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Relationship Between Flexible Organizational Culture and Innovation Capabilities: The Moderating Effect of Rigid Organizational Culture

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ABSTRACT

The aim of this research is to evaluate the moderating effect of rigid organizational culture on the relationship between flexible organizational culture and innovation capabilities. As empirical evidence, a sample of 103 companies from Northwest Mexico was obtained through quantitative, correlational and cross-sectional research, with a non-experimental design. Also, Pearson's correlation and stepwise regression were used to test the hypotheses of the study, which were partially proved. It was found that rigid and flexible cultures are complemented to foster the development of innovation capacities.

Keywords: Organizational Culture, Innovation Capabilities, Relation, Moderation
JEL Classifications: M140, M3

1. INTRODUCTION

The knowledge society has brought with it significant changes at all levels of the economy (Drucker, 1969; Machlup, 1962), which has had an important impact on the development of organizations (Brooking, 1997; Grant, 1996; Obeso, 2003). Under this premise, intangible assets have become resources capable of generating competitive advantages for companies (Penrose, 1959). This becomes more apparent when such resources are considered as rare, unique, difficult to imitate and non-transferable, as is expressed by resources based view (RBV) (Barney, 1991). It should be noted that through this theoretical posture, it is possible to involve a series of immaterial variables where it is possible to highlight organizational culture (Barney, 1986) and innovation (Teece, 2007). The first is considered as collective mental programming that distinguishes one group from another (Hofstede, 1980); while the second, from an economic point of view, allows growth through creative destruction that has driven the generation of new ideas and products, as well as the introduction of new products, production methods and markets (Schumpeter, 1943).

These variables can be framed from the proposal of the dynamic capacities - theory that follows from RBV, which aims to explain the competitive advantage through change, where consideration of internal and external elements is required, emphasizing the role of organizational culture because it plays a relevant role in the implementation of innovation (Teece et al., 1997). Because culture is a set of values, rites and norms that differentiate one organization from another (Cameron and Quinn, 2006), which, since it has been used to solve problems, it can be considered as the most appropriate way of thinking, perceiving and acting (Schein, 1992). Thus, there is a strong relationship between culture and innovation within social groups (Guerra and Knox, 2008), in particular, within organizations (Erez et al., 2015).

On the other hand, taking into account that innovation has become a source of competitive advantage (Read, 2000; Teece et al., 1997),

companies have looked for ways to put it into practice, in order to serve the changing markets from the knowledge age. This is how innovation is a dynamic capacity, which is the ability to adapt to changes in order to develop products and market them successfully (Slater et al., 2014). Therefore, the capacity for innovation is the ability of employees to combine individual knowledge in order to create a new knowledge that favors the development of new products and services, which are capable of generating a competitive advantage (Demicar and Ertürk, 2010).

Culture can count on many elements that favor the development of the capacities of innovation within the organizations and in the same nations (Demicar and Ertürk, 2010). This premise is present in different studies (e.g. Cameron, and Quinn, 2006; Hofstede, 1980; Schein, 1992), where it was found that certain cultures favor more than others in the development of intelligent ideas to innovate. However, there is still no consensus on the relationship between organizational culture and innovation (Büschgens et al., 2013). This is how the present research has been planned to address this need. For that, this document was structured through a literature review on study variables, problem statement, study method, results, and conclusions.

2. LITERATURE REVIEW

2.1. Organizational Culture

It starts from the premise that culture is a multidisciplinary subject, which has been studied from different areas of knowledge - anthropology, sociology, philosophy and social psychology, through which you have emerged theoretical and empirical evidence that allows a better understanding of this variable within organizations. Although within the history of thought, the term had already been associated with the concept of civilization from a philosophical perspective (Kroeber and Kluckhohn, 1952), its origins go back to anthropology, in special to Tylor's work (1871), who conceptualized this variable as the set of knowledge, beliefs, art, morality, law, customs, habits and abilities acquired by man as a member of society. However, it was not until the early 1980s that culture became popular within the academy, being considered as one of the most important elements that characterize organizations (Alvesson and Berg, 1992), and being Pettigrew (1979 in Bellot, 2011), the first to mention the term "organizational culture", addressing this variable from anthropological assumptions. Later, the study of this variable became relevant within the academy, as is explained by Frias et al. (2014), through a bibliometric study, showing that from 2004 the citation of this variable experienced a significant increase in the main business journals in the world, where it is possible to observe the relevance that has acquired the study of the organizational culture.

