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ORGANIZATIONAL TOUGHNESS FACING NEW ECONOMIC CRISIS

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Abstract:
Organizations are increasingly facing great changes in their external environment, like is the case of current pandemic. Theoretical reflection and scientific literature review led us to develop a new concept – organizational toughness - and a new model that may help explaining the variables underlying an effective response to environmental changes, contributing to the organization's survival. This model also includes the concepts of organizational plasticity and organizational strength as crucial factors to face new market threats and opportunities. Other second order latent variables – staff preparation and structure adapted to change – and manifest variables, such as the quality level of competencies, motivation, flexibility, strategic planning processes, leadership behaviours, organizational learning market oriented, the amount of resources holt by an organization, and external access to these resources are also presented, as well as clues for future research. This paper aims at contributing to the development of strategic management theory in relation to market changes even when not expected.

JEL: D20; D23; M11

Keywords: organizational toughness, organizational plasticity, organizational strength, strategic management, pandemic

1. Introduction

In this new economic context, facing a pandemic that led the countries' governments to shut down most of the business activities (e.g., The New York Times, 2020), is necessary to rapidly develop survival strategies for all types of organizations. This problem also happened in environments marked by natural catastrophes or strikes in strategical sectors of economy like those of transports (e.g., BBC.NEWS, 2019, 2020).

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There are several measures that were taken in order to help businesses and to defend the employment. In US, the authorities insisted on the distribution of money directly to families, and in Europe it was tried to ensure part of the salaries of employees laid off. However, unemployment skyrocketed immediately, not least because it is easy to fire in the US and there are many employees in Europe on temporary contracts. In addition, in both economies, there are many illegal immigrants, who are obviously unemployed at this conjuncture. Of course, it is essential that, in addition to the credit lines created, the taxes postponed or cancelled, and the financial obligations that were suspended, we must have other, innovative solutions to face this economic earthquake. As during World War II, many companies were asked to produce essential goods to help health services fight the pandemic, from protective equipment to the development of new drugs or vaccines, for example. All the measures taken are disruptive, and there is a consensus on the perception that the world economy will never be as it was before, and that we will see many changes in the way we will organize business.

Entrepreneurs are aware of the risks involved in their organizations. There are financial, strategic, technological, market, competitive, reputational, environmental, political, and economic risks, but there is now a new type of risk – the unexpected risk – where we can include the risks of a pandemic, a terrorist threat, natural disasters, or prolonged strikes in sectors of activity that immobilize our business. What is new is that an organization can produce, but they are not allowed to do it for two main reasons: through a preventive law, in order to protect workers from contagion or physical damage, or because the organizations no longer have supplies or are badly damaged. How can management act in order to save the organization, before, during and after the crisis?

Our aim is to propose a model that may help organizations to survive during extreme market conditions. In the particular case of the current pandemic, and in addition to all the assistance that they will be able to obtain from governments or financial entities, organizations will be more likely to recover if they have characteristics already studied in scientific research that point to a great flexibility of workers (e.g., Wright & Snell, 1998), as well as to a leadership and management structure that facilitates the adaptation of organizations to the dynamic and open contexts of the modern economy (e.g., Holbeche, 2019; Uhl-Bien & Arena, 2018). We defend that this approach is important and suitable to the present crisis. Thus, we are within the scope of issues related to the level of preparation of human resources and the degree of development of management structures adapted to change. However, we think that, besides what is called as organizational plasticity, it is crucial for organizations to be strong enough to withstand the very sharp deprivation or drop in sales due to the current and other similar crisis. This assumption leads us to propose a new model of strategical analysis of organizations, which allows to assess their strength and their plasticity, so that they may have a greater probability of survival in the face of this new type of risk.

In this paper, we review the literature on these subjects, namely about what is possible to consider as organizational plasticity and organizational strength, as well as

their main determinants. Based on our reflection on those variables, we propose a new model to frame organizational strategies for the future.

2. Method

We used a conceptual approach based on literature review in several scientific domains (management, economics, sociology, psychology, information systems, etc.). The main keywords used were 'plasticity', 'adaptability', and 'flexibility' in the context of organizations and market changes. In order to organize and systematize the concepts related to resources and capabilities, we develop a further research about other important concepts, such as competencies, motivation, strategic planning, leadership, organizational learning, and market orientation. Based on these literature review, we deduced five propositions, which allowed to create a new model that explains, theoretically, what could be the most important variables to change organizations to cope with turbulent environments.

3. Literature Review and Propositions

3.1. Organizational Plasticity

Organizational plasticity in related with similar others like organizational adaptability, flexibility or agility. There are many examples of organizations that have transformed themselves in order to cope with the increasing change on the markets and global economy (e.g., Roos, 2014). Today, organizations must face the huge amount of information and knowledge that doubles every 12 months (Lewis, 2016). In the current world, with the economy slowing down dramatically due to the pandemic situation, it is important to reflect about the new challenges that all organizations must face, which led us to review scientific literature around this topic.

Gavetti and Rivkin (2007) used the concept of plasticity related to the way an organization defines its strategic planning. Namely, the organization's strategy is based on physical and mental elements, such as search mechanisms, routines, cognitive heuristics, stocks, and interactive activities, which may become less plastic as they age (Baron, Hannan, & Burton, 1999). However, they didn't present any specific definition of this concept. Is was found that individuals react differently to similar circumstances (Saks & Ashforth, 2000), which is in line with the behavioural plasticity hypothesis (Avey, Palanski, & Walumbwa (2011). Behavioural plasticity is defined by the extent to which a person is affected by external factors (Pierce, Gardner, Dunham, & Cummings, 1993) and has been studied by several scholars (e.g., Eden & Kinnar, 1991; Elengovan & Xie, 1999). More, neuroscience research has been showing that the brain changes over time, what is called brain plasticity, and this can influence organizational priorities and operations (Hill, Cromartie, & McGinnis, 2017). These authors showed the linkage between agile thinking (Garlick, 2002) and the organizational plasticity development that leads to enhancement of organizational agility. Promoting agile thinking among employees,

when they cope with variability of business problems, contributes to strategic agility or organization plasticity (Friedman, Gerstein, & Hertz, 2018; Hill et al., 2017).

