The Influence of Organisational Culture on Performance Measurement Systems in Libyan Higher Education

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Abstract

This research attempts to study the influence of organisational culture (OC) on the acceptance, importance and use of performance measurement systems (PMS) in Libyan higher education. To achieve the objectives of this research, a contingency theory is adopted. Organisational culture as a contingent variable was identified from the literature and appropriate statistical tests were undertaken to ascertain its influence.

The organisational culture assessment instrument (OCAI) devised by Cameron & Quinn (2011) was chosen to be the conceptual model for determining the organisational culture type of institutions. Using the OCAI, an organisational culture profile could be verified by determining the organisation's dominant culture type characteristics. The Competing Values Framework (CVF) model developed by Cameron & Quinn (2011) was chosen to be a measurement tool for Organisational Culture (OC) to examine aspects of dominant organisational culture types in the Libyan higher education sector.

A mixed methods (quantitative and qualitative) approach, involving a survey questionnaire and interviews, was adopted. Descriptive statistics, which include frequencies and percentages, were utilized to present the main characteristics of the sample, the profiles of organisations' cultural types, and the information gained in relation to the acceptance, importance and use of performance measurement systems.

The sample of this study consists of three types of Libyan higher education (universities, higher institutions and technical collages). The intended participant lists covered the entire population of all groups in Libyan higher education.

The study revealed that the three types of Libyan higher education are not homogeneous. In addition, the study showed that job titles and positions, experience and education levels are among the factors that influence organisational culture and thereby PMS acceptance, importance and use. While Libyan higher education in general, which includes public universities and technical colleges, was dominated by a Hierarchy culture that favours a centralised management style, the private and higher institutions were dominated by a Clan culture which is often found in 'family-type' organisations.

Hierarchy culture exhibited a significant negative direct relationship with the acceptance and importance of performance measurement systems in Libyan universities. On the other hand, Clan

culture exhibited a significant negative direct relationship with the acceptance and use of performance measurement systems in Libyan higher institutions.

The contingency theory of performance measurement systems is based on the assumption that there is no universally appropriate use of performance measurement systems that applies equally to all organisations in all circumstances and the findings of this thesis are consistent with this contingency theory assumption. Therefore, organisational culture as a factor of contingency theory has influence on some aspects of performance measurement systems and does not influence others, and this depends on a given organisation's circumstances.

Table of Contents

List of Tables

List of Figures

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Abbreviations

PMS	Performance measurement systems
FPMS	Financial Performance measurement systems
Non-FPMS	Non- Financial Performance measurement systems
BSC	Balanced scorecard
CVF	Competing Values Framework
OC	Organisational Culture
CC	Clan Culture
AC	Adhocracy Culture
MC	Market Culture
HC	Hierarchy Culture
GDP	Gross Domestic Product
OCAI	The organisational culture assessment instrument
JIT	Just-in-Time
TQM	Total Quality Management
ORG	Organisation
MHE	Ministry of Higher Education

Chapter 1: Introduction

1.1 Chapter Outline

The purpose of this introductory Chapter is to present the background to the study and to provide a rationale for pursuing the issue of the correlation between organisational culture (OC) and performance measurement systems (PMS). The aims, objectives and research question are established. In addition, the need for the research, the research framework, and the contributions to existing knowledge is presented. Thereafter, a brief indication of the proposed research methodology is provided, and this is followed by an outline of the structure of the thesis.

1.2 Background to the Study

The low levels of performance of various public sector establishments in developing countries is attributable to numerous cultural, economic, social, political, technical and other reasons which obstruct the administrative authority from playing its role in an efficient and effective manner. The majority of these reasons were identified through a number of studies and analyses in an attempt to reach to a logical scientific interpretation, which accurately defines the problems, which prevent the public sector from playing its role properly. But the aspects of organisational culture with regard to the personnel and those in charge of the public sector units have not received sufficient attention in spite of the findings in a number of the world's countries that confirmed the feasibility of studying organisational culture and its positive effect on the level of organisational performance.

Organisational culture represents a set of common values of knowledge, traditions, customs, ethics and behavioural forms, which control the interactions between the organisation's personnel and stakeholders outside the organisation. It may be a strength or weakness depending on its impact on the behaviour of the organisation's personnel. The human being is considered to be the main theme of this study, which involves an analysis of the prevailing cultural system, since human resources are the basis of development and are responsible for implementation of the strategic plans of any organisation.

This research attempts to study the influence of organisational culture on the acceptance, importance and use of performance measurement systems and the relationship of these systems to organisational performance in Libyan higher education.

Non-profit organisations in sectors such as education, public health care, charities, civil society and social enterprise, aim to offer a service and a benefit, and do not aim to maximise profit. Public and

private higher education institutions and universities in Libya are a few of the non-profit organisations discussed in this thesis. Al-Turki & Duffuaa (2003) discuss the important role that education institutions play development; they support global development strategies with the necessary highly qualified manpower and research.

Elferjani et al (2011) argue that the increase in the number of Libyan higher education institutions can be attributed to the increase in oil revenues which gave Libya the opportunity to accelerate the development of education, as well as the restructuring and reform of the education system in 1980 under what was known as the New Structural Plan for Education.

On the other hand, the graduates of the education system in Libya in all disciplines are neither sufficiently knowledgeable nor trained to be productive, and usually need extensive retraining to improve themselves (Libya Business Executive Survey, 2005, cited in Porter and Yergin, (2006, p. 119). Moreover, there are no links between research institutions and companies in Libya, resulting in the Global Competitiveness Report (GCR) ranking Libya 113 among 144 countries in university research association / industry; this demonstrates a serious disjunction between the education system and the labour market.

The poor quality of the Libyan higher educational system is a justification for this research. There is a consensus that the quality of Libyan higher education is not good. According to the GCR (World Forum, 2013) the Libyan higher educational system performs poorly and Libya ranks 113th out of 144 countries. Libyan higher educational institutions need to evaluate their performance, which requires the acceptance of performance measurement systems. Kaplan & Norton (1996c, p. 35; Kaplan Robert & Norton David, 2001) have warned that the concentration should move by going beyond the financial norms; in this research, this movement is oriented towards the non-financial indexes and proposes several books of various domains in order to measure and evaluate performance which involves several orientations like the balanced scorecard, which is within the scope of the non-financial indexes. Therefore, the acceptance of a performance measurement system should focus on both financial and non-financial aspects.

Neely (1999) argues that business performance measurement has become topical because of seven main reasons: increasing competition; international and national quality awards; changing organisational roles; the changing nature of work; changing external demands; specific improvement initiatives; and the power of information technology.

A contingency theory theoretical framework of performance measurement has been adopted in this research to investigate the contingent relationships between different factors in organisational culture and the acceptance, importance and use of financial and non-financial performance measures, in an attempt to understand performance measurement systems. This thesis builds on financial and non-financial performance measurement systems. Otley (1980, p. 413) (1999, p. 367) states that:

"The contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system equally applicable to all organisations in all circumstances" (Emmanuel, Merchant, & Otley, 1990, p. 57).

A performance measurement system is a component of management control systems and management accounting. The purpose of management accounting is to provide information to people inside the company. This information is used for planning and controlling the operations of the business. Management accounting is usually divided into five areas: pricing, investment analysis, integration with financial accounts, budgeting and performance measurement (G. M. D. Medori, 1998). Performance measurement systems play a key role in organisations not only because of their importance as a source of information about financial transactions and internal activities, but also due to their effect on the monetary success of organisations (M. I. K. Zuriekat, 2005).

Murphy & Cleveland (1995) believe that research on culture will contribute to the understanding of performance management. Magee (2002) contends that without considering the impact of organisational culture, organisational practices such as performance management could be counterproductive because the two are interdependent and change in one will impact the other.

Organisational culture is an important factor used to determine how well an employee fits into their organisational context, and the importance of a good fit has been asserted (O'Reilly, Chatman, & Caldwell, 1991; Silverthorne, 2004). Organisational culture could vary from country to country with great differences in this aspect between developing and developed countries. Moreover, organisational culture is one of the unique characteristics that differentiate successful firms from others (Cartwright & Cooper, 1996). Schneider (2000) argues that understanding organisational culture is important for organisational success in the business environment and a vital task for leaders within organisations because it has an influence on planned growth, productivity, adopting new systems, and future changes of the organisation. With the rapid transformation of economies, the impact of globalisation, and increasing multinational business cooperation, organisational culture is more important today than ever

before, as it has a crucial effect upon an organisation's performance and ability to adopt changes (Wilkins & Ouchi, 1983, p. 225). Schein (1985) argues that the actions, attitudes and assumptions of individuals and organisations cannot be fully understood without an analysis and interpretation of culture.

Many academics and researchers who have studied culture have defined culture differently, and have developed different definitions according to their discipline and area of interest. Although there are many definitions of organisational culture, nearly all definitions consist of a combination of values, beliefs, and assumptions about proper, adequate, and acceptable behaviour that members of each organisation consider important (Hofstede, 1991, 2001).

Schein (1992) indicates that basic beliefs form the main and most important feature of organisational culture and defines it as follows:

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members of the organisation as the correct way to perceive, think, and feel in relation to those problems (Schein, 1992, p. 12).

