

The Impact of Organizational Culture on Business Innovativeness: The Case of SME's

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Abstract: The majority of studies in the '80s and '90s proposed that a strong culture is essential to the success of an organization. However, some researchers have since disputed this claim, arguing that while some strong cultures lead to success, others fail. Examining several examples from the market, over time, the so-called "case for a strong culture" presents significant weaknesses. The present study, based on the Competing Values Model, examines the effects of a culture's strength on the innovativeness of the organization. A sample of 110 Greek Small and Medium Enterprises (SMEs) was examined, of which a total of 504 people responded to a questionnaire. The participating companies range in size, in terms of the number of their staff, from 20 to 250 members, and come from different market segments. The results showed that organizational culture strength is inversely related to a company's innovativeness and that strong cultures have a negative impact on a company's innovativeness. The main objective of this research is to reinforce the existing knowledge in the relationship between culture and innovativeness, especially in the field of small and medium enterprises since the vast majority of studies concern culture comparisons between large companies using mainly small samples. The focus of this research is on the growing importance of culture given the globalization of the market, the increasing pace of mergers, acquisitions, and strategic alliances between companies with different cultures.

Keywords: SME's, organizational culture, strong culture, weak culture, innovativeness

1. Introduction

Organizational culture is one of the main determinants of the organizational success that induce employees to work and participate in knowledge acquisition, experience, and decision-making (Liu & Almor, 2016; Obeidat et al, 2018). The existence of an organizational culture among organization members motivates them and offers the ability to create and exchange information resulting in the improvement and development of their skills and experiences, enabling the cross-fertilization of ideas. Today's organizations need to be armed with a positive organizational culture and a high level of flexibility to achieve continuous improvement and quality, to create an encouraging positive environment which nurtures innovation. The present study is based on the Competing Values Model by Quinn & Rohrbaugh (1983), which is widely used both for measuring the strength of a culture and for diagnosing the type of organizational culture. The purpose of this study is to empirically examine the relationship between innovativeness and the strength of a culture. The focus of the research is on the growing importance of culture given the globalization of the market, the increasing rate of mergers, acquisitions and strategic alliances between companies with different cultures as well as the ever-increasing difficulty of companies to adapt to a changing environment. In the new global market, the relationships between the various parameters are changing, including the organizational culture and the innovativeness. For this reason, the results of the study are expected to have practical value both for business executives (contributing to the better management of their organizational culture, as it evolves over time) and for business consultants and for academic researchers. The absence of direct studies on innovativeness and culture in the organizational literature is conspicuous. The originality of the study lies in two points. The first point is the fact that the study examines the strength of culture and its impact on the innovativeness of an organization, which is rarely found in the relevant literature for SME's. Secondly, the sample used is also original as there are no corresponding studies for Greek small and medium enterprises (with a number of employees less than 250, according to the European Observatory for SME's, 2020). The focus of this paper is on the impact of organizational culture, on the innovativeness of a company. The findings are expected to provide a broader understanding of the concept of culture and its impact on the organization's ability to innovate. Equally important, however, is the contribution of the study to the further development of knowledge about the field of small and medium enterprises, which has not been adequately studied by the academic community despite its importance in the economies of all countries.

2. Literature review

2.1 Organizational culture

Although there are different perspectives over the meaning and definition of organizational culture, most of them refer to a set of guiding principles and values that will influence every behavior, action and working relationship (Carvalho et al, 2017; Arayesh et al, 2017; Massaras et al, 2014). The definition of organizational culture is a subject of long discussions, since it comes from various scientific fields. As a result, the term is used interchangeably with concepts such as the values and the environment of an organization, or, with norms of behavior and common values of a group of people. Serpa (2016) refers to organizational culture as “as the shared way of being, thinking and acting in a collective of coordinated people with reciprocal expectations” (p. 51). All of these are just aspects of culture or rather the different layers of culture and not the culture itself, according to Schein (1985). Schein (1985) believes that culture entails the deeper beliefs and assumptions, shared by the members of an organization that operate at an unconscious level. These beliefs and assumptions are created and maintained by the company's effort to survive in a hostile external environment and to solve the problems of creating and maintaining the organization. Organizational culture is also associated with trust, loyalty and participation through teamwork which helps managers to be nice and encourage employees to comply with the norms and traditions (Parent & Lovelace, 2018; Popoli, 2017). As a result, cultural elements have a strong influence on individual performance, which in turn contributes to the overall performance and helps employees achieve productivity and efficiency organizational goals (Tănase, 2015; Adeoye & Hope, 2020; Taye, Sang, & Muthanna, 2019). Furthermore, organizational culture is considered to be one of the critical success factors for the implementation and success of quality improvement programs (Carvalho et al, 2019; Samuel et al, 2017). Analyzing modern organizations without including their organizational cultures is difficult. It is obvious that culture is a complex concept, and there is no commonly accepted definition of culture in the literature (Tian et al, 2018). Despite the fact that there is no consensus in the literature on organizational culture, it is argued that organizational culture contains both tangible and nontangible characteristics. In the present study organizational culture is defined as the set of basic assumptions or beliefs and values, which determine the behavior, as well as the mode of operation and activities of an organization. Common values and assumptions determine what behaviors are rewarded, which people are promoted, what is considered as high performance, what kind of relationships exist between the members of the organization etc.

