962). *Strategy and structure: Chapters in the history of American industrial enterprises*. MIT Press.

Claver-Cortés, E., Pertusa-Ortega, E. M., & Molina-Azorín, J. F. (2012). Characteristics of organizational structure relating to hybrid competitive strategy: Implications for performance. *Journal of Business Research*, *65*(7), 993-1002.

Csaszar, F. A. (2012). Organizational structure as a determinant of performance: Evidence from mutual funds. *Strategic Management Journal*, *33*(6), 611-632.

da Cunha, L. T., de Albuquerque, E. P., Jr., de Aquino Cabral, A. C., Pessoa, M. N. M., & dos Santos, S. M. (2011). Configuração da estrutura organizacional no terceiro setor: o caso EDISCA. *REGE-Revista de Gestão*, *18*(3), 385-407.

Daft, R. L. (2008). *Organizações: Teoria e prática*. Cengage Learning.

DeBode, J. D., Armenakis, A. A., Feild, H. S., & Walker, A. G. (2013). Assessing ethical organizational culture: Refinement of a scale. *The Journal of Applied Behavioral Science*, *49*(4), 460-484.

Dess, G. G., Newport, S., & Rasheed, A. M. A. (1993). Configuration Research in Strategic Management: Key Issues and Suggestions. Journal of Management, *19*(4), 775-795. https://doi.org/10.1177/014920639301900403

Dockhorn, M. D. S. M. (2016). *Influência da cultura organizacional na relação entre estrutura formal para inovação e processo criativo estudo em ambientes organizacionais*. Tese [Doutorado em Ciências Contábeis e Administração]. Universidade de Blumenau.

Drazin, R., & Van de Ven, A. H. (1985). Alternative forms of fit in contingency theory. *Administrative science quarterly*, *30*(4), 514-539.

Faria, J., & Madeira, R. B. (2011). Impacto da estrutura organizacional de dois hospitais públicos portugueses na execução dos seus objectivos. *Perspectivas em Gestão & Conhecimento*, *1*(1), 106-124.

Faria, L. D. O., & Fischer, T. (2001). Privatização, mudança & evolução da estrutura organizacional em três momentos: Tebasa, Telebahia e Telemar. *Organizações & Sociedade*, *8*(21), 59-75.

Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of management review*, *32*(4), 1180-1198.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate data analysis (6th ed.). Pearson Prentice Hall.

Hall, R. H. (1984). *Organizações: Estrutura e processos*. Prentice-Hall.

Harris, I. C., & Ruefli, T. W. (2000). The strategy/structure debate: An examination of the performance implications. *Journal of Management Studies*, *37*(4), 587-604.

Hartmann, A., Moretto, L., Neto, Finger, L., & Fernandes Pereira, M. (2011). Análise da estratégia e da estrutura: um estudo de caso na indústria e comércio de embalagens Maxiplast Ltda. *Gestão & Planejamento-G&P*, *12*(2), 199-212.

Joseph, J., & Gaba, V. (2020). Organizational structure, information processing, and decision-making: A retrospective and road map for research. *Academy of Management Annals*, *14*(1), 267-302.

Kich, J. I. D. F., & Pereira, M. F. (2011). A influência da liderança, cultura, estrutura e comunicação organizacional no processo de implantação do planejamento estratégico. *Cadernos EBAPE.Br*, *9*(4), 1045-1065.

Klein, H. J., Cooper, J. T., Molloy, J. C., & Swanson, J. A. (2014). The assessment of commitment: Advantages of a unidimensional, target-free approach. *Journal of Applied Psychology*, *99*(2), 222.

Kline, R. B. (2015). *Principles and practice of structural equation modeling*. Guilford Publications.

Lima, S. M., de Macêdo, J. L., de Aquino Cabral, A. C., & Colares, R. F. (2014). Estrutura organizacional das empresas vinculadas à incubadora de Base Tecnológica da Universidade de Fortaleza: Uma análise sob a perspectiva de Mintzberg. *REGE-Revista de Gestão*, *21*(3), 305-324.

Marôco, J. (2010). *Análise de equações estruturais: Fundamentos teóricos, software & aplicações*. ReportNumber.

Marôco, J., & Garcia-Marques, T. (2006). Qual a fiabilidade do alfa de Cronbach? Questões antigas e soluções modernas?. *Laboratório de Psicologia*, *4*(1), 65-90.

Matheson, C. (2009). Understanding the policy process: The work of Henry Mintzberg. *Public Administration Review*, *69*(6), 1148-1161.

Medeiros, C. A. F. (2003). *Comprometimento organizacional: Um estudo de suas relações com características organizacionais e desempenho nas empresas hoteleiras.* Tese [Doutorado em Administração]. Universidade de São Paulo.

