Design of an Instrument to Evaluate Organizational Design Characteristics Based on the Organizational Configuration Model

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Abstract: The purpose of this article was to design and validate an instrument to determine relevant variables of the business environment, demeanor, and organizational behaviors linked to the Organizational Configuration Model and its relevance in these tumultuous times driven by the pandemic. From the literature, fifty-nine organizational attributes were extracted and administered to a random sample of 160 managers. Using a combined approach, i.e., exploratory factor analysis and construct validity, a structure of eight factors were extracted that explained 66.3 percent of the total variance with an exhibited satisfactory sample adequacy for the factor analysis (KMO = 0.63). An instrument was designed with these eight factors that provided a focused and valid perspective capable of assessing the impact and continued viability of a business's organizational configuration under unsettled economic times.

Keywords: Organizational Design, Organizational Configuration, Organizational Behavior, Organizational Assessment

Introduction

The financial devastation of many companies throughout Latin America because of the pandemic has triggered an unbalanced operating approach that poses threats to their long-term viability (Arreaza 2020). A vast majority of these companies in the region have recorded dramatic reductions in their income. As a result, they end up being victims of the immediate rather than maintaining the long-term perspective of their original business plans (CEPAL 2020). To avoid a 'new normal' collapse and promote improved operations within a turbulent economy, valid and reliable instruments are urgently needed to fully assess the business situation (Hartnell et al 2019).

The purpose of this research was to provide a conceptual and practical framework to identify, describe, and analyze the interrelation between an organization's environment and its structure as a relevant topic in the study of organizational dynamics under stressful economic conditions. Organizations under stress are prone to enact behaviors that deviate from the well-established, expected patterns. From a conceptual perspective, the literature presents various models that identify the environment as a critical variable for deciding how to adapt to the environment and achieve efficiency within a short-term setting and a long-term strategic view (George, Walker, and Monster 2019). From a practical viewpoint, this research seeks to create and validate an assessment tool that measures the behavioral and environmental variables that affect decisions made under economic duress, such as those inflicted by the pandemic.

In conducting a review of the literature related to approaches to organizational dynamics, the Organizational Configuration Model proposed by Henry Mintzberg (1979, 1988) was selected for this study. With this model, Mintzberg suggests that organizational strategies are enacted is such a way that they also characterize the organization's structural configuration. This model is supported

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The International Journal of Interdisciplinary Organizational Studies
Volume17, Issue 1, 2022, https://organization-studies.com

ISSN: 2324-7649 (Print), ISSN: 2324-7657 (Online)
https://doi.org/10.18848/2324-7649/CGP/v17i01/83-101 (Article)

by an extensive review of literature in different research areas and builds on widely recognized models in the field of organization theory (Dauber, Fink, and Yolles 2012). Using this model, fifty-nine variables were selected and administered as a survey to 160 company managers. Employing a combination of exploratory factor analysis and construct validity analysis, eight factors were extracted that explained the environment-structure-management dynamics and were used to build an instrument capable of assessing businesses' performance, especially under the pressures of a harsh and unpredictable economic environment.

Theoretical Framework

As a crucial business process, it is essential for organizations to periodically monitor and study their environment-structure relationship to assess performance, minimize risks, and take advantage of prospects from the social, technical, political, and economic changes surrounding them (Dupleix and Rébori 2017; Sharma et al. 2020). This assessment is especially relevant in a post-pandemic era. The results of a periodic review of the interaction between environment and organizational structure allow for smoother adaptations in times of crisis, increase the survivability rate, and enable interventions and innovative initiatives that maximize viability and competitive permanence in the markets (Kalay and Gary 2015).

Essentially, the environment is considered an external influencer of changes within an organization's structure (Zapata and Martínez 2011; Walker and Brown 2004). Various authors have established that organizations operating in highly dynamic settings improve the company's survival in turbulent environments when they are cognizant of their environment-structure interactions (Kipley, Lewis, and Jewe 2012; Ansoff et al. 2018). A more comprehensive review of the strategic impact of the environment-structure relationship upon an organization is presented in Table 1.