It is important to emphasize that there is a heterogeneity of conceptions about organizational culture (Kroeber and Kluckhohn, 1952), which has prevented consensus on its definition. Within the heterogeneity of perspectives that have tried to explain to culture values, subjective culture and cognitive anthropology, the study of the organizational culture excels (Erez and Earley, 1993). However, within such complexity - this variable can be understood as a mental programming of a group (Hofstede, 1980), through which they share knowledge and structures aimed at favoring the transmission of meanings and symbols (Geertz, 1973; Harris and Sutton, 1986), that as a whole have worked efficiently as a valid method to do things and, therefore, it is appropriate to be taught to new members as the best way to perceive, think and feel (Schein, 1992), being a starting point for the study of group interaction within the company. Therefore, from the organizational perspective, this variable has been studied by different authors, where it is possible to highlight to Cameron and Quinn (2006), Denison (1990; 1996; 2000), Frost et al. (1985), Handy (1986), Olson (1971) and Schein (1992). These approaches as a whole have expressed that culture can direct human capital towards organizational development, therefore, it is possible to observe that this variable can be considered as an intangible asset capable of granting a sustained competitive advantage to an organization (Barney, 1986).

Organizational culture from a broad sense focuses on the description of the meanings, assumptions, beliefs and values shared by the members of the organization in order to guide their activities (Gordon, 1997). In addition, it is an element of control and organizational evolution that favors the development (Alvensson and Berg, 1992). The culture within an organization is reflected by a single language, symbols, rules and ethnic sentiments (Parsons and Shils, 1951; Schein, 1992); also, it is intangible and is present in a very penetrating form (Robbins and Judge, 2013); transporting sense of identity to employees, as well as guidelines of understanding to give a sense of belonging to workers (Cameron and Quinn, 2006). It is also, the way how people solve their problems (Trompenaars and Hampden-Turner, 1997). In general terms, it is a social mental programming that distinguishes the members of a human group from another (Hofstede, 1980).

In spite of the heterogeneity of positions that have tried to explain organizational culture, taking as a reference to Bellot (2011), it is possible to highlight four elements of coincidence between different authors: (1) Culture in spite of being an intangible element really exists within organizations and the influences of employees' behavior; (2) this variable as a consequence of the above is inherently confusing, because it includes a series of contradictions and theoretical and empirical ambiguities; However it is an intangible asset (Barney, 1986), located within the collective unconscious, because it only manifests itself through artifacts and values (Schein, 1992); (3) it is a social construct based on comparative experiences that distinguish members of one group from others; y (4) it is relatively unique and malleable, because it can be constantly changed, so that it becomes a strategy to achieve the company's goals.

Within the different models that have studied the organizational culture, a certain parallelism has been detected as far as its taxonomies. This premise can be observed when comparing theoretical approximations of Denison (2000), Cameron and Quinn (2006), Deshpandé et al. (1993), Iivari and Huisman (2007), and Sainsaulieu (1997; 1990), where it is possible to observe specific coincidences: (1) the authors classify this variable into four types of cultures; (2) these can be grouped into two classes: Flexible and rigid; (3) Flexible cultures foster individual development,

communication and participation; at the same time, they reward innovation and creativity; (4) rigid cultures are focused on strategies and objectives to be competitive; at the same time they are based on hierarchical rules that guide employees (Table 1).