1.3 Study problem

The success of an organisation's performance depends to a large extent on strategic analysis, which is the first stage of the strategic planning, through a process of identifying the core elements in the organisation's internal and external environments. In each environment there are strengths, which should be enhanced, and weaknesses that should be admitted and dealt with it. Organisational culture is one the most important elements of the internal environment that leads, in its turn, to the development of loyalty and making the personnel feel of their respective identification and stability. Various studies point out that a successful establishment is that which exists on the basis of cooperation between the personnel and a common understanding of the establishment's message. Thus it is necessary to emphasise the necessity of accordance and consistency between the prevailing organisational culture and the strategic plans of the organisation, because inconsistency leads, in its turn, to an organisation's failure in executing its policies. Thus emerges the need to scrutinise the prevailing organisational culture in order to understand its determinants and to try to amend replace the prevailing values in a manner which helps them continue to develop according of the vast, rapid and continuous local and international changes.

Any organisation needs to assess the development of its financial and non-financial performance in order to determine its strengths or weaknesses. Medori (1998) states that the performance measurement systems are one of the important areas of management accounting that play a major role in evaluating the achievement of organisational objectives. Adriana (2004) argues that performance measurement, although extensively studied, has been given relatively little consideration in terms of the factors that influence the design of performance measurement systems. In order to achieve their objectives, organisations mainly depend on performance measures to evaluate, control and improve processes, to compare the performance of departments and teams, and to assess employees. Agnaia (1997) believes that in Libya the whole area of management has historically been affected by the fact that aspects of extended families, clans, tribes, villages and the Islamic religion characterise the social environment.

Moxham (2009) argues that though non-profit performance measurement is receiving increasing academic and practitioner attention, the design of non-profit measurement systems has received limited consideration.

Organisational culture is associated with an organisation's sense of uniqueness, its aim, goals, mission, values, and main ways of working and establishing shared beliefs (Cameron & Quinn, 1999). Although, a review of the relevant literature pointed to some key research studies (Ramachandran, Choy Chong, & Ismail, 2011; Vakkuri & Meklin, 2003) in the educational sector which examine the relationship between the organisational culture and performance measurement system, these studies do not examine the relationship between organisational culture and the acceptance, importance and use of (financial and non-financial) a performance measurement system. Therefore, this study examines the influence of organisational culture on the acceptance, importance and use of (financial and non-financial) performance measurement systems in Libyan higher education.

In addition, (Schein, 2010) says that in the research of recent decades, the subject of organisational culture has drowned those of anthropology, sociology, social psychology and cognitive psychology. It has become a sought after research area and has become connected significantly with broader cultural studies that have lately been generated by widespread globalisation. While several of the studies in the literature that examined organisational culture have focused on industrial and commercial sectors such as (Al-Hussari, 2006; Chow, 2002; Deshpande, Farley, & Webster, 1993; Rashid, Sambasivan, & Johari, 2003), there is very limited specific investigation done in the higher education sector such as (Ramachandran et al., 2011; Vakkuri & Meklin, 2003).

The study problem is represented by the shortcomings of the higher education institutions and universities in Libya in terms of the current performance of their role.

The purpose of this study is to explore and investigate the relationship and the influence of organisational culture as an independent variable on the acceptance, importance and use of the financial and non-financial performance measurement system as a dependent variable for Libyan higher education.

1.4 Research Aim and Objectives

This research aimed to explore and investigate the influence of organisational culture on the acceptance, importance and use of performance measurement systems in Libyan higher education and to investigate the following objectives:

Objective 1: To identify the organisational culture types in Libyan higher education.

Objective 2: To identify the use of performance measurement systems in Libyan higher education.

Objective 3: To investigate the role of organisational culture in the use of performance measurement systems in Libyan higher education.

1.5 Research Questions

The study adopted the exploratory research approach to explore the impact of the four organisational culture types (Hierarchy, Clan, Adhocracy and Market) on the acceptance, importance and use of PMS in Libyan higher education. The main and subsidiary questions for this research arise from gaps existing in the literature concerning the relationships between organisational culture and PMS acceptance, importance and use in Libyan higher education in general and in each type of Libyan higher education in particular. This leads us to the following main research question:

What influence does organisational culture have on the acceptance, importance and use of performance measurement systems in Libyan higher education?

Subsidiary questions are the following:

1. **To achieve the first objective the researcher developed the following questions:** What types of organisational culture are found in Libya's higher education system?
2. What types of organisational performance are found in Libya's higher education system?

To achieve the second objective the researcher developed the following questions:

3. To what extent are performances measurement systems (financial, non-financial and advanced) adopted in the Libyan higher education system?
4. To what extent are performance measurement systems considered important in the Libyan higher education system?
5. To what extent are the performance measurement systems used in the Libyan higher education system?

To achieve the third and fourth objectives the researcher developed the following questions:

6. What influence does organisational culture have on the acceptance of performance measurement systems (PMS) in the Libyan higher education system?
7. What influence does organisational culture have on the importance of performance measurement systems (PMS) in the Libyan higher education system?
8. What influence does organisational culture have on the use of performance measurement systems (PMS) in the Libyan higher education system?
9. Do culture types differ for different job titles and positions and levels of education in the Libyan higher education system?

To assess the influence of organisational culture on the acceptance of PMS, Cameron and Quinn's (1999; K. Cameron & Quinn, 2011) model was used. This model has six dimensions, namely: Organisational Characteristics, Organisational Leadership, Management of Employees, Organisational Glue, Strategic Emphasis, and Criteria of Success. Cameron and Quinn used a six dimensional model for an analysis, which then helped them derive four organisational culture types. These are: Hierarchy Culture, Clan Culture, Adhocracy Culture and Market Culture.

1.6 The Need for the Research

The most important justification for a study on organisational culture in the higher education system is that institutions of higher education around the world are known to play a significant role in the development of any nation's workforce and the economy in general; Libya is no exception. There are a number of other factors that make this study an invaluable one, not least of which is the poor quality of the Libyan higher educational system. According to the Global Competitiveness Report GCR (World

Forum, 2013), the Libyan educational system performs poorly and the report ranks Libya 113th out of 144 countries; therefore there is a need for a different performance measurement system (PMS) to evaluate organisational performance.

The researcher's first contact with Libyan education dates back to 1996 when she worked as a teacher in Libyan education. This experience helped the researcher to identify many of the difficulties and challenges associated with the development of higher education in Libya.

On the other hand, an academic experience will widen the researcher's knowledge gather fieldwork data easily, in particular, through conducting distribution of the questionnaire, and making the interviews with various respondents.

One other simple reason for choosing this topic is the change in Libyan government policy to raise the level of an international degree is the main objective of the Ministry of higher education, where the Ministry with the support and structure of the Libyan universities until the cause procession. To raise the level of Libya higher education should use financial and non-financial PMS to identify the currently PMS used and to work on adding the useful and effective PMS to evaluate Libyan higher education.

In addition, different cultural environments require a different PMS to increase organisational success (Eker & Eker, 2009). Therefore, managers have to define the existing organisational culture and design a PMS relevant to that culture, because if there is an incompatibility between both, a designed system can not achieve any success for their ultimate goal, which is to produce capable human resources in the fields for which they attempt to prepare their students. Thus, the top management must be capable of correct decision-making and designing a PMS for organisational culture. As Detert et al, (2000) rightfully say, the dominant organisational culture can undermine management efforts before they can begin. DeLong & Fahey (2000) also assert that while most managers instinctively recognize the importance of culture , the rationalisation of the relationship of culture to existing management objectives will be a mammoth task. This challenge has also inspired this study because a conducive culture is needed for the acceptance of PMS in general, and advanced techniques in particular. Therefore, an investigation into the types of OC in Libyan higher education will create the platform for the planning and execution of organisation-wide management efforts for change, including the acceptance of innovative strategies and practices such as PMS. Kotter & Heskett (1992) state that culture is a critical factor in long-term financial success. Without cultural change, there is little hope for improvement in organisational performance. Organisational culture as a significant contextual factor in

performance management is scarcely studied.

People are not aware of their culture until it is challenged or they experience a new culture. Most organisational scholars and observers now recognise that organisational culture has a powerful effect on the performance and long-term efficacy of organisations. Empirical research has demonstrated the importance of culture in improving organisational performance (for reviews, refer to Cameron & Quinn 2011, Cameron and Ettington, 1988; Denison, 1990, Trice and Beyer, 1993). Cameron and Quinn (1999) argue that understanding organisational culture is important because plans for any changes which are adopted without considering organisational culture could normally have unforeseen and usually negative consequences.

A strong, unique culture has the ability to reduce collective uncertainties (that is, facilitate a common interpretation system for members), create social order (make clear to members what is expected), create continuity (perpetuate key values and norms across generations of members), create a collective identity and commitment (bind members together), and elucidate a vision of the future (energize forward movement) (see Trice and Beyer, 1993).