2.2 Innovativeness and organizational culture

Although in several studies “Innovativeness” is one of the criteria for effectiveness, it will be considered as a separate independent variable in this study. Innovativeness is the ability of an organization to introduce, implement and assimilate innovations (Sahinidis, 2010). Like culture, there are many definitions of innovation in the literature, leading to a situation in which, there is no clear and authoritative definition of innovation. Innovation has been defined by various researchers, who described innovation as the production, acceptance and implementation of new ideas, processes, products, or services. The common finding in the literature is that innovation plays a vital role in a company's further development (Zhang et al, 2020; Finco, Bucci, & Bentivoglio, 2018). In the present study, innovation is considered anything new in the field of organization.

Different types of culture are expected to respond differently to each of the dimensions of innovation. A highly innovative culture, for example, would be particularly productive in new ideas but potentially less effective in the phase of assimilation of innovation. On the contrary, a culture with an emphasis on rules and regulations will be less productive in new ideas, since rules characterize also a way of thinking, but at the same time, the innovations decided to be implemented are adopted without delay or modifications (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2016). Researchers also distinguish two types of innovations: Administrative and Technological. Administrative innovations are new programs, new processes, policies, and organizational structures adopted by an organization. Technological innovations refer to innovations in the field of products or markets in the processes of production or provision of services and in the technology of the organization. A third type proposed is cultural innovations, which have to do with the adoption of new practices, norms of behavior and values by the organization, at the initiative of executives (Naranjo-Valencia & Calderon-Hernández, 2018). This type of innovation has not been researched at all, perhaps due to the relatively recent appearance of the term culture in the management literature. Finally, researchers on innovation distinguish between radical (disruptive) innovations, i.e., innovations that contain a high degree of new knowledge (Si &

Chen, 2020), and incremental innovations, which usually improve a product or a process, and enhance the existing capabilities of an organization (Acemoglu, Akcigit, & Celik, 2020).

2.3 The concept of strong or weak organizational culture

One dimension of organizational culture is the strength of culture, which according to Cameron & Quinn (1999) is the ability of culture to influence everything that happens within an organization. Organizations vary in terms of the strength of their culture which may be strong, or weak. The strength of culture characterizing an organization is dependent on the extent to which members adapt to that culture (Thokozani & Maseko, 2017). Many authors believe that strong cultures are generally more effective (Parent & Lovelace, 2018; Odor, 2018). The stronger the culture of the organization, the more confidence is built into employees' commitment. Strong cultures serve as a tool of controlling and motivating employees, hence enhancing their performance (Gochhayat, Giri, & Suar, 2017; Thokozani & Maseko, 2017; Naranjo-Valencia & Calderon-Hernández, 2018). Thokozani and Maseko (2017) found that strong organizational cultures are more successful than weak organizational cultures in accomplishing organizational goals.

However, a respectable number of researchers consider that culture is positively related to business performance, but under certain conditions, such as the type of environment. On the other hand, several studies report that companies with strong cultures outperform those with weak cultures and prevent the innovation process within the organization. They come to a conclusion that, flexibility-oriented cultures enhance innovation because flexibility is associated with creativity, freedom, and a risk-taking attitude, whereas cultures that stress stability and control may inhibit innovation (Naranjo-Valencia & Calderon-Hernández, 2018). If a company prefers to avoid external environment changes and trends, it will not be able to discover and exploit opportunities outside its existing businesses, or beyond its current technical or operational capabilities. Jaskyte and Kisieliene (2006) observed that an organizational culture characterized by stability is inversely related to innovation. It is generally accepted, that strong, cohesive cultures allow a freer expression of member feelings, since the members feel close to one another and can air their frustrations, without fearing irreparable damage in their relationships. However, the intense socialization and the strict adherence to the prevailing norms can generate individual views and ideas strikingly similar, since both the information perception and interpretation processes have been influenced in a specific direction, by the overpowering organizational culture. Such controlling cultures stifle novel thinking and creativity and limit innovation stimuli perception, to those existing within the boundaries of the organizational members' perceived environment (Bilal, Ahmad, & Majid, 2018).