Within the models already mentioned, it is possible to highlight the Cameron and Quinn's approximation, which has gained significant relevance within the academic community. According to these authors, cultural organizations can be grouped: Flexible (clan and adhocracy) and rigid (market and hierarchy). The first is based on individual development, participation and innovation; while the second, in control, hierarchy, roles and positioning in the market. Such classification is basic for the understanding and characterization of this variable. For example, Khazanchi et al. (2007), used this taxonomy flexibility and control to explain to the culture oriented towards the innovation. From this perspective the organizational culture has been considered as a strategic element to make companies more competitive (Barney, 1986; Cameron and Quinn, 2006; Schein, 1992).

Although the Cameron and Quinn's proposal have made it possible for culture to be studied in any country of the world, giving rise to a vast empirical evidence (e.g. Arciniega, 2013; Naranjo-Valencia et al., 2011; Khazanchi et al., 2007; Ojeda et al., 2010); however, in general terms more emphasis has been placed on diagnosis through the taxonomy of four cultures and not much attention has been given to flexible and rigid cultures.

2.1.1. Types of organizational culture

Cameron and Quinn (2006) show a model that aims to diagnose the culture of an organization, from four types of dominant cultures: Clan, adhocracy, hierarchy and market; which are differentiated among other aspects according to their flexibility and rigidity. In addition, these are differentiated according to The competitive values framework, through dominant characteristics, organizational leadership, human resource management, organizational union, strategic emphasis and success criteria.

2.1.2. Flexible organizational culture

These cultures are bounded by flexibility and discretion; for this reason, these are characterized by fostering freedom within the organization, staff participation, as well as its empowerment, the creation of self-directed teams, innovation and creativity. Here, cultures as clan and the adhocracy are situated.

2.1.2.1.The clan culture

The culture of the clan is analogous to a family, where tradition, loyalty, personal commitment and socialization are emphasized. This term clan comes anthropologically from a social group where its members have a family relationship. In this sense, clan culture refers to an organization which promotes teamwork, self-administration and social influence, allowing its members to commit to organizational goals, through a high sense of belonging to the organization (Cameron and Quinn, 2006).

2.1.2.2. The adhocracy culture

From the etymological root, the term adhocracy comes from the latin word ad (to), as well hoc (this), what means for this or something specific; therefore, nominally it means something changeable, creative and specialized (Mateos, 2007). This type of culture can be considered as a result of the influence of the era of knowledge and the emergence of new needs, through the promotion of innovation and the constant struggle in a dynamic society. It emphasizes the search for novelty, experimentation, being at the forefront, adaptation to change and effectiveness to offer new and exclusive products with the aim of achieving rapid growth (Cameron and Quinn, 2006).

2.1.3. Rigid organizational culture

In opposition to flexible organizational cultures, rigid cultures are found. In essence, they are oriented toward compliance with standards, work specialization, hierarchy and the fulfillment of planned objectives. The focus here is on the efficiency and measurement of metals that guarantee positioning within the market, emphasizing hierarchy and market cultures.

2.1.3.1. Hierarchy culture

This culture is based on the bureaucratic organization studied by Weber (1968), who conceives it from an ideal vision and within the context of his time, through the existence of rules, specialization, merit, hierarchy, separate ownership, impersonality and responsibility, to obtain a broad control of the company. For this reason, this type of culture values the formality, the rules, the operating procedures, which together are established as standards, leading to specialized work at high levels of employee safety.