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human resource management review*, *1*(1), 61-89.

Mintzberg, H. (1980). Structure in 5's: A Synthesis of the Research on Organization Design. *Management science*, *26*(3), 322-341.

Mintzberg, H. (2012). *Criando organizações eficazes* (2. ed.). Atlas.

Mintzberg, H. (2006). *O processo da estratégia* (4. ed.). Bookman Editora.

Mintzberg, H., & Quinn, J. (2001). Administrando mudanças. In H. MINTZBERG & J. QUINN, *O processo da estratégia* (pp. 109-114). Bookman.

Mintzberg, H., Lampel, J., Quinn, J. B., & Ghoshal, S. (2006). *O processo da estratégia: conceitos, contextos e casos selecionados* (4th ed.). Porto Alegre: Bookman.

Moreira, T. P., Marques, D. S., dos Santos, S. M., de Aquino Cabral, A. C., & Pessoa, M. N. M. (2019). A estrutura organizacional da Universidade Federal do Ceará (UFC): um estudo de caso à luz da teoria das cinco configurações de Mintzberg. *Revista Gestão Universitária na América Latina-GUAL*, 73-96.

Neis, D. F., Pereira, M. F., & Maccari, E. A. (2017). Strategic Planning Process and Organizational Structure: Impacts, Confluence and Similarities. *Brazilian Business Review*, 14(5), 479–492. https://doi.org/10.15728/bbr.2017.14.5.2

Pasquali, L. (1997). *Psicometria: Teorias e aplicações*. Unb.

Peters, G. Y. (2014). The Alpha and the Omega of Scale Reliability and Validity: WShy and how to Abandon Cronbach's Alpha. *European Health Psychologist*, *16*(2), 576.

Picchiai, D., & Sauma, C. (2014). Alinhamento entre estratégia, estrutura e os efeitos no desempenho financeiro: Estudo de caso do Complexo Hospitalar. *Jornal Brasileiro de Economia da Saúde*, *6*(3), 129-140.

Pugh, D. S., Hickson, D. J., Hinings, C. R., & Turner, C. (1968). Dimensions of organization structure. *Administrative Science Quarterly*, *13*(1), 65-105.

Santos, N., Ladeira, M. B., Oliveira, M. P. V., & Resende, P. T. V. (2014). Cultura organizacional, estrutura organizacional e gestão de pessoas como bases para uma gestão orientada por processos e seus impactos no desempenho organizacional. *BBR - Brazilian Business Review*, *11*(3), 106-129.

Seiffert, P. Q., & Costa, J. A. S. (2007). *Estruturação organizacional: planejando e implantando uma nova estrutura*. Editora Atlas SA.

Silva, M. Z., & Fernandes, C. F. (2019). The influence of contingencies factors strategy and structure in the enterprise risk management in a hospital. Gestão & Produção, *26*(1), e2315. https://doi.org/10.1590/0104-530X2315-19

Stoner, J. A. F., & Freeman, R. E. (1995). *Administração.* Editora LTC.

Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). *Using multivariate statistics* (Vol. 5, pp. 481-498). Pearson.

Teixeira, R., Koufteros, X., & Peng, X. D. (2012). Organizational structure, integration, and manufacturing performance: A conceptual model and propositions. *Journal of Operations and Supply Chain Management*, *5*(1), 70-81.

Toldo, G. S., & Lopes, F. D. (2017). Cinema como arte ou entretenimento: Uma visão de seus realizadores e a estrutura organizacional de suas produtoras. *REAd. Revista Eletrônica de Administração (Porto Alegre)*, *23*(2), 167-190.

Trigueiro-Fernandes, L. T. (2014). *Estrutura e desempenho organizacional: Uma análise na Universidade Federal do Rio Grande do Norte*. Dissertação [Mestrado em Administração]. Universidade Federal do Rio Grande do Norte.

Trigueiro-Fernandes, L.T., Medeiros, C. A. F., Anez, M. E. M., Medeiros, B. C., & Danjour, M. F. (2016). Construção de um instrumento para mensuração dos componentes de estrutura organizacional: Uma análise em uma instituição de ensino superior. In: *XL Encontro Nacional da ANPAD - EnANPAD*, Salvador, Brasil.

Trigueiro-Fernandes, L., Lins Filho, M. L., Mól, A. L. R., & Añez, M. E. M. (2019). Ebaco-R: Refinement of organizational commitment bases scale. *BBR - Brazilian Business Review*, *16*(4), 315-333.

Trigueiro-Fernandes, L. (2019). *Configurações dos elementos do comportamento organizacional para formação de vantagem competitiva sustentável*. Tese [Doutorado em Administração]. Universidade Federal do Rio Grande do Norte.