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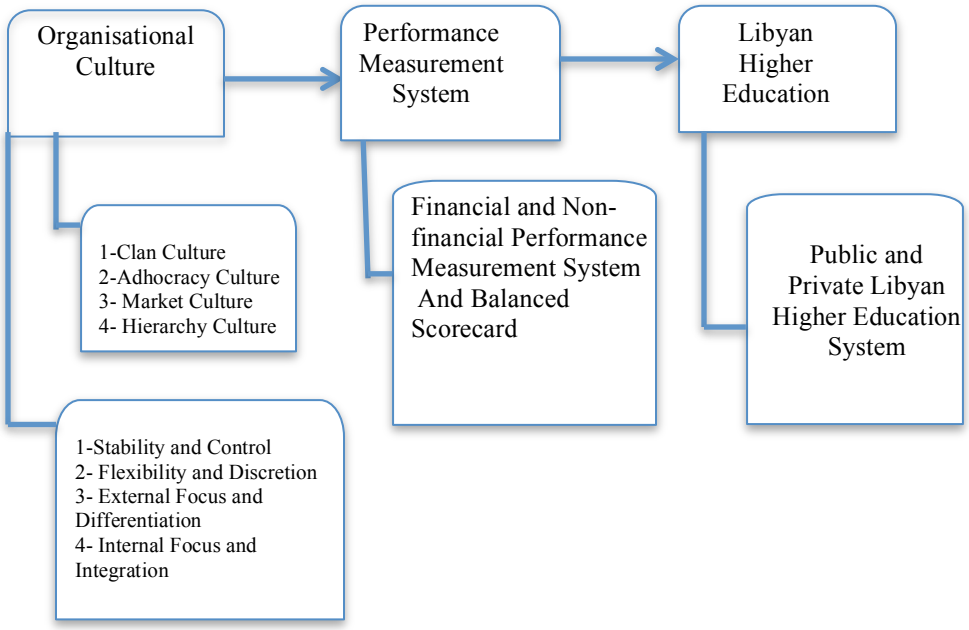
1.7 Research Framework

In order to address the above-mentioned problem and research questions, the researcher developed a research design based on models from the organisational culture of Cameron and Quinn (1999; 2011). Figure (1:1) shows the conceptual framework of this research as a theoretical model outlining the relationship between the three important components: The first is concerned with four organisational culture types, the second with the extent of usage of the performance measurement diversity, and the third with Libyan higher education.

Figure 1:1 Thesis Framework



1.8 Research Methodology

The study adopted an exploratory research approach to investigate the impact of organisational culture on the acceptance, importance and use of financial and non-financial performance measurement systems. A mixed methods (quantitative and qualitative) approach, involving a survey questionnaire and interviews, was adopted. Fiest of all, quantitative research method by questionnaire survey was chosen as the main method for data collection the literature a survey showed that this was the main method used in similar researches (Abraham, Mark, & Xenophon, 2004; Ali Mohammad Mosadegh, 2006; Aljaz, 2011; Ehtesham, 2011; Henri, 2006; Kevin, Kristal Jia, & Robert, 2011; Lok & Crawford, 2004; Twati & Gammack, 2006; Zahari & Shurbagi, 2012). Survey is a popular and common strategy in business and management research and is most frequently used to answer "who, what, where, how much and how many questions" (Saunders et al, 2007). Sharma (2008) argues that survey research is widely regarded as inherently quantitative and positivist unlike qualitative methods involving unstructured interviews, participant observation, focus groups, case studies etc. In addition, a survey strategy is usually associated with a deductive approach and allows the researcher to collect quantitative data that can be analysed statistically in the later stages.

Secondly, qualitative research methods by interviews is the secound resarch method to explore the experiences of people and can reveal a holistic in-depth picture of a phenomenon and aim to understand human behaviour and the reasons that govern such behaviour. Qualitative research involves the study and collection of a variety of empirical materials, which may be in the form of a case study, personal

experience, life story, interview, observation, and/or visual texts; these materials are used to describe routine and problematic moments and meanings of facts, events, personalities and others (Denzin & Lincoln, 2005).

Therefore, the research will mainly apply a quantitative approach to address the research objective and questions, in order to assess the likely impacts of contingency theory factor (organisational culture) on the acceptance, importance and use of the performance measurement systems in Libyan higher education. In addition, the research will apply a qualitative research method to identify the OC type in one of the Libyan higher education organisations to confirm one of the main objectives of this research, in which the content emphasises the importance of organisational culture.

'Research method' is relate to specific activities designed to generate data for questionnaires, and 'research methodology' is more about attitude and understanding of research and a strategy that will answer questions on research (Greener, 2008). The methodology which is used in this study could be described as a cross-sectional study adopting a quantitative approach conducted through a survey questionnaire to investigate the specific contingency theory factor (organisational culture) on the acceptance of performance measurement systems in Libyan higher education and their impact on organisational performance.

Prior to data collection in the current research, a pilot study was planned and conducted using a sample of 10 public and private sector employees with postgraduate certificates and a lot of experience in education. This pilot study helped to clarify the issues that the researcher would face in preparing the questionnaire. After that, the comments and suggestions they made were included in the final version of the questionnaire. The researcher translated the questionnaire into Arabic, which was later checked by an expert translator.

Data were analysed using the Statistical Package for Social Sciences (SPSS) version 20.0 for Mac software. Descriptive statistics, which include frequencies and percentages, were utilized to present the main characteristics of the sample and the profile of organisational culture and performance measurement systems.

1.9 Contribution to the knowledge

Research in the Arab regions on cultural influences on performance measurement systems to date has been very limited. Moreover, no general studies were found that incorporate organisational culture

and PMS acceptance, importance and use. Therefore, this study has contributed in general to the literature on management accounting and particularly to bridging the gap in the knowledge about performance measurement systems; this has specific implications for researchers and practitioners. These aspects can be summarized as follows:

1- This study has been applied to the education sector in Libya, a developing country with context and culture different to that of developed and western countries where most previous studies on PMS have been conducted in sectors unrelated to education.
2- Due to the scarcity of the literature and studies on the influence of organisational culture and performance measurement systems on higher education, the present study attempts to fill this gap by addressing those issues.
3- It is an empirical test of contingency theory to investigate the influence of a contingency theory factor (organisational culture) on the acceptance, importance and use of performance measurement systems in Libyan higher education.
4- This study has produced results based on contingency theory and a defined conceptual model of organisational culture in the Libyan education sector and its influence on PMS acceptance, importance and use, providing a theoretical contribution to existing knowledge by expanding the concept of OC in answering the research question.
5- This study is perhaps the first to compare four types of higher education in terms of performance measurement systems, using four organisational culture variables.
6- This study had produced results for the Libyan education sector with a comparison of its types; while previous studies in the Libyan context found that different sectors have the same OC type, this study has found that OC types were different even within the same sector.
7- Investigation of the financial and non-financial PMS, and the balanced scorecard can be applied in higher education.
8- This research may draw attention to the influence of organisational culture on PMS. Culture, regardless of how powerfully it may be established, it is not stable or fixed, but may be changed and affected by its environment.
9- The impact of the adopting performance measurement systems on higher education organisations has been discussed in this study.
10- This study being the most recent to investigate the organisational culture profile within Libya,

with insights into the cultural values currently operating within the society, its findings are up to date enough to be for new a PMS framework design to be implemented in Libyan higher education.

1.10 Structure of the Thesis

This thesis is organised as follows:

Chapter One The purpose of this introductory Chapter is to present the background to the study and to provide a rationale for pursuing the issue of organisational culture and performance measurement systems. The aim and objectives of the research and the main research question are established in this chapter. In addition, the need for the research, the framework of the research, and its contributions to knowledge is presented. Thereafter, a brief indication of the research methodology is provided, and this is followed by an outline of the structure of the thesis.

Chapter Two contains the critical review of the literature on organisational culture (OC), different definitions of OC, measures of organisational culture. This chapter gives an overview of organisational culture types, organisational culture and performance measurement systems, conceptual model and hypotheses, research questions, and proceeds to define the variables, the conceptual model of the study, the conceptual model for organisational culture, and the development of the hypotheses.

Chapter Three contains the critical review of the literature of performance measurement systems, which includes: contingency theory of performance measurement, performance measurement systems (PMS), different definitions of PMS, the financial / non-financial PMS, and the balanced scorecard. Finally, this chapter proceeds to discuss the performance measurement systems acceptance, importance and use.

Chapter Four The purpose of this chapter is to discuss the historical factors as well as those relating to the environment, population, and political background of Libya, which influence the country's current HE environment. In doing this, the chapter provides an in-depth understanding of the Libyan education system in general, and then proceeds to discuss Higher Education specifically.

Chapter Five discusses the methodology of this research. It describes the various aspects of this research such as its philosophy, approach, strategy, design, population, pilot study and data collection methods. It considers the validity and reliability of the methods of analysis employed to address the aim and objectives of the research. At the end of this chapter is the description of the response rate.

Chapter Six presents the questionnaire survey results by presenting the respondents' profile in general, followed by organisational culture profile, performance measurement systems profile.

Chapter Seven presents the influence of organisational culture on performance measurement systems acceptance, importance and use.

Chapter Eight discusses the main findings of the research in terms of the research aim and objectives. The results are linked with the literature, in order to investigate and establish similarities or contrasts between existing theoretical propositions. The results of the research hypotheses tests of this study are also presented in this chapter.

Chapter Nine provides conclusions and indicates how the aim and objectives of the research have been met. Additionally, the originality of the study, the resulting contributions to knowledge and its limitations are discussed. Finally, recommendations are made for further research.

