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Exploring adaptability in organizations: Where adaptive advantage comes from and what it is based upon

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Abstract

Purpose – The purpose of this paper is to contribute to the development of a new perspective on adaptive strategy design. It examines the concept of adaptive advantage, as such a new perspective, and seeks to improve its understanding and application. The study of its origins leads to a solid comprehension of the concept and the proposal of a certain company profile. This could serve as a foundation for further research and as benchmark for companies trying to be more responsive to change and ultimately more resilient.

Design/methodology/approach – Three theories of the area of adaptability, namely, organization ecology, corporate demography and complexity-based thinking, have been studied conducting a review of the relevant literature of each one. After drawing out the individual contributions, a definition of adaptive advantage is offered and the question about its implementation in an organization is posed. Consequently, indicators of the three elements impacting adaptability, innovation culture, decision-making style and accumulated experience are measured in a sample of "old" and innovative firms. In order to do so, three questionnaires have been used, resulting in a case description of an archetype of adaptive companies.

Findings – It is shown that the expected elements are present, but in a lesser degree than expected. In conclusion, the trial study shows a pattern of "old," innovative firms, whose cultures promote innovation, are analytic and adaptive in their decision making and have relatively high levels of accumulated experience.

Originality/value – This general review improves the comprehension of a complex concept currently under debate in the field of strategic planning. It explains the areas of the firm implicated in the achievement of adaptive advantage and tries to clarify a practical application of the concept.

Keywords Adaptability, Organizational change, Strategic planning, Innovation culture, Organizational evolution

Paper type Conceptual paper

1. Introduction

A prominent feature of today's economy is the consistence of fast change. Such a rapidly shifting market requires flexible firms and a theoretical background to guide managerial decision making. In this respect, many strategy studies are following this development post-factum, not only attempting to forecast it by responding to that very change but to create it. This approach is otherwise known as adaptive advantage (Reeves *et al.*, 2010).

Adaptive advantage describes the combination of various factors, which result in the ability of the firm to adapt swiftly to a fast-changing environment. This approach typifies the importance of superseding the static nature of the competitive advantage concept and seeks a formulation of strategic behavior, which is more apt for the modern, flexible company. Choosing certain strategic actions may be seen to be too isolated and rigid (McGrath, 2013), in order to ensure successful survival. The very

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creation of renewed competitive advantages and the ability to forecast change rely on certain special characteristics of the company so, in this way, the focus is no longer on what the company does but on how the company is.

We can observe that business practitioners have started to use such an adaptive advantage approach for strategy formulation. Indeed, the renowned consulting firm Boston Consulting Group (BCG) has included this concept in its perspectives on successful firm behavior ((The) Boston Consulting Group, 2015). In their recent publication, *Adaptive Advantage: Winning Strategies for Uncertain Times* (Reeves *et al.*, 2010), they explain in detail the different components of adaptive advantage. In their analysis of the five bases for adaptive advantage, they consider several cases ranging from software companies, like Intuit Ltd. to large oil firms like Royal Dutch Shell. They found that, in many cases, companies from any industry are implementing practices to adapt faster and better to sudden changes in their environment. Booz and Company (recently renamed to strategy&), another high-ranking strategy consultancy, published in April 2013 an article under the title *The Agility Factor* (Williams *et al.*, 2013), in which superior profitability and general performance are directly associated with accommodating business practices to environmental change. The authors advance four routines for agility (strategizing dynamically, perceiving environmental change, testing responses and implementing change (p. 4)), which are expanded in their more recent publication (Worley *et al.*, 2014).

Scholars have also paid increasing attention to this concept, as we can see in recent publications, such as Rita McGrath's (2013) *The End of Competitive Advantage* or Reeves and Deimler's (2011) "Adaptability: the new competitive advantage". The problems of fading competitive advantage and components of adaptive advantage are studied and to which we will refer in detail further on, after reviewing its foundations in prior theories.

