THE LINK BETWEEN HIERARCHICAL CULTURE AND ADMINISTRATIVE INNOVATION

Fathiya Abubaker Mohammed
Lecturer at the University Sirte in Sirte (Libya).

Abstract: In this paper we examined the link between hierarchical culture type and the frequency of administrative innovation in higher education institutions in Libya. Although much has been written about the link between organizational culture type and the frequency of innovation, no previous studies has been undertaken in the North Africa region, particularly in Libya. The main value of this paper is its analysis and testing of the relation of hierarchical culture and administration innovation. In addition, this topic has not been studied in depth and requires attention to hierarchical culture and administration innovation. The study used Organizational Innovation Assessment Instrument, and the Organizational Culture Assessment Instrument. Using Pearson correlation allowed us to explore the linkage between the independent variable and the dependent variable in public universities in Libya.

In the study, hierarchical culture was hypothesized to have a positive correlation with frequency of administrative innovation. To test this hypothesis, data were gathered from 780 employees of higher education institutions in Libya. Respondents for the study included senior executives, administrators, and faculty members at Tripoli university, Benghazi university, Sirte university, Misurata university, Al Jabal Al Gharbi University and Sabha university. The researchers employed a quantitative method to determine the link between hierarchical culture and administrative innovation within the public Libyan universities. The findings indicate that the hierarchical culture type was statistically significantly related to administrative innovation. Specifically, a low positive correlation was found between hierarchical culture type and the frequency of administrative innovation.

Key words: organization culture, hierarchical culture, organizational innovation, administrative innovation.

INTRODUCTION

Innovation has become the mainstay of every organization because of the fast changing business world of today. It has been made possible by rapid technological change, shorter product runs, and a higher rate of new product growth and, in turn, it has also changed the nature of global economic growth (Cavusgil et al., 2003). Innovation has, however, become increasingly complex given changing customer requirements, extensive competitive pressure and rapidly evolving technology (Plessis, 2007).

Given the increase of global competition, there is a widespread recognition that innovation is a key force that drives economic development; and this is witnessed in nations that are technologically advanced. In these nations, technological change occurs frequently in many organizational operations (Huang & Liu, 2005). In this context, Roberts (1998) pointed out that the performance, and even the survival, of organizations depends more than ever on their ability to achieve a solid and competitive position and on their flexibility, adaptability and responsiveness. For this reason, it is hardly surprising that there is a growing interest in innovation as a strategy that allows the organization to improve its flexibility, competitive advantage, and performance (Nooteboom, 1999).

A review of previous studies reveals that most existing studies have focused on employee creativity (Brindley, 2008; De Miranda et al., 2009; Livingston, 2010; Troman et al.,2007) while the implementation of ideas is explored far less often. The current study includes an investigation both of behaviours in the scope of idea generation and of the implementation of these ideas as important elements of innovative behaviour, as well as the role hierarchical culture plays in enabling and enhancing such behaviour.

Moreover, innovation has been much studied and can help clarify the impact of organizational culture on organizational innovation, which is not well known. Therefore, this study will investigate the link between hierarchical culture and administrative innovation. The researcher employed a quantitative method to determine the relationship between hierarchical culture and administrative innovation within universities in Libya.

The importance of organizational culture and its contribution to the organization's effectiveness and success is well established (Gregory et al., 2009; Zavyalova & Kucherov, 2010).). A sound organizational culture is quite possibly the most critical factor determining an organization's aptitude for sustainable development. It is remarkable to note that cultural input can be a factor in shaping the brand image of a company which in effect may have significant positive and negative implications. In a situation where the organizational culture is incompatible with the core values and operational strategy of the organization, it can become a significant liability for the entire organization. Therefore, to keep organizational culture vital and relevant, employees need a deep understanding of the strategy and mission of the organization (Woodbury, 2006; Zheng, 2009).

In many empirical studies, the process of innovation emphasized different stages of a product outcome (Ball, 2005); however, little emphasis was placed on the process of innovation from individual to organizational level supported by innovation climate. Furthermore, innovation studies were predominantly restricted to manufacturing, while service industries were seldom used as a context for empirical research (Revati, 2005). The purpose of the present study is to address the relationship between the hierarchical culture and administrative innovation in one service industry; namely, public universities. If the organizations better understand this relationship, they can potentially enhance their value and ultimately achieve greater success.

The Problem Statement

Euchner (2012) suggested that innovation is the successful exploitation of new ideas. It is a very important ingredient for competitiveness, productivity and social gain in organizations. Business organizations currently face many issues and problems that require their leadership and staff to consider reducing reliance on the traditional approach of solving problems and utilizing a creative approach instead (Al-Baraqi, 2008).

In most Libyan organizations, uniformity and routine characterize the manner in which employees carry out their daily tasks (Twati, 2006). Thus, it would not be expected that they would introduce innovative features to improve their efficiency. While a number of studies have investigated organizational innovation, in most cases the researchers paid little attention

to the organizational characteristics related to organizational innovation (Obenchain, 2002). Some Libyan institutions have attempted to introduce innovation but they lacked an understanding of organizational culture that allows interaction and the exchange of thoughts, and provides managers with the opportunity to carry out their duties and make decisions related to the problems they face. The primary aim of the present study, therefore, is to focus on the role of hierarchy culture in innovation

Twati and Gammack (2004) suggested that an organization's capability to respond to environmental pressures is determined, in part, by its resources, processes and cultural values. In spite of numerous writings and studies on organizational culture and its impact on organizational innovation in the United States and Europe, only a few studies have explicitly examined the dynamic relationship between these variables in the North Africa region, particularly in Libya. Therefore, this study addresses this void in the current literature through an investigation of the relationship between hierarchy culture and Administrative innovation in higher education institutions.