There are other expressions or concepts related to organizational plasticity, such as the case of organizational adaptability (e.g., Daniel & Marino, 2015), or organizational flexibility (e.g., Reed & Blunsdon, 1998), or organizational agility (e.g., Gunasekaran, 1999). In general, they represent the same pattern of behaviours as an organizational capability to address all types of changes in business environment in order to survive and/or grow, considering the political, economic, social, cultural and technological tendencies. These behaviours are also drivers of innovation and transformation of the organization (Broekaert, Andries, & Debackere, 2016). Sherehyi, Karwowski, and Layer (2007) presented a deep literature review around these concepts, defending that organizational agility can comprehend organizational adaptability as a reactive approach and organizational flexibility as a proactive one. On the contrary, Basadur, Gelade, and Basadur (2014) referred that organizational adaptability is a proactive process where the organizations look for new problems and things to cope with, in order to be more competitive in the market. Holbeche (2019) talked about organizational changeability as the combination of organizational agility and organizational resilience, which means the ability to respond to fast and/or disruptive changes in the market and sustain future organizational success.

After many other readings around these concepts, we ended up concluding that organizational plasticity can include all other concepts. Organizational plasticity is about the ability of an organization to change irreversibly and permanently its strategic approach to the markets in order to survive and/or grow (resilience), under different environment conditions (adaptability) and pressures (flexibility), and be able to timely and effectively (agility) react to threats and proactively seize opportunities.

In this context, it seems that human resource flexibility is an important dynamic organization capability (e.g., Bhattacharya, Gibson, & Doty, 2005; MacDuffie, 1995; Wright & Snell, 1998), namely in face of rapid economic changes (Hitt, Keats, & DeMarie, 1998). This capability can be studied by three components: employee skills, employee behaviour, and human resource practices (Ngo & Loi, 2008). Thus, flexible human resource practices can be adjusted in terms of speed and adaptation to specific situational contexts, providing a competitive advantage to the organization (Basadur et al., 2014; Bhattacharya et al., 2005; Ketkar & Sett, 2010).

We assume, as Jackson and Schuler (1995) defended, that organizational culture and human resource management are not separable in an organization, and represents organizational shared artefacts, values, beliefs, and assumptions that form and influence the set of standard behaviours within the organization in face of external adaptation and internal integration (Schein, 2017). Thus, organizational culture underlies the concept of organizational plasticity, but we prefer to analyse these relationships through more visible and measurable variables, such as the degree of staff preparation, which are related to human resources' characteristics, and the degree of adaptation of the organization's structure to change, which are related to the management model.

Based on all these research assumptions and concepts, we deduce the first proposition:

P1: *Staff preparation and a structure adapted to change are functions of organizational plasticity.*

In the next section we develop the variables included in the concept of staff preparation.

3.1.1. Staff Preparation

It seems obvious that the success of the response of an organization depends on its capacity to quickly adapt to other forms of providing their competences, when under great pressure of the market or under special situations such as the current pandemic. In this context, organization's staff is fundamental because they are the ones who, through their action, can contribute to the level of organizational plasticity in the quick adaptation process. Consequently, as research have been showing, human resources will be as or more effective the greater their skills, motivations and flexibility are.

3.1.1.1. Competencies

Competencies can be defined as a set of capabilities, skills, knowledge and experience that with the necessary effort, i.e., as structured forms of action, required, exercised and validated in a given context (McClelland, 1973), can result in a high level of performance (Carvalho, 2018). Employees' competencies are critical to develop flexible organizations (Eldridge & Nisar, 2006) or agile organizations (Plonka, 1997). There is also research on employee adaptability (e.g., Pulakos, Arad, Donovan, & Plamondon, 2000), flexibility (e.g., Bhattacharya et al., 2005), and agility (e.g., Hopp & Van Oyen, 2004), showing the importance of human competencies in different contexts.

Besides the need to have within the organization the right competencies to be effective, it is needed, particularly in turbulent environments, flexibility of employees' skills in order to have more and quicker options of alternative uses (Wright & Snell, 1998). This means the existence of a broad set of competencies that are adjustable to specific changes in the market or in the environment (Bhattacharya et al., 2005). For instance, critical thinking, speed of self-development, adaptation to new work environments, problem-solving, knowledge sharing, teamwork, negotiation, multifunctional work, and coping with change, new ideas, technologies, and responsibilities are core competencies today (Breu, Hemingway, Strathern, & Bridger, 2002; Gunasekaran, 1999; Plonka, 1997). Thus, it is important for an organization to develop skill flexibility among its employees through processes such as job rotation, cross-functional teams, and project-based work arrangements, as suggested by Bhattacharya et al. (2005).

Nevertheless, competencies are only effective if employees are motivated to do new or different, that is, to be flexible.

3.1.1.2. Motivation

It is well known that motivation is the engine to action. During an adverse context, like this one of the pandemics, there are probably different forms of motivation and

demotivation. Fear of the disease or the fact of losing income will be demotivating factors. However, the possible willingness to help others, to play an important role in the recovery of the organization and the economy, may be factors of new motivation, of which we have had countless examples around the world.

The neuroscience and psychology pointed out that the use of both intrinsic and extrinsic motivations can shape work plasticity and subsequent behaviours, being its agility associated with the evolution to new forms of conduct (e.g., Hill et al., 2017; Kreye, 2016; Locke & Schattke, 2019). Motivation to change is an important factor to distinguish behaviour flexibility from skill flexibility. Skilled employees may lack the behavioural motivation to change, or they may be motivated but lack the necessary skills or knowledge to make change decisions (MacDuffie, 1995). Thus, in any context, including periods of crisis, the staff motivation is crucial to the survival and success of the organization. Managers and entrepreneurs should promote effective activities, rewards and recognition, in order to improve motivation of the employees. At the same time, they must assess intrinsic motivation of the staff, aiming at a better disposal of their competencies, to enhance their pleasure with what they are doing. The use of patterns of excellence as a cultural habit within the organization contribute to stimulate a healthy competition among the employees, as well as each one with himself.