Great attention has been paid to the importance of adaptability in firm success and survival, by scrutinizing the different dimensions of the concept and their relation to firm innovativeness (Tuominen *et al.*, 2004; Reeves and Deimler, 2011; Reeves *et al.*, 2010; McGrath, 2013; Hu *et al.*, 2011). In this paper, an evolutionary explanation is provided as to where the adaptive advantage concept originates, considering how it evolved to our current understanding of competitive advantage. There have been numerous revisions of strategic management theory, in which the contributions of diverse streams have been examined (Porter, 1981; Teece *et al.*, 1997; Rugman and Verbeke, 2002; Rindova and Kotha, 2001; McGrath, 2013) and this paper follows in line with this work but attempts to further its parameters by contrasting certain parameters with the business reality. To begin with, this new perspective is placed in a context of current market circumstances.

2. A new competitive setting

The market environment has changed in a way that traditional strategy theory no longer serves in order to prepare organizations for the future competitive setting. Basic external parameters are shifting at an unprecedented speed – technology, politics, environment, social tendencies, customer habits and business models. The sharing of information made possible by the development of IT has made organizational change and social change increasingly unpredictable (Hatch, 1991). This turbulence provides little reliable information because forecasting future scenarios depends less on current the state and this, as Celly and Frazier (1996) have noted, has led to "causal-ambiguity" (Celly and Frazier, 1996). When the external environment becomes more turbulent and less predictable, organizations need to adjust to meet the challenge and align their internal resources with external demand in an attempt to enhance firm growth and survival. The recent economic crisis, which provoked significant changes in stock markets, position of governments and access to credit and customer concerns have contributed to the modification of the benchmarks from which decision makers were accustomed. McGrath (2013), in her very appropriately titled publication *The End of Competitive Advantage*, uses the term "Transient Competitive Advantage" in order to refer to ever, shorter phases of competitive advantage. According to this McGrath, the hypercompetitive environment has made obsolete most of the conventional perspectives on strategy (Porter's 5 Forces Analysis, BCGs Matrix or the SWOT Analysis), requiring a new set of tools for strategy formulation. There seems to be consensus among researchers that generally held assumptions, such as the sequential planning process, analysis of the environment or reliance on certain key resources, are no longer reliable in order to develop a successful strategic outlook (Reeves and Deimler, 2011; McGrath, 2013; Hamel, 2007; Akgün *et al.*, 2013).

Garg *et al.* (2003) show that in fast-changing environments adaptive companies simultaneously scan their immediate environment (i.e. customers, competitors and technology) and their internal organizational capabilities associated with innovation, in order to achieve their congruence. Indeed, when the rate of change in customer groups and preferences is rapid, organizations are likely to be forced to change their products and services and to create "new competitive space" (Hamel and Prahalad, 1994) which is why a premium is placed on continuous learning about markets and customers, as well as leading the market in new products or services.

3. Adaptability

3.1 Organizational ecology and the evolutionary perspective

When studying adaptability, it is important to mention the evolutionary perspective and the contributions of Nelson and Winter (1982) because these authors challenged orthodox economic theory in their seminal work *An Evolutionary Theory of Economic Change* which conceptualized evolutionary economics and organizational change. In particular, they drew attention to the, neglected issue of environmental and organizational change by creating a connection between economic and management theory, as we shall see.

This was significant because change had not been considered by economic theory until after Second World War. Even though economic theory had started to consider it, the focus was put on growth (growth theory) and economic theory remained at a macro-level, unable to explain trends like the increase in output per worker that had occurred during the late industrial revolution. Even though Schumpeter (1943) had introduced the term innovation in the production function as early as 1943, it failed to explain how it really affected differences in competitiveness. Innovation or technological change were used in the production function as place-holders for causes that could not be explained. In order to better understand innovation it was essential to examine the inner workings of the organization and this was where orthodox economics fell short. Indeed, as Nelson and Winter (1982) pointed out "[…] the orthodox formulation offers no possibility of reconciling analyses with what is known about the process of technological change at the microeconomic level" (p. 206).

