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Organizational design as a learning enabler: A fuzzy-set approach☆

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ABSTRACT

In the literature on organizational learning, very few empirical studies attempt to show how organizational design can enable or hinder learning in organizations. This study uses a fuzzy-set technique (fuzzy-set qualitative comparative analysis: fsQCA) as an initial approach to analyzing different design variables and how they affect organizational learning. The results prove that the mechanical structures are suitable for organizational learning, especially in large companies. Furthermore, qualified workers should have autonomy to learn.

1. Introduction

Even though the processes and outcomes of learning in organizations receive much attention from researchers, the study of organizational design as an enabler of learning requires further investigation. Empirical studies that analyze the design variables aiming to engender learning are uncommon. The objective of this study is to analyze whether the different elements of organizational design, such as complexity, centralization, and formalization influence or enable learning within the organizational environment by using fuzzy-set qualitative comparative analysis (fsQCA).

Although researchers use a broad variety of statistical techniques, those techniques correspond to two main categories: those using a large sample and those using a much smaller sample. Studies in each category use quantitative or qualitative methods, respectively, whereas few studies use a mixed methodology. Fuzzy-set qualitative comparative analysis (fsQCA) is a relatively recent technique, particularly suitable for studies comprising small to medium-sized sample because of the difficulties in obtaining large samples of firms willing to share relevant internal information.

The study contains the following sections: following the introduction, the first section provides a description of the variables for exploration such as organizational learning, whereas the second section examines the causal conditions that compose the basic elements of organizational design. The third section describes the method for the fuzzy-set analysis (fsQCA), and the study concludes with an interpretation of the results and the subsequent conclusions.

2. The influence of organizational design on learning

During the last decades, many studies focus on learning. The term "learning" from an organizational perspective refers to the development of the relationship between past events and the efficiency of current and future ones (Fiol & Lyles, 1985). These changes must be long lasting and, as Lyles (1988) highlights, learning is the result of actions and changes in the state of knowledge. Learning in organizations is a collective phenomenon that relates to the acquisition and creation of competences that, to a greater or lesser extent, modify the way organizations manage situations, as well as situations themselves (Koenig, 1994). Organizations must develop a capacity for learning in to compete successfully in the market.

The capacity for organizational learning can represent a source of competitive advantage for the firm (De Geus, 1988; Stata, 1989) because this learning can represent the ability to do things better than competitors. Stalk, Evans, and Shulman (1992) state that a wide variety of skills can transform certain key processes in the firm regarding strategic capabilities to lead the firm toward competitiveness and a degree of success. This capability depends upon the firm's capacity to reduce the gap between knowledge accumulated in the past and knowledge that will be necessary to adapt to or anticipate the future environment

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(Zack, 1999). The greater the degree of uncertainty, the greater the need for knowledge (Dodgson, 1993) and learning will be.

A firm's capabilities relate to how a firm deploys and combines its resources (Amit & Schoemaker, 1993). Those capabilities depend on the confrontation between the organization and its environment, and on the transfer of knowledge, and also on the characteristics of the knowledge that affect how easily members of the organization learn. The aspects that affect this capability are organizational, as that effect does not merely refer to the identification and assimilation of knowledge in organizations, but also the organization's ability to exploit that knowledge, as Cohen and Levinthal (1990) propose.

Deep changes in the relationships between organizations and their environments can entail a total restructuring of the organization. Organizations change by transforming and restructuring their resources and capabilities (Garud & Nayyar, 1994). One of these transformations involves deciding which type of organizational structure is the most propitious for achieving a competitive advantage. Some authors, such as Szulanski (1996), state that competitive advantages that result from knowledge transfer and learning can disappear when a sterile organizational context surrounds them. Although the structure itself does not guarantee the existence of learning, a wrong choice or decision can seriously hamper or endanger this process.

One of the first studies on the factors that influence the context of learning in organizations is that of Fiol and Lyles (1985). Revilla and Pérez (1998) distinguish between support tools that influence the process and the enablers of organizational learning, where organizational learning acts as a support for the interactions between individuals and groups within the organization. Bapuji and Crossan (2004) also consider structure as a learning enabler. Currently, the literature recognizes this aspect (Fang, Lee, & Schilling, 2009; Hao, Kasper, & Muehlbacher, 2012; Liao, Chuang & To, 2011; Ribeiro-Soriano & Urbano, 2010; Steiger, Hammou, & Galib, 2014).