Obviously, employees' flexibility is directly related with their motivation.

3.1.1.3. Flexibility

We have presented in organizational plasticity section the idea that human resource management flexibility influence adaptability culture though its sub-dimensions of employee skill flexibility, employee behaviour flexibility, and human resource practice flexibility. Ngo and Loi (2008) showed that exists statistical significance in the relation between those sub-dimensions and adaptability culture except with employee skill flexibility. However, there is a positive impact of all variables on organizational performance, being this conclusion reinforced in the study of Bhattacharya et al. (2005), which showed that behaviour flexibility creates value through sparing costs of non-adjustment to a changing environment and avoiding the need to hire new skilled employees to face the new environment situations.

There is an approach to work flexibility that explains it based on numerical, functional, and financial aspects (Dastmalchian, 1993). The numerical flexibility is about changing the number of employees or their working hours in order to respond to demand changes, which is a human resource practice. The functional flexibility is like skill flexibility involving the need to change employees' competencies in order to undertake a wider range of activities. Financial flexibility is based on other human resource practice related to individualized pay systems, pay for performance, and profit-sharing plans.

Other perspective on work flexibility was presented by Beltrán-Martín, Roca-Puig, Escrig-Tena, and Bou-Llusar (2009) and is called internal labour flexibility. This similar concept is composed by four dimensions: employees' intrinsic flexibility, skill malleability, behavioural malleability and relational flexibility. These authors have also talked about external labour flexibility, referring to changes in the volume of labour

employed, which is similar to Dastmalchian's numerical flexibility, as well as human resource practices (Wright & Snell, 1998). On the other hand, their concept of internal labour flexibility resembles the concepts of skill and behaviour flexibility (Wright & Snell, 1998) and functional flexibility (Dastmalchian, 1993), because they referred to the adaptability of the employees to face unexpected situations that ask for creativity and initiative. However, they have also related this concept with a resource-based view (RBV) of the available human resources in the organization, which is an approach that we will considered in our model under other strategic variable related with internal availability of resources.

We can link the concepts of competencies and motivation with staff's flexibility. If employees have multiple skills that can be adjusted and expressed in current and new activities, and human resource practices that are also adapted to the current and new situations, then we will admit that the organization may have a high level of flexibility in employees' skills and behaviours, as well as in its human resource management (Ketkar & Sett, 2010; Wright & Snell, 1998). This interaction between these three dimensions can be seen at the light of the concepts of behavioural and organizational plasticity, which look to the way a person is affected by external factors (Pierce et al., 1993), the way individuals react to situational factors (Saks & Ashforth, 2000), and the way human resource practices are adjusted to the staff's competencies and the changes in the external environment (Ngo & Loi, 2008).

Other concept related to behavioural plasticity theory is general self-efficacy, consisting in a set of expectations that each person brings to face new situations based on past experiences success and failure (Sherer et al., 1982). There are studies arguing that general self-efficacy can be used to test the behavioural plasticity hypothesis (e.g., Eden & Kinnar, 1991), showing that interventions, such as training, are more effective for individuals with low general self-efficacy. Saks and Ashford (2000) showed that general self-efficacy is not as strong a predictor of job attitudes and behaviours, and that there is a weak support for behavioural plasticity. However, these authors argued that the results might be influenced by the fact of the use of non-experimental phenomena, as well as the nature of the study participants. It seems that individuals with low general self-efficacy are more influenced by an experimental treatment (Eden & Kinnar, 1991). Thus, Saks and Ashford (2000) concluded that "*behavioural plasticity theory is perhaps most likely to predict outcomes when the independent variable is an experimental intervention, and when the intervention is designed to boost task-specific self-efficacy and improve behavioural outcomes*" (p. 57).

Based on all these research assumptions and concepts, we deduce the second proposition:

P2: *Employees' competencies, motivation, and flexibility are functions of staff preparation.*

In the next section we develop the variables included in the concept of structure adapted to change.

3.1.2. Structure Adapted to Change

An organization always need a management model in order to develop its activities in a coordinated manner with a view to fulfilling its mission, i.e. its reason for existing. In the current turbulent global market contexts, with faster changes in consumer preferences and market strategies, as well as in situations of natural disasters or pandemics such as the one we are going through, it is essential that organizations, in addition to prepared personnel, also have an agile management structure that adapts quickly to new business environments (e.g., Holbeche, 2019; Reed & Blunsdon, 1998). Based on our research and experience, we defend that this structure is based mainly on flexible and agile strategic planning, with context-adjusted leadership, and an enhanced market-oriented organizational learning ability.

It seems that organizations are more adaptative to unstable, changing, and unpredictable environments when they have an organic design (Sherehyi et al., 2007). This structure is less formal, hierarchical, and centralized, with more flexibility and teamwork, on the contrary of a mechanistic design (e.g., Donaldson, 2001). However, it also seems that does not exist an ideal organizational structure for innovation, because it depends on business environmental variables (e.g., Kelley, 2009). More, Kodama (2019) argued that organizational adaptability is needed as an ambidextrous capability (O'Reilly III & Tushman, 2004), which can help exploration to achieve innovation through an organic organizational structure, as well as helping exploitation through a mechanical (rigid, centralized) organizational structure to expand existing business.

Thus, we think that all these strategical decisions must be framed in the context of organizational strategic planning, based on a strategic reflection about different scenarios, including current and future potential environmental variables, and trying to prepare the organization to uncertain and unexpected situations.

3.1.2.1. Strategic Planning

We agree with Carvalho (2018, p.175) that "*strategic planning is critical to timely develop adaptive and/or innovative processes between the organization's resources and capabilities and its market objectives, opportunities and threats*". Strategic thinking is about making choices, leading to the establishment of priorities for the future based on current and available resources, and focusing all internal stakeholders in the definition of objectives and strategies to achieve them.