Nonetheless by adopting the orthodox position as a parting point, the authors clarify how the utility maximizing assumption does not hold when firms have to adjust to unforeseen changes. This is because managers are unable to plan for utility maximization, which optimizes the conventional production function in the long term. Within a context of great uncertainty, adaptive responses will be needed instead, meaning that outdated policies are replaced by improved equivalents. In order to get closer to this reality, the authors use a typical production function and introduce elements of adaptation, such as search (referring to research and observation of the environment) and innovation (experimentation and new product/service developments), which are taken from evolutionary theory. This allowed them to construct a model in which the influence of innovation on economic growth and productivity, among other factors, becomes clearer. Therein, this shifts the focus from a broad, and what can be interpreted as limited, economic perspective to a firm-level perspective in order to better understand adaptive behavior. The black box is opened.

We can therefore see a fundamental contribution in building a rigorous economic model that responds to orthodox economic demands but explains economic growth, considering firms' innovation activities. This established an important relationship between, on the one hand, strategy and businesses intentional actions, and on the other, economic growth. For this reason, the elements of search and innovation reappear as key components to adaptive advantage.

The issue of change in organizations is then further advanced to become organizational transformation theory. Here we find the advocates of gradual transformation (Miller *et al.*, 1984; Cyert and March, 1963) and of revolutionary transformation or punctuated equilibrium theory (Romanelli and Tushman, 1985, 1994; Gersick, 1991). The first group of authors argues that organizational transformation happens by small changes undertaken by the different business units in response to variations in their immediate environment (e.g.: adjusting the product range or prices to shifts in local demand). This would mean that a number of these incremental, decentralized changes would eventually add up to broader organizational change (Miller *et al.*, 1984).

On the other hand, punctuated equilibrium theory understands organizational transformation as a succession of revolutionary changes carried out during short periods of time, which involve the whole organization. These short bursts of disruption are embedded in longer periods of stability (equilibrium). The sub-units of the organization are seen as interdependent and connected to the outside stakeholders, such as buyers, suppliers, financial backers, etc. (Romanelli and Tushman, 1985). On the downside, this interdependence can also act negatively toward organizational change, since the established system of power and relationships is tried to be perpetuated by managers.

Trying find out which school describes change processes better, Romanelli and Tushman (1994) studied 25 computer firms over a three-year period, through which they were able to confirm that punctuated equilibrium describes reality of organizational transformation much better than the non-revolutionary approach. They also showed that small organizational changes do not accumulate to produce incremental changes at the global organizational level. We therefore understand that two important contributions to understanding adaptability can be taken from punctuated equilibrium theory, which are:

(1) organizations suffer transformations in short bursts, affecting the whole organization; and

(2) organizational sub-units are interconnected and influenced by their environment.

As we see, prior ideas are confirmed. Resulting from these two points it can be concluded that adaptive organizations consider change as a global phenomenon (that needs to be managed as such) and are able to integrate all organizational sub-units in the process, while remaining open to external stimulations. In a perspective on the negative aspect of adaptation, decline, it has been highlighted that the inability to reconfigure internal resources and capabilities (malabsorbtive incompetence) and or lack of development of new competencies (maladaptive competencies) will lead to decline (Heine and Rindfleisch, 2013). This hints at the importance of intentional change carried out in response to new competitive settings, which, if disregarded, will be fatal to the organization.

Before continuing the study of internal processes in order to understand adaptive capabilities, an intermediate level of analysis of the firm, lying in between the economic conditions and strategic management, needs to be examined.

3.2 Corporate demography (CD)

If we consider companies as living, evolving organizations it is only logical examine their social environment in order to better understand them. Just as the social context of a person must be studied in order to understand the evolution of the individual, a company's immediate context must also be considered to obtain a reflection of its operation. And it is here that CD is of great help.