Table 1: Perspectives on the Organizational-Environment Relationship

Author	*Description-Synthesis*
Cyert and March 1963	Organizations learn to adjust their behavior over time by altering their objectives, reviewing procedures, and determining relevant environmental dynamics.
Aguilar 1967	The environment is a crucial variable for sustaining a company. Four elements of the external environment are considered: social, economic, political, and technological.
Eisenstadt 1969	An organization's objectives provide the context for the relationship between the internal structure and the environment in which it operates. The fit of the objectives within the social structure and the type of dependence that the company has on the outside forces are considered.
Duncan 1972	Factors that contribute to decision unit members experiencing uncertainty in decision making. Uncertainty within the internal or external environment of an organization is directly proportional to each other. Levels of internal and external uncertainty on one affect the other.
Miles, Snow, and Pfeffer 1974	Making adjustments to organization strategies, technologies, structures, and processes are essential to properly handling changes in environmental demands.
Steers 1977	An organization's capacity to adapt to its environment is enabled by its ability to properly estimate what the external environment will be like in the future.
Smart and Vertinsky 1984	A study on the relationship between strategy and the environment and its influence on survival and growth.
Javidan 1984	Studied the relationship between strategic planning and environmental perception. The result of the study implies that insights into the environment are strong moderators to the organizations responses.

Source: Rojas et al.

When analyzing the influence of the external environment upon an organization, there are multiple interpretations as to the variables that are at play. Several studies suggest that environmental influences emerge in the forms of uncertainty, complexity, dynamism, heterogeneity, and turbulence (Tsuja and Mariño 2013). Mintzberg (1988) proposed four relevant characteristics of the environment: stability, complexity, diversity, and hostility. Relatedly, Ansoff (1986) defined three basic environmental models: stable (simple, favorable, and integrated), adapts reactively (stable, somewhat complex, somewhat favorable, and diverse), and unstable turbulent (dynamic, complex, hostile, and diverse).

Ansoff (1986) also suggests environmental variables are affected by an element called 'turbulence,' defined as the amount of change and complexity in the environment of an industry. He classified turbulence into five different levels based on the combined measure of the capacity for change and the predictability and instability of the environment of the company. His classifications are Repetitive and Unchanged (Level 1); Expanding (Level 2), where the change is slow, incremental, visible, and predictable; Changing (Level 3), defined as rapid change but still incremental and fully visible; Discontinuous (Level 4), in which the future change within the industry will probably be very different from the historical past and, as such, the successes of the past will not guarantee future success; and Surprising (Level 5), in which a change occurs without prior notice, not visible, completely unpredictable, and extremely fast. An example of the Surprising Level is the turbulence created by the COVID pandemic. For companies to be successful at Level 5, openness and flexibility, and advanced innovative ideas are required (Evangelista, Lucchese, and Meliciani 2013; Kipley, Lewis, and Jewe 2012).

Understanding the effects of the external environment upon the organization describes only part of the dynamics of interest for this study. In addition to environmental variables, organizational design and its adaptive activities are also considered variables (Lin and Carley 2001; Molina 2000). Adaptive activities of the managerial type (planning, organizational structure, direction, and control) and corporate type (marketing, financial administration, personnel administration, and production management) are characterized as 'suprasystem' variables (Njoroge, Kinuu, and Kasomi 2016; Tran and Tian 2013). Changes to these systems have led organizations to design structure that optimizes its adaptation to the environments (Vargas-Hernández and Mondragón 2005).

For our purposes, "organizational design" is defined as the process by which optimal performance and adaptation is achieved through suprasystem integration and structural differentiation (Hodge, Anthony, and Gales 2003). Accordingly, business managers have typically resorted to the variety of administrative schemes available through formal research, case studies, and best practices for planning and implementing an organizational design. This predisposition has made management theories an indispensable resource for finding practical applications to help respond to diverse environmental changes (Daft 2015). Over time, traditional models of organizational management (classical, structuralist, humanist, neoclassical, behavior) were questioned as to the degree of flexibility required to respond effectively to environmental demands (Lin and Carley2001). Other classic management models also challenged include the systemic model (Raza and Standing 2011) and the situational model (Lorsch 1977).