In this context of flexible strategic planning, it is possible to think about other concept such as strategic agility, defined by Ivory and Brooks (2018) as the capability of an organization to continuously adjust strategic direction and develop innovative ways to create value, and includes three organizational meta-capabilities: strategic sensitivity, collective commitment, and resource fluidity (Doz & Kosonen, 2010). According to Lewis, Andriopoulos, and Smith (2014), strategic agility is a paradoxical concept, because includes possible contradictions between stability and flexibility, commitment and change, and established routines and novel approaches. However, we consider that this is not a problem, being useful this dialectic approach to a balanced strategic plan, which, in on hand, tries to predict a common route for the organization to achieve their goals

and objectives, and, in the other hand, tries to prepare a contingency plan to deal with uncertainties and unexpected events. Thus, when those organizational meta-capabilities are high then we can consider that the organization is more prepared for all market circumstance and, in this context, the role of organizational leadership is crucial to develop a strategic plan.

3.1.2.2. Leadership

Leadership is a core competency of any manager or entrepreneur, determining the success of an organization in face of all type of changing situations. When the leadership is strong, in the sense of being well adapted to the diverse situations that are happening, as well as to the situational context of the followers, then the organizational path becomes facilitated (Carvalho 2018).

There are many theories about leadership compiled in excellent manuals (e.g., Cunha, M., Cunha, R., Neves, & Cabral-Cardoso, 2016), but what is important for the purpose of this paper, is its impact on employees' behaviours facing turbulent environments. The agile adaptation of many organizations to the pandemic situation shows a great versality of entrepreneurs, managers, and employees. Many universities and industrial organizations started producing all kind of safety equipment to the populations and, in particular, to the professionals involved in providing firstly food and health assistance to all. In these times, we were able to evaluate leaders' decisions, starting with the political actors and ending with all the activities of solidarity undertaken by people by their own decision. In this context, and based on behavioural plasticity hypothesis research, Brown, Treviño, and Harrison (2005) showed that ethical leadership is positively related to follower organizational citizenship behaviour and negatively related to deviant behaviours. Thus, the characteristics of leadership are an important predictor of organizational survival or success. If the leaders have an agile thinking, as we have noticed in other section, then they can view all kind of problems from different perspectives and they can more easily cope with them, using different and innovative approaches and fostering organizational plasticity and agility (Hill et al., 2017). Leaders must drive communication, motivation and collaboration among employees, promoting actively their flexibility, agility and adaptability to handle with a changing and unpredictable business environment (Keister, 2014).

Other authors talk about holistic leadership, integrating what Fry (2003) considered to be "*the four fundamental areas that define the essence of human existence—corporeality, the mind (logical and rational thinking), the heart (the emotions) and the spirit*" (Kodama 2019, p.369). Beyond Kodama's framework for holistic leadership, what matters for the purpose of this paper is the ambidextrous theory approach to leadership for organizational adaptability, which considers the combination of both exploration and exploitation as a different perspective in relation to the traditional theory of style leadership traits, being its focus more on how leaders can make organizations and employees demonstrate adaptability when facing complex challenges on business environment (Uhl-Bien & Arena, 2018).

Based on all these approaches to leadership research, namely in relation to a challenging and unpredictable environment, we conclude that leadership is a crucial organizational capability and a key-clue to its successful development. Organizational adaptability, flexibility, plasticity, and agility also depends on other variables like organizational learning and market orientation, as we will see in the next section.

3.1.2.3. Organizational Learning Market Oriented

The leadership can determine a strategic plan that supports a culture that promotes learning at all levels, individual, collective and organizational. Thus, a learning orientation is a feature of organizational culture that may be oriented to different strategic approaches in market management (Carvalho, 2018). Organizational learning started to be defined as a process by which organizations learn through interaction with their environments (Cyert & March, 1963). Carvalho (2005) presented organizational learning as the process of creating knowledge capital through four activities: (1) constant challenge to the organization's practices and beliefs, reflecting an attitude of openness of mind; (2) formal and informal commitment to learning and training; (3) sharing a vision; and (4) practices related to information research, experimentation and innovation. These practices allow the possibility of learning, adaptation, and internal selection of current routines that will be the base to behavioural plasticity (Levinthal & Marino, 2015). However, it is important to have these characteristics oriented to the market rather than to the product, production, sales, or legal-normative (Carvalho, 2005). Moreover, organizational learning cannot be only positioned at the adaptive level, but also at a generative level, being aware of latent market needs and environmental changes. Several studies have shown that organizational learning is essential to successfully deal with environmental turbulence (e.g., Camps, Oltra, Aldás-Manzano, Buenaventuravera, & Torres-Carballo, 2016; Edwards, 2009).

Senge (1990) presented the concept of a learning organization that imply a continuous transformation by enhancing and facilitating employees' and managers' learning. This commitment to lifelong learning, collaboration, and knowledge sharing provides an organization with the capacity to adapt to the changing environment and to revitalize itself (Friedman et al., 2018).

An organization needs to have a system for generating, disseminating, and processing information, with inter-functional coordination to be able to respond to market turbulence and unexpected events (Carvalho, 2005; Kohli & Jaworski, 1990). Market orientation allows for the creation of higher levels of organizational learning, reinforcing the sustainable competitive advantages of organizations and, together, promote better organizational performance, both economically and non-economically (e.g., Baker & Sinkula, 1999). Thus, it is critical to have a decentralized structure without an asphyxiating bureaucracy, and a well-trained and competent staff with the capacity to learn and adapt to ever-changing market situations and with the ability to obtain information and to circulate it formally and informally in order to contribute to decision-making and to organizational change (Carvalho, 2018). In a market-oriented organization, threats can be detected more quickly, leading entrepreneurs and managers

in a timely manner to prepare the changing process, planning and mobilizing the entire organization for the new challenges. Moreover, research has been showing that an organization should have the flexibility to change its internal structure and decision-making processes to continuously innovate (e.g., Miles, Snow, Fjeldstad, Miles, & Lettl, 2010). Even within strong cultures, with high consensus among employees, organizations can present good financial performance if the norms intensely emphasize adaptability (Chatman, Caldwell, O'Reilly, & Doerr, 2014). Adaptive organizations can routinely anticipate new market scenarios, trends and changes, and give them responses faster than competitors do (Holbeche, 2019), what sets up organizational learning.