The seminal work of Carroll and Hannan (1999) describes the field of CD as applying demographic studies to the study of corporations, analyzing their birth (creation), development (growth, diversification, adaptation) and death (decline and closure). It gives reasons for certain events that rely on a broader perspective than management science, while remaining more detailed than economic theory. Company populations, which are grouped by sector or region, are studied, and an analysis is provided on a meso-level – in between managerial and economic sciences.

CD studies the reasons for diversity in firm populations and the evolution of large communities of firms. Instead of looking at the inner workings of organizations as stand-alone entities or the conditions set by the environmental forces, CD explains companies' actions through the conditions set by the development of industries and the firms' life cycles. Human or "internal demography" is only taken into account when considering the founders' and managers' role in the organization. Demographic composition of the corporate population, such as number of firms, age structure, relative size, growth and mortality rates and migration are used to explain phenomena commonly addressed from other points of view. For instance, the number of firms and their relative size, disregarding the homogeneity of their products, could explain the degree of rivalry within a given industry. Even though one could be tempted to categorize CD in the EBV, CD is different in its focus and even reaches contrary results, which becomes clear when compared to Porter's Five Forces analysis (Carroll and Hannan, 1999, p. 7). Even though its perspective lies above the firm-level, at which strategy studies operate, it serves as a valuable link between what goes on inside the organization and its effects on the wider environment and (or even more so) vice versa. It explains the actions taken by a company based on what its immediate community is doing and suffering. In this sense, adaptive behavior would be understood as a reaction to a particular set of external conditions.

Interestingly, it has been found that in more competitive settings, such as that of microforms in Spain or Portugal, companies show higher survival rates than in less competitive ones (Biswas and Baptista, 2012). This conclusion has been reached by a study comparing different settings and analyzing survival rates depending on the organizations' immediate context. The reason behind it seems to be that less efficient new comers leave the market quicker and incumbents become more resilient. This shows the impact of context on firm characteristics, leading to the idea of tougher environments breeding tougher organizations.

CD's importance in the study of corporate adaptability stems from its task of measuring and analyzing firm heterogeneity (Carroll and Hannan, 2000). It considers adaptability to be uncommon among firms, arguing instead that firms are renewed in the sense of new firm creation and destruction of old ones rather than adaptation of incumbent organizations. From a CD perspective, the greater the diversity of firms in a particular environment, the higher the chances of survival (Carroll and Hannan, 2000, p. 152). This means that diverse systems are more likely to survive disruption than homogenous ones. The authors argue that the more realistic and ampler perspective CD provides, is more suitable for times of instability than strategy studies' normative approach. CD remains diagnostical and points out what actually worked and which policies failed in particular circumstances, instead of prescribing universal solutions.

This might be the most valuable lesson, which can be taken from CD for the understanding of the adaptive advantage. By definition, adaptive advantage is applied in very diverse and fast-changing contexts, making it extremely hard to find one set of recommendations suitable for all companies and any situation. It seems more reasonable to think of a set of values that will lead to diverse actions in different corporations and contexts, but establish a base condition for better adaptability. Establishing a rigid set of rules to follow seems ill advised for firms seeking flexibility and adaptive advantage. One possible recommendation could be to build on experience and use a set of indicators in order to identify changes early and seek fast internal response. This ability to respond depends greatly on how the managers and employees behave and the firm's processes are organized.

3.3 Complexity-based thinking

After studying the economic (macro) perspective, the demographic (meso) and the firm-level (micro), it seems suitable to examine the decision-making process. In order to do so, the mental process of the managers responsible for strategic planning will be considered to learn which lessons can be learned for better adaptability.