To facilitate the study of the impact of the hierarchy culture on administrative innovations of selected Libyan public universities and to better understand this relationship, the following research question was posed:

Question 1: What is the relationship between the hierarchy culture and administrative innovation in higher education institutions in Libya?

Objective of the Study

The primary purpose of this study was to explore the relationship between hierarchy culture and administrative innovation in higher education in Libya.

There is some empirical evidence that supports a link between organizational culture and organizational innovation, but further study is needed (Kenny and Reedy 2006; Sarros, Cooper, and Santora 2008; Whittinghill, 2011), particularly to better understand the relationship between hierarchy culture and Administrative innovation in public organizations.

Theoretical Framework and Research Model

The Competing Values Framework originally emerged from empirical research on the question of what makes organizations effective (Quinn & Rohrbaugh, 1983). It has been used to examine the relationship between organizational culture and organizational effectiveness in colleges and universities (Zammuto and Krakower, 1991) and organizational performance (Deshpande et al., 1993). Other researchers have expanded this model to include a model of cultural congruence for organizations (Cameron and Freeman, 1991); a Model of Organizational Culture Types (Deshpande et al., 1993); the Competing Values Framework of leadership roles, effectiveness criteria, and core management theories (Cameron and Quinn, 1999); and the Competing Values Model of Organizational Effectiveness (Zammuto et al., 2000).

Research has provided several reasons for using the Competing Values Framework to evaluate organizational cultures: firstly, it gives a detailed description of the organizational cultures;

second, it describes the components of these cultures; third, it gives a method of evaluating similarities and differences in cultures; and fourth, it provides a way to measure and analyze cultures (Creque, 2003).

The quadrants of the Competing Values Framework are based on two dimensions: structure and focus. The first dimension ranges from flexibility at one extreme to control at the opposite extreme. The second dimension ranges from an external focus to an internal focus (Schein, 1985). The cross-hairs of this model result in four quadrants that precisely match the main organizational forms that have been developed in organizational science (Cameron & Quinn, 1999). These include: the open systems model, the human relations model, the internal process model, and the rational goal model. Cameron and Quinn (1999) termed the culture types in the four quadrants as adhocracy, clan, hierarchy and market, respectively.

The organizational culture model, which is the focus of this study, is based on one cultural type that has been shown in the literature to have an influence on organizational effectiveness: Hierarchy culture, which is summarized as follows:

Hierarchy Culture: characterized by regulations and formal structures where formal rules and policies hold the organization together, procedures govern what people do, effective leaders are good coordinators and organizers, maintenance of a smooth running organization is important and the long-term concerns are stabled, predictability and efficiency (Alexakis, Platt, & Tesone, 2006, Koutroumanis & Alexakis, 2009).

Administrative Innovation

Innovation is the key to potential development that increases the competitiveness (Lam, 2011). It needs a supportive environment, risk-taking behavior, merging into bigger organizational units and allowing change in the current processes and organizational hierarchy (Oetinger, 2004). Another scholar, (Fairholm, 2009) considers that innovation is the essence of the organizational strategy. Singh (2011) suggested that innovation is the use of new technical and administrative knowledge to offer a new product or service to customers.

Administrative innovations are new approaches and practices to motivate organizational members, devise strategy and structure tasks and units, and modify the organization's management processes (Birkinshaw et at.' 2008).

Development of Research Hypothesis

There is significant empirical evidence to suggest that organizational culture has been a key factor related to organizational innovation (e.g. Acosta et al.,2012; Euchner, 2012; Cronley, 2011; Danes et al., 2008). The majority of the research that has addressed this relationship has used the CVF as the basis for the conceptualization of culture and its impact on organizational innovation. This line of research can be divided into two sections. First, there are a number of studies that have investigated the relationship between organizational culture and different types of innovation. Second, there is a smaller amount of research that has examined the relationship between cultures across the four types of organizational innovation.

Link between Hierarchy Culture and the Frequency of Administrative Innovation

Scott-Findlay & Golden-Biddle (2005) suggested that understanding the culture of an organization culture is necessary for understanding organizational behavior. Other scholars, (Cakar & Erturk, 2010) have pointed out that organizational culture has been regarded as contributing to enhance organizational innovation. Empirical research has been conducted to support this position. Some recent research has identified a relationship between organizational culture and organizational innovation (Dasanayaka, 2009; Kenny & Reedy, 2006; Semercioz et al., 2011; Tabor, 2007; Valencia et al., 2011).

A hierarchy culture is often found in formal, structured organizations that emphasize smooth running, stability, predictability and efficiency. Such organizations rely on formal rules and policies. Cameron and Quinn (2011) and Berrio (2003) argued that the standardized rules and procedures, and control were valued as the keys to success. Other research suggests that a negative relationship exists between hierarchy and innovation (Dobni, 2008; Henard & McFadyen, 2008; Schein, 2004) and that an organic organizational form is more appropriate for innovation. Hence, we attempt to determine the relationship between a hierarchical culture and the administrative innovation by means of the following hypothesis:

H_o1: A hierarchy culture has no statistical significant correlation with the frequency of administrative innovation.

The central point of this hypothesis is to explore the link between hierarchy culture and the frequency of administrative innovation, as shown in Figure 1.
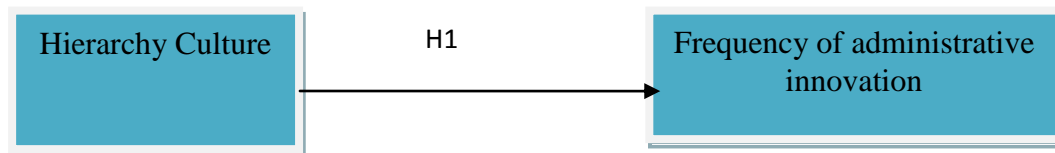
| Hierarchy Culture | →H1→ | Frequency of administrative innovation |

Figure 1: link between hierarchy culture and the frequency of administrative innovation

Research Method

This study used quantitative research questions from the survey instrument, Organizational Culture and Organizational Innovation Assessment Survey, to determine the link between hierarchy culture and administrative innovation among employees within the universities under study.