We conclude that an organization that holds an entrepreneurial culture and an appropriate leadership that fosters organizational learning market-oriented presents higher competitive advantage and it may be more successful in face of all types of market changes.

Based on all these research assumptions and concepts, we deduce the third proposition:

P3: *Strategic planning, leadership, and organizational learning market oriented are functions of a structure adapted to change*.

In the next section we develop the variables included in the concept of organizational strength.

3.2. Organizational Strength

We define organizational strength as the ability of an organization to access internal and external physical, human, intellectual and financial resources. Physical resources are raw materials, machines, computers, etc. Human resources include managers and employees with the needed competencies to face market changes, such as skills, leadership, and flexibility. Intellectual resources are intangible assets like trademark (branding: brands, logo, slogans), copyright (creative work: software, films, music, etc.), trade secrets (private technology, contact lists, formulas), contracts (technology, business information) and patents (inventions: new technology). Financial resources are about the money available to a business for spending or investment in the form of cash, bank deposits, liquid securities, bonds, and credit lines.

3.2.1. Internal Availability of Resources

The resource-based view (RBV) theory (Penrose, 1959; Wernerfelt, 1984) is used to explain the competitive success of organizations. This theory postulates that differences in performance between organizations, and the creation of competitive advantages, do not depend on the specific dynamics of the industry, but rather on the processes of accumulation, management and distribution of resources within the company. Thus, the resource-based approach sees an organization as a bundle of resources and capabilities, which are difficult to imitate and substitute. Many other scholars mentioned in this paper have used the same approach when presenting their concepts (e.g., Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; Ngo & Loi, 2008).

In this context, the success has been increasingly dependent on the management of the intangible resources, more than on physical and financial ones. This type of resources can be defined as any attribute, managerial, intellectual or relational, that can be advantageously used in the market, namely market-oriented organizational capabilities (Carvalho, 2018), such as strategic planning, leadership, or organizational learning, which were included in 'structure adapted to change' in our model. Moreover, human resource capabilities, as well as human resource management, were included in the variables related to 'staff preparation', since they have a huge importance to organizational plasticity, being RBV theory the most used in this context (Wright, Dunford, & Snell, 2001). There are several related-concepts to intangible resources in the literature, such as "*invisible assets*" (Itami & Roehl, 1987), "*internal competitive advantages*" (Grant, 1991), "sustained competitive advantages" (Barney, 1991), "core competencies" (Hamel & Prahalad, 1990), "*dynamic capabilities*" (Teece & Pisano, 1994), or "*knowledge-creating companies*" (Nonaka & Takeuchi, 1995). All these concepts are related to the study of the way an organization can address rapidly changing and turbulent environments by the creation, integration, and reconfiguration of internal and external resources and capabilities.

However, the internal availability of employees and managers in terms of numbers is other issue, because under difficult market conditions, like a natural catastrophe, a pandemic situation, or a strike in a sector that can jeopardize the organizational activity, one needs to know how many collaborators are available to work. People can die, be hurt or ill at home, or be unable to go to work because they have no transportation. More, it is important to assess organizational resource flexibility, which is related to the possibility to use the resources in different ways, and to easily transform or combinate them to use in different situations (Beltrán-Martín et al., 2009; Penrose, 1959).

A crucial issue is about physical resources, namely when an organization depends heavily from suppliers of all type of materials in order to implement its operations. For example, just-in-time theory (e.g., Schonberger, 1982) is now at stake, because the number of events (catastrophes, pandemics or strikes in other capital sectors) that have the capacity to stop production are increasing. Thus, the entrepreneurs and managers should study carefully their logistic value chain in order to be prepared for rupture situations in supplies. Here, we can notice the importance to have contingency scenarios when developing organizational strategic planning. One possible solution is to predict resource purchases for emergency situations still in the potential occurrence phase.

3.2.2. Ability to Access External Resources

About this variable, we can ask: are the physical, financial, intellectual, and human resources necessary for quick adaptation to changing market conditions easily accessible? An organization is unable to generate all type and amount of resources needed for survival; therefore, it is dependent on its environment for those resources (Sheppard, 1995).

For example, the recruitment of people who present higher levels of adaptability and behavioural flexibility helps improving organizational flexibility as we have already mentioned (Bhattacharya et al. 2005). All type of resources should be planned in terms of easy access if any unexpected situation occurs. As if we guarantee, in addition to insurance products adjusted to unexpected problems, a safety margin that allows us to face such events, namely in terms of financial and material resources, which may be the most difficult to obtain.

Based on all these research assumptions and concepts, we deduce the fourth proposition:

P4: *Internal availability of resources and ability to access external resources are functions of organizational strength.*

In the next section we present the new model to cope with changing, turbulent, and unexpected business environments.

4. New Model Proposal

Management researchers have been creating new concepts on the base of materials' mechanical properties, such are the cases of: resilience as the ability of an organization to internalize and resist to external impacts maintaining its capacity to survive in the market; elasticity, which is included in resilience, is the ability to resist and change temporarily under any kind pressure or stress and return to its original size, shape or profile when the pressure or stress are removed; flexibility that is the ability of an organization to adapt to market dynamics and changes; and plasticity as the ability to definitely change organizational profile or behaviours according to market transformations or other disruptive impacts without breaks or bankruptcies.

In this context, we propose a new model based on the concept of toughness, which is the ability of an organization to internalize external impacts of the market or other events (natural disasters, pandemics, major strikes) and withstand shocks, undertaken a plastic adaptation without failing or breaking, i.e., a combination of organizational plasticity, measured by the levels of staff preparation and of a structure adapted to change, and of organizational strength, measured by the levels of internal availability of resources and the ability to access external ones (Figure 1). Thus, our last proposition is:

P5: *Organizational plasticity and organizational strength are functions of organizational toughness*.