As previously discussed, in a context of fast change, interconnectedness and great complexity it is hard to maintain a form of strategy making based on rigorous analysis of the business environment, a detailed design of strategic options that lead to strategy implementation. Gavetti *et al.* (2005) explain how the cognitive and time constraints of managers make an analogy-based approach much more suitable for this context, as opposed to one which revolves around a profound planning and execution-by-plan. Drawing on past experience, distilling important lessons and applying policies that worked in the past, allows business leaders to take more dynamic action. While the authors point out that this is actually how many managers tackle today's problems, the literature remains limited. Based on Cyert and March's (1963) behavioral perspective and following the lead of evolutionary scholars Nelson and Winter (1982), it is possible to reason by analogy as a way of explaining how strategic processes in hypercompetitive environments are more likely to be successful if built step by step rather than by falling back on large studies and broad guidelines. We can see an example in the way many managers successfully apply processes from industries they worked in earlier in their career to their new positions. Gavetti *et al.* (2005) use the cases of Merill Lynch's approach to brokerage based on its co-founder's experience in supermarkets or Lycos' organization when entering the media industry based on the observation of this very industry.

Nevertheless, analogy still needs to follow a set of rules in order to be successful, leading otherwise to great failure. Such is the case when the key elements of the situations that are compared are misinterpreted. From a cognitive perspective on strategic planning, analogies are a good procedure to confront the type of fast-paced environment of the current business world. This falls in sync with elements of adaptive advantage addressing knowledge management, used in organizational learning. Here, organizations are advised to draw on past experience for developments, which lead to creating analogies with past success. Redesigning the whole strategy would be much too slow and rigid, compared to adjusting to new situations in a modular fashion, which is highlighted in Gavetti *et al.* (2005) study of several cases of successful strategy making by analogy.

This same approach is described in the analysis of knowledge creation in complex adaptive systems (CAS), in which agents (the knowledge workers of the company) draw on acquired knowledge from past situations and examine their applicability to the problem at hand. On an organizational scale this leads to a repository of knowledge to be used by all decision makers (Sherif and Xing, 2006). The authors describe the process of exploitation, according to which patterns in past situations are identified and rules are deducted in order to approach future situations – reasoning by analogy. Therefore, the way of making decisions in organizations has a very tight relationship with the knowledge management and conditions the adaptive capacity.

The cognitive approach adds analogy to incremental strategy development (Lindblom, 1959), which explained strategy as a path-dependent process based on existing resource endowment and past experiences. While analogy is present in the short-term comparisons carried out in incremental strategy formulation, it has similar potential to evaluate previous situations experienced by managers or by the organization. It makes sense that an adaptive advantage should draw on both short-term experiences and those that lye further back in the history of the company. The former experiences would remain in the perception and memory of the employees and managers, while the latter would be found in the long-term memory of the corporation: its corporate culture. Meaningful events create an impact on how a firm operates and on the perception of its context. Important actions carried out in the past survive as success stories and the people involved are idolized as role models. The value structure of the organization is altered, introducing the lessons as shared values (Schein, 1992). This is why early events in organizational long-term memory (or sub-consciousness) are present. Adaptability is conditioned by the short-term capacity to react (making adjustments of the organization in terms of practices, activities, new routines and structure) and rely on the fundamental identity of the organization found in its corporate culture. It is thought that thereafter the values guiding the employee's and manager's actions condition their adaptive capability.

4. Adaptive advantage

As seen, adaptability addresses the organization – environment relationship and the achievement of fit between an organization's external environment and its internal organizational structure, rooted in the environment-based view and dynamic capabilities theory (Burns and Stalker, 1961). The dimensions that describe and measure adaptability differ substantially in the literature. As means of a brief description, adaptability is the organization's capacity to engage in internal change in response to external conditions (Denison and Mishra, 1995). According to other strategic theorists, adaptability is the ability to adjust to changes in the external environment in order to maintain organizational viability (Child, 1972; Miles *et al.*, 1978). Further examples are present in the detailed descriptions of Angle and Perry's (1981) work, who propose that adaptability resides in different abilities: the ability to anticipate problems, to keep up with changes and consider new ways of doing things, the ability to adjust to changes quickly and the ability to cope with crises.