Faced with the dilemma regarding the leading forms of organizational designs responsive to external challenges, Kotter (2014) argues that hierarchies and traditional management processes still work for facing daily corporate activities, but, "…what they do not do well is identify the most important hazards or opportunities early enough, formulate innovative strategic initiatives nimbly enough, and (especially) execute those initiatives fast enough" (Kotter 2014, 6). Attempts to quantify the impact of the environment upon an organization's structure represent a significant challenge. The weighting of the environment in the configuration process and the need to adapt and achieve rapid and efficient responses to environmental conditions gave rise to contingent theory, which defines organizational effectiveness in terms of results (Donaldson 2006). The

effectiveness of these results is a function of the adjustment to contingent variables such as technology, environment, structure, and strategy.

Using Jones (2013) as a source, Table 2 summarizes the landscape of Administrative Theory, the types of environments in which its operation has been considered suitable, and shows the optimal design approach to respond to the challenges imposed by the environments in which they are immersed.

Table 2: Design Approach and Types of Environments

Perspective	*Theories*	*Emphasis*	*Design Approach*	*Type of Environment*
Classical	Scientific Administration	Tasks	Mechanical or Rational	Stable
	Administrative Doctrine	Structure		
Humanist	Human Relations	People	Mechanical or Rational	Stable
Neoclassical or Eclectic	Neoclassical Theory	Structure	Mechanical or Rational	Stable
	Bureaucratic Model			
Structuralist	Structuralist Theory	Structure	Mechanical or Rational	
Behavior	Behavioral Theory	People	Mechanical or Rational	Stable
	Organizational Development Theory			
Systemic	Systems Theory	Environment	Natural or Organic	Turbulent
Situational	Situational or Contingency Theory	Environment	Natural or Organic	Turbulent

Source: Jones 2013

A different yet more straightforward approach to understanding organizational structure and its significance to environmental dynamics is provided by Burns and Stalker (1961), who identified two primary forms of organizational structure models. They describe organization forms as either mechanical, meaning they highly resemble the type of traditional bureaucratic model devised by Weber (du Gay 2000), or organic, which is cross-hierarchical and cross-functional (Hellriegel and Slocum 1973; Pasricha, Singh, and Verma 2018). The studies of Ahmady, Mehrpour, and Nikooravesh 2016) confirm these forms of organization, whose attributes are summarized in Table 3.

Table 3: Characteristics of the Types of Organizational Structure

Mechanical Model	*Organic Model*
Accurate description of the rights, obligations, methods, and tasks of each position, defines a highly formal structure.	The adjustment and continuous redefinition of tasks and high commitment produce a tendency towards a looser structure.
Hierarchical structure of supervision, control, and communication makes clear the presence of high centralization.	The informal structure of control and authority, the participation of individuals in decision-making and lateral communication suggest a clear trend towards less centralization
The high differentiation–vertical and horizontal–specifies a great specialization.	The location of knowledge in any part of the organizational network defines a low specialization.

Source: Zapata, Martínez, and Hernández 2009

It is worth noting that the mechanical and organic structures are determined by content variables such as goals, strategies, hierarchy, technology, and the organization's size. For example, Mintzberg (1988) characterizes these differences based upon groups of activities or sections of the organization strategic apex (top management and its support staff), middle line (managers between the operating core and the top management of the organization), technostructure (analysts) and support staff (people who have the duty to support and link the activities of the organization). Content variables provide meaningful research outcomes when compared and analyzed against external environmental variables.

In addition to the forms of mechanical and organic organizational structure, a third form may also be helpful when analyzing the environment-structure interaction. A social structures approach provides an interpersonal relationship assessment of opportunities and challenges. The organization's internal social dynamics are recognized as simple, functional, multidivisional, matrix, hybrid, networked, and bureaucratic (Santos, Pache, and Birkholz 2015; Ahmady, Mehrpour, and Nikooravesh 2016). Monitoring the effects of the environment upon the social structures of an organization is another way to assess the need for changes or adjustments. It should be noted that Daft (2015) confirms that the new challenges presented by the environment promote changes in organizational design and management practices. This creates a tendency to abandon highly structured mechanical models for a preference for freer and more flexible systems more aligned with the organic model.