2.1.3.2. Market culture

Market culture is characterized by the maximum attainment of transferable and quantifiable goods, without the existence of any type of relationship or social commitment among the interested parts. In addition, by focusing on results, a commitment is created by employees achieving objectives. This favors a development of an attitude oriented to be better than the competition, although the relations between the individual and the organization are contractual, where the worker is responsible for the performance and the organization promises a reward, obtaining extrinsic meaning from an individualistic perspective where financial goals

Table 1: Organizational culture taxonomies

Types	Sainsaulieu (1977; 1990)	Iivari and Huisman (2007)	Deshpandé et al. (1993)	Denison (2000)	Cameron and Quinn (2006)
Flexible	Common	Group culture	Clan	Consistency	Clan
	Dual	Developmental culture	Adhocracy	Involvement	Adhocracy
Rigid	Burocracy	Hierarchical culture	Hierarchy	Mision	Hierarchy
	Modern	Rational culture	Market	Adaptability	Market

Own elaboration based cited authors

are pursued, although there are low levels of identity, integration and communication (Cameron and Quinn, 2006).

2.2. Innovation Capabilities

There is no a general theory of innovation due to research on the subject, which has been studied from different disciplines (Read, 2000). Innovation is an elementary concept for understanding economic development (Bradley et al., 2012), because it generates new products and services that seek to meet the needs of consumers, through the promotion of research and technology (Cancino et al., 2015). This variable from a macro level is capable of generating competitive advantages to the nations (Porter, 1990), like the organizations which are competing in the knowledge economy (Obeso, 2003; Stewart, 1998). Therefore, within the changing nature of the markets, innovation is like a constant process of the renewal of the companies in order to improve the goods and services (De Avila et al., 2015).

The authors agree that Schumpeter (1939), he can be considered as the precursor of the study of innovation (e.g., Cancino et al., 2015; De Avila et al., 2015; Lazzarotti et al., 2011). For Schumpeter (1843), this variable is the result of creative destruction within a capitalism that is essentially change this has been driven by entrepreneurs in implementing new ideas, introducing new products, as well as production methods and markets.

Under these theoretical assumptions, the economic structures from within, are constantly destroying the old ones, creating new ones. Then, this changes innovations can be radical or incremental (Schumpeter, 1943), which can be seen as the types of innovation, an idea found in authors such as Dewar and Dutton (1986). It should be noted that innovation can manifest itself in various companies of the company, the emergence of new resources, and skills (Galunic and Rodan, 1998; Porter, 1990). which are called as innovation capabilities because they are the ability of an organization's employees to combine individual knowledge collectively, In order to create a new knowledge that favors the development of new products and services to generate competitive advantages (Demicar and Ertürk, 2010).

2.2.1. Incremental innovation capabilities

Incremental innovation capabilities are defined as the ability to generate innovations that redefine and reinforce the products and services with which an organization is available (Subramaniam and Youndt, 2005).

2.2.2. Radical innovation capabilities (IRAD)

IRAD enable the generation of innovations that significantly transform the products and services offered by a company (Subramaniam and Youndt, 2005).

2.3. Organizational Culture and Innovation Capabilities

Organizational culture and innovation capabilities have certain points of contact. Both can be intangible assets that can generate sustained competitive advantages for companies; in addition, they are variables that can be explained through the RBV (Barney, 1991). It is important to emphasize that the structure of the organization needs to support innovation (Teece, 2007), because to innovate, companies must have employees with the appropriate skills (Porter, 1990), that is, with innovation capabilities, where culture plays a relevant role, forming part of another structure. This is why the culture is a basic element of innovation (Büschgens et al., 2013; Chandler et al., 2000). However, the explanation of the relationship between organizational culture and innovation especially innovation capabilities is not yet clear at all (Büschgens et al., 2013).

First, culture has a profound impact on innovation both socially and organizationally, so it is a scenario that allows innovation (Brettel et al., 2015; Çakar and Ertürk, 2010; Feldman, 1988; Teece, 1996). Empirical evidence from different disciplines has supported such premise. For example, culture from an anthropological perspective may explain innovation (Welz, 2003). In the case of an economic and social context, Hofstede (1980), emphasizes that the dimensions of the national culture of femininity and the low power distance, favors innovation within organizations. However, considering the dimensions of culture within this model, Çakar and Ertürk (2010), found that only uncertainty avoided could directly influence innovation, which did not happen with other dimensions such as power distance, collectivism, the assertive approach. Other authors such as Kaasa (2017), found that the dimensions of culture do influence innovation in the countries of the European Union. While for Bock et al. (2012), culture plays a moderating role in strategic flexibility during the innovation of a business model.