On the contrary, in an organization with a weak culture, employees only adhere to rules and regulations not because they derive satisfaction from their jobs, but because of fear of the consequences of their inactions. Weak cultures make no significant effort, or at least not an effective one, to create the sense of team among their employees. People will do what the tasks require, and no effort will be made to engage in social relationships unless attraction forces them to do so. Their interests, values, goals, and perspectives will be highly diverse and the organizational influence over their external lives will be very low. According to Ashipaoloye (2014), a weak organizational culture, refers to values and beliefs not strongly and widely shared within the organization. In an organization with a weak culture, employees only adhere to organizational rules and regulations not because they derive satisfaction from their jobs, but because of fear of the consequences of their inactions (Thokozani & Maseko, 2017). For Warrick (2017) weak culture describes cultures where norms and practices are unknown or confusing, inconsistent, or not reinforced. Similarly, Bateman and Snell (2013) described weak culture as a situation where every individual has different values so there is a lack of clarity about the goals and principles. An organization with a weak culture finds it difficult to clearly communicate the expectations to employees and thus there is a negative impact on factors such as morality, customer relations, innovation, performance, cooperation, service, and loyalty (Suharnomo, 2017). Table 1 summarizes the main characteristics of strong and weak cultures within an organization (Sahinidis, 2010)

Table 1: Strong vs. Weak organizational culture

Characteristics	Strong	Weak
Inside group Memberships	Many	None more than required
Outside group memberships	Few if any	Varies among individuals
Effect on extra-organizational life	Profound	Non-existent
Effect on activities, interests, perspectives	Profound	Non-existent

Characteristics	Strong	Weak
Shared values	Most	Few
Norm intensity	Strong	Weak
Shared cultural assumptions	All shared	Few shared

Therefore, the first hypothesis proposed is:

H1. *Strong cultures have a negative impact on company's innovativeness*

The relationship between strong cultures and innovation rate is summarily presented in the Figure 1 below (Sahinidis, 2010). The innovation rate increases as the culture becomes stronger, up to a point. Beyond that point, a stronger culture will have an adverse effect on innovation adoption. Formally stated, our second hypothesis is:

H2. *There is a curvilinear relationship between the strength of culture and innovation*

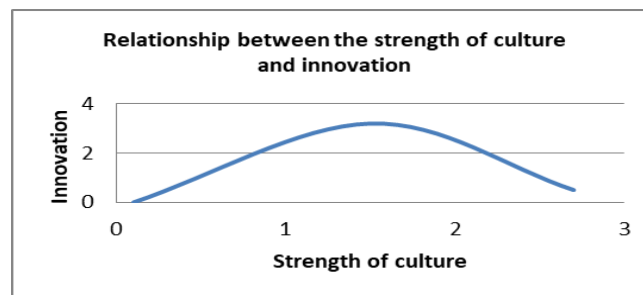


Figure 1: The strength of culture and its relationship with innovation

3. Methodology

To measure organizational culture, we used the Competing Values Framework (CVF). The Competing Values Framework (CVF), proposed by Cameron and Quinn (1999), was used to determine the features of culture. CVF is one of the most significant and widely used models in organizational culture research (Yu, 2009). Cameron and Quinn (1999) distinguish four types of cultures – adhocracy, clan, market, and hierarchy – using two dimensions: flexibility and discretion versus stability and control and external focus versus internal focus and integration (see Figure 2). Four types of organizational cultures are created, by combining these factors with six organizational aspects: dominant characteristics, organizational leadership, employee management, the organizational glue, strategic focus, and criteria for success.

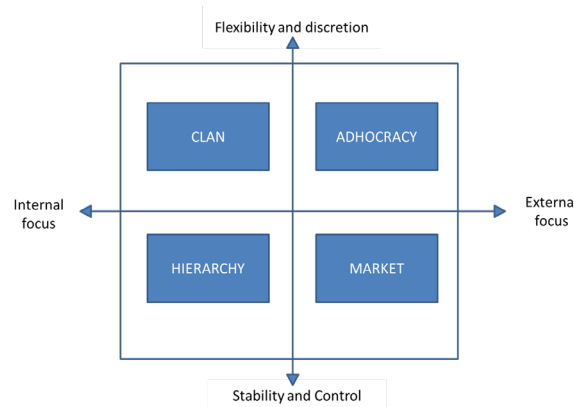


Figure 2: Cameron and Quinn (1999) Model.