Despite these forms of organizational structure, how the variables of the environment-organization interaction are perceived—especially by the management of the company—is critical in deciding the changes that a company adopts in response to different turbulence levels (Collier, Fishwick, and Floyd 2004). In the modern business environment, organizational design and management have forged the transformation of many traditional design schemes and promoted effective structures in response to internal and external environmental conditions (Hodge, Anthony, and Gales 2003).

Along these lines, Parra, Moreno, and Del Pilar Liz (2009) argue that organizational theory addresses the relationship between structure, organizational design, and management from two perspectives, the descriptive and the normative. The descriptive point of view is where the nature of the existing relationship between the different subsystems of the organization and its environment is defined. The normative point of view proposes how things "should" be. Both perspectives subscribe to an organizational configuration that functions as an "open" system, therefore recognizing an interplay between the environment and the desired structure (Daft 2015).

Within the formal studies on the relationship between environmental and organizational structure, Mintzberg, Quinn, and Voyer (1980) provided one of the more comprehensive and prominent interpretations. They propose that the existence of internal and external parameters, called "Fundamental Design Parameters," determine the ideal configuration of an organizational structure. This model is comprised of various components, such as strategic apex, middle line, operating core, technostructure, support staff, and ideology units. These components are expected to reflect the situation of the organization, that is, its age, its size, the type of production system, and the degree of complexity and dynamism of its environment (Mintzberg 1979). A summary of the models of organizational configuration proposed by Henry Mintzberg is summarized in Table 4.

Table 4: Models of Organizational Configuration

Structural Configuration	*Prime Coordinating Mechanism*	*Key Part of Organization*	*Type of Decentralization*
Simple Structure	Direct supervision	Strategic apex	Horizontal and vertical centralization
Machine Bureaucracy	Standardization of work	Technostructure	Limited horizontal decentralization
Professional Bureaucracy	Standardization of skills	Operating core	Horizontal decentralization
Divisionalized Form	Standardization of output	Middle line	Limited vertical decentralization
Adhocracy	Mutual adjustment	Support staff	Selective decentralization
Missionary	Standardization of norms	Ideology	Decentralization
Politics	None	None	None

Source: Mintzberg, Quinn, and Voyer 1980

This previous review of academic literature provided the theoretical foundation to explore and select a model that best characterizes the dynamics between the environment, organizational structures, and internal strategies. However, there are many variables within these approaches, perspectives, and models, suggesting the need for a reduction and validation process. A reduction and validation of variables facilitate the design of an instrument that is capable of measuring the environment-structure relationship.

Methodology

The reduction and validation process starts with selecting relevant internal and external variables, typologies, and factors from the perspectives, approaches, and models discussed in the literature review. The results of this collection of variables, typologies, and factors are then converted into a survey and administered to a sample of managers from companies of various sizes, ages, and years of operations. The data generated by these managers is then submitted to an Exploratory Factor Analysis and a construct validity analysis using SPSS, resulting in a reduced albeit relevant number of variables. Finally, the reduced number of variables is used to compose a valid and reliable instrument intended to measure the environment-structure interrelationship.

An analysis of the relevant literature discussed in the previous section, multiple variables, typologies, and factors related to the conduct and internal behavior of companies were identified and are presented in Table 5.

Table 5: Internal Variables, Typologies, and Factors

Variable	*Typology*	*Internal Factor*
Age	Young	Time
	Old	
Technical System	Informal	Work of the operators
	Highly regulated	Operating staff
	Organic	Unskilled work
	Bureaucratic	
	Simple	Specialized staff
	Complex	

Variable	*Typology*	*Internal Factor*
Goals and Strategies	Not defined	Purpose
	Defined	Resources and Activities
		Work environment
		Scope of operation
Power	Internal	Daily Actions
	External	Responsibility
Fashion	Not fashionable	Management Practices and Technologies
	Fashionable	
Job specialization	Vertical	Tasks
		Making Decisions
	Horizontal	Autonomy
Formalization of position	Informal	Norms and Procedures
	Formal	
Training	Low Professionalization	Formal Education Levels
	High Professionalization	
Indoctrination	Not standardized	Behavior of people
	Standardized	
Unit Grouping	Work Processes	Coordinated jobs
	Markets	Coordinated workflow
Unit size	Small	Number of positions
	Large	
Planning and Control Systems	Planning of activities	Planning Activities
		Results
	Performance control	Actions
Liaison Devices	Formalized	Personnel
		Jobs
Internal relationships	Mutual Adjustment	Units
External relationships		Teams
Decentralization	Centralized	Decision-making power
		Decision making
	Decentralized	Places

Source: Rojas et al.