Studies show that highly internally focussed and integrated organizations may have difficulties adapting to external market demands (Lawrence and Lorsch, 1967), which confirms the importance of external vigilance and creation internal change. Several authors highlight the importance of organizational learning in this process (Argirys and Schön, 1978; Fey and Denison, 2003; Nadler, 1998; Senge, 1997), explaining that the swift integration of external information into organizational practices means faster adaptation and the need to learn is a requirement for the ability to adapt (Dodgson (1993). Following the same reasoning, Orton and Weick (1990) state that adaptability implies assimilation and accommodation of change, hence the importance of change management in this process. All of this highlights the eclectic and inclusive nature of adaptability.

But this form of learning is often not enough. Staber and Sydow (2002) explain that organizations with an adaptive capacity can "[…] learn faster than the rate of change under the conditions that require dismantling old routines and creating new ones" (pp. 410-411), are prepared to experiment with new designs and can identify and capitalize on emerging market and technology opportunities to develop and implement innovative ideas. Similarly, Angle and Perry (1981) depict the different capabilities that add up the adaptive capability. First, organizational adaptive capability is explained as a dynamic process of continuous learning, which permits an increase in firm innovation, leading to the potential for the company to create the change through innovation.

Further, market adaptive capability emphasizes learning quickly in order to identify customer requirements and competitor behavior. This is done by scanning the market, monitoring customers and competitors and allocating resources to marketing activities. Other authors also mention this capability pointing out how it helps the organization be responsive to customers, and how it empowers and rewards employees to ensure this responsiveness (Oktemgil and Greenley, 1997; Tuominen *et al.*, 2004). Staber and Sydow (2002) also describe the technological adaptive capability, which indicates a firm's ability to monitor technical change, secure access to desired technologies, achieve technological complementarities, improve product quality and performance and avert the potential risk of failure in new product developments. Lastly, and in line with Gibson and Birkinshaw (2004), Tuominen Rajala and Möller (2004) define management system adaptive capability as the degree in which the management systems encourage people to challenge outmoded traditions and practices which subsequently allows a firm to respond quickly to changes in the market and evolve rapidly in response to shifts in its business priorities.

Reeves and Deimler (2011) take the decisive step toward the adaptive advantage concept when they identify adaptability as the new competitive advantage. The authors consider diverse sources of adaptive advantage among which they cite several abilities (also see Staber and Sydow, 2002; Tuominen *et al.*, 2004) the ability to read and act on signals of change, to experiment rapidly and frequently, to manage complex and interconnected systems of multiple stakeholders and to motivate employees and partners. We could therefore define adaptive advantage as the ways of working of an organization, making it resilient and proactive in a hypercompetitive environment. The creation of new competitive advantages adapted to the fast-changing conditions constitutes an advantage in itself.

After understanding the concept, the great challenge now lies in understanding how an organization could acquire an adaptive advantage. As we have seen, acquiring organizational adaptive capability and generating a renewed set of competitive advantages is an interaction of market, technology and management system adaptability-related constructs (Akgün *et al.*, 2012). If we follow the guidance of these authors, management should realize the importance of quick information flow at different levels of the organization, give departments autonomous decision-making powers, enable them to take action on those decisions, and experiment with new models. It would also encourage the informal relations and ties to exchange information, resources and advice, distribute the formal rules of expected behavior throughout the organization yet be flexible to enhance freedom and creativity, keep control when establishing media richness and communication channels and finally avoid keeping too much or too little idle information, as well as excessive overhead and capacity (slack). At the same time, management should be cautious with loose management styles under fast-changing conditions, keeping control and enforcing guidelines to maintain focus on the vision of the company. The challenge seems to be to be able to balance discipline in strategic direction and looseness for greater flexibility.

It can therefore be said that adaptability requires the management of several domains within the organization because it relates to a variety of fields and implies a development of a very diverse set of capabilities. In order to accommodate these diverse elements of adaptability, firms must select particular organizational structures (Miller, 1987), which should be more "organic," with less formal control and greater integration and decentralization (Miller and Dröge, 1986). These authors together with Iyer *et al.* (2004) suggest that delegating decision making to the lower levels of a hierarchy helps firms respond to fast-changing conditions. Complementing these recommendations, Hamel (2007) in his perspective for future management, highlights the importance of team-based structures with uncomplex and limited levels of hierarchy. Flexible organizations with fast reaction capabilities are sought, in order to integrate swiftly whatever changes are needed. For a more detailed understanding of adaptive structures we would have to refer CAS theory, which identifies a number of elements, which influence organizations in order to adapt to the stimuli of its environment, creating a dynamic system (Holland, 1995). In a recent application, Akgün *et al.* (2013) show how CAS have positive influence on new product development and innovation, which are clear expressions of adaptation and predictive behavior.