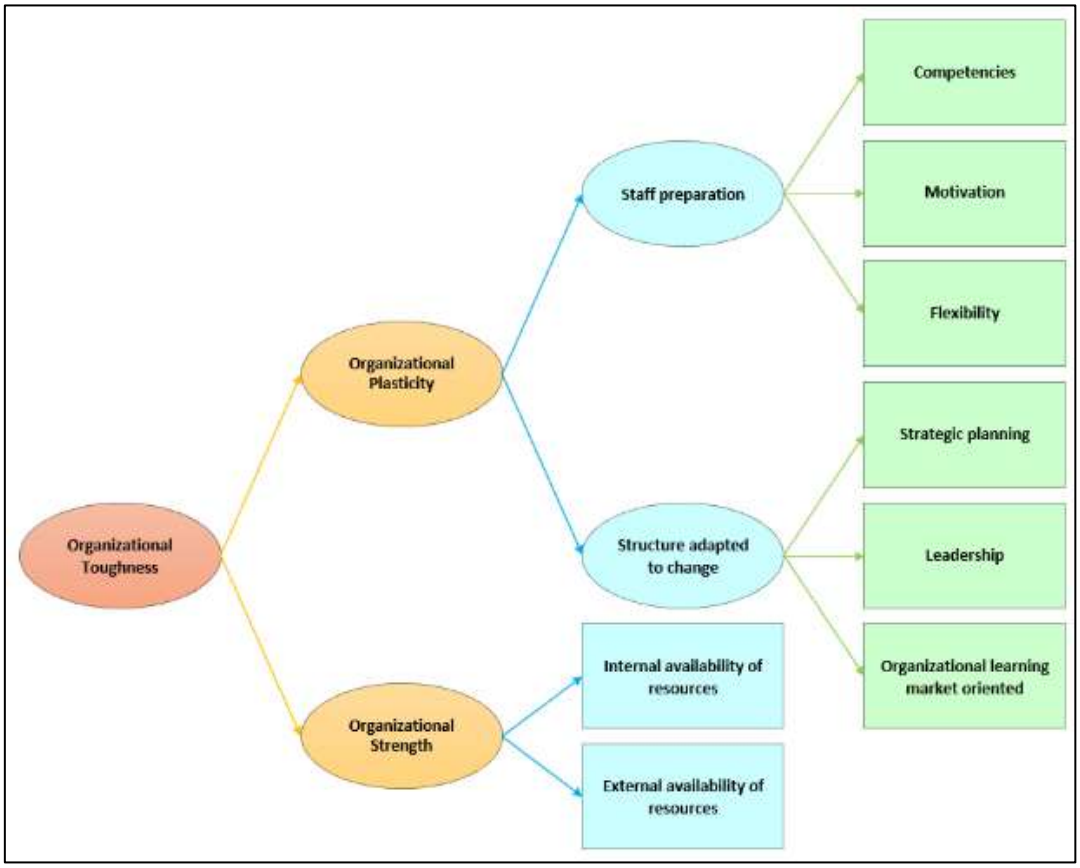

Figure 1: The organizational toughness model

5. Conclusion

Organizations are increasingly facing changes in the market, from the rapid evolution of consumer preferences, through constant innovation and technological differentiation processes, to unexpected events, which even lead to the suspension of normal business activity, such as this is the case with the current pandemic.

Thus, based on theoretical reflection and scientific literature review, we developed a new model that can help explaining the relation among the main variables involved in these processes of adaptation to change. It is fundamental to have resources and capabilities within an organization or available externally as RBV theory defends. An organization does not function without people and an internal structure to frame all the activities needed to accomplish its mission. Consequently, we defined several latent variables – organizational toughness, organizational plasticity, organizational strength, staff preparation, and structure adapted to change – and manifest variables, such as the quality level of competencies, motivation, flexibility, strategic planning processes, leadership behaviours, organizational learning market oriented, the amount of physical, intellectual, human, and financial resources holt by an organization, and easy external access to the same types of resources.

The organizational toughness model may help researchers and practitioners to reflect on the best way to respond to the new risks that are posed to economies. This

model can be empirical tested among organizations that are struggling with the current pandemic and be evaluated during and after this major event. Beyond that, it is important that organizations assess their level of toughness in order to know their strengths and weaknesses in case they eventually have to face similar situations.

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References

Avey J B, Palanski M E, Walumbwa F O, 2011. When leadership goes unnoticed: The moderating role of follower self-esteem on the relationship between ethical leadership and follower behavior. Journal of Business Ethics 98: 573–582. doi:10.1007/s10551-010-0610-2

Baker W E, Sinkula J M, 1999. Learning orientation, market orientation, and innovation: Integrating and extending models of organizational performance. Journal of Market Focused Management 4 (4): 295-308. doi:10.1177/0092070399274002

Barney J, 1991. Firm resources and sustained competitive advantage. Journal of Management 17 (4): 99–120. doi:10.1177/014920639101700108

Baron J N, Hannan M T, Burton M D, 1999. Building the iron cage: Determinants of managerial intensity in the early years of organizations. American Sociology Review 64, 527–547. doi:10.2307/2657254

Basadur M, Gelade G, Basadur T, 2014. Creative problem-solving process styles, cognitive work demands, and organizational adaptability. The Journal of Applied Behavioral Science 50 (1): 80–115. doi:10.1177/0021886313508433

BBC.NEWS, 2019. Portugal strike: Tanker drivers defy threat of arrest (August 14, 2019). https://www.bbc.com/news/world-europe-49344872. Accessed 14 April 2020

BBC.NEWS, 2020. France protests: Longest strike in decades stuck in deadlock (January 2, 2020). https://www.bbc.com/news/world-europe-50971439. Accessed 14 April 14 2020

Beltrán-Martín I, Roca-Puig V, Escrig-Tena A, Bou-Llusar J C, 2009. Internal labour flexibility from a resource-based view approach: definition and proposal of a measurement scale. The International Journal of Human Resource Management 20 (7): 1576–1598. doi:10.1080/09585190902985194

Bhattacharya M, Gibson D E, Doty D H, 2005. The effects of flexibility in employee skills, employee behaviors, and human resource practices on firm performance. Journal of Management 31 (4): 622-640. doi:10.1177/0149206304272347

Breu K, Hemingway S J, Strathern M, Bridger D, 2002. Workforce agility: the new employee strategy for the knowledge economy. Journal of Information Technology 17 (1): 21–31. doi:10.1080/02683960110132070

Broekaert W, Andries P, Debackere K, 2016. Innovation processes in family firms: the relevance of organizational flexibility. Small Business Economy 47: 771–785. doi:10.1007/s11187-016-9760-7.