Within the area of organizational design, some studies suggest that certain organizational design variables act as enablers of learning. Relevant research, such as Kim's study (Kim, 1993), points to autonomy as one of the necessary characteristics for organizational learning to occur. Hedlund (1994) also examines flexibility and autonomy in this context, claiming that design is an essential element for achieving flexibility, along with possessing highly skilled human resources.

Other authors propose specific structures for knowledge transmission. The best known of these is the hypertext model of Nonaka and Takeuchi (1995) and the N-form corporation, which Hedlund (1994) proposes. Swieringa and Wierdsma (1992)) identify different types of structure in firms that facilitate different kinds of learning. According to Grant (1996), the integration of strategic knowledge into the organization entails two different aspects. On the one hand, the firm must establish flatter (low complexity) structures based on teamwork, where the emphasis lies on the role of employees in a more effective articulation of knowledge. On the other hand, the firm concerns the decentralization of decision making that relate to knowledge acquisition. Other authors state that for a higher level of learning to take place, the organization should adopt an organic structure with few hierarchical echelons and hence lower organizational complexity (Hodge et al., 2003), increasing decentralization and reducing formalization.

2.1. Organizational complexity

Regarding the role of hierarchy, the fundamental organizational issue lies in achieving full coordination of the action. A more participative management style allows the organization to access and use individual knowledge appearing in the lower echelons of the organization (Wruch & Jensen, 1994), whereas the higher levels require greater intervention and participation from specialists.

Many organizations seek to increase cooperation among individuals, redesigning their structures to be flatter, based principally on team work, with decentralized authority to reinforce the role of low-level employees (Jones & George, 1998).

Firm size is one of the variables that provokes the biggest discussion. For most academics, firm size is a factor to bear in mind. According to Schumpeter (1934), large firms are more innovative than small ones. Recently, authors such as Tsang (1997) or Lei, Slocum, and Pitts (1999) associate larger size with a greater capacity for learning. Conversely, other authors such as McCann (1991) or Damanpour (1992) claim that small organizations may be more innovative given their higher flexibility and their greater capacity for adaptation and improvement. Recent trends among organizations indicate that a reduction in size is the most popular option. The concept of size may be evolving. Firms with increasingly lower number of employees, although not small, generate greater learning because of the advances in information technology and increasingly automated processes. Firm age and the capacity for learning may have a positive relation because of the accumulative effect of learning (Benavides, 2007; DiBella, Nevis, & Gould, 1996; Dodgson, 1993; Guzmán-Cuevas, Cáceres-Carrasco, & Soriano, 2009). Size and age are important variables for structure (Hall, 1996) and affect learning capacity either directly or indirectly.

H1a. : A low level of complexity in organizational design enables learning in the organization.

H1b. : Large size enables greater levels of learning in the organization.

2.2. Decision making

The locus of decision making, from the perspective of organizational learning, has two major implications: the organization needs to decentralize decisions building on idiosyncratic or specialized knowledge, while centralizing those decisions that require more general knowledge. Decentralization reduces the burden and responsibility for high-level management so that the organization becomes more sensitive to changing conditions, thereby reducing the number of managers necessary to direct the firm.

Autonomy or freedom guarantees the necessary flexibility to acquire, relate, and interpret information in the search for new knowledge (Davenport, Jarvenpaa, & Beers, 1996), although autonomy involves a certain amount of risk as employees can use resources less efficiently if those resources are not their own. As the creation of new organizational knowledge building on sharing knowledge becomes more widespread in the organization, the firm must endow its members and teams with greater autonomy, otherwise running the risk of generating only low-level knowledge (Wruch & Jensen, 1994). Autonomy drives personal commitment and the organization must, in turn, manage this commitment (Nonaka, 1994), with a view creating a spirit of achievement and improvement, where employees see themselves as colleagues rather than competitors.

Organizations must allow their members to act with the greatest degree of freedom possible to increase the likelihood of new opportunities. Those organizations that foster learning tend to *decentralization* (s & Chang, 2012). In cases where decentralization exists, employees must have the capability to judge and take decisions to solve complex, specific problems. This proviso means that workers need to possess enough knowledge and experience to incorporate successfully the use of new technologies into their daily work, to participate in developing innovative products, to improve the current ones, and to solve any problem that might arise after establishing new procedures. Workers with adequate training can make the most suitable decisions for their tasks because their training provides them with specific knowledge and qualification to make judgments and decisions on complex issues.

H2a. A high level of employee autonomy enables organizational learning.