Next, each variable and its typology are associated with various external factors, which are beyond the control of companies but affect their behavior, their decisions, and consequently the way their different physical and social components are arranged to react and respond to multiple and variable environmental requirements. The external factors under consideration are presented in Table 6.

Table 6: External Variables, Typologies, and
Factors Affecting the Perception of the Environment

Variables	*Typologies*	*External factors*
Stability	Stable-Predictable	Economics
		Tastes and Preferences (Demand)
	Dynamic-Uncertain	Competition
		New Products (Demand)
		Income
Complexity	Simple	Knowledge
		Processes
	Complex	Technology
		Skills
Hostility	Favorable (slow reaction)	Competition
		Competition
	Hostile (rapid reaction)	Control groups
		Competition
		Providers
Diversity	Integrated (lower breadth)	Segments
		Portfolio of products and services
	Divisionalized (greater breadth)	Location of the Demand
		Geographic Zones

Source: Mintzberg, Quinn, and Voyer 1980

The internal and external variables from Tables 5 and 6 were operationalized through a survey-type instrument made up of fifty-nine items organized as follows: five questions on company demographics and fifteen questions about general perceptions regarding the characteristics of the environment in which the company interacts, followed by thirty-nine questions about general perceptions regarding the conduct and behaviors in the company. Questions associated with the general perceptions of the environment, conduct, and behaviors were answered using a Likert-type scale with values between 1 and 5, with 1 as "Completely Disagreeing" and 5 as "Completely Agreeing."

For this study, data were collected from 160 managers and directors of companies in the city of Cartagena, Colombia. The selection was made randomly for each of the sectors and sizes of companies (large, medium, and SMEs). As for the demographics, years of operation of the company, the number of employees, the value of annual sales, and the total value of assets are considered and displayed in Table 7.

Table 7: General Data Variables of the Company (N = 160)

Characteristics	
Years of Operation of the Company	***N°***
Mean (SD)	2.97 (1.01)
Less than 3 years	18
Between 3 and 7 years	30
Between 8 and 15 years	51
More than 15 years	61
Number of Employees	
Mean (SD)	2.22 (1.181)
9 or less	36
Between 10 and 49	50
Between 50 and 250	35
More than 250	39
Total Value of Assets	
Mean (SD)	2.24 (1.093)
Up to $2 million USD	63
Between $2 and $ 10 million USD	27
Between $10 and $43 million USD	45
More than $43 million USD	25
Total Value of Annual Sales	
Mean (SD)	2.09 (1.181)
Up to $2 million USD	71
Between $2 and $10 million USD	36
Between $10 and $50 million USD	20
More than $50 million USD	33

Source: Rojas et al.

Analysis and Results

The analysis of the data generated by the 160 company managers was submitted to an Exploratory Factor Analysis, a statistical method used to explore the underlying structure of a set of observed variables and a crucial step in a scale development process. The analysis of the measure of coherence or internal consistency was obtained by calculating Cronbach's alpha coefficient (Hernández Sampieri, Fernández Collado, and Baptista Lucio 2014). Afterward, the evaluation of construct validity was performed by Exploratory Factor Analysis, principal component analysis with VARIMAX rotation (Pérez 2004). Additionally, a reliability analysis of each component was performed. The assessment of the scales was performed by analyzing the data using Statistical Package for Social Sciences (SPSS), version 25 for Windows.

Specifically, the reliability analysis of the data was performed using Cronbach's alpha coefficient, resulting in an $\alpha = 0.82$ (with fifty-four items). Subsequently, by analyzing subdimensions, some thirty items that did not contribute to reliability were eliminated, and reliability was recalculated. The recalculated Cronbach's alpha was 0.703 for the total scale.