Brown M E, Treviño L K, Harrison D A, 2005. Ethical leadership: A social learning perspective for construct development and testing. Organizational Behavior and Human Decision Processes 97 (2): 117–134. doi:10.1016/j.obhdp.2005.03.002

Camps J, Oltra V, Aldás-Manzano J, Buenaventuravera G, Torres-Carballo F, 2016. Individual performance in turbulent environments: The role of organizational learning and employee flexibility. Human Resource Management 55 (3): 363–383. doi:10.1002/hrm.21741

Carvalho J M S, 2005. Organizações não lucrativas – Aprendizagem organizacional, orientação de mercado, planeamento estratégico e desempenho. Edições Sílabo, Lisboa, Portugal.

Carvalho J M S, 2018. The ties of business. A humanistic perspective of entrepreneurship, innovation and sustainability. Lambert Academic Publishing.

Chatman J A, Caldwell D F, O'Reilly C A, Doerr B, 2014. Parsing organizational culture: How the norm for adaptability influences the relationship between culture consensus and financial performance in high-technology firms. Journal of Organizational Behavior 35: 785-808. doi:10.1002/job.1928.

Cunha M P, Cunha R C, Rego A, Neves P, Cabral-Cardoso C, 2016. Manual de comportamento organizacional e gestão, 8th Ed. Editora RH, Lisboa, Portugal.

Cyert R M, March J G, 1963. A behavioral theory of the firm. Prentice-Hall, Inc., NJ, USA.

Dastmalchian A, 1993. The concept of organizational flexibility: exploring new direction. In Organizational Flexibility, Proceedings of a Colloquium. University of Victoria, British Columbia, pp 15-25.

Donaldson L, 2001. The contingency theory of organization. Sage Publications, London, UK.

Doz Y, Kosonen M, 2010. Embedding strategic agility. A leadership agenda for accelerating business model renewal. Long Range Planning 43: 370–382. doi:10.1016/j.lrp.2009.07.006

Eden D, Kinnar J, 1991. Modeling galatea: Boosting self-efficacy to increase volunteering. Journal of Applied Psychology 76: 770–780. doi:10.1037/0021-9010.76.6.770

Edwards M G, 2009. An integrative metatheory for organizational learning and sustainability in turbulent times. The Learning Organization 16 (3): 189–207. doi:10.1108/09696470910949926

Eldridge D, Nisar T M, 2006. The significance of employee skill in flexible work organizations. International Journal of Human Resource Management 17 (5): 918-937. doi:10.1080/09585190600641164

Elengovan A R, Xie A J, 1999. Effects of perceived power of supervisor on the subordinate stress and motivation: The moderating role of subordinate characteristics. Journal of Organizational Behavior 20 (3): 359–373. doi:10.1002/(sici)1099-1379(199905)20:3%3C359::aid-job902%3E3.0.co;2-z

Friedman H H, Gerstein M, Hertz S, 2018. Employee adaptability and organizational agility: The secret elixir that produces outstanding performance. Northeast Business & Economics Association Proceedings, pp 105-109. https://www.dropbox.com/s/5ibzj3f3aq4rkve/2018%20NBEA%20Conference%20Proceedings%20-%20FINAL%20-%2003-13-19.pdf?dl=0

Fry L W, 2003. Toward a theory of spiritual leadership. The Leadership Quarterly 14 (6): 693–727. doi:10.1016/j.leaqua.2003.09.001

Garlick D, 2002. Understanding the nature of the general factor of intelligence: The role of individual differences in neural plasticity as an explanatory mechanism. Psychology Review 109 (1): 116–136. doi:10.1037/0033-295x.109.1.116

Gavetti G, Rivkin J W, 2007. On the origin of strategy: Action and cognition over time. Organization Science 18 (3): 420–439. doi:10.1287/orsc.1070.0282

Grant R M, 1991. The resource-based theory of competitive advantage: Implications for strategy formulation. California Management Review 33 (3): 114–135. doi:10.2307/41166664

Gunasekaran A, 1999. Agile manufacturing: a framework for research and development. International Journal of Production Economics 62: 87–105. doi:10.1016/s0925-5273(98)00222-9

Hamel G, Prahalad C K, 1990. The core competence of the corporation. Harvard Business Review 68 (May-June): 79–91.

Hill M E, Cromartie J, McGinnis J, 2017. Managing for variability: A neuroscientific approach for developing strategic agility in organizations. Creative Innovation Management 26: 221–232. doi:10.1111/caim.12223

Hitt M A, Keats B W, DeMarie S M, 1998. Navigating in the new competitive landscape: Building strategic flexibility and competitive advantage in the 21st century. Academy of Management Executive 12 (4): 22-42. doi:10.5465/ame.1998.1333922

Holbeche L, 2019. Designing sustainably agile and resilient organizations. Systems Research and Behavioral Science 36: 668–677. doi:10.1002/sres.2624

Hopp W J, Van Oyen M P, 2004. Agile workforce evaluation: a framework for cross-training and coordination. IIE Transactions 36 (10): 919–940. doi:10.1080/07408170490487759

Itami H, Roehl T, 1987. Mobilizing invisible assets. Harvard University Press, Cambridge, USA.

Ivory S B, Brooks S B, 2018. Managing corporate sustainability with a paradoxical lens: Lessons from strategic agility. Journal of Business Ethics 148: 347–361. doi:10.1007/s10551-017-3583-6

Jackson S E, Schuler R S, 1995. Understanding human resource management in the context of organizations and their environment. Annual Review of Psychology 46: 237–264. doi:10.1146/annurev.ps.46.020195.001321

Keister A C, 2014. Thriving teams and change agility: leveraging a collective state to create organization agility. In Research in Organizational Change and Development. Emerald, Bingley, UK, pp 299-333. doi:10.1108/s0897-3016_2014_0000022007

Kelley D, 2009. Adaptation and organizational connectedness in corporate radical innovation programs. Journal of Product Innovation Management 26 (5): 487–501. doi:10.1111/j.1540-5885.2009.00676.x.