On the other hand, Slater et al. (2013) propose that the organizational culture especially the clan, through the promotion of the client orientation, the competitor and learning, influences the IRAD focused on the products. This was corroborated empirically by Yeşil and Kaya (2012), who found that only the culture of the adhocracy influenced the capabilities of innovation, which did not happen with the clan and the hierarchy. Thus, this type of culture which emphasizes innovation, can be considered as an innovation-oriented culture (Szczepańska, 2014), which is distinguished by the promotion of new ideas, learning, with independent workers, where knowledge is the main resource, since innovation is supported by symbols and rituals that lead to innovative behavior, and leadership seeks to promote the potential of creative thinking. In fact, according to Tesluk et al. (1997), culture also influences on individual creativity. While for Tellis et al. (2009) national culture affects on radical innovation.

This shows that it is not yet clear how the relationship between organizational culture and innovation capabilities. This becomes even more evident when considering flexible and rigid cultures. Hypothetically, flexible culture can respond to what Davenport and Pusak (1998) call friendly culture with knowledge, creativity and innovation; while rigid culture can be framed as an unfriendly culture, especially in the hierarchy, which can refer to what Barney (1991) denominates as competitive rigidity. This is the result of an organizational culture that collides against the objectives of a company (Mihi, 2008), if this is the case where a company emphasizes innovation and creativity (Table 2). There are no good or bad cultures (Cameron and Quinn, 2006), but by its very nature allows or favors innovation within the organization.

In this context, flexible culture can be considered as a friendly culture with the promotion of innovation capabilities. This is due to their emphasis on personal development and participation (clan), as well as on innovation and creativity (adhocracy). On the contrary, the rigid or unfriendly culture, being centered by control, the accomplishment of tasks, the goals and the achievement of objectives (hierarchy and market), may not favor innovation within organizations. In this sense, evidence was found by Brettel et al. (2015), who shows that flexible cultures affect positively and significantly on innovation in companies; however, further research is still lacking to support such a premise. Therefore, the following question arises: How do flexible and rigid cultures associate with innovation capabilities?

Giving continuity to the previous one, it does not rule out an important role of rigid culture within innovation; however, because some control is required to allow the participation of cultures, a moderation on the relationship between flexible culture and innovation is needed. This can be seen in the fact that entrepreneurs consider a radical innovation as very risky (Teece, 2007), where it is necessary to foment a culture that provides mayor security within the organization, as it is the case of the rigid cultures. A moderator is understood as a variable that affects the direction and strength of a relationship between variables (Baron and Keny, 1986). In view of these assumptions, the following research question is proposed: How does rigid culture moderate the relationship between flexible culture and innovation capabilities? For answering the research questions, the following hypotheses are presented.

3. HYPOTHESIS

H_1: There is a significant and positive relationship between flexible culture and innovation capabilities.
H_2: There is a significant and negative relationship between rigid culture and innovation capabilities.
H_3: Flexible culture has a significant and positive influence on innovation capabilities.
H_4: Rigid culture moderates significantly and positively the relationship between flexible culture and innovation capabilities.

4. METHODOLOGY

This research is of quantitative type, because the numerical data have been used to test the hypotheses of study In addition, it is correlational because the relationship between the variables is measured; while it is transverse because data collection was performed only one time, with a non-experimental design (Creswell, 2009).

4.1. Study Sample

As empirical evidence the measurement instrument was applied to 103 companies from southern Sonora in Mexico. Table 3 shows the characteristics of the sample.