Some authors consider adequate a coefficient between 0.70 and 0.90 (Hernández Sampieri, Fernández Collado, and Baptista Lucio 2014).

The items associated with the environment were grouped into four subdimensions: stability, complexity, diversity, and hostility. The estimation of internal consistency for each of the subdimensions was 0.73 for stability, 0.57 for complexity, 0.60 for diversity, and 0.74 for hostility. In the case of contingency or situational factors, these subdimensions were grouped into four subdimensions: age, goals and strategies, specialization, and liaison devices. The estimation of internal consistency for each of the subdimensions was 0.69 for age, 0.72 for goals and strategies, 0.63 for specialization, and 0.62 for liaison devices. Table 8 shows the mean, standard deviation, and Cronbach's alpha for each of the scale items.

Table 8: Mean, Standard Deviation, and Cronbach's Alpha for Environmental Aspects and Contingency Factors

Item Number	*Statement*	*Mean*	*Standard. Deviation*	*Cronbach's α by subdimension*
	Subdimension: stability			
6	We are constantly facing unpredictable changes in the economy.	3.77	1.193	0.73
7	We constantly face unpredictable changes in the tastes and preferences of our customers.	3.56	1.258	
8	Our competitors are constantly offering unpredictable innovations in products and services.	3.53	1.283	
9	The dynamic environment in which our organization moves makes the work we do unpredictable.	3.09	1.220	
	Subdimension: complexity			
10	The operations of our organization are based on a complex body of knowledge.	3.82	1.233	0.57
11	The products and services we offer are based on complex work processes with poor knowledge in the market.	2.68	1.230	
12	The complexity of the information required for decision-making has led us to decentralize decision-making power.	2.83	1.347	
	Subdimension: diversity			
13	Our company serves diverse markets.	3.59	1.319	0.6
14	We offer a diversified portfolio of products and services.	4.04	1.266	
	Subdimension: hostility			
17	Competition threatens our profitability.	3.56	1.292	0.74
18	Pressures from external groups who have power over the company (client groups, unions, communities, monitoring and control bodies, media, etc.) threaten our profitability.	2.83	1.452	
19	The loss of customers in our company is threatening our profitability.	3.04	1.451	
20	Our suppliers permanently exercise actions that threaten our profitability.	2.71	1.301	
	Subdimension: age			

Item Number	*Statement*	*Mean*	*Standard. Deviation*	*Cronbach's α by subdimension*
21	Given the time that our company has been operating, it is common to hear phrases such as "we have seen it all" from former employees.	2.98	1.466	0.69
22	Over time, the behavior of our organization has become repetitive, making personnel actions predictable.	3.19	1.177	
	Subdimension: goals and strategies			
27	In our company we have a specific purpose that is understood and shared by all its members.	4.13	1.010	0.72
28	In our company, goals are often defined as an enduring statement of the company's purpose.	4.05	1.033	
29	In our company, we have an action plan that describes the distribution of resources and activities for managing the environment and to achieve organizational goals.	3.97	1.118	
30	The goals and strategies established in our company define the work environment and the relationship with employees.	3.91	1.069	
	Subdimension: specialization			
37	In general, in our organization, employees do not have autonomy to make decisions about the tasks they perform.	2.99	1.259	0.63
38	In our organization, unskilled jobs are clearly defined and operators do not have autonomy over the tasks performed.	3.24	1.216	
	Subdimension: liaison devices			
54	In our organization, we have created jobs to directly coordinate the work of two or more units without having to go through administrative channels.	3.38	1.227	0.62
55	In our organization, meetings are held where members of several and diverse units gather to discuss issues of common interest.	3.99	1.174	
56	In our organization, specific issues are resolved through temporary teams that bring together members of several and diverse units.	3.31	1.289	

Source: Rojas et al.

Based upon the results shown in Table 8, the Cronbach coefficients are considered acceptable.