Ketkar S, Sett P K, 2010. Environmental dynamism, human resource flexibility, and firm performance: Analysis of a multi-level causal model. International Journal of Human Resource Management 21: 1173–1206. doi:10.1080/09585192.2010.483841

Kodama M, 2019. Business innovation through holistic leadership-developing organizational adaptability. Systems Research and Behavioral Science 36: 365–394. doi:10.1002/sres.2551

Kohli A K, Jaworski B J, 1990. Market orientation: The construct, research propositions and managerial implications. Journal of Marketing 54 (April): 1-18. doi:10.2307/1251866

Kreye M E, 2016. Employee motivation in product service system providers. Production Planning & Control 27: 1249-1259. doi:10.1080/09537287.2016.1206219

Levinthal D, Marino A 2015. Three facets of organizational adaptation: Selection, variety, and plasticity. Organization Science 26 (3): 743-755. doi:10.1287/orsc.2014.0956

Lewis M W, Andriopoulos C, Smith W K, 2014. Paradoxical leadership to enable strategic agility. California Management Review 56 (3): 58–77. doi:10.1525/cmr.2014.56.3.58

Lewis P, 2016. Is knowledge doubling or halving. http://www.wnd.com/2016/05/is-knowledge-doubling-or-halving/ Accessed 3 April 2020

Locke E A, Schattke K, 2019. Intrinsic and extrinsic motivation: Time for expansion and clarification. Motivation Science 5 (4): 277–290. doi:10.1037/mot0000116

MacDuffie J P, 1995. Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world of auto industry. Industrial and Labor Relations Review 48: 197-221. doi:10.2307/2524483

McClelland D C, 1973. Testing for competence rather than intelligence. American Psychologist 28 (1): 1-14. doi:10.1037/h0034092

Miles R E, Snow C C, Fjeldstad Ø D, Miles G, Lettl C, 2010. Designing organizations to meet 21st-century opportunities and challenges. Organizational Dynamics 39 (2): 93–103. doi:10.1016/j.orgdyn.2010.01.009.

Ngo H-Y, Loi R, 2008. Human resource flexibility, organizational culture and firm performance: an investigation of multinational firms in Hong Kong. The International Journal of Human Resource Management 19 (9): 1654–1666. doi:10.1080/09585190802295082

Nonaka I, Takeuchi H, 1995. The knowledge-creating company. Oxford University Press, Oxford, UK.

O'Reilly C III, Tushman M, 2004. The ambidextrous organization. Harvard Business Review 82 (April): 74–82.

Penrose E, 1959. The theory of the growth of the firm. Oxford University Press, Oxforf, UK.

Pierce J L, Gardner D G, Dunham R B, Cummings L L, 1993. Moderation by organization-based self-esteem of role condition employee response relationships. Academy of Management Journal 36: 271-288. doi:10.5465/256523

Plonka F S, 1997. Developing a lean and agile work force. Human Factors and Ergonomics in Manufacturing 7 (1): 11–20.
doi:10.1002/(sici)1520-6564(199724)7:1%3C11::aid-hfm2%3E3.0.co;2-j

Pulakos E D, Arad S, Donovan M A, Plamondon K E, 2000. Adaptability in the workplace: Development of a taxonomy of adaptive performance. Journal of Applied Psychology 85: 612-624. doi:10.1037/0021-9010.85.4.612

Reed K, Blunsdon B, 1998. Organizational flexibility in Australia. International Journal of Human Resource Management 9 (3): 457–477. doi:10.1080/095851998341017

Roos D, 2014. 10 companies that completely reinvented themselves. http://money.howstuffworks.com/10-companies-reinvented-themselves.htm Accessed 2 April 2020

Saks A M, Ashforth B E, 2000. The role of dispositions, entry stressors, and behavioral plasticity theory in predicting newcomers' adjustment to work. Journal of Organizational Behavior 21: 43–62. doi:10.1002/(sici)1099-1379(200002)21:1%3C43::aid-job985%3E3.0.co;2-w

Schein E, 2017. Organizational culture and leadership, 5th ed. John Wiley and Sons, Inc., Hoboken, New Jersey, USA.

Schonberger R J, 1982. Japanese manufacturing techniques: Nine hidden lessons in simplicity. Free Press, USA.

Senge P M, 1990. The fifth discipline: The art and practice of the learning organization. Doubleday, New York, USA.

Sheppard J, 1995. A resource dependence approach to organizational failure. Social Science Research 24: 28–62. doi:10.1006/ssre.1995.1002

Sherehyi B, Karwowski W, Layer J K, 2007. A review of enterprise agility: Concepts, frameworks, and attributes. International Journal of Industrial Ergonomics 37: 445–460. doi:10.1016/j.ergon.2007.01.007

Sherer M, Maddux J E, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers R N, 1982. The self-efficacy scale: construction and validation. Psychological Reports 51: 663-671. doi:10.2466/pr0.1982.51.2.663

Teece D, Pisano G, 1994. The dynamic capabilities of firms: An introduction. Industrial and Corporate Change 3 (3): 537–556. doi:10.1093/icc/3.3.537-a

The New York Times, (2020). The U.S. shut down its economy. Here's what needs to happen in order to restart (22nd March). https://www.nytimes.com/2020/03/22/us/politics/coronavirus-economy-shutdown.html Accessed 3 April 2020

Uhl-Bien M, Arena M, 2018. Leadership for organizational adaptability: A theoretical synthesis and integrative framework. The Leadership Quarterly 29 (1): 89–104. doi:10.1016/j.leaqua.2017.12.009

Wernerfelt B, 1984. A resource-based view of the firm. Strategic Management Journal 5: 171–180. doi:10.1002/smj.4250050207

Wright P M, Dunford B B, Snell S A, 2001. Human resources and the resource-based view of the firm. Journal of Management 27: 701–721. doi:10.1177/014920630102700607

Wright P M, Snell S A, 1998. Toward a unifying framework for exploring fit and flexibility in strategic human resource management. Academy of Management Review 23: 756-772. doi:10.2307/259061

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