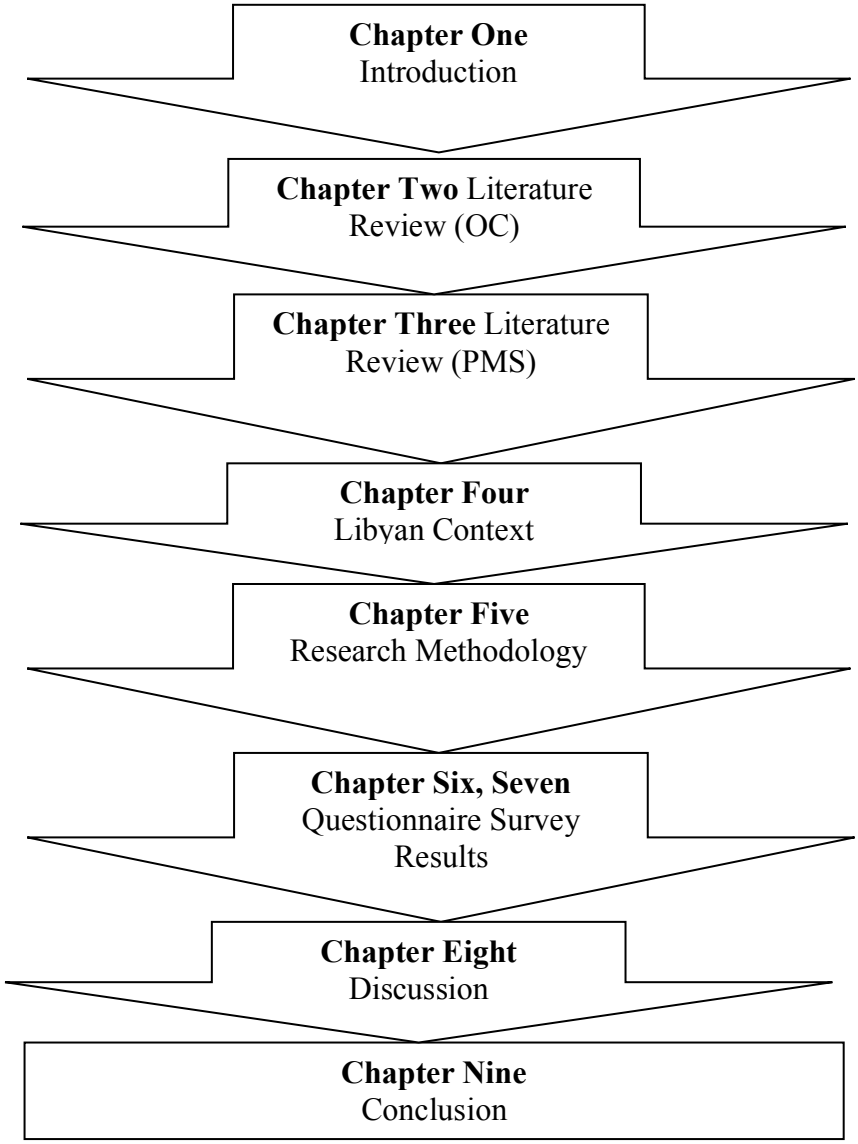


Figure 1:2 Thesis Structure

1.11 Summary

This chapter serves as an introduction to the most important issues of the research study. It first highlighted the background to the study and the essential problem of this research; it then came up with an overview of the research aim and objectives. The main research question, the need of the research, its framework, its contribution to existing knowledge and its structure has also been presented at the end of this chapter. Since this study adopts an organisational culture theoretical framework, it is discussed in more detail in the next chapter

Chapter 2: Literature Review - Organisational Culture

2.1 Introduction

The main purpose of a literature review of organisational culture is to give an overview of the concept of organisational culture and its four types (Hierarchy culture, Clan culture, Market culture and Adhocracy culture) as independent variables. This Chapter also describes the conceptual model for organisational culture and the instrument for its assessment.

The organisational culture with regard to the acceptance of PMS in higher education, organisational culture is a crucial area for research because of the ability of culture to affect motivation, behaviour and performance. Cameron and Quinn (1999) argue that organisational culture is important because plans for any changes adopted without including organisational culture would normally have unforeseen and usually negative consequences.

Organisational culture is an important factor, which is used to determine how well an employee fits into their organisational context, and it has been asserted that a good fit between the employee and their organisation is important (O'Reilly et al., 1991; Silverthorne, 2004). Organisational culture is associated with an organisation's sense of uniqueness, its aim, goals, mission, values, and main ways of working and establishing shared beliefs (K. Cameron & Quinn, 2011). While organisations have always had cultures, few managers have been able to understand how to manage them (Druckman, Singer, & Harold Van Cott, 1997). Many of the studies in the literature that examined organisational culture have focused on industrial and commercial sector (Al-Hussari, 2006; Chow, 2002; Deshpande et al., 1993; Rashid et al., 2003). Limited specific investigation has been conducted on the relationship between the organisational culture and PMS in higher education organisations. Although, the literature pointed out some studies in the educational sector which examine the relationship between the organisational culture and PMS such as: (Ehtesham, 2011; Vakkuri & Meklin, 2003). These studies do not examine the relationship between organisational culture and financial and non-financial PMS in the higher education sector from the perspective of decision makers who use financial and non-financial PMS in their organisations. For example, the main objective of the study of Ramachandran et al. (2011) was to provide empirical insights from the perspective of faculty members on the differences between organisational culture (OC) in private and public higher education institutions (HEIs) and to consequently pave an avenue for cross-learning in order. Their study used the competing values framework (CVF), and found

that the faculty members perceive all the four OC types in public HEIs as being significantly different those of private HEIs. On the other hand, this study of Ramachandran et al. (2011) is in the area of private and public HEIs from the perspective of the members (decision makers) of financial and administration sections in higher education; its objective is to provide empirical insights on the differences and consequently pave an avenue for cross learning.

With the rapid transformation of economies, the impact of globalisation, and increasing multinational business cooperation, organisational culture is more important today than ever before, as it has a crucial effect upon an organisation's performance and ability to adopt changes (Wilkins & Ouchi, 1983). Organisational culture could be different from country to country, especially when comparing developing and developed countries; each culture is unique, and this study tests the influence of organisational culture in a developing country (Libya) to investigate which types of organisational culture influence the acceptance, importance and use of PMS. Schneider (2000), as cited in Twati & Gammack (2006, p. 181), argues that understanding organisational culture affects strategic development, productivity and learning at all levels of management. Prior research on management control systems and culture has focused on national culture instead of organisational culture such as (Awasthi, Chow, & Wu, 1998; Robert H. Chenhall, 2003). There are few studies about organisational culture and PMS (Chee, Tim, & Anne, 2001; Henri, 2006; M. Zuriekat, Salameh, & Alrawashdeh, 2011) especially in higher educational sector. However, in recent years, the literature on organisational culture in business organisations has been prolific. Henri (2006) in his study tests the relationships between organisational culture and two attributes of PMS, namely the diversity of measurement and the nature of PMS use at manufacturing firms.

Through archival data from Canada, Hong Kong, New Zealand, South Africa, United Kingdom and the United USA, Boglarsky and Kwantes (2007) studied the perception that aspects of organisational culture are associated with personal effectiveness and leadership. It was reported that organisational culture was strongly associated with both leadership effectiveness and personal effectiveness. Jofreh and Masoumi (2013) in their empirical investigation to find important factors influencing organisational culture in a banking sector, adopted a questionnaire based on Denison's organisational culture dimensions and distributed it among different groups of employees who worked for an Iranian bank. The survey concluded that while dimensions of job involvement and organisational mission were

in a better position compared with dimensions of compatibility and consistency, there was some positive and meaningful correlation among all four components.

Many researchers e.g., (D. Denison, Haaland, & Goelzer, 2003) as cited in (Yilmaz & Ergun, 2008) have called to investigate the phenomenon of organisational culture in different cultural contexts, particularly in non-western nations (Ehtesham, 2011). According to Kandula (2006) the key to good performance is a strong culture. Thus, it is important to investigate the influence of organisational culture on the acceptance, importance and use of PMS. In the Cameron and Quinn (2011, p. 72) framework, the strength of your culture is determined by the number of points awarded to a specific culture type. The higher the score, the stronger or more dominant is that particular culture.

2.2 Organisational Culture Definition and importance

The term 'organisational culture' made its first appearance in the academic literature in an article in Administrative Science Quarterly by Pettigrew (Hofstede, Neuijen, Ohayv, & Sanders, 1990; Pettigrew, 1979). The concept of organisational culture has received increasing attention in recent years both from academics and practitioners (Schein, 1990). In every organisation there are specific attitudes, symbols, and beliefs that are taken for granted within that organisation (Schein, 1990). Many academics and researchers who have studied culture have defined culture differently, and have developed different definitions according to their discipline and area of interest. Although there are many definitions of organisational culture, nearly all definitions consist of a combination of values, beliefs, and assumptions about proper, adequate, and acceptable behaviour that members of each organisation consider important (Hofstede, 1991, 2001).

As Bresnen and Marshall (2000) reiterate, "organisational culture is a complex and multifaceted phenomenon that arises and develops through on-going social interaction among members of a community. It is not simply something that can be imposed from on high, and frequently attempts to do so simply provoke resistance or produce unintended and undesired consequences".