The questionnaire used consisted of three sections. The first section elicited demographic information, including functional level, gender, years of service, type of service and educational qualifications. This information was used to determine the characteristics of the sample for statistical comparisons. Secondly, the respondents were asked to evaluate the current situation. Based on Cameron and Quinn's (1999) Organizational Culture Assessment Instrument, this evaluation included the following six items; Dominant characteristics, Leadership style, Management style, Organization bonds, Organizational climate, and Criteria

of success. In the last section, the respondents were asked to identify the frequency of administrative innovation in their organizations. This section was based on the conceptualization of Perri 6 (1993) and Shin (1996).

Scope of the Study

Understanding the culture and organizational innovation of higher educational institutions, both of which are key elements to success and effectiveness, would offer great value and utility to the management of those organizations. However, to date a methodology to explore organizational effectiveness by investigating the relationship between hierarchy culture and administrative innovation within the environment of Libyan higher educational institutions has not been developed. To conduct this research, six universities in Libya were evaluated to determine the organizational culture and organizational innovation that are currently in operation.

Research Site, Population and Sample

Data were collected from employees in the public universities of Libya located in the states of Tripoli, Benghazi, Sirte, Misurata, Al-zawia and Sabha. In this study, "employees" refer to staff of public universities who have served more than three years with the university. The targeted individuals of this study are President, trustees, deans and faculty members of the university from various departments. A total of 130 individuals were selected from each university, with the following breakdown based on their position: (35) Trustees (35) Presidents (15) Deans, and (45) Faculty members.

The sample was selected based on convenience sampling; i.e. only willing respondents were selected among the staff of the institutions. However the number of respondents in particular posts or groups was controlled to ensure a more representative sample.

The Response Rate for the Questionnaires

The study setting was the work environment in the respective selected universities and participation was voluntary. The unit of analysis was the individual employees who responded to the questionnaire. A total of 780 surveys were distributed to six universities - one hundred and thirty copies to each university. Sets of questionnaires were sent to the Deans and Heads of the institutions and they were informed of the sample selection classification requirements. The deans then distributed the questionnaires to all willing respondents in the various groups specified. Out of the total 780 distributed, 600 copies were returned fully answered and were used for the analysis (77.7 per cent of the total number distributed). This return rate can be considered reasonable and useful for the purpose of analysis.   Six copies were not completed properly and thus were excluded from the analysis, while 174 copies (22per cent) were not returned at all. Table 1below shows a summary of response rates for the respondents, according to the different universities.

Table 1: Summary of Response Rates for the Respondents

Questionnaires Numbers	Name of university						Total Number
	Garyounis	Al-fateh	Sirte	Al Jabal Al Gharbi	7th of October	Sabha	
Distributed	130	130	130	130	130	130	780
Returned	88	104	120	87	100	108	606
Not returned	42	26	10	43	30	22	174

Overview of the Study

The study setting was the work environment in the six respective sampled universities and participation was voluntary. The unit of analysis was the individual employee who responded to the questionnaire. The researcher set out to examine whether there was a link between hierarchy culture (as the independent variable) and administrative innovation (as the dependent variable) in six public Libyan universities. Survey respondents included executives, administrators, and faculty members from Tripoli University, Garyounis University, Sirte University, Al Jabal Al Gharbi University, Misurata University and Sabha University.

The Likert scale used included six possible responses from 1 (low) to 6 (high) for each question (1 = strongly disagree, to 6 = strongly agree). Additionally, the Likert scale enables the creation of visual representation of the organization's culture as a means for identifying cultural strength and balance.

Reliability Score for the Research Instruments

In the current study Cronbach's alpha was used to determine the reliability of scales used in the questionnaire (Sekaran, 2000; Spiliotopoulou, 2009). Alpha scores exceeding 0.7 are considered to have passed the acceptable reliability thresholds (Cooper & Schindler, 2006). SPSS 18 was used to compute Cronbach's alpha for the seven items hierarchy culture scale and the two items administrative innovation scale. This study confirmed a high reliability coefficient for hierarchy culture and administrative innovation than those achieved by Cameron & Quinn (1999), and Obenchain (2002) in their study, as can be seen in Table 3 and Table 4.

Table 3: Cronbach's Alpha for Hierarchy Culture

Organizational Culture Type	Cronbach's Alpha	
	Current Study	Cameron &Quinn's Study (1999)
Hierarchy	0.89	0.78

Table 4: Cronbach's Alpha for Administrative Innovation

Organizational Culture Type	Cronbach's Alpha	
	Current Study	Obenchain's Study (2002)
Administrative	0.83	0.65

A comparison of the alpha coefficient in Table 3 revealed that the Cronbach's Alpha obtained by Cameron and Quinn (1999) for hierarchy culture was lower than the measure obtained in the current study. The results of reliability analysis in Table 4 revealed that the Cronbach's Alpha for administrative innovation obtained in the current study was higher than the Cronbach's Alpha obtained by Obenchain (2002). The difference in measures obtained for the hierarchy culture and administrative innovation could be attributed to cultural, organizational or other demographic factors.

Descriptive Statistics

This section presents the quantitative findings from the study. Descriptive statistical analyses were conducted on the demographic information. This is followed by a discussion of the descriptive analysis of the independent and dependent variable measures. The use of the descriptive quantitative method means that this research can make a contribution to the existing literature on the subject in a manner consistent with previous research efforts. This method also makes possible the comparison of research results with those of other researchers who have used or may use the selected survey instrument (Cameron & Quinn, 1999) to identify hierarchy culture. The following will be a brief discussion on the results of this analysis.