In order to further act upon these findings, management literature indicates that technology and knowledge management are useful tools for organizational adaptation in order to confront uncertainty generated by fast change (Bechman *et al.*, 2004). The multidimensional nature of adaptability brings this concept to all areas of the firm, making its sources impossible to pin down in one single area. Environmental turbulence can be managed through various structural and cultural arrangements as key drivers for organizational design and adaptability (Akgün *et al.*, 2012; Denison and

Mishra, 1995). It is due to this that we see adaptive advantage emanate from the very essence of the firm. Since corporate culture is the one element, which is equally omnipresent in the organization, it seems that this could be a useful tool for the identification and management of adaptive advantage.

This can be said with some authority given that corporate culture has been found to have significant impact on the result of the company overall (Flammholtz, 2001; Kotter and Hesket, 1992; Schein, 1992) and its innovative capacity in particular (Naranjo Valencia *et al.*, 2012; Morcillo, 2007). Therefore, the type of culture that leads to higher innovative capabilities will surely be the one leading to greater adaptability and ultimately adaptive advantage. In order to develop this "innovation culture," managers will have to understand its composition and foundation. It has been shown that this culture is measurable and hence can be intentionally managed (van den Berg and Wilderom, 2004; Tejeiro Koller, 2014; Rao and Weintraub, 2013), making it possible to acquire an innovation culture, which, in turn, could help in conquering an adaptive advantage.

5. Methodology

Based on the exposed revision of theories leading to the concept of adaptability, the following model has been developed:

$$\text{Corporate culture} + \text{Employee experience} + \text{Decision making style} \Rightarrow \text{Long term success}$$

Hence, these three elements will be measured and their presence in a specific sample of firms will be analyzed.

The empirical study presented here does not have the aspiration of reaching generalizable conclusions but rather wants to describe the situation of a very particular set of companies – old and innovative ones – and lay out a path for future research. Due to the reduced number of responses, a descriptive statistical analysis seemed most appropriate, which also expresses sufficiently the intended example. Research with a broader sample and a higher number of responses would be suitable for further research.

The selected firms respond to a very specific set of requirements. In order to represent companies that have proven good survival skills, a selection of firms was made that were established at least 50 years ago (before 1964). Additionally, the sample is composed of companies carrying out innovative activities, identified in the list of "Innovative Companies" published by the Ministry of Economy and Competitiveness of Spain (Ministerio de Economía y Competitividad, 2015). Ultimately 51 Spanish firms of diverse sectors and sizes were contacted in order to measure the proposed dimensions. After two e-mail and two phone contacts with each firm a total of 18 useful responses were obtained.

First, in order to measure the adjustment of the selected firms' cultures to an innovation culture, the measurement tool developed by Tejeiro Koller (2014) has been chosen. This tool yields an Innovation Culture Score (ICS), which indicates the similarity of the studied culture to an ideal innovation culture. It is based on a questionnaire of 52 questions and uses a Likert scale from 1 to 5.

As has been discussed earlier, the hypercompetitive environment managers need to make decisions in requires a fast reaction time in which a less analytical and more analogical process seems more appropriate. This is in line with the cognitive continuum theory, in which it is argued that individuals oscillate between two extremes of cognitive styles, namely, analytical and intuitive (Allinson and Hayes, 2012). A person will be drawn toward one pole or the other, depending on his/her cognitive style. The performance of the tasks at hand will largely depend on the correspondence of the cognitive style and the problem the individual faces. In this sense, it can be argued that managers following a more intuitive or adaptive cognitive style, which avoids long periods of analysis and follows a reasoning by analogy, are more likely to succeed in the complex, fast-paced environment. The use of Allinson and Hayes' (1996) the Cognitive Style Index (CSI) is therefore considered appropriate to measure the managers' decision making.

Finally, the level of accumulated experience of the group of employees was studied using a small set of indicators, based on the Intellectual Capital Report (Cañibano *et al.*, 2002).

6. Findings and conclusions

The results will be presented one element at a time, followed by a conclusion including all factors. Table I shows the characteristics of the results, with the ICS in the first column, followed by the CSI and lastly the accumulated experience. It is to note that the dispersion of the sample is relatively high for all values, which will be discussed in more detail henceforth.

In the first place the ICS (ranging from 50 to 250) has proven that a vest majority of the analyzed companies have corporate cultures, that are similar to an innovation culture. IN all, 89 percent have scored higher than 150 points, corresponding therefore to the first two percentiles, which can be interpreted as above the threshold value. Only two respondents show a relatively low adjustment to an innovation culture, placing them in the third percentile. It can therefore be said that the corporate cultures of the respondents promote innovation activities in most cases, which seems in line with the expected results (Table II).

Considering the decision making, measured with the CSI (Allinson and Hayes, 1996), it can be observed that an equal amount of respondents follow an adaptive and an analytic style (see Table III). If Quasi-analytic and analytic styles are considered jointly, it could be said that about half fall into these two categories (55.55 percent). On the other hand, only approximately 11.1 percent declare to be intuitive or quasi-intuitive in their cognition style. This tendency toward analytical thinking is normal

	n	Min	Max	Mean	SD
ICS	18	116.0	212.0	177.80	23.06
CSI	18	26	64	48.56	10.49
Exp	18	10	20	16.83	2.55

Table I.
Descriptive statistics

Percentile	%
1 (200-250)	11.11
2 (249-150)	77.78
3 (149-100)	11.11
4 (99-50)	0

Table II.
Innovation Culture Score

for the cultural context of Spanish firms. Considering that one third of respondents apply an adaptive style is relatively in line with the expectations, in which adaptive firms were thought to be governed by reasoning by analogy, which includes a degree of intuition, but relies on the analysis of past experiences. Nevertheless, the high percentage of analytical firms contradicts the expectation of rather intuitive decision making.

Finally, the level of accumulated experience of employees in companies shows a picture of relatively high levels of accumulated experience in most cases. The majority of them (72.22 percent) can be placed in the second percentile, with one case in the highest and one case in the lowest one. This is in line with the revised literature, since employee experience represented the short-term reaction capacity of adaptive firms and is expected to increase their long-term success. A greater percentage of firms in the first percentile would have made this clearer (Table IV).

In conclusion, the trial study shows a pattern of "old," innovative firms, whose cultures promote innovation, are analytic and adaptive in their decision making and have relatively high levels of accumulated experience. This fits relatively well the characteristics exposed in the revised literature, although is not as clear as expected. According to the data, it seems that these adaptive companies are more analytical in their decision making than expected and experience plays a smaller role, since the majority does not score in the first percentile.

7. Limitations and future research

The presented study could have benefitted from a larger number of responses, in order to be more representative in its conclusions. It makes a description of a particular case, which excludes other measures commonly associated with performance, such as capital expenditure, assets, market share or operational expenditure.

In order to reach more complete and generalizable conclusions, a correlation analysis of these elements with measures of performance in a time series would be appropriate. This approach should control for other elements expected to impact long-term performance and possibly include a control group.

Table III. Cognitive styles of firms

Style	%
Intuitive	5.56
Quasi-intuitive	5.56
Adaptive	33.33
Quasi-analytic	22.22
Analytic	33.33

Table IV. Accumulated employee experience

Percentile	%
1 (20-25)	5.56
2 (19-15)	72.22
3 (14-10)	16.67
4 (9-5)	5.56

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