4.2. Measurement Instrument

For the measurement of the organizational culture, the Organizational Culture Assessment Instrument was used, which comprises 24 items answered using a Likert-type scale with five options to respond, ranging from 1 (Strongly disagree) to 5 (strongly agree) in a Spanish version. It aims to diagnose a dominant culture of a company (i.e., clan, market, adhocracy y hierarchy), which were grouped into two basic groups: Flexibles y rigids, that as already mentioned agree with different taxonomies (i.e., Denison, 2000; Deshpandé et al. 1993; Handy, 1988; and Sainsaulieu, 1997; 1990). Although authors have been reported favorable values for validity for all four cultures (e.g., Cameron and Freeman, 1991; and Zammuto and Krakover, 1991). In this investigation, favorable values were obtained for the Keiser-Meyer-Olkin test (KMO = 0.834; P = 0.000), where two dimensions flexible culture and rigid culture explain 44.78% of the variance, with favorable levels of reliability for the flexible culture ($\alpha = 0.857$) and rigid culture ($\alpha = 0.844$).

Table 2: Taxonomy of organizational culture and innovation

Type of culture	Integration into two cultures	Relationship with innovation
Clan Adhocracy	Flexibles	Friendly
Hierarchy Market	Rigids	No friendly

Own elaboration

Table 3: Characteristics of the studied companies (n=103)

Characteristics	n (%)
Number of employees	
1-10	39 (37.9)
11-50	32 (31.1)
51-250	12 (11.7)
More than 251	20 (19.4)
Activity of the companies	
Industry	22 (21.4)
Commercial	29 (28.2)
Services	52 (50.5)
Market orientation	
Nacional	79 (76.7)
International	10 (9.7)
Both	14 (13.6)

Own elaboration

On the other hand, for the measurement of the innovation capabilities, the questionnaire proposed by Subramaniam and Youndt (2005) in a Spanish version was employed, which considers six items answered through a Likert-type, ranging like the first questionnaire. It should be noted that by factor analysis with varimax rotation, favorable results were obtained for the tests Keiser-Meyer-Olkin (KMO = 0.700; P = 0.000), where both dimensions explain 80.150 % of the variance, obtaining high levels of construct validity because the loads coincided with the factor provided: Incremental innovation (three items) and radical innovation (items). Furthermore, with respect to reliability, adequate alpha values were obtained for both variables, respectively ($\alpha = 0.912$ and $\alpha = 0.832$).

5. RESULTS

In order to test H_1 and H_2, Pearson correlation was performed. Through it was found at a first moment that flexible cultures were

associated with a significant and positive way with the innovation capabilities: FLEX-IINC (r = 0.608; P = 0.001) and FLEX- IRAD (r = 0.294; P = 0.001). These findings were enough to statistically prove the first research hypothesis (Table 4). This corroborates the positions that propose the existence of a favorable relationship between these variables (e.g., Bock et al., 2012; Kaasa, 2017), in particular, studies that consider flexible cultural traits (e.g., Çakar and Ertürk, 2010; Hofstede, 1980; Welz, 2003). While, respecting to H_3, the findings reported by Slater et al. (2013) were confirmed, for whom the clan organizational culture favors the development of IRAD. It also agrees with the study of Yeşil and Kaya (2012), who found that only the culture of accession influenced innovation capabilities. This, because through linear regression it was found that flexible cultivation has an effect on incremental innovation capabilities (B = 0.423; ΔR^2 = 0.399; F =33.570; P = 0.001), corroborating H_3 (Table 5). It is thus that flexible cultures clan and adhocracy can be considered as friendly cultures with innovation, in the same sense as proposed Davenport and Pusak (1998).

While, regarding the second hypothesis where it is postulated that the variables would be associated in a negative way, empirical evidence showed that this relationship is positive RIG-INNC (r = 0.575; P = 0.001) and RIG-IRAD (r = 0.265; P = 0.001), finding that this hypothesis was rejected (Table 4). Therefore, the findings show that these cultures market and hierarchy may not be totally friendly cultures with innovation capabilities, following to Davenport and Pusak (1998), nor does it promote competitive rigidity, retaking Barney (1991).