Hofstede (1984) states that organisational culture can be defined as the values, attitudes, beliefs and behaviours that represent an organisation's working environment, organisational objective, and vision. In addition, organisational culture refers to a set of shared values, belief, and assumptions and practices that shape and guide the attitudes and behaviour of the members of the organisation. This definition is consistent with the findings of Deshpande et al (1993), who reviewed more than 100 studies in organisational culture. They defined organisational culture as a pattern of shared values and beliefs that

help individuals understand organisational functions and provide them the norm for the behaviour in organisations (Aljaz, 2011). Culture is rooted in people and subconsciously influences their behaviour; Culture affects their performance and vice versa – that is, performance is a factor that affects organisational culture. Informally, such culture can be described as follows: "That's the way we do it!" or "The way things are done around here" (Lewis, 1995). Culture includes the different philosophies and approaches to doing work within an organisation (Moore, 2002).

Pinto (2010) reveals four ways organisational culture can affect project management. First, it affects how departments are expected to interact and support each other in the pursuit of project goals. Second, it influences the level of employee commitment to the goals of the project in the context of balancing them with other, potentially competing goals. Third, it influences project planning processes such as the way work is estimated or how resources are assigned to projects. Finally, it how managers evaluate the performance of project teams and how they view projects' outcomes.

Denison (1984) believes that organisational culture includes: fundamental values and beliefs in organisations; patterns of behaviour that come from shared values and symbols that link assumptions and values; and the behaviour of members.

Schein (1992) indicates that basic beliefs form the main and most important feature of organisational culture and defines it as follows:

"A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members of the organisation as the correct way to perceive, think, and feel in relation to those problems (Schein, 1992, p. 12)."

Another definition was established by Cameron and Quinn (2011, p. 17) where "OC is reflected by what is valued, the dominant leadership styles, the language and symbols, the procedures and routines, and the definitions of success that make an organisation unique".

As a consequence of globalization, understanding culture's impact on the environment of a business or of multinational corporations has attracted considerable research interest.

2.3 Measures of Organisational Culture

In order to better understand the concept of organisational culture, several studies have attempted to measure it. Many researchers (Cameron & Quinn, 1999; Hofstede, 1980; Schein, 1985, 1992) have studied organisational culture according to their varying interests, and hence, they have all developed

different measures and dimensions of organisational culture. In this section, a typology of eight models and frameworks will be reviewed. Each scholar has his or her own ways of typifying organisational culture, which may create both similarities and differences in comparisons.

The work of Ramachandran et al. (2011) and Deal and Kennedy ((1983) on OC focuses on the measurement of organisations based on feedback and risk, where quick feedback means an instant response, and risk represents the degree of uncertainty in the organisation's activities. They used several parameters to classify four OCs:

(1) Tough-guy macho culture;

(2) Work hard/play hard culture;

(3) Bet your company culture; and

(4) Process culture.

Schein (Schein, 1985) classifies OC into three dimensions:

(1) Assumptions at the first level;

(2) Values at the second level; and

(3) Artefacts at the third level.

Denison (1990) explains OC in four distinct hypotheses:

(1) The consistency hypothesis – the notion that a common perception, communal beliefs, and values among the organisational members will enhance internal coordination and promote meaning and sense for the members;

(2) The mission hypothesis – the notion that a communal sense of purpose, direction, and strategy can synchronise and move organisational members toward collective goals;

(3) The involvement/participation hypothesis – the notion that involvement and participation will contribute to a sense of responsibility and ownership, and organisational commitment and loyalty; and

(4) The adaptability hypothesis – the notion that customs and beliefs that enhance an organisation's ability to receive, construe, and translate information from various sources into internal organisational and behavioural changes will promote its survival, growth, and ultimately its development.

These hypotheses focus on different facets of culture but, more importantly, they stress different functions of culture. The first two hypotheses encourages/promotes stability, while the second two allow for change and adaptability. The first and third hypotheses see culture as focusing on internal organisational dynamics, while the second and fourth see culture as addressing the relationship of the

organisation with the external environment (D. R. Denison, 1990). Thus, a company might exhibit an OC with either a high external orientation (high adaptability and strong sense of mission) or a high internal orientation (high involvement and consistent work practice and regulation).

These hypotheses correspond closely to Cameron and Quinn's (1999) categorisation of organisational focus and associated types of organisations, which are represented in the competing values framework (CVF).

The CVF has received renewed attention from organisational development researchers and leadership development scholars (Belasen, 2007; Burgess, Ong, & Shaw, 2007). Much of this attention has focused on the wide applicability of the CVF as a diagnostic and development tool for cultural variables (Goodman, Zammuto, & Gifford, 2001; Igo & Skitmore, 2006), human resource development (Belasen & Frank, 2004; Panayotopoulou, Bourantas, & Papalexandris, 2003) and the relationships between leadership roles, personal growth, and organisational effectiveness (Belasen & Rufer, 2007). The CVF also provides researchers with a common metric for multi-level, trans-organisational, and cross-cultural analyses of OC as a key influence on the effectiveness of change management initiatives (Howard, 1998). Due to this, the CVF is argued to be a valid framework for examining OCs (Goodman et al., 2001; Harris & Mossholder, 1996; Howard, 1998).

The topic of organisational culture often presents two contradictory images. The presents culture as "the glue that holds the organisation together"; the second presents it as a central part of the change process (D. R. Denison, 2000).

Umit et al (2006), in their research paper on the dynamics of PMS and OC found that OC and management style seem to be interdependent throughout the life cycle of the PMS and the management style needs to evolve as PMS and OC evolve. In addition, during these implementations, the authors observed that organisational culture and management styles have an impact on how PMS are implemented and used, thus affecting their success or failure.

Henri (2006) believes that OC has been overlooked in recent PMS studies, even though several authors have argued that organisational culture has had a significant impact on management control systems. In his survey of organisational culture and performance measurement, Henri tested the relationships between organisational culture and two attributes of performance measurement systems, namely the diversity of measurement and the nature of use. The results of the survey reveal that top managers of firms reflecting a flexibility dominant type tend to use more performance measures and to use

performance measurement systems to focus organisational attention and to support strategic decision-making and legitimate actions to a greater extent than top managers of firms reflecting a control dominant type.

(Zu, Robbins, & Fredendall, 2010) Investigated how organisational culture influences the implementation of different practices incorporated in the recent Six Sigma approach as well as those associated with traditional total quality management (TQM). They employed the competing values framework to capture the underlying value orientations of organisational culture. Using survey data collected from 226 US manufacturing plants; the relationships between four culture types and 10 TQM/Six Sigma practices were examined via the structural equation modelling technique. The results reveal the differential effects of the culture types on the implementation of TQM/Six Sigma practices. The implications of the links between different cultures and different TQM/Six Sigma practices are discussed. While the relationship between TQM practices and culture has been the subject of prior research, this is the first look at the relationship between organisational culture and a comprehensive set of quality management practices including the new Six Sigma practices. The understanding of the advantage of each culture type should help managers achieve effective implementation of TQM/ Six Sigma practices from a holistic perspective of both quality management and culture.

2.4 Typologies of Organisational Culture

A number of theoretical frameworks, or typologies, have been designed with regard to organisational culture (Cameron & Quinn, 2006; K. Cameron & Quinn, 2011; Deal & Kennedy, 1983; Harrison & Stokes, 1992; Hellriegel et al., 2004; Hofstede, 1993; Rowe, Mason, Dickel, Mann, & Mockler, 1994). Typologies are useful because they provide broad overviews of the variations that exist between organisational cultures (Brown, 1995). In order to get a better understanding of different concepts of organisational culture, three typologies will be briefly discussed, with particular emphasis on their relationship with PMS.

2.4.1 Rowe, Mason, Dickel, Mann and Mockler's organisational culture Typology

Rowe et al. (1994) developed a classification that identifies four types of cultural environments, illustrated in Figure 2-2. These classifications of organisational culture suggest that an organisation's

culture provides clues to appropriate change strategies, and by studying these clues, an organisation can increase the likelihood of successful implementation of a strategic change (ibid).

Figure 2-2 indicates the different combinations of organisational settings or organisational rules and the organisation's orientations, which produce the four types of cultural orientations within which an organisation is believed to function (Rowe et al., 1994). An organisation's values range from achievement in an open system, to performance in a controlled system (ibid).

Achievement in an open system refers to an organisation being creative, whereas performance in a controlled system refers to an organisation being market orientated and following market trends. An organisation's orientations can be either technical, which is differential; or social, which has high levels of integration and coordination (Rowe *et al.,* 1994). Within a technical orientation, an organisation revolves around differentiation and task orientation, and the social orientation refers to an organisation being more people and relationship orientated. The combination of such values of orientation will bring about a specific cultural environment (Rowe *et al.,* 1994).

<table>
<tr><td rowspan="3">Organisational Values/Norms</td><td>Achievement
(Open system)</td><td><u>Quality Culture</u>
Effective Planning
Problem Solving
Accepts Change</td><td><u>Creative Culture</u>
Innovation
Entrepreneurship
Risk Taking
Initiates Change</td></tr>
<tr><td rowspan="2">Performance
(Controlled system)</td><td><u>Productive Culture</u>
Efficiency
Consistence
Procedure
Rituals
Resists Change</td><td><u>Supportive Culture</u>
Teamwork
Cooperation
Growth
Responds to Change</td></tr>
<tr><td>Technical
(differentiation)</td><td>Social (Integration</td></tr>
</table>

Figure 2:1 Rowe et al. Organisational culture typology

Source: Rowe *et al.* (1994).