Demographic Information

The demographic data were used to present information about the institutions from which the respondents who completed the questionnaire were drawn as well as the characteristics of the respondents themselves. This is critical to understand the representativeness of the sample, in that the makeup of the demographic information facilitates a foundational comprehension of the distinctiveness of the sample population used for the research. Demographic data in this research included the respondents' functional level, gender, type of service, number of years of service, and educational qualification.

I. Functional Level

Figure 2 shows that the typical respondent (N = 265) was currently employed as a lecturer (44.2%), followed by those who functioned as a president (27.3%), followed by those who functioned at the level of trustee (15.3%), and lastly by those who functioned as a dean (13.2).
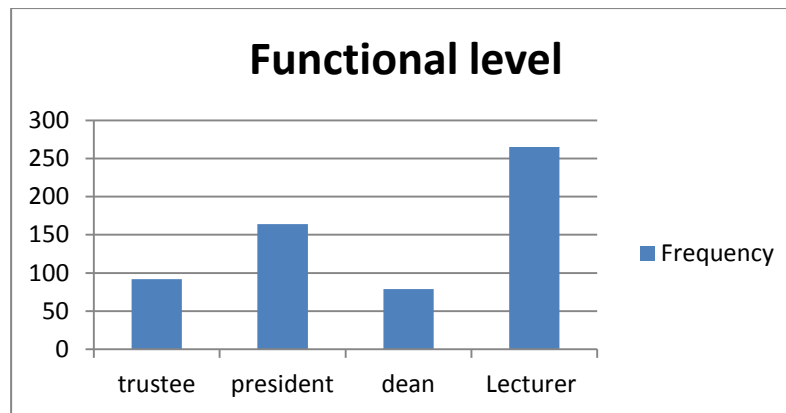
Figure 2: Distribution of Respondents by Functional Level

Gender

Figure 3 shows that males comprised 64.7% (N=388) of the total number of participants, while females accounted for 35.3% (N=212).
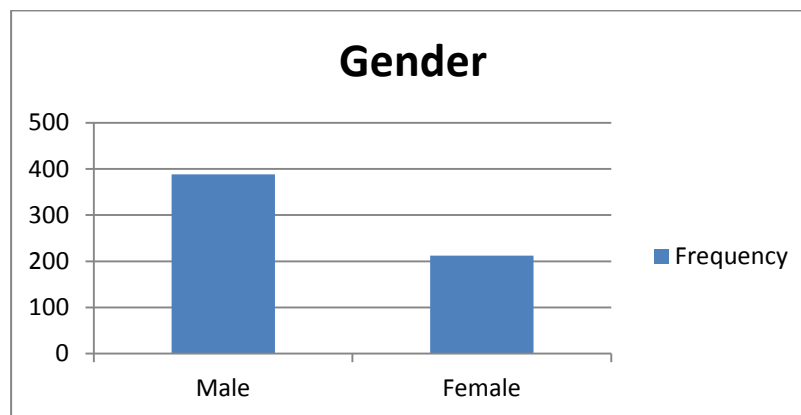

Figure 3: Distribution of Respondents by Gender

Type of Service

Figure 4 shows that 58.3 % of the respondents reported that they held full-time lecturer tenure with their universities, and 31.3 %, of the respondents reported that they held full-time administrative staff tenure with their universities, while (10.3%) of the respondents reported that they were part-time lecturers at their universities.
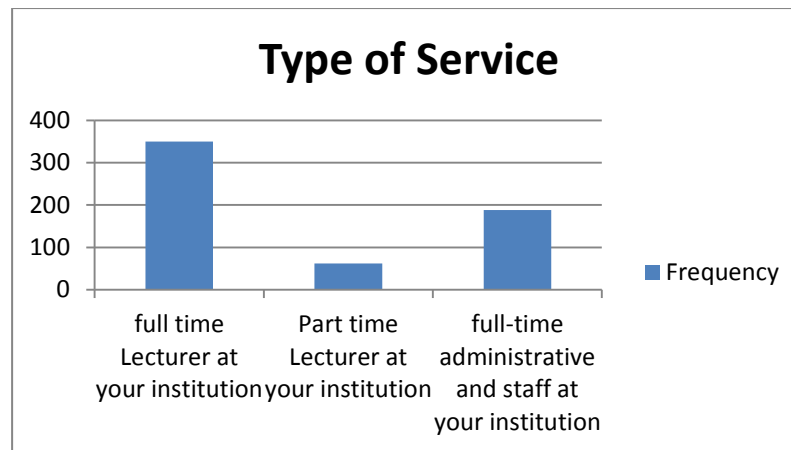
Type of Service

Figure 4: Distribution of Respondents by Type of Service

Years of Service

The typical respondent (N = 251) had completed five or fewer years of service (41.8%), including Faculty, President, Dean, etc. The remainder of the respondents was distributed as follows: 15 years of service and over (22.2%), 6-10 years of service (19.0%), and 11-15 years of service (17.0%), as shown in Figure 5.
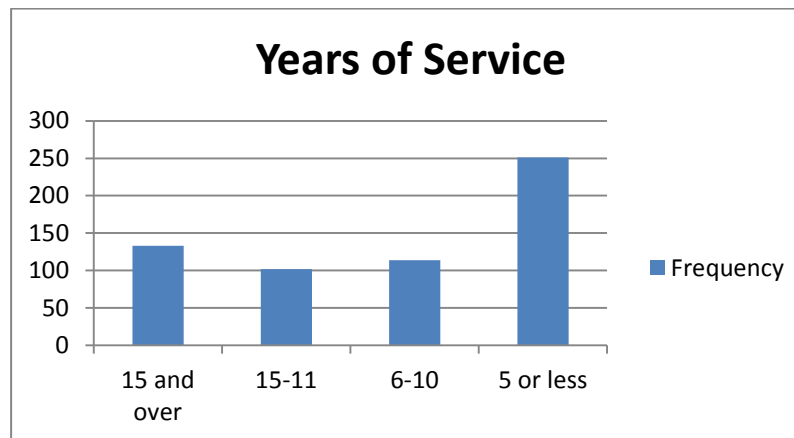

Figure 5; Distribution of respondents by Years of Service

Educational Qualification

Figure 6 shows that Master's degree holders comprised (41.3%) of the total number of participants, followed by a Doctorate degree (39.5%), higher diploma (12.3%), and Baccalaureate (6.8%).