Vallandro, L.F., & Trez, G. (2013). Visão baseada em recursos, estratégia, estrutura e performance da firma: uma análise das lacunas e oportunidades de pesquisas existentes no campo da administração estratégica. *Análise–Revista de Administração da PUCRS*, *24*(1), 79-91.

Vasconcellos, E., & Hemsley, J. R. (1997). Estrutura das organizações: estruturas tradicionais, estruturas para inovação, estrutura matricial. In *Estrutura das organizações: Estruturas tradicionais, estruturas para inovação, estrutura matricial* (pp. 9-208). Cengage Learning.

Voorhees, C. M., Brady, M. K., Calantone, R., & Ramirez, E. (2016). Discriminant validity testing in marketing: an analysis, causes for concern, and proposed remedies. *Journal of the Academy of Marketing Science*, *44*(1), 119-134. https://doi.org/10.1007/s11747-015-0455-4.

Walton, R.E. (1985). From control to commitment: Transformingworkforce management in the united states. In K. Clark, R.Hayes & C. Lorenz (Eds.), *The uneasy alliance: Managementthe productivity-technology dilemma*. Boston: Harvard BusinessSchool Press.

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, *34*(6), 806-838.

Zendeh, B., Aali, S., Norouzi, D., & Atashpeykar, H. (2012). A new Approach to SPACE Matrix. In *International Conference on Economics and Finance Research IPEDR* (Vol. 32, pp. 40-44).

Zey, M., & Zey-Ferrell, M. (1979). *Dimensions of organizations: Environment, context, structure, process, and performance*. Goodyear Publishing.

## AUTHORSHIP CONTRIBUTIONS

The elaboration of this research was developed with the collaboration of all authors. The first author defined the problem, developed the theoretical framework, performed data collection, statistical analysis and interpretation. the other two co-authors carried out the critical review and writing of the research. The fourth co-author supervised the entire research.

## CONFLLICT OF INTEREST

There are no conflicts of interest in this research.

## ACKNOWLEDGEMENT

We are grateful for the financial support of the Ânima Institute

# APPENDIX A – RESEARCH INSTRUMENT

O PRESENTE QUESTIONÁRIO COMPÕE UM PROJETO DE PESQUISA DO GRUPO DE ESTUDOS E PESQUISAS EM ESTUDOS ORGANIZACIONAI DA UFRN. SUA CONTRIBUIÇÃO, COM MÁXIMO DE VERACIDADE, É ESSENCIAL PARA QUE OS RESULTADOS REFLITAM A REALIDADE ORGANIZACIONAL.

**1. Qual a sua unidade organizacional:**_____

CONSIDERANDO SEU CONHECIMENTO SOBRE COMO ESTÁ ESTRUTURADA A UNIDADE ORGANIZACIONAL QUE VOCÊ ESTÁ LOTADO(A) (TRABALHA) ATUALMENTE, CONSIDERE OS SEGUINTES INDICADORES PARA AVALIÁ-LA QUANTO AOS ASPECTOS DE ESTRUTURA ORGANIZACIONAL.

| | DISCORDO 1 | 2 | 3 | 4 | 5 | CONCORDO 6 |
|---|---|---|---|---|---|---|
| 2. Esta unidade utiliza documentos (normas, manuais, instruções) para garantir que suas atividades sejam padronizadas. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3. Nesta unidade as atividades são padronizadas, de modo que fique claro como cada uma deve ser feita. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 4. Esta unidade tem bem definido quem deve efetuar cada tarefa. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 5. Nesta unidade é bem definido quando e qual atividade tem que ser feita. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 6.Nesta unidade são realizados programas institucionais para desenvolver competências nas pessoas. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7.Esta unidade promove o treinamento das habilidades e conhecimentos necessários para a realização das atividades. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8. Nesta unidade as pessoas participam de programas de treinamento que as ajudam à absorver os valores organizacionais. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9. Esta unidade realiza treinamentos para garantir que os servidores realizem suas atividades da melhor forma. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 10. As pessoas se preocupam aqui mais com seu próprio trabalho do que com os objetivos mais amplos da organização. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 11. O mais importante para esta unidade é realizar o seu próprio trabalho. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 12. As pessoas desta unidade não desempenham outras funções dentro da organização. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 13. Nesta unidade existe uma preocupação maior com o próprio trabalho do que com o desempenho da organização. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 14. Esta unidade dá liberdade para os funcionários solucionarem os problemas. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 15. Nesta unidade, os chefes fornecem respostas rápidas aos seus subordinados. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 16. Esta unidade dá liberdade ao funcionário para exercer o trabalho da maneira que considera mais eficaz. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 17. Nesta unidade, as decisões são tomadas em grupo, buscando-se a participação dos funcionários nas decisões. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 18. Esta unidade possui muitos níveis hierárquicos. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 19. Nesta unidade existem muitos chefes subordinados ao gestor principal da unidade. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 20. Esta *organização* possui muitos níveis hierárquicos. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 21. Nesta *organização* existem muitos chefes/gestores. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 22. Os sistemas de informação desta organização são bem utilizados por esta unidade. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 23. Nesta unidade os servidores tem facilidade na utilização dos sistemas de informação da organização. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 24. Esta unidade utiliza com eficiência os canais de informação disponibilizados pela organização. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 25. Nesta unidade os canais de envio e recebimento de informações são bem utilizados. | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