Once reliability was established, the construct validity was evaluated using Exploratory Factor Analysis, an analysis of factors by principal components with VARIMAX rotation. The adequacy of the sample data for the factor analysis was satisfactory, a KMO (Kayser, Meyer, and Olkin) of 0.63 was found, and Bartlett's test of sphericity was highly significant (Chi2 = 1,161.69; df = 276; $p < 0.000$). From the analysis, eight interpretable factors were extracted and explained 66.32 percent of the total variance. Table 9 summarizes the total variance.

Table 9: Explanatory Factor Analysis and Total Variance

Com-ponent	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	Total	% of vari-ance	% accumul-ated	Total	% of vari-ance	% accumul-ated	Total	% of vari-ance	% accumul-ated
1	3.802	15.842	15.842	3.802	15.842	15.842	2.436	10.150	10.150
2	3.139	13.080	28.922	3.139	13.080	28.922	2.327	9.697	19.847
3	2.176	9.067	37.989	2.176	9.067	37.989	2.297	9.571	29.419
4	1.810	7.543	45.532	1.810	7.543	45.532	1.922	8.007	37.426
5	1.389	5.789	51.321	1.389	5.789	51.321	1.884	7.849	45.275
6	1.313	5.471	56.793	1.313	5.471	56.793	1.726	7.191	52.466
7	1.189	4.953	61.745	1.189	4.953	61.745	1.709	7.120	59.586
8	1.099	4.579	66.324	1.099	4.579	66.324	1.617	6.738	66.324

Source: Rojas et al.

The criteria for the factor analysis were as follows: the item must have a weight load equal to or greater than 0.50; the item is included in a single factor, the one with the highest weight load; there must be conceptual congruence between all the questions included in a factor; a factor must be made up of two or more items; and the factors have eigenvalues greater than 1. Table 10 shows the details of the factorial solution obtained.

The factorial analysis indicated that the subdimensions associated with aspects of the environment (stability, complexity, diversity, and hostility) and contingency or situational factors (age, goals and strategies, specialization, and liaison devices) are appropriate and contain a relevant and reliable assessment, with acceptable internal consistency. This means that the configuration of the dimensions and subdimensions is solid when finding adequate saturations of the items on the evaluated factors. Likewise, the data adequacy of the sample was satisfactory for the factor analysis, finding a KMO of 0.63, while the Bartlett's test of sphericity was highly significant (Chi2 = 1,161.69; df = 276; $p < 0.000$). In addition, eight factors were extracted that explained 66.32 percent of the total variance.

Among the fifty-four items that were initially formulated for the composition of the different subdimensions, it was necessary to eliminate thirty that did not contribute to reliability. From this action, the analysis generated a mean of the total scale equal to 3.42 (SD = 0.47) and a Cronbach's alpha of 0.703. These results indicate that the reduction and its formulation as an instrument have a high degree of reliability and, consequently, its use is statistically acceptable.

Table 10: Exploratory Factor Analysis by Principal Components and Varimax Rotation

N	*Sub-dimension*	*Component*							
		F1	*F2*	*F3*	*F4*	*F5*	*F6*	*F7*	*F8*
	Hostility								
18	Pressure from power groups outside the company (customer groups, unions, communities, surveillance and control bodies, the media, etc.) jeopardizes our profitability.	0.782							
20	Our suppliers permanently take actions that endanger our profitability.	0.768							
19	The loss of customers in our company is threatening our profitability.	0.598							
17	The competition endangers our profitability.	0.587							
	Goals and strategies								
28	In our company, the goals are often defined as an enduring statement of the company's purpose.		0.830						
27	In our company we have declared a specific purpose that is understood and shared by all its members.		0.770						
30	The goals and strategies established in our company define the work environment and the relationship with employees.		0.620						
29	In our company we have an action plan that describes the distribution of resources and activities to deal with the environment and to achieve organizational goals.		0.519						
	Stability								
7	We constantly face unpredictable changes in the tastes and preferences of our customers.			0.827					
6	We are constantly facing changes in the economy.			0.743					