Although the demographics were incorporated into the data set, they were used to better understand the sample. The results of the sample showed that the respondents were predominantly males, well-experienced and with a long tenure of service at their universities.
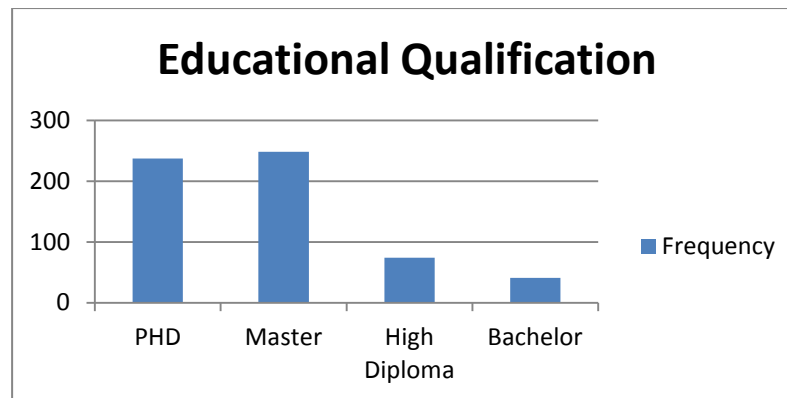
Figure 6: Distribution of Respondents by Educational Qualification

Descriptive Analysis of Variance

Descriptive analysis was used to summarize the collection of data received from the participants in an understandable way for the survey. The descriptive statistics portrayed a comprehensive vision of the sample by displaying the mean, standard deviation, minimum and maximum of the collected data. The mean suggests the central tendency of the data while the standard deviation measures the dispersion or variation in the distribution; the maximum indicates the largest data values and minimum indicates the smallest data values (Gibilisco, 2004).

The Independent Variable

The independent variable measure of hierarchy culture (OC) was Quinn and Cameron's (1999) Organizational Culture measure. Six additional dimensions of OC are identified, and items were developed to measure these dimensions. These are discussed in the following summary. The results in Table 5 show the hierarchy culture score ranged from 2.01 to 5.99 with a mean of 4.08 and a standard deviation of 1.19.

Table 5: hierarchy Culture - Descriptive Statistics

Organizational Culture Type	Mean	Std. Deviation	Minimum	Maximum
Hierarchy Culture	4.08	1.19	2.01	5.99

The Dependent Variable

This study employed a conceptualization of organizational innovation similar to Perri 6 (1993) and identical to Shin (1996) and Obenchain (2002), that categorizes types of organizational innovation as either technical innovation or administrative innovation. The dependent variable was measured using two scale items. The respondents were asked to rank their responses to the items based on a 10- point scale (1 to 10) among the two items of administrative innovation in order to identify the frequency of administrative innovation in their universities. A score of 5 was considered the midpoint score. Any score below 5 was considered "lower than average" and any score above 5 was considered "higher than average". Scores below 3 were considered "very low" and scores above 7 were considered "very high".

Administrative innovation includes two sub-types, "Create new organizational structures for the management of people" and "Build new inter-organizational relationships with other organizations". As shown in Table 6, "Create new organizational structures for the management of people" was implemented 5.24 times by the institutions in the sample during the previous three years, with a standard deviation of 1.11. The mean frequency for the creation of new inter-organizational relationships was similar at 5.43 times, with a standard deviation of 1.24. The results showed that the lowest score for each innovation category was 1 and the highest score was 7.

Table 6: Frequencies and Distributions of the Administrative Innovation

Administrative innovation	Mean	SD	Range
Creating new organizational structures	5.24	1.11	2-7
Building new inter-organizational relationships	5.43	1.24	1-7

Total Frequency - Administrative Innovation (mean) = 10.67 (5.34)

The Hypothesis Testing Results

The research question examine the relationship between hierarchy culture and the frequency of administrative innovation. Pearson correlation was used to determine the direction and strength of the relationship between independent variable and dependent variable. The Pearson correlation procedure is the typical research tool used by others to find the relationship between variables (Chin-Loy & Mujtaba, 2007; Schimmoeller, 2007; Zheng, 2009). The table below depicted the finding of the analyses using Pearson correlation coefficients for: (1) hierarchy culture (2) administrative innovation.

Ho1: Hierarchy culture has no statistical significant correlation with organizational innovation. Results of testing the null hypothesis using Pearson product-moment coefficient of correlation were: r = 0.26, p<. 001. The null hypothesis was rejected and the alternate hypothesis was supported. The result in Table 5 indicates that there is a statistical significant with positive correlation between hierarchy culture and organizational innovation capability, which means that the two variables change in the same direction.

Table 5:   **Correlations between Hierarchy Culture type and Administrative Innovation**

Hierarchy Culture	Administrative Innovation		
	Pearson coefficient	P-value	Correlation Decision
Hierarchical culture	0.26**	<.001	Ha4 was supported

In each case as we can see, the null hypothesis was rejected and the alternative hypothesis was supported. Interpretations of the findings will be discussed in detail in the next section.