On the other hand, to measure the moderating role of rigid culture in the relationship between flexible culture and innovation capabilities H_4 Hierarchical regression or stepwise was used. This Hierarchical regression analysis seeks to detect the main and interaction effects between study variables (Cohen and Cohen, 1983). It should be noted that to do this requires at least 30 observations (Aamodt, 2010), an aspect that fulfills the present investigation. Then, to carry out this test two steps were used: (1) Simple linear regression was run, taking as a predictor step the items: Number of employees, activity of the companies and marketing orientation; (2) two regressions were made, considering at first the effect of independent variable (IV) on dependent variable (DV). For later, consider the DV, generated by multiplying IV × moderating variable (Figures 1 and 2).

The findings showed that, taking as DV the incremental innovation capabilities, the rigid culture moderates significantly and positively (β = 1.682; ΔR^2 = 0.538; F =1313.525; P = 0.001); while in the case of radical innovation as a DV, the moderation was β = 1.198; ΔR^2 = 0.852; F =2943.172; P = 0.001. Such results were sufficient to support the third research hypothesis (Tables 5 and 6).

6. DISCUSSION AND CONCLUSION

Intangible assets play a relevant role for companies to obtain sustained competitive advantages (Barney, 1991), where variables such as organizational culture stand out (Barney, 1986) and innovation (Teece, 2007), which have a close relationship (Brettel et al., 2015; Çakar and Ertürk, 2010; Feldman, 1988; Kaasa, 2017;

Table 4: Correlation of variables (n=103)

	1	2	3	4
FLEX	1			
RIG	0.747**	1		
IINC	0.608**	0.575**	1	
IRAD	0.294**	0.265**	0.216*	1

**P<0.01 (two tails); ***P<0.05 (two tails). FLEX: Flexible culture, RIG: Rigid culture, IINC: Incremental innovation capabilities, IRAD: Radical innovation capabilities

Table 5: Moderating effect: Incremental innovation capabilities as IV (n=103)

Predictor step	Incremental innovation capabilities		
	Beta	ΔR^2	F-change
Number of employees	−0.161	0.024	0.495
Activity of the organization	−0.063		
Commercialization area	−0.102		
S1 - Flexible culture (FLE)	0.423	0.399	33.570***
S2 - FLExRIG	1.682	0.538	1313.525***

***P≤0.001, S1: Step 1, S2: Step 2, RIG: Rigid culture

Table 6: Moderating effect: IRAD as IV (n=103)

Predictor step	IRAD		
	Beta	ΔR^2	F-Change
Number of employees	–0.151	0.046	1.577
Activity of the organization	0.133		
Commercialization area	0.069		
S1- Flexible culture (FLE)	0.219	0.075	4.138***
S2- FLE×RIG	1.198	0.852	2943.172***

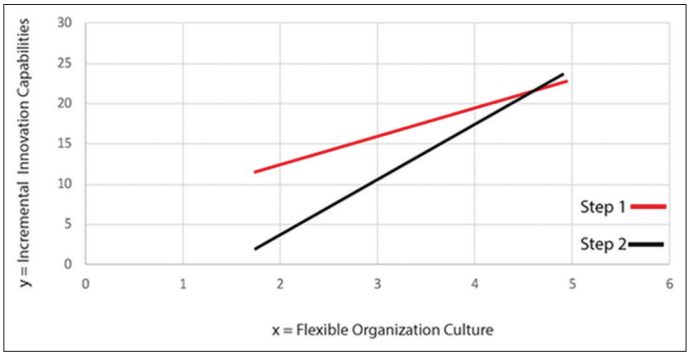
***P≤0.001; S1: Step 1; S2: Step 2

Teece, 1996; Welz, 2003). However, actually the explanation of the association between organizational culture and innovation In particular, with innovation capabilities still not clear at all (Büschgens, Bausch, and Balkin, 2013), because no consensus has been reached on which type of culture is best suited to develop innovation capabilities within companies.

According to Robbins (2002), a suitable culture is one that allows the organization to achieve its objectives; In this sense, it is necessary to recognize that within the knowledge society organizations are facing a new reality (Drucker, 1969), where intangible assets such as organizational culture can generate sustained competitive advantages (Barney, 1986). However, for this to be possible, it is necessary for the organization to identify the type of culture that it requires of strategic. In the case of the promotion of innovation capabilities, it has been proposed that they require a flexible culture (Çakar and Ertürk, 2010; Welz, 2003), especially adhocracy (Yeşil and Kaya, 2012). But, the role of rigid cultures within the development of accounts has not yet been fully explained. Under this gap the present investigation was carried out.

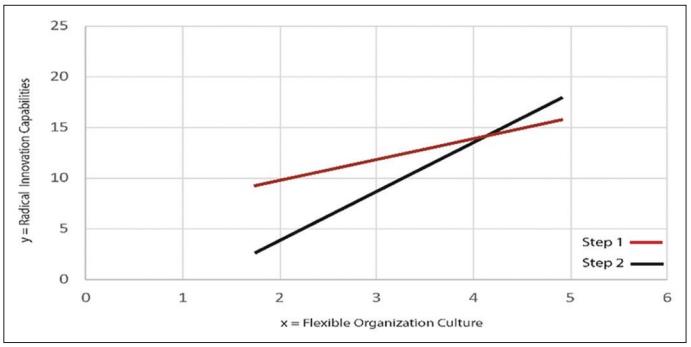
Through the use of two types of cultures - rigid and flexible that are based on the different taxonomies of organizational culture - Cameron and Quinn (2006), Denison (2000), Deshpandé et al. (1993), Handy (1988), and Sainsaulieu (1997; 1990) it was found that flexible cultures, despite appearing to be contrary to rigid ones, also favor the rigid part, which shows that they are not excluded, but are complemented for the purpose of developing

Figure 1: Moderating effect on incremental innovation capabilities



Source: Own elaboration

Figure 2: Moderating effect on radical innovation capabilities



Source: Own elaboration

innovation capabilities. This was observed in the fact that the companies studied showed the existence of an eclectic culture, where a dominant culture is not present fully. The results allow us to understand how the combination of cultures under an integrative approach favors the understanding of organizations in a better way, beyond the reductionist perspective that has been given the Cameron and Quinn's model, where it has only tried to differentiate the dominant culture.

For this reason, the relevance of an inclusive culture in place of discrimination is observed. In this way, the empirical evidence found by this study, it reflected that both flexible and rigid cultures can coexist within organizations and jointly favor the development of intangible assets such as innovation capabilities. Certainly, flexible culture is positively associated with the development of innovation capabilities; however, the moderation of the rigid culture improves the relationship, and even increases the level of the effect, this contemplates the variable culture as an IV. This can be understood in the light of the Mexican national culture, which is the fruit of the miscegenation between Spanish and indigenous (Paz, 1970; Ramos, 1951). This has had a great impact within the organizational culture, since according to Hofstede (1980), in Mexican organizations, culture has high levels of power distance and masculinity, where control is used to guarantee the achievement of the objectives of the company, in predominantly hierarchical companies.

Within the limitations of the study it is possible to indicate the type of sampling used, which does not allow to generalize the results; however, the empirical evidence found, was sufficient to corroborate most of the hypotheses raised. It would be convenient to do a study with a larger sample, using probabilistic sampling and the involvement of companies from all over the country, and even several ways to better understand the organizational phenomenon. Similarly, in order to measure the effect of flexible and rigid cultures on innovation capabilities, it is recommended to take another sample in order to make a longitudinal study, which is more convenient to address a hypothesis such as those raised in this research. As it is so important that in the knowledge era the most appropriate culture is identified to develop strategies that favor innovation. This is because the competitiveness of nations and companies depends on the great extent of the capacity to innovate (Porter, 1990).

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