- 1. The **adhocracy culture** focuses on flexibility and change, so it is externally orientated. It's more common in firms that operate in fast-paced environments or those aiming to be market leaders. Creativity, entrepreneurship, and taking risks are fundamental values in an adhocracy culture.
- 2. The **clan culture** also emphasizes adaptability, but it is internally oriented. Teamwork, employee involvement, and corporate commitment to employees are all characteristics of a clan culture.
- 3. A **market culture** is externally oriented and preaches control and stability. Goal attainment, consistency, and competitiveness are the main principles of companies with this culture.

- 4. Finally, a **hierarchy culture** is also control-oriented, but it emphasizes in the internal organization. Its key values are efficiency and close adherence to norms, rules and regulations.

The second part of the questionnaire concerns “innovativeness”. The innovativeness of a company, (i.e., how innovative that company is) is measured in the literature in various ways. One of them is to measure the innovations adopted by a company in a certain period and its comparison with other companies operating in the same sector of the economy. The present study uses an adaptation to Greek of the innovativeness measurement instrument used by Russell & Russell (1992), in which the individual is asked to complete 30 questions on a five-point Likert scale regarding his/her degree of agreement, thus describing the business norms which are related to innovation. The strength of culture is one of its key dimensions and has been the subject of a significant number of studies. In the present study, a culture is considered strong when one of the four types of culture mentioned above dominates the business. The greater the difference from the second in type units the stronger the organizational culture (Cameron & Quinn, 1999). The type of sampling used in this survey, in almost all observations, is snowball sampling since the majority of those who agreed to participate in the survey during the first telephone call, eventually withdrew, thus forming the final sample of 110 companies, with a total of 504 respondents. The hypotheses derived from the literature review are examined using the analysis of variance (ANOVA) and the t-test, and the Kruskal-Wallis and Mann-Whitney tests where the samples are small and the use of non-parametric methods according to their model was deemed appropriate. The following analysis used the statistical software package SPSS, v. 19.1.

4. Results

4.1 Organizational culture

The present study confirms the fact that the scale used is a reliable tool for measuring culture. Specifically, the scale reliability for the clan culture has a Cronbach factor $\alpha = 0.8320$. For the adhocracy culture the coefficient $\alpha = 0.7345$, for the hierarchy culture, $\alpha = 0.7071$ and for the market culture $\alpha = 0.7971$. In the sample used in the present study we observed, 58 companies with clan cultures, 2 companies with adhocracy cultures, 18 companies with hierarchy cultures and 32 companies with market cultures. The variable of strength was divided into three parts after a study of the organizations’ relevant scores. Specifically, the total companies in the sample were divided into three groups: those with the strongest cultures, the medium and the low ones, with each group comprising 33.33% of the total sample. Specifically:

- 1: if the strength is less than 6.93 (Low)
- 2: if the strength is between 7.49 and 16 (Medium)
- 3: if the strength is greater than 16.1 (High)

4.2 Innovativeness

Despite the scarcity of similar studies in the literature, the scale of innovation proved to be highly reliable ($\alpha = 0.8861$). In the sample used in this survey, 74% of business executives consider their companies to be innovative, based on the tool for measuring innovation used, while 26% respectively describe their companies as non-innovative. This result comes from the dichotomy of the variable “innovativeness” where the separation value is 64.45, with a minimum value of 37 (the most innovative) and a maximum value of 107 (the least innovative). It is noted that the low score on the variable innovativeness indicates high rates of innovation adoption, while the high score indicates a non-innovative company.

4.3 Statistical hypothesis testing

In the following paragraphs, the hypotheses that emerged from the literature review are statistically tested.