Discussion:

Although much has been written about the relationship between organizational culture and organizational innovation, no previous studies had been undertaken in Libya to establish the relationship between these variables in a different socio-economic and cultural environment. Therefore, the present research sought to evaluate the relationship between organizational culture and organizational innovation in a different environment and propose how the findings may differ under different types of environments. It was anticipated that the findings would thus provide scholars and practitioners with a more targeted approach to evaluate cultural influence on organizational innovation.

The findings indicate that this culture type was statistically significantly related to administrative innovation. Specifically, a low positive correlation was found between hierarchical culture type and the frequency of administrative innovation. Detailed analysis of the results of tests for each hypothesis is explained in the following section.

Hierarchical Culture and Administrative Innovation

The result demonstrated there is a statistical significant with positive correlation between hierarchical culture and administrative innovation, albeit with a relatively weak coefficient of determination ($r=0.26^{**}$). Therefore, the null hypothesis was rejected as support was found for the alternative hypothesis.

Hierarchical culture stresses order and regulations with policies and procedures providing the main direction for workers, as assumed by Cameron and Quinn (2011). Like the market culture, a hierarchical culture stresses control and stability, but with an emphasis on internal maintenance. Leaders take on the coordination and organization of responsibilities (Schein, 2004).

Prior to the study, the researcher assumed that a negative link existed between hierarchical culture and the frequency of administrative innovation. Contrary to expectations, a positive relationship was found between hierarchy culture and the frequency of administrative innovation. This finding does not support the common perception held by researchers in the field of management that an organization is likely to be more hierarchical when its employees are less innovative (Henard & McFadyen, 2008; Robbins & Judge 2009).

In addition, this finding that the presence of a hierarchy culture type had a significant positive relationship with the frequency of administrative innovation was not consistent with the findings of Cameron and Quinn (1999) and Schein (2004), who found that the presence of hierarchy culture had a negative relationship with the frequency of administrative innovation. As Damanpour (1991, p. 562) stated: "Organizations with diverse and differentiated task structures initiate more innovations, and those with formalized and centralized structures implement fewer innovations". Kelley (2010) claimed that organizations that want to have a culture that supports innovation must first master the lower levels of the hierarchy. Moreover, it is argued that culture supporting innovation rejects practices and behavior which hinder innovation such as rigidity, control, predictability, and stability (Dobni, 2008; Jassawalla & Sashittal, 2002; Tsai et al., 2009). On the other hand, this finding is consistent with the

dominant operational theory which stresses that control fosters efficiency and therefore effectiveness. Clear lines in decision- making authority, standardized systems and procedures, and control mechanisms were appreciated as the keys to success, according to this theory (Berrio, 2003; Cameron and Quinn, 2011).

In another article, Dobni (2008) maintained that an organizational culture which encourages innovation has the characteristic features of engaging individuals to important creativity, involves risk taking, cooperation, and value seeking, and is solution-oriented, communicative, instills trust, respect for each other, and is quick to uptake in making decisions. Jassawalla and Sashittal (2002) argued that culture supporting innovation refuses practices which hinder innovation such as perseverance, stability, expectedness, and control.

In summary, the results of the present study showed that there is a positive relationship between hierarchy culture and the frequency of administrative innovation.

Several possible reasons may account for this inconsistency between the findings of this study and the findings of other studies. These include the differences in university culture in the two societies (western and eastern). In particular, in the Libyan society, the religion of Islam played an essential role in creating the cultural values of individuals. In Islamic culture, faith, morals and community practices are strongly linked. Consequently, Muslims consider Islam as their way of daily life (Twati & Gammack, 2007).

In addition, the Libyan institutions emphasize the strong relationship between compliant behaviors and cooperation and collectivism, typical of collectivist cultures (Hofstede, 2001), in which managers care about their employees in different situations (Twati & Gammack, 2004). These cultural dimensions strongly affect the performance of employees in the Libyan educational institutions. This social structure and cultural background affect the relationship and communication within Libyan universities in terms of treatment of employees towards one another and in creating an environment that encourages administrative innovation.

Another possible reason, in developing countries like Libya, is that the leader in the organization commands high respect as the basis of the hierarchy culture. Hence leaders were able to dictate the organizational direction firmly and achieve the innovation targeted. In developed countries, hierarchy culture is not so apparent and it is more difficult for a leader to dictate their subordinates to push for innovation. The difference in the results of previous studies could also be attributed to the differences in sample numbers, equal versus unequal numbers in each group, and the differences in statistical testing.

Based on the above discussion, in order to implement innovation in higher education institutions, it is necessary to have rules, regulation and uniformity (hierarchy).

Conclusion

Higher education is the most important sector in the economy of many countries. In order to achieve an education system of a high standard in Libyan universities under study, many problems and challenges must be addressed. Some research on education system in Libya has suggested that innovations in education must be implemented. A number of comprehensive

reviews have been written with regard to the factors that may influence innovation. Organizational culture appears to have an influence on the extent of innovation in an organization (Tuan & Venkatesh, 2010). Given the importance of innovation, there is a need for a deeper look into the nature of organizational culture and for an investigation into its relationship with organizational innovation.

Similar to previous studies, this study found that that a relationship existed between hierarchy culture and administrative innovation; in other words, hierarchy culture was positively correlated to administrative innovation. Therefore, increased attention by the organization to hierarchy culture would naturally bring about enhanced capabilities of administrative innovation. A better understanding of this relationship would lead organizations to increase their ability to make wise choices relating to the successful implementation of administrative innovation. Therefore, selected Libyan universities should undertake measures to actively create hierarchy culture that would support innovation activities.