8	Our competitors are constantly offering unpredictable novelties in products and services.			0.648					
9	The dynamic environment in which our organization operates makes the work we do unpredictable.			0.566					
	Linking devices								
55	In our organization, meetings are held permanently where members of various and diverse units gather to discuss matters of common interest.				0.740				
54	In our organization we have created jobs to directly coordinate the work of two or more units without having to pass through administrative channels.				0,709				
56	In our organization, specific issues are resolved through temporary teams that bring together members of several and diverse units.				0.697				
	Age								
22	Over time, the behavior of our organization has become repetitive, making staff actions predictable.					0.807			
21	Given the time that our company has been operating, it is common to hear, from older employees, phrases such as “we have already seen it all.”					0.745			
	Complexity								
10	Our organization’s operations are based on a complex body of knowledge.						0.747		
11	The products and services we offer are based on complex work processes rarely known in the market.						0.711		

12	The complexity of the information required for decision-making has led us to decentralize decision-making power.						0.534		
	Diversity								
14	We offer a diversified portfolio of products and services.							0.835	
13	Our company serves diverse markets.							0.733	
	Specialization								
38	In our organization, unskilled jobs are clearly defined, and operators do not have autonomy over the tasks performed.								0.846
37	In general, in our organization, employees do not have autonomy to make decisions about the tasks they perform.								0.768

Source: Rojas et al.

Conclusion

The performance of many organizations has been severely affected by an economy damaged by the pandemic. The tumultuous and unexpected changes in exogenous variables and situational factors require organizations to reevaluate the effectiveness of their structure. With the assistance of a valid and reliable instrument, companies can reevaluate themselves, avoid being victims of the immediate at the expense, maintain a long-term perspective, avoid organizational collapse, and promote operations within a "new normal."

To facilitate this reevaluation, the eight subdimensions associated with aspects of the environment—stability, complexity, diversity, and hostility—and contingency factors—age, goals and strategies, specialization, and liaison devices—constitute the foundation of an instrument that provides a valid perspective to measure the environment, conduct, and organizational behavior. Even without the benefit of being able to generate quantitative data based on the instrument, the eight subdimensions are useful as qualitative criteria to assess the current challenges and plan interventions aimed at preserving short- and long-term viability in an uncertain post-pandemic era.

Traditionally, there has been a dilemma about whether structure follows strategy (Chandler 1962) or if strategy follows structure (Hall and Saias 1980; Fredrickson 1986). However, postulates on organizational design have evolved to favor the adoption of flexible structures that are adaptable to contexts, which in turn contribute to achieving long-term managerial and strategic efficiency (Velásquez Vásquez 2004). In this sense, the results of this research correspond to an effort to design and validate an instrument to measure the general, behavioral, and environmental variables that affect decisions on the best organizational design structure. The above is done to determine which structure to adopt to effectively address the uncertainty generated within companies by the dynamic and turbulent environments in which industries and sectors are immersed worldwide.

There are various constraints, delimiters, and limitations to consider that provide proper context for understanding the practical application of this study's outcomes. First, this study was conducted in a specific city within a Latin-American country. Thus, it may carry cultural

nuances in organizations' structure and internal behaviors when reacting to the environment. Some studies address national culture as an interpretative lens for the business environment (Yusoff, Othman, and Yatim 2013). Second, this study focuses on the effects of the environment upon the organization. The opposite relationship, that is, the effects of organizations upon the environment (Kostova, Roth, and Dacin 2008), is beyond this study's intent. Third, the sample used for this research consisted of small, medium, and large businesses. Unfortunately, the sample size was insufficient to study the environment-structure effects by business size. Additionally, perceptions of the environment and structure segregated by gender, seniority, and academic preparation of the participants may have an impact but were not studied because of an insufficient sample size. Finally, the pandemic severity may have heightened the perceptual values of variables that were removed from this study. Yet, any of these delimiters and constraints is the basis for further studies.

The outcome of this research was to design and validate an instrument based upon relevant variables of the business environment, demeanor, and organizational behaviors linked to the Organizational Configuration Model. Periodical assessments of a business are vital, especially in tumultuous times like those driven by a pandemic. Correspondingly, an instrument was designed with eight factors providing a focused and valid perspective capable of assessing the impact and continued viability of a business's organizational configuration under unsettled economic times.

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