H1. Strong cultures have a negative impact on company’s innovativeness

Table 2: Strength of culture and innovativeness

1 ANOVA					
Innovativeness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	36,96	2	18,480	9,210	,002

1 ANOVA					
Within Groups	1240,274	68	18,239		
TOTAL	1277,234	70			

Descriptives								
Innovativeness								
					95% Confidence Interval for Mean		Minimum Maximum	
STRENGTH	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound		
LOW	22	19,1908	3,48	,7419	17,6478	20,7337	11,32	25,38
MEDIUM	31	18,2391	4,3071	,7736	16,6592	19,8190	6,34	27,25
HIGH	18	17,2618	5,0259	1,1846	14,7624	19,7611	7,07	26,38
TOTAL	71	18,2862	4,2716	,5069	17,2752	19,2973	6,34	27,25

2 KRUSKAL-WALLIS			
Ranks			
	STRENGTH	N	Mean Rank
Innovativeness		22	40,82
	1,00		
	2,00	31	34,9
	3,00	18	32
	TOTAL	71	
Test Statistics			
	INNOVATIVENESS		
Chi- Square	5,384		
df	2		
Asymp.	,002		
Sig.			
a Kruskal Wallis Test			
b Grouping Variable: SRENGTH			

To test this hypothesis, the method of dispersion analysis (ANOVA) with the factor "strength" in three levels was used. The "innovation" is taken as a dependent variable while the levels of strength are: 1: low strength, 2: medium strength, 3: high strength. Alternatively, to avoid the hypothesis that the sample populations are normal with common dispersion, the Kruskal - Wallis criterion is used to test the hypothesis that the three samples are from populations with equal mean values. Considering the first hypothesis, the non-parametric method of Kruskal - Wallis, is supported by p-value = 0.002 which leads to its acceptance (Table 2). Therefore, based on this sample and the given constraints, there is a statistically significant difference in organizational innovativeness between strong, medium and low strength of culture. The hypothesis of strong culture is confirmed as expected.

H2. There is a curvilinear relationship between the strength of culture and innovation.

Table 3: Culture strength and innovativeness

1 ANOVA					
Innovativeness					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23,310	2	11,655	7,625	,015
Within Groups	1831,026	99	18,495		
TOTAL	1854,336	101			

Descriptives								
Innovativeness								
					95% Confidence Interval for Mean		Minimum	Maximum
STRENGTH	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound		
1,00	33	17,9158	3,7832	,6586	17,1196	20,7548	7,35	27,25
2,00	37	18,3845	4,2217	,6940	18,2432	19,9347	9,32	27,25
3,00	32	17,5324	4,8574	,8587	17,3255	20,0347	7,07	27,98
TOTAL	102	18,1123	4,2848	,4243	17,8958	19,579	6,34	27,98

2 KRUSKAL-WALLIS	
Test Statistics	
	INNOVATIVENESS
Chi-Square	4,962
df	2
Asymp.	,018
Sig.	
a Kruskal Wallis Test	
b Grouping Variable: STRENGTH	

Here again, the method of Dispersion Analysis (ANOVA) was used. The hypothesis is accepted at the level of p-value = 0.015 using ANOVA, while using the Kruskal-Wallis test (p-value = 0.018) again the hypothesis 2 is accepted. According to the data of the present research, there is a statistically significant difference between the means of the three levels of culture's strength, in terms of business innovativeness.

5. Conclusions

This study has attempted to demonstrate that the widely shared belief of strong cultures being more innovative than less strong ones is not well founded and deserves further study. Managers should be aware of the strength of their organizational culture. It is particularly important to maintain a moderately strong culture in environments where innovation is vital. Such environments are technology intensive industries, where technological innovation is quintessential. Low technology industries can also benefit from innovation, but to a lesser extent. It is important, however, for every organization's long-term performance, to create and maintain cultures conducive to innovation and creativity, regardless of what environment they operate in, if they are to stay in sync with their environment. The main conclusion is that there is a curvilinear relationship between the strength of culture and organizational innovation. The optimal level of culture strength in the terms of innovativeness is the level of the moderately strong cultures. These cultures are expected to be associated with higher rates of administrative, technological, and cultural innovations and are expected to exhibit higher performance in the long run, than organizations with strong and weak cultures. Regarding the limitations of the current research it should be initially stated that organizational culture is a broad term that encompasses a large number of dimensions, levels and aspects, which makes it an extremely difficult concept to measure and statistically analyze. Next, the research sample is not random as the snowball sampling method is used. The randomness or randomization of the sample would allow conclusions to be drawn regarding the total population. The choice to use a questionnaire leads to the problems faced by all surveys that use this method. These include lack of flexibility in answering questions, recording only the participant's verbal behavior, the lack of control of the respondent's environment, and incompletely answered questionnaires. In addition, the sample used in this research includes companies from different sectors of the economy, so it is difficult to compare them in terms of culture, efficiency or degree of innovativeness. Finally, it would be interesting to look at the results of similar research but in companies based abroad.

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