It is hoped that the current study will be helpful to other researchers in their search for answers regarding the relationship between organizational culture and organizational innovation in the public sector, especially in countries undergoing rapid transformations from traditional societies to modern nations.

References

1. Acosta, M.C.A, Ramos, L.G, Rio, F.G.N & Morejon, V.M.M. (2012). "Organizational Culture and the Learning Organization: An analysis from Innovation Perspective", *Revista Internacional Administracion & Finanzas, Vol. 5, N. 1, pp. 33-52.*

2. Alexakis, G., Platt, A. R., & Tesone, D. V. (2006). "Appropriating biological paradigms for the organizational setting to support democratic constructs in the workplace", *Journal of Applied Business and Economics. Vol.6, No.1, pp. 17-28.*

3. Ball, S. R. (2005). The role of organizational culture in innovation adoption: Teaching through the Internet in specialized schools of business, The Dissertation of Doctor's Degree, Philosophy , Phoenix University, United States.

4. Berrio, A. (2003). "An organizational culture assessment using the competing values framework: A profile of Ohio State University extension", *Journal of Extension, Vol. 41, No.2, pp. 293-316.*

5. Birkinshaw, J., Hamel, G., & Mol, M. J. (2008). "Management Innovation", *Academy of Management Review, Vol.33, No.4, pp. 825-845.*

6. Brindley, D. (2008). "Culture, Creativity, and Research', *New Review of Academic Librarianship,Vol. 14,pp.17–35.*

7. Cakar, N. D., & Erturk, A. (2010). "Comparing Innovation Capability of Small and Medium-Sized Enterprises: Examining the Effects of Organizational culture and empowerment", *Journal of small business management, Vol.48, No.3, pp. 325–359.*

8. Cameron, K. S. & Quinn, R.E. (1999). *Diagnosing and Changing Organizational Culture.* Upper Saddle River, NJ: Prentice-Hall.

9. Cameron, K. S. & Quinn, R.E. (2011). *Diagnosing and Changing Organizational Culture: Based on the Competing Values Framework,* 3rd ed. San Francisco: Jossey-Bass.

10. Cavusgil, S.T., Calantone, R.J. & Zhao, Y. (2003). "Tacit Knowledge Transfer and Firm Innovation Capability", *Journal of Business & Industrial Marketing, Vol. 18 No. 1, pp. 6-21.*

11. Creque, C., A. (2003). Organizational Culture Type and Business Process Orientation Congruence in Buyer-Seller Relationships The Dissertation of Doctor's Degree, Business Administration, Nova Southeastern University, United States.

12. Cronley, C. (2011). "Cross-Level Analysis of the Relationship Between Organizational Culture and Technology Use Among Homeless-Services Providers", *Cityscape, Vol.13, No.1, pp.7-31.*

13. Damanpour, F. (1991). "Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators",*Academy of Management Journal, Vol. 34, No.3, pp.555-590.*

14. Danes, S. M., Lee, J., Stafford, K., & Heck, R. K. Z. (2008). "The effects of ethnicity,families and culture on entrepreneurial experience: An extension of sustainablefamily business theory", *Journal of Developmental Entrepreneurship, Vol.13, No.3, pp. 229- 268.*

15. Dasanayaka, S. (2009). Implications of Organizational Culture on Innovation: An Exploratory Micro Study of Sri Lankan Gift and Decorative-ware Sector Firms, pp. 1-19.

16. De Miranda, P. C., Aranha, A. S. & Zardo, J. (2009). "Creativity: people, environment and culture, the key elements in its understanding and interpretation", *Science & Public Policy (SPP) Vol.36. No.7, pp 523-535.*

17. Deshpande, R., Farley, J. & Webster, F. (1993). "Corporate culture, customer orientation and innovativeness in Japanese firms: A quadrad analysis", *Journal of Marketing, Vol. 57, pp.23-37.*

18. Dobin, CB. (2008), "Measuring Innovation Culturein Organizations", *European Journal of Innovation Management, Vol.11No.4, pp. 539-559.*

19. Euchner, J. (2012). "Culture, People, and Innovation", Research-Technology Management, March—April, pp.13-18.

20. Fairholm, M. R.(2009). "Leadership and Organizational Strategy", The Innovation Journal: *The Public Sector Innovation Journal, Vol.14, No.1, article3.*

21. Gregory, B. T., Harris, S. g., Armenakis, A.A., & Shook, C. L. (2009). "Organizational Culture and Effectiveness: A Study of Values, Attitudes, and Organizational Outcomes", *Journal of Business Research, Vol. 62 , No. 7, pp. 673–679.*

22. Henard, D. H., & McFadyen, M. A. (2008). "Making knowledge workers more creative", *Research Technology Management, Vol.51, No.2, pp. 40-46.*

23. Hofstede, G. (2001), *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, 2nd Edition (Sage, Thousand Oaks, CA).

24. Huang, C. J., & Liu, C. J. (2005). "Exploration for the Relationship between Innovation, IT and Performance", *Journal of Intellectual Capital Vol. 6 No. 2, pp. 237-252.*

25. Jassawalla, A.R. & Sashittal, H.C. (2002). "Cultures that Support Product-innovation Processes", *Academy of Management Executive, Vol. 16 No. 3, pp. 42-54.*

26. Kelley, B. (2010). *Stoking your innovation bonfire.* John Wiley & Sons, Inc., Hoboken, New Jersey. Canada.

27. Kenny, B. & Reedy, E. (2006). "The Impact of Organisational Culture Factors on Innovation Levels in SMEs: An Empirical Investigation", *Irish Journal of Management, Vol.5, No.17, pp. 119-143.*

28. Koutroumanis, D., & Alexakis, G. (2009). "Organizational culture in the restaurant industry: Implications for change", *Journal of organizational culture communications and conflict, Vol.13, No.2, pp. 45- 53.*

29. Lam, A. (2011). Innovative Organizations: Structure, Learning and Adaptation. Paper presented at the DIME Final Conference, 6-8 April, Maastricht.