POR FAVOR, PARA FINALIZAR, RESPONDA ALGUMAS QUESTÕES SOBRE VOCÊ:

53. Idade: ____ anos

54. Sexo: ☐Masculino ☐Feminino

55. Estado Civil:
☐ Casado/União estável ☐ Solteiro ☐ Separado ☐ Viúvo

56. Área de Atuação:
☐ Setor Público ☐ Setor Privado

57. Tipo de Vínculo:
☐ Estatutário ☐ CLT ☐ Contratado por tempo determinado ☐ Outro:_____

58. Cargo:_____

59. Tempo de serviço: _____ ano(s) e _____ mês(es).

60. Escolaridade:

| | | | |
|---|---|---|---|
| ☐1º Grau incompleto | ☐ 2º Grau incompleto | ☐Superior incompleto | ☐ Especialização |
| | ☐ 2º Grau completo | | ☐ Mestrado |
| ☐1º Grau completo | ☐ Curso técnico | ☐ Superior completo | ☐ Doutorado |

# APPENDIX B – SCALE OF ORGANIZATIONAL STRUCTURE COMPONENTS

| Variável | TREINAMENTO E INTERNALIZAÇÃO |
|---|---|
| trei_int_1 | Nesta unidade são realizados programas institucionais para desenvolver competências nas pessoas. |
| trei_int_2 | Esta unidade promove o treinamento das habilidades e conhecimentos necessários para a realização das atividades. |
| trei_int_3 | Nesta unidade as pessoas participam de programas de treinamento que as ajudam à absorver os valores organizacionais. |
| trei_int_4 | Esta unidade realiza treinamentos para garantir que os servidores realizem suas atividades da melhor forma. |
| | **COMUNICAÇÃO** |
| com_1 | Os sistemas de informação desta organização são bem utilizados por esta unidade. |
| com_2 | Nesta unidade os servidores tem facilidade na utilização dos sistemas de informação da organização. |
| com_3 | Esta unidade utiliza com eficiência os canais de informação disponibilizados pela organização. |
| com_4 | Nesta unidade os canais de envio e recebimento de informações são bem utilizados. |
| | **HIERARQUIZAÇÃO** |
| hier_1 | Esta unidade possui muitos níveis hierárquicos. |
| hier_2 | Nesta unidade existem muitos chefes subordinados ao gestor principal da unidade. |
| hier_3 | Esta *organização* possui muitos níveis hierárquicos. |
| hier_4 | Nesta *organização* existem muitos chefes/gestores. |
| | **DESCENTRALIZAÇÃO** |
| desc_1 | Esta unidade dá liberdade para os funcionários solucionarem os problemas. |
| desc_2 | Nesta unidade, os chefes fornecem respostas rápidas aos seus subordinados. |
| desc_3 | Esta unidade dá liberdade ao funcionário para exercer o trabalho da maneira que considera mais eficaz. |
| desc_4 | Nesta unidade, as decisões são tomadas em grupo, buscando-se a participação dos funcionários nas decisões. |
| | **FORMALIZAÇÃO** |
| form_1 | Esta unidade utiliza documentos (normas, manuais, instruções) para garantir que suas atividades sejam padronizadas. |
| form_2 | Nesta unidade as atividades são padronizadas, de modo que fique claro como cada uma deve ser feita. |
| form_3 | Esta unidade tem bem definido quem deve efetuar cada tarefa. |
| form_4 | Nesta unidade é bem definido quando e qual atividade tem que ser feita. |
| | **DEPARTAMENTALIZAÇÃO** |
| dept_1 | As pessoas se preocupam aqui mais com seu próprio trabalho do que com os objetivos mais amplos da organização. |
| dept_2 | O mais importante para esta unidade é realizar o seu próprio trabalho. |
| dept_3 | As pessoas desta unidade não desempenham outras funções dentro da organização. |
| dept_4 | Nesta unidade existe uma preocupação maior com o próprio trabalho do que com o desempenho da organização. |