The four organisational cultures have different characteristics:

1) The productive culture: this cultural type concentrates on efficiency and consistency within an organisation. The organisational values and norms within this cultural environment stress performance, and the organisation's orientation is technical. Due to the technical orientation combined with the controlled system, this type of organisation is likely to resist change.

2) The quality culture: the focus in this organisational cultural environment is on the growth of the organisation's employees through problem solving and effective planning. In practice, an organisation with this type is more flexible in its approaches and therefore more accepting when change occurs. The organisation values the achievement of individuals, and there is a strong technical orientation within the organisation.

3) The creative culture: this tends to be innovative and entrepreneurial and is therefore more inclined towards risk taking and initiating change. An advantage of this culture is that change is easily initiated and made. This organisation achieves creativity because it values individual achievement and has a more social orientation.

4) The supportive culture: an organisation with this cultural type produces an organisational environment that is characterised by teamwork, cooperation, and reinforcement. The focus of organisational values and norms is on performance, and the organisations orientation is social, and therefore this organisation is quick and ready to respond to change.

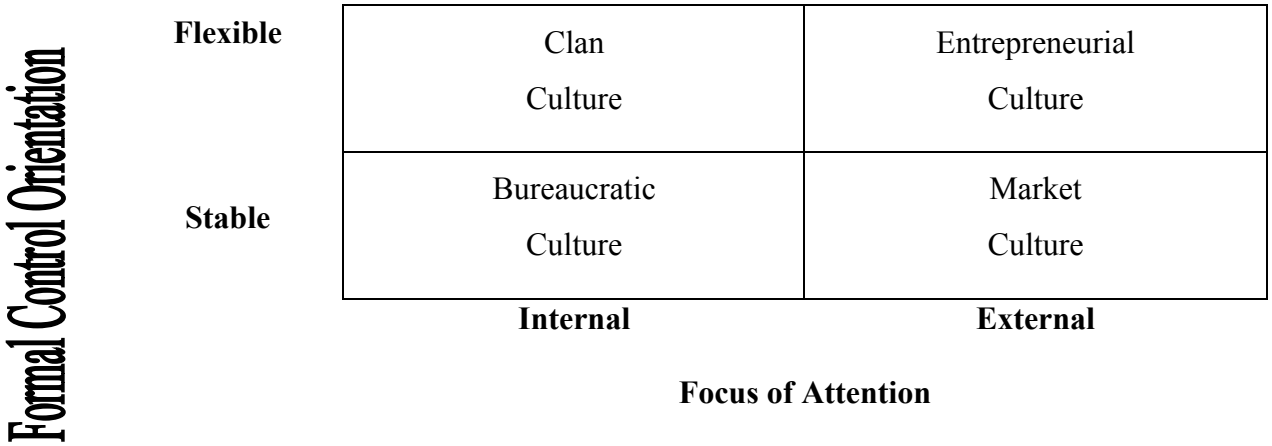
2.4.1 Hellriegel, Jackson, Slocum, Staude, Amos, Klopper, Louw and Oosthuizen's organisational culture typology

Hellriegel et al (2004) state that cultural elements and their relationships within an organisation create a pattern that is a unique part of that organisation, creating an organisation's culture. Several types of organisational culture can be described, namely bureaucratic culture, clan culture, entrepreneurial culture, and market culture (Hellriegel *et al.,* 2004). Figure 3.3 graphically represents the first typology that will be discussed with regard to organisational culture.

In Figure 2:3, the vertical axis reflects the relative formal control orientation within the organisation, which ranges from stable control to flexible control. The horizontal axis, on the other hand, reflects the relative focus of attention of the organisation, and ranges from internal functioning to external functioning. The farthest corners of the four quadrants correspond to four pure organisational cultural

types, which are bureaucratic, clan, entrepreneurial and market. Each of the four organisational cultural types developed by Hellriegel *et al.* (2004) will be briefly discussed.

Figure 2:2: Hellriegel *et al*, organisational culture typology



Source: (Hellriegel et al., 2004, p. 365)

Bureaucratic Culture: This type of organisation values rules, hierarchical coordination, formalisation and standard operating procedures; with the long-term concerns being efficiency, predictability and stability (Hellriegel et al., 2004). Managers within a bureaucratic organisation are good coordinators, organisers and enforcers of rules and procedures that are clearly defined. The tasks, responsibilities and authority for the entire organisation's employees are also clearly stated. (Hellriegel et al., 2004) Assert that most government institutions have bureaucratic cultures, which can hinder their effectiveness and efficiency. The focus of attention of this organisation is internal, and the formal control is stable.

Clan Culture: Aspects of this type of organisation are tradition, loyalty, teamwork, personal commitment and self-management. The organisation focuses their attention internally, yet their formal control is flexible. The members of this organisation recognise an obligation that is beyond their job descriptions, with the understanding that their contributions to the organisation may exceed their contractual agreements. Employees identify that their long-term commitment to their organisation, in the form of loyalty, is in exchange for the organisation's long-term commitment to the employee, in the form of security. Unity from this culture type is created through a long and thorough socialisation process, where long-term clan members serve as mentors and role models for newer members. There is also strong peer pressure to adhere to important norms within the organisation, and an environment is

created in which few departments are left completely free from normative pressures, which may generate creative and risk-taking behaviour (Hellriegel et al., 2004). Success of this type of organisation is assumed to depend on teamwork, participation, consensus decision making, as well as employee sensitivity to customers and concern for people (Hellriegel et al., 2004).

Entrepreneurial Culture: This cultural form is characterised by high levels of risk-taking, dynamism and creativity (Hellriegel et al., 2004). Employees are committed to experimentation, innovation and being on the leading edge. This organisational culture type reacts quickly to change, as well as creates it due to the fact that individual initiative, flexibility and freedom promoting growth are encouraged and rewarded (Hellriegel *et al.,* 2004). Effectiveness within this organisation means providing new and unique products and rapid growth. The organisation focuses their attention externally and formal control orientation is flexible in order to foster creativity and change.

Market Culture: According to Hellriegel *et al.* (2004), the achievement of measurable and demanding goals, especially those that are finance-based and market-based are characteristics of this type of organisational culture. In this organisation, the relationship between employee and organisation is contractual, where the obligation of each is agreed in advance; therefore the formal control orientation is quite stable. This is because the employee is responsible for an agreed level of performance with the organisation exchanging this for an agreed level of remuneration and reward in return (Hellriegel *et al.,* 2004). Competitiveness and a profit gaining orientation therefore exist throughout this organisation because increased levels of performance from the employee are rewarded through increased compensation from the organisation (Hellriegel *et al.,* 2004).

2.4.2 The Competing Values Framework (CVF)

Model by Quinn and Rohrbaugh (1981; 1983) and Cameron and Quinn (1999; K. Cameron & Quinn, 2011). This model of organisational culture typology is used in this research to classify the different types of organisational cultures within the selected organisations.

The CVF is chosen to be a measurement tool for OC in this study for several reasons. First, the CVF corresponds closely to Cameron and Quinn's (1999) definition of OC, which is the operational definition of OC used in this study. It is also consistent with Denison's hypotheses of categorisation of organisation focus and types of organisations. More importantly, the CVF has wide implications for a variety of organisational issues, including leadership, decision-making, and strategic management (Goodman et al., 2001; R. E. Quinn & Rohrbaugh, 1983; R. Quinn & Rohrbaugh, 1981). This

framework is useful in organising and understanding the four organisational culture types. These four culture types serve as the base for the Organisational Culture Assessment Instrument (OCAI) that has been widely cited in the literature and has been used more repeatedly in measuring an organisation's culture. The reliability of this model of culture was used to develop a standardised diagnostic tool, the OCAI (Cameron & Quinn, 1999), used in the current study to analyse the organisational culture in Libyan higher education in order to explore any variations in the PMS use. The OCAI is also used to discover any similarities in organisational culture between the different industry sectors.

The Organisational Culture Assessment Instrument (OCAI), developed by Cameron and Quinn (1999), was considered to be the most suitable for the purpose of this research. The OCAI is based on a theoretical model, and the Competing Values Framework by Quinn and Rohrbaugh (1983; 1981) refers to whether an organisation has an internal or external focus and whether it favours flexibility and individuality or stability and control. The framework is also based on six OC dimensions that form four types of dominant organisational culture types: Hierarchy, Clan, Adhocracy, and Market. Those four culture types are used to identify the organisational culture profile based on the core values, assumptions, interpretations, and approaches that characterise organisations (K. Cameron & Quinn, 2011). The following is a discussion of the organisational culture types: Hierarchy, Clan, Adhocracy, and Market. Cameron and Quinn (2011) further explain the four types of the Organisational Culture in figure (2:3).