30. Livingston, L. (2010). "Teaching Creativity in Higher Education", *Arts Education Policy Review, Nol.111, pp. 59–62.*

31. Nooteboom, B. (1999). "Innovation, Learning and Industrial Organizations", *Cambridge Journal of Economics, Vol. 23, pp. 127-50.*

32. Oetinger, B. V. (2004). "Form Idea to Innovation: Making Creativity Real*", Journal of Business Strategy, Vol. 25, No.5, pp.1583-96.*

33. Perri 6, (1993). "Innovation by non-profit organizations: Policy and research issues" *Nonprofit Management and Leadership,Vol. 3, No. 4, pp.397–414.*

34. Plessis, M. D. (2007). "The Role of Knowledge Management in Innovation", *Journal of Knowledge Management, Vol. 11 No. 4, pp. 20-29.*

35. Quinn, R.E. & Rohrbaugh, J. (1983). "A spatial model of effectiveness criteria: towards a competing values approach to organizational analysis", *Management Science, Vol. 29, No. 3, pp. 363–377.*

36. Revati, S. (2005). A Multivariate Study of the Relationship between Organizational Learning Organizational Innovation and Organizational Climate in the Australian Hotel Industry, The Dissertation of Doctor's Degree, Philosophy, Swinburne University of Technology, Australia.

37. Robbins, S. P., & Judge, T. A. (2009). Power and politics. In D. Parker & J. Collins (Eds.), *Organizational Behavior* (pp. 448-481). Upper Saddle River, NJ: Pearson Education, Inc.

38. Roberts, N. (1998). *The Holocene: An Environmont History* (2nd ed), Blackwell Publishing. Oxford. United Kingdom.

39. Sarros, J. C., Cooper, B. K. & Santora. J. C. (2008). "Building a Climate for Innovation Through Transformational Leadership and Organizational Culture", *Journal of Leadership & Organizational Studies, Vol. 15, No. 2, p 145-158.*

40. Schein, E. H. (1985).Organizational culture and leadership. San Francisco: Josey-Bass.

41. Schein, E. H.(2004). Organizational Culture and Leadership, 3rd ed. San Francisco, CA: Jossey-Bass.

42. Scott-Findlay S, & Golden-Biddle K. (2005)." **Understanding how organizational culture shapes research use",** *Journal of Nursing Administration, Vol.**35, No.7-8, pp.359**-365*.

43. Semercioz, F. Hassan, M. & Aldemır, Z. (2011). "An Empirical Study on the Role of Interpersonal and Institutional Trust in Organizational Innovativeness", *Canadian Center of Science and Education. Vol. 4, No. 2, pp. 125-136.*

44. Shinn, J. (1996). The Effects of Executive Leadership on Organizational Innovation in Nonprofit Human Service Organizations. Unpublished doctoral dissertation. The University of Pittsburgh, Pittsburgh.

45. Singh, S.,K. (2011). "Organizational Innovation as Competitive Advantage during Global Recession", *the Indian Journal of Industrial Relations, Vol. 46, No. 4,pp. 713-725.*

46. Tabor, J., H.(2007). Leadership, culture, and organizational innovation: The case of Commerce bank,the degree of Doctor of philosophy, Gonzaga University, United States.

47. Tromana, G, Jeffrey, B & Raggla, A. (2007). "Creativity and performativity policies in primary school cultures", *Journal of Education Policy Vol. 22, No. 5, pp. 549–572.*

48. Tsai, M., Chuang, S, & Hsieh, W. (2009). "Prioritization of Organizational Innovativeness Measurement Indicators Using Analytic Hierarchy Process", *The Business Review, Cambridge, Vol.* 12, No. 1, pp. 250 - 256.

49. Twati, J. M. & Gammack, J. G. (2004). The Impact of Organisational Culture Innovation on the Adoption of IS/IT: The Case of Libya. Paper presented at the 2004 International Research Conference on Innovations in Information Technology (IIT2004), Dubai, UAE.

50. Twati, J. M. & Gammack, J. G., (2007). "The impact of organisational culture innovation on the adoption IS/IT: the case of Libya", *Journal of enterprise information management, Vol.19, No.2, pp. 175 – 191.*

51. Valencia, J. C. N., Jimenez, D.J., & Valle, R. S.(2011). "Innovation or imitation? The role of organizational culture", *Journal Management Decision. Vol. 49 No. 1, pp. 55-72.*

52. Woodbury, T. J. (2006) Building Organizational Culture - Word by Word. Leader to Leader Vol. 39, pp. 48-54. *Available on the internet: http://elin.lub.lu.se.ludwig.lub.lu.se [Accessed: 07.02.01].*

53. Zammuto, R.F., & Krakower, J.Y. (1991). "Quantitative and Qualitative Studies of Organisational Culture*", Research in Organisational Change and Development, Vol. 5, pp. 83-114.*

54. *Zammuto, R. F., Gifford, B., & Goodman, E. A. (2000). Managerial ideologies, organization culture and the outcomes of innovation: a competing values perspective, in Ashkanasy, N., Wilderom, C. and Peterson, M. (eds), The Handbook of Organizational Culture and Climate, Sage, Thousand Oaks, CA. 263-80.*

55. Zavyalova, E., & Kucherov, D. (2010). "Relationship between organizational culture and job satisfaction in Russian business enterprises*", Human Resource Development International, Vol.13, No.2, pp. 225- 235.*

56. Zheng, C. (2009). A Correlational study of organizational innovation capability and two factors: innovation drivers and organizational culture, The Dissertation of Doctor's Degree, Management in Organizational Leadership, Phoenix University, United States.