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The Role of Leadership, Individual Creativity and Organizational Climate in the Development of Innovative Capability of Tunisian Companies

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Abstract

Surviving in a changing and hostile environment has become the primary concern of all managers. However, the development of innovative behavior largely depends on the internal and external environment of the company. More specifically, creativity of the employees, behavior of the manager and the organizational climate in general directly influence the innovation capacity of the company. The aim of this research is to study the role of leadership, individual creativity and organizational creativity in explaining innovation capacity. Our survey was conducted on 52 Tunisian companies operating in three priority industrial sectors of the Tunisian economy, namely: Food, Mechanical and metallurgical and Electrical & Electronics. We used the PLS approach to test hypotheses of our research model which allowed us to conclude that innovation is largely conditioned by a creative organizational climate, which in turn mainly depends on leadership and employees' individual creativity.

Key Words: *Leadership, Individual Creativity, Creative Climate, Innovation Capability.*

Introduction

How to survive in a changing and hostile environment has become the primary concern of all managers. Innovation is a solution to this concern. It was identified as a key factor related to the success and survival of the company (Rosenbusch et al.2011). However, Ben Moussa & Zaiem (2013) showed that there are several barriers to developing innovation, of which lack of qualified employees. It is for this reason that many companies have focused on employee training and development of their knowledge. Indeed, the creation of a sustainable competitive advantage depends largely on the ability of employees to adapt to environmental changes. When the company has competent and capable employees to solve problems related to daily tasks, it might be able to differentiate itself from its competitors. Companies are more than ever called to be creative and innovative (Amabile, 1988) to meet customer needs. Several studies have shown that the development of innovative behavior depends largely on the internal and external environment of the company. In our study we focus on internal variables that influence the development of the company innovative capability. In fact, the chances of improving innovation capability depend primarily on the characteristics of the human dimension of the company: employees and leader(s). We cannot imagine a creative organizational climate in the absence of creative individuals and witch an autocratic leader. Any company wishing to embark on the path of innovation should place a growing interest in establishing a climate that encourages initiatives, tolerates errors and remunerates the employees for their creative effort. More specifically, creativity of the employees, behavior of the leader and organizational climate in general, influence in a direct way innovation capability of the company. Previous research has focused on the study of each variable and its impact on innovation separately. Very little research has investigated the relationship between these different constructs together. Our aim in this paper

is to analyze the nature of the relationship between these different constructs together in the Tunisian context. In other words, it identifies in a first step, the effect of leadership and individual creativity on the creative climate of an organization. Then in a second step we study the link between the creative climate and innovation capability. The effect of individual capability and leadership on innovation capability is mediated by a creative organizational climate. After this introduction, we propose a review of the literature on the four basic concepts of our study: leadership, individual creativity, creative climate and innovation capability. Then we present the research methodology adopted to conduct our survey. Analysis and discussion of the results will be detailed in the last section.

Review of the Literature

Innovative Capability

Innovation is a fairly complex process that involves changes in the production process (Therrien et al., 2011). Assink (2006) explains innovation as the changes made in the products and services offered by the company. Therefore, innovation means all changes affecting ideas, processes or products (Nybakk et al., 2009). Innovation capability refers to the organizational traits favoring its adoption (Nybakk et al., 2009). It is considered necessary to develop organizational innovation (Laforet, 2011). Neely et al. (2001) defines, moreover, innovation as the potential for the company to generate innovative products. In fact, whatever the content of this concept, the most obvious fact is that the success of innovation in the company requires continuous support from all stakeholders (Damanpour & Evan, 1984). Hence the importance of the existence of an entire internal environment that promotes the success of an innovation project. Bullinger et al. (2007) distinguish two categories of determinants of innovation namely internal factors and external factors. In this paper only internal factors interest us, particularly the human dimension: employees and leader.

Creative Organizational Climate and Innovation

A creative organizational climate is often seen as a phenomenon that largely influences innovative capability of the company. Anderson & West (1998) define creative organizational climate as collective perceptions shared by members of an organization with regard to the practices, policies and routines. A creative organizational climate is characterized by the support of creativity in terms of encouraging and supporting new ideas. A creative organizational climate largely influences innovation of the company to the extent that an internal environment that encourages and supports new ideas is able to achieve good results. A creative organizational climate is considered the most important factor to produce and implement any new idea. A creative organizational climate provides considerable support to new ideas and proposals from the different members of the company. The research of Chang (2011), and Bolivar- Ramos et al. (2012) shows that creativity is positively related to the innovation of the company. It depends on the responsiveness of the company and the propensity to adopt new ideas (Rubera & Kirca , 2012). A more creative organizational climate reduces employee resistance to any change introduced in the company (Van de Ven, 1986). Hence our hypothesis:

H1: Creative climate is positively related to innovation capability.

Individual Creativity and Ccreative Climate

Creativity is defined as any production of new ideas, in the form of products, services, processes and procedures. It can lead to some interesting changes to the organization (Amabile, 1988). Individual creativity is considered a determinant of innovation capability of the company (Scott & Bruce, 1994). It identifies the real needs of customers and solve problems creatively and effectively (Grewal et al., 2009). Encourage individual creativity of employees within the company allows for a better understanding of customer needs and adaptation of processes and products in a more and more demanding environment. The

success of the company is strongly associated with employees' creative ability to effectively solve customer problems (Grewal et al, 2009). Cummings & Oldham (1996) showed that individual creativity is essential for innovation capability. Creative employees involved in the innovation process are able to develop new opportunities and new products (Hulya et al., 2013) that meet customer needs and can cope with the changes observed in the market. Several studies have shown that individual creativity is necessary for a creative climate and thus for the innovative capability of the firm (Amabile et al, 1996; Shalley, 2004). Where:

H2: individual creativity is positively related to creative climate.

Leadership and Organizational Creativity

Leaders who tolerate risk taking and encourage the adoption and implementation of new ideas with a decentralization and a participatory spirit provide an environment conducive to the development of innovation in an internal environment (Cummings &Oldham, 1996). Improving innovation capability of a company depends largely on leadership style adopted by the manager. Birasnav et al. (2013) showed that leadership plays a very important role in the success of an innovation project . Indeed, a leader who encourages employees and offers them more decision-making autonomy in all actions related to tasks they perform and support new activities (Jung, Wu, & Chow, 2008; Gumusluoglu & Ilsev , 2009). Thus we can formulate the following hypothesis:
H3 : Leadership is positively related to organizational creativity .

Figure1. Modele conceptuel

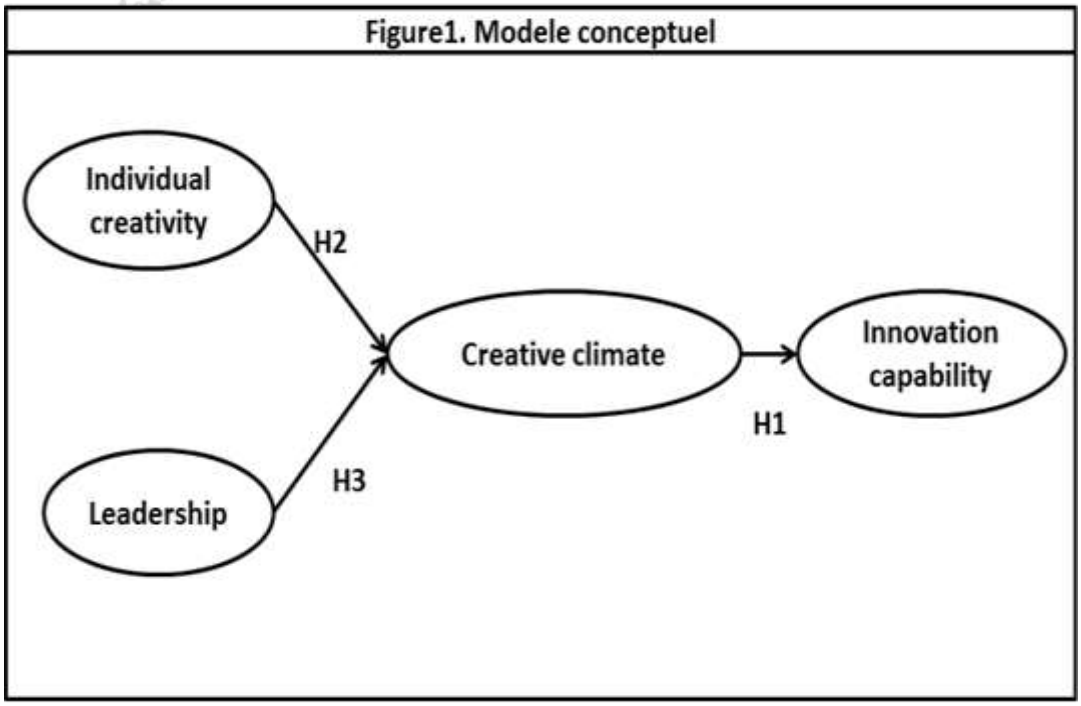

Figure 1 summarizes the overall relationship between the different constructs of our research model.

The Research Methodology

Our survey was conducted on 52 Tunisian companies (Table 1) selected according to the quotas method on three priority sectors of the Tunisian economy: Food, Mechanical and metallurgical and Electrical & Electronics.

Table 1. Characteristics of the sample (N = 52)

Characteristics		Frequence	Perrcentage
Company size			
□	**< 50**	24	46.2
□	**[50, 250[**	16	30.8
□	**≥250**	12	23
Age of the company			
□	**< 5 ans**	16	30.8
□	**[5, 20[ans**	19	36.5
□	**≥ 20 ans**	17	32.7
Type of industry			
□	Food	19	36.6
□	Mechanical and metallurgical	18	34.6
□	Electrical & Electronics	15	28.8

The respondents are senior managers of the companies surveyed. All constructs of our model are reflexive. The items used to operationalize the constructs of our model are borrowed from previous studies. The capacity for innovation construct was measured by four items borrowed from Hult et al. (2003) and used by Yan et al. (2013). The creative climate construct was measured by 3items based on the work of Scott & Bruce (1994). The individual creativity construct was measured by four items based on the work of Tierney et al. (1999). The leadership construct was measured by four items based on the work of Kennedy & Anderson (2002). Each item of the different constructs was assessed on a Likert-type scale ranging from 1 = Strongly disagree to 5 = Strongly agree.

Analysis of the Results

To analyze the data collected from the companies surveyed, we transferred the research model into a structural equation model. We choose the method of partial least squares structural equation modeling (PLS) to test hypotheses of our research model . This method is recommended when the sample size is reduced (Gefen et al . 2000). This is also the case in our study. The smartPLS 2.0 software (Ringle et al. , 2005) was chosen for its simplicity and usability. The process of data analysis has two phases: a measurement model phase and structuring of the model phase.

The Measurement Model

The measurement model involves checking three criteria: construct reliability, convergent validity and discriminant validity (Hair, 2013). Table 2 presents the results of two tests measuring Construct reliability: composite reliability (CR) and Cronbach's alpha. It is clear that all CR values range between 0.882 and 0.932 and Cronbach's α varies between 0.822 and 0.890, exceeding the 0.7 threshold recommended by Straub (1989). The construct reliability of measurement scales is checked.

Fornell & Larker's (1981) assess convergent validity through two criteria: factor loadings and Average Variance Extracted (AVE). Factor loadings of all items are significant and exceed 0.7. For the first criterion, factorial contributions of items of each construct should exceed crossed factorial contributions (Table 3). AVE of all constructs varies between 0.652 and 0.819 and exceeds the required 0.5 threshold (table2).

Table 2. Convergent validity criteria

	AVE	CR	Cronbachs Alpha
Innovation capability	0.652328	0.882251	0.822601
Individual creativity	0.695020	0.901033	0.854706
Creative climate	0.819731	0.931670	0.889743
Leadership	0.699746	0.903014	0.859164

We check discriminant validity using the square root of AVE of each construct (Fornell and Larker, 1981). In our case the square root of AVE for each construct exceeds the inter-construct correlation (Table 4). Therefore the discriminant validity of our model is checked.
In light of all of these tests it can be concluded that the psychometric characteristics of our model are then satisfactory.

The structural model:

To test our hypotheses we conducted a bootstrapping analysis. The analysis was performed in two steps: testing the relationship between our model's constructs. Three criteria are often used to assess correlation between the constructs namely: value of R^2, standardized correlation coefficients (path - coef) and t-values (t- value) .

Table 3. Factor loadings and factor crossed

Items	Innovation Capability	Individual creativity	Creative Climate	Leadership
CIN1	**0.797692**	0.800371	0.699109	0.558254
CIN2	**0.862807**	0.772126	0.612221	0.413240
CIN3	**0.788263**	0.730737	0.710793	0.597442
CIN4	**0.854622**	0.722699	0.550698	0.489286
CRI1	0.783504	**0.848040**	0.702781	0.563139
CRI2	0.779235	**0.873561**	0.547223	0.438663
CRI3	0.776497	**0.810682**	0.672438	0.608510
CRI4	0.753204	**0.829616**	0.514068	0.438507
CRO1	0.711479	0.677551	**0.917327**	0.786426
CRO2	0.739847	0.669770	**0.876580**	0.730912
CRO3	0.736940	0.672020	**0.921581**	0.775373
LDT1	0.583909	0.593352	0.778305	**0.876613**
LDT2	0.678261	0.647651	0.813996	**0.850217**
LDT3	0.418315	0.400929	0.561432	**0.804411**
LDT4	0.419148	0.392603	0.618647	**0.812765**

The value of $R^2 = 0.789$ (the sub-model where creative climate is the dependent variable and individual creativity and leadership are the independent variable), which means that 78.9% of the variance in creative climate is explained by the independent variables included in our sub-model. Indeed, the dependent variable (creative climate) is mainly explained by leadership ($\beta = 0.623$, $t = 10317$) and second by individual creativity ($\beta = 0.354$, $t = 6.355$) . We find that the t-values exceed the required standard ($t > 1.96$) indicating that these relationships are significant (Table 5). The second sub-model (innovation capability is the dependent variable and creative climate is the independent variable) provides a $R^2 = 0.649$, i.e. 64.9 % of total variance of innovation capability is explained by creative climate. The results support for H1, H2 and H3.

Table 4. Correlations between constructs and discriminant validity

Constructs	Innovation capability	Individual creativity	Creative climate	Leadership
Innovation capability	**0.80766825**			
Individual creativity	0.749299	**0.8336786**		
Creative climate	0.805690	0.743521	**0.90538997**	
Leadership	0.644423	0.625637	0.844338	**0.83650822**

Discussion and Conclusion

The aim of this paper is to study the role of leadership, individual creativity and creative climate in explaining innovation capability. The results of our survey, conducted on 52 Tunisian companies operating in three priority industrial sectors of the Tunisian economy, namely: Food, Mechanical and metallurgical and Electrical & Electronics. We found that innovation is largely conditioned by the creative organizational climate, which confirms the work of Hulya & Gunsel (2013), Anderson & wets (1998) and Scott & Bruce (1994). The creative climate of the organization, in turn, depends mainly on leadership and individual creativity of employees. These results confirm the work of Cummings & Oldham (1996), Amabile et al. (1996) and Gilson & Shalley (2004) . It turns out that innovative capability of a firm is mainly due to the human dimension and in particular the will and support of the leader in Tunisian companies.

Table 5. Structural model constructs

.Hypothèses	Relation entre les construits	Path coefficient	t- value	Validation des hypothèses
H1	creative climate → Innovative capability	0.354	6.355	Oui
H2	individual creativity → creative climate	0.623	10.317	Oui
H3	Leadership → creative climate	0.806	18.996	Oui

In fact, the manager should provide more flexibility for employees so that they can makethe necessary changes to improve working methods. Trusting employees is generally profitable for the company and therefore favors the development of innovation. Managers are called to encourage, support and especially accept errors of their employees. In short, managers should be aware of the utility of establishing an internal environment for innovation development. This begins with the recruitment of creative employees capable of producing new ideas and especially setting up a structure that encourages innovation and motivates the search for new solutions to the problems encountered by the organization. Managers should give more liberty of action to employees and support in case of failures. This study has some limitations. The first limitation is the small sample size. Moreover, the measures of all constructs of our model are the result of the perception of the surveyed managers. A second limitation lies in the survey sample, which includes companies that operate only in three sectors. It is recommended to reach a larger number of Tunisian companies operating in several sectors and measure the moderating effect of the sector. Our study takes into account only the variables of leadership and individual creativity as determinants of creative climate, but other variables affect this component. It is therefore recommended to include them in future research.

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