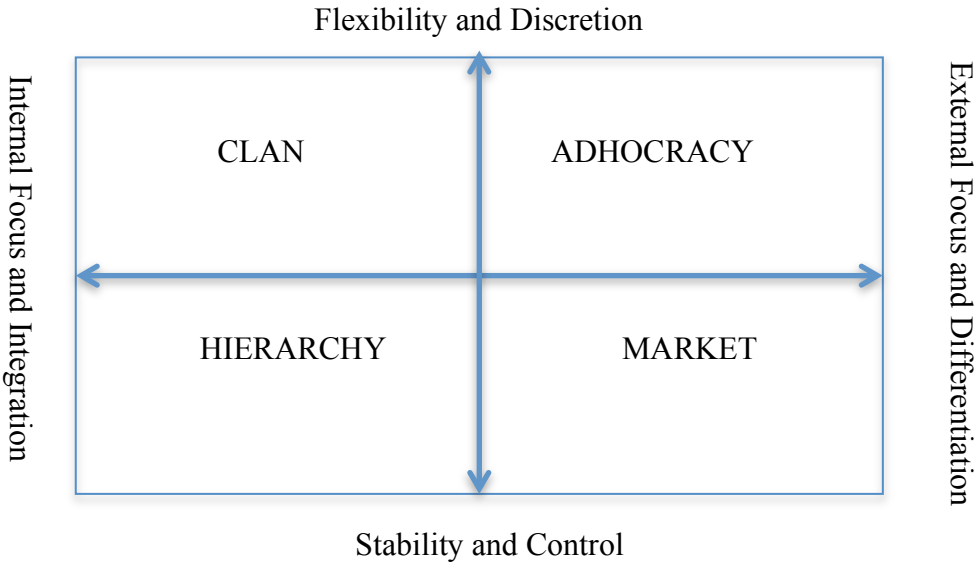


Figure 2:3 Competing Values Framework

Hierarchy culture The hierarchy culture refers to the culture of an organisation that concentrates on internal maintenance with a need for stability and control in their management and structure. The hierarchy culture has a structure and control that is derived from a strict chain of command, which is governed by formal rules, policies and procedures. It highlights stability, reliability, predictability and security of employment.

People in the hierarchy culture organisations have respect for the position and power, and these organisations often have clear policies, rules and procedures. Managers are usually the coordinators and organisers who keep a close eye on what is happening. Such organisational culture is dominant in large organisations and government agencies (K. Cameron & Quinn, 2011)

Hierarchy culture occurs in a bureaucratic organisation, where most people are helpful to each other and work together collectively.

Hierarchy culture is characterised by the desire to increase, improve and standardise the existing models, techniques, products, processes, services and technologies to task- or business-related use (Jordan et al., 2004). Cameron & Quinn (2011) found that when an organisation is dominated by the hierarchy culture its most effective managers those rated as most successful by their subordinates, peers, and superiors and those who tend to move up quickly in the organisation demonstrate a matching leadership style. That is, they are good at organising, controlling, monitoring, administering, coordinating, and maintaining efficiency.

Twati & Gammack (2006) who found that the organisational culture profiles of both the oil and gas and banking sectors of Libyan industry fit predominantly in the lower left quadrant (Figure 3:1), or the Hierarchy culture. Zahari & Shurbagi (2012) found that the Hierarchy culture was the dominant culture type in the Libyan Oil sector. In addition, (Parker & Bradley, 2000) in their study, which focuses on six organisations in the Queensland university public sector, found that four out of six departments were dominated by a Hierarchy culture. Trivellas & Dargenidou (2009), in their study on a sample of faculty and administration members at the Technological Educational Institution of Larissa, found that the Hierarchy culture proved to be the most prevalent among administration staff, while Clan and Hierarchy dominated among faculty members.

A hierarchy culture focuses on internal maintenance and strives for stability and control through the establishment of clear tasks and compliance with strict rules. Therefore, it tends to adopt a formal

relationship between those in non-leadership roles and leaders; the latter have to be good organisers and coordinators and follow the 'party line'. Great value is given to economy, formality, rationality, order and obedience. Cameron and Quinn (1999, 2006) stated that government agencies fit very strongly in the Hierarchy culture, which confirms this study's findings. Moreover, organisations in the Hierarchy culture are characterised as a formalised and structured workplace, governed by formal rules, policies and procedures, with efficiency-minded leaders valuing coordination and smooth organisation, and where stability, dependability, predictability and employment security are highlighted (Cameron and Quinn, 1999).

Clan culture Thus named because of their similarity to a family-run organisation, these organisations seem more like extended families than economic entities. Some basic assumptions in a clan culture are: the environment can best be managed through teamwork and employee development; customers are best thought of as partners; the organisation is in the business of developing a humane work environment; and the major task of management is to empower employees and facilitate their participation, commitment, and loyalty. (K. Cameron & Quinn, 2011). Clan culture refers to the culture of an organisation that focuses on internal maintenance with flexibility, care for people and sensitivity for customers. Clan culture organisations have less focus on control and a greater concern for flexibility. People are driven by vision, shared goals, outputs and outcomes. Organisations with this type of culture have an internal focus and a sense of family, and people work well together, strongly driven by loyalty to one another. Managers work in a facilitative, supportive way and may take on a parental role. Keskin et al (2005) point out that Clan culture highlights the human resources department and the human factor and emphasizes one to one connections and participations.

When the organisation is dominated by clan culture, the most effective leaders are parent figures, team builders, facilitators, nurturers, mentors, and supporters. Previous studies such as that of Shurbagi and Zahari (2013) find that Clan culture was the second dominant culture in National Oil Corporation of Libya.

Abousaber & Papazafeiropoulou (2011), whose study shows that the majority of organisational cultures of Saudi Arabia's Small and Medium Enterprises (SMEs) are clearly dominated by clan culture. Florida and Kenney (1991) have established that this culture type is prevalent in Japanese organisations. Henri (2006) has analysed a population consisting of 2175 Canadian manufacturing firms and concluded that top managers of firms reflect a clan type culture. Thomas, et al (2002) found

in a study of the relationship between project cultures (as assessed by Quinn's Competing Values Framework) and the quality of outcomes on thirteen construction sites that clan culture type was found to correlate to improved quality outcomes, whereas market culture was more common in construction companies.

Clan culture is typically seen in organisations that focus on internal maintenance with flexibility, concern for people, and sensitivity to customers. Emphasis is placed on human relations and internal relationships adopt flexible operational procedures. The core values include cooperation, consideration, agreement, justice and social equality. Such an organisation is generally a very pleasant place to work where people share a lot of themselves. It is like a big family where leaders are seen as mentors, and loyalty and tradition are seen as keeping the organisation together. This result is consistent with many previous studies: (Abousaber & Papazafeiropoulou, 2011; Florida & Kenney, 1991; Henri, 2006; Thomas et al., 2002).

Adhocracy culture Adhocracy culture relates to the ethos of an organisation that concentrates on external positioning with a high degree of flexibility and individuality. Adhocracy organisations have even greater independence and flexibility than those with clan culture; they rapidly form teams to face new challenges, and rely on experimenting rather than long projects and developments. Managers are visionary, innovative entrepreneurs who take calculated risks to make significant gains. Keskin et al (2005) argue that adhocracy culture focuses on entrepreneurship, innovativeness and creativity. Effective leaders in organisations dominated by adhocracy culture tend to be entrepreneurial, visionary, innovative, creative, risk-oriented, and focused on the future. The most effective leadership styles tend to match the organisation's culture, the dominant styles are in quadrants diagonally opposite to each other See (Figure 3:1). Adhocracy leaders are rule breakers, for example, whereas hierarchy leaders are rule reinforces. Clan leaders are warm and supportive, whereas market leaders are tough and demanding. Cameron and Quinn (1999, 2006) further explain the four types of the organisational Culture in figure (3:1). (Naranjo-Valencia, Jiménez-Jiménez, & Sanz-Valle, 2011) State that Adhocracy culture has a positive effect on innovative orientation. Twati (2006) hypothesised that organisations dominated by an adhocracy culture type will exhibit a significant positive direct relationship associated with acceptance and use of management information system MIS applications, and his study supported this hypothesis in the Arab Gulf region only. Keskin et al (2005) in their

investigation about the relationship between Adhocracy culture and tacit knowledge oriented management, found their hypothesis fully supported: Adhocracy culture was found to be positively related to tacit knowledge oriented management.

An adhocracy culture, where the organisation focuses on external positioning with a high degree of flexibility and individuality, is based on an open system that promotes the will to act. Overall, it is a dynamic, entrepreneurial and creative place to work where people take risks. Leaders are visionary and innovative, and success means producing unique and original products and services. The organisation values creativity, experimentation, risk, autonomy and responsiveness.

Market culture The name market is not synonymous with the role of marketing function or the consumer marketplace. Rather, it refers to a type of organisation that serves as a market in itself. Market culture points to an organisation that focuses on external maintenance with a need for stability and control. Market culture is not focused on only marketing, but it is where all actions, internal and external, are viewed in market terms. In an efficient market culture organisation, value passes between people and stakeholders with minimum cost and delay. Market cultures are outward looking, result-driven and usually very competitive. Managers in this type of culture are hard-driving competitors who attempt to achieve goals (Cameron & Quinn, 2011). When an organisation is dominated by market culture, the managers rated as most effective tend to be hard driving. Igo & Skitmore (2006), applying the tool called Organisational Culture Assessment instrument (OCAI); found that this culture was dominant in Australian companies. (Zu et al., 2010) Investigated how organisational culture influences the implementation of various practices incorporated in the recent focus of Six Sigma, which related to the traditional management called Total Quality Management (TQM); they used survey data collected from 226 manufacturing plants in the United States. Relationships between the four types of and 10 practices of TQM / Six Sigma were examined, and the results revealed that the dominant culture was market culture. Twati (2006) hypothesised that organisations dominated by market culture type will exhibit a significant positive direct relationship associated with the acceptance and use of management information system (MIS) applications, and his study supported this hypothesis in Arab Gulf region only. Also, Shurbagi and Zahari (2013) pointed out that there was a positive relationship between transformational leadership and Market culture in the National Oil Corporation of Libya. They are good at directing, producing results, negotiating, and motivating others.

The Clan Culture A very friendly place to work where people share a lot of themselves. It is like an extended family. The leaders, or head of the organisation, are considered to be mentors and, maybe even, parent figures. The organisation is held together by loyalty or tradition. Commitment is high. The organisation emphasizes the long-term benefit of human resource development and attaches great importance to cohesion and morale. Success is defined in terms of sensitivity to customers and concern for people. The organisation places a premium on teamwork, participation, and consensus.	**The Adhocracy Culture** A dynamic, entrepreneurial, and creative place to work. People stick their necks out and take risks. The leaders are considered to be innovators and risk takers. The glue that holds the organisation together is commitment to experimentation and innovation. The emphasis is on being on the leading edge. The organisation's long-term emphasis is on growth and acquiring new resources. Success means gaining unique and new products or services. Being a product or service leader is important. The organisation encourages individual initiative and freedom.
The Hierarchy Culture A very formalized and structured place to work. Procedures govern what people do. The leaders pride themselves on being good coordinators and organizers, who are efficiency-minded. Maintaining a smooth-running organisation is most critical. Formal rules and policies hold the organisation together. The long-term concern is on stability and performance with efficient, smooth operations. Success is defined in terms of dependable delivery, smooth scheduling, and low cost. The management of employees is concerned with secure employment and predictability.	**The Market Culture** A results-oriented organisation. The major concern is getting the job done. People are competitive and goal-oriented. The leaders are hard drivers, producers, and competitors. They are tough and demanding. The glue that holds the organisation together is an emphasis on winning. Reputation and success are common concerns. The long-term focus is on competitive actions and achievement of measurable goals and targets. Success is defined in terms of market share and penetration. Competitive pricing and market leadership are important. The organisational style is hard-driving competitiveness.

Figure 2:4 Organisational Culture Profile (K. Cameron & Quinn, 2011, p. 66)

2.5 Organisational Performance Types According to "Competing Values Framework CVF"

The Organisational Culture Assessment Instrument (OCAI) is based on a theoretical model, the Competing Values Framework (CVF) model by Quinn and Rohrbaugh (1981; 1983) and Cameron and Quinn (1999; K. Cameron & Quinn, 2011), which is considered to be the most suitable for the purposes for a certain type and this research is matched those criteria. The framework is also based on six organisation culture dimensions that form four types of dominant organisational culture types: Hierarchy, Clan, Adhocracy, and Market. Those four culture types are used to identify the organisational culture profile based on the core values, assumptions, interpretations, and approaches that characterise organisations (Cameron & Quinn, 2011). In addition, CVF refers to organisational performance types, and is used to identify whether an organisation has an internal or external focus and whether it favours flexibility and individuality or stability and control.

Each organisational performance type, according to Cameron & Quinn (2011), can be characterised by one of four core values in the Competing Values Framework that represent opposite or competing assumptions. Each continuum highlights a core value that is opposite to the value at the other end of the continuum-flexibility versus stability, internal versus external.

Therefore, the dimensions of the competing values Framework diagram are also produce quadrants contradictory or competing in the diagonal. The upper left quadrant, for example, identifies values that emphasize an internal and organic focus, while the lower right quadrant identifies values that emphasize an external and control focus. Similarly, the upper right quadrant identifies values that emphasize an external organic approach, while the lower left quadrant emphasizes internal values and control. The competing or opposite values in each quadrant give rise to the name for the model, the Competing Values Framework.

According to "Competing Values Framework CVF" model by Quinn and Rohrbaugh (1981; 1983) Cameron and Quinn (1999; K. Cameron & Quinn, 2011), there are two cultural types associated with stability and control values that are characterised by the stability and control organisational performance type: the hierarchy culture, and the market culture. The hierarchy culture concentrates on internal maintenance, while the market culture points to an organisation that focuses on external maintenance.

Caermen & Quinn (2011) state that as competition, change, and pressure intensifies for organisations, organisational culture is given more importance and emphasis, and organisational culture creates both

the stability and the adaptability of organisations. Moreover, stability is the glue that holds an organisation together.

In addition, flexibility values refer to the spontaneity, change, openness, adaptability and responsiveness. More specifically, the culture of development based on adaptability and willingness is geared to achieve growth, innovation and creative ability. Group culture sees cohesion, team spirit and morale as a means to promote the development / empowerment and engagement of human resources. In short, the types associated with cultural values promote flexibility, loose and informal controls, side open communication channels and a free flow of information throughout the organisation (Burns & Stalker, 1961). Culture flexible highlights fundamental values such as spontaneity, change, openness, adaptability and sensitivity.

To summarise, the main characteristics and values of the four organisational culture typologies are shown in Table 2:1.

Table 2:1 Classifications of organisational culture typologies

	Culture Classifications	**Characteristics**	**Values**
Rowe *et al.,* (1994)	Productive	Resists change: Performance and technical orientation	Efficiency and consistency within organisation
	Quality	Accepts change: Achievement and technical orientation	Problem solving and effective planning
	Creative	Initiates change: Achievement and social orientation	Innovation and entrepreneurial thinking
	Supportive	Responds to change: Performance and social orientation	Teamwork, cooperation, and reinforcement
Hellriegel *et al.,*(2004)	Bureaucratic	Focus of attention is internal Control is stable	Rules, hierarchical coordination, predictability and stability
	Clan	Focus of attention is internal Control is flexible	Teamwork, participation, consensus decision making, loyalty, adherence to norms

	Entrepreneurial	Focus of attention is external Control is flexible	Dynamism, creativity, risk taking
	Market	Focus of control is external Control is stable	Achievement of measurable and demanding goals that are finance and market-based
Cameron and Quinn (1999; K. Cameron & Quinn, 2011)	Hierarchy	Focus in internal maintenance with a need for stability and control	Formal rules, policies and procedures. It highlights stability, reliability, predictability and security of employment
	Clan	Focuses on internal maintenance with flexibility, care for people and sensitivity for customers	Thus named because of their similarity to a family-run organisation, these organisations seem more like extended families than economic entities
	Adhocracy	External positioning with a high degree of flexibility and individuality	Organisations dominated by adhocracy culture tend to be entrepreneurial, visionary, innovative, creative, risk-oriented, and focused on the future
	Market	Focuses on external maintenance with a need for stability and control	Market cultures are outward looking, result-driven and usually very competitive. Managers in this type of culture are hard-driving competitors who attempt to achieve goals.

2.6 Strategy Formulation and Change of Organisational Culture

The need for organisation change is generally signalled through changes in strategy. Schneider (1989) state that the strategy formulation process determines the manner in which an organisation knows and responds to its environment.

Green (1988) defined Culture as 'the significant shared meanings which allow managers collectively to make sense of what they and others do, Strategy constitutes an important constellation of these meanings and management is a cultural process aimed at altering managers' interpretations about the fundamental nature and purpose of their organisation and their roles within it. It is argued that senior executives seeking strategic change need to pay more attention to what messages they are seeking to communicate and how these messages are likely to be received. In this way, they can more readily hit on the right language and symbolic action to influence strategy. However, the most brilliant strategy is worse than useless if it cannot be implemented because it is socially unacceptable. This may happen when intended strategy calls for new ways of doing things which either conflict with traditional ways, or which lead to changes in (relative) power. While formulation of strategic options may be an analytic process, strategy choices and implementation are behavioural processes. The implicit assumption here is that, once established, corporate culture becomes relatively resistant to environmental, and hence to strategic change.

(Ibid) argue that culture is separate from the rest of the organisation's social system (formal structure, systems and strategy); it is capable of a wide range of modes of integration within it. A key management task, therefore, is to enhance system integration.

Shrivastava (1985) argue that the organisational culture is an important variable for effective strategy making. It influences the different stages of the strategic decision process and consequently affects the content of corporate strategies. The challenge facing managers in charge of strategy making is to examine cultural products and their impact on strategy. While many cultural characteristics may be difficult to change, managers can at least be aware of them and try to develop strategies consistent with organisational culture. Therefore, if a culture effect people to the need for change or causes them to resist it, then cultural blocks have to be eliminated. Although organisational cultures are conceptually elusive, they have important influences on corporate strategy. Hence, managers need to assess their impact in qualitative terms and try to integrate cultural products and processes with corporate strategy

formulation.

As Cameron & Quinn (2011) has shown in their research that organisations may be worse off than if the change strategy had not been attempted in the first place. Modifying organisational culture, in other words, is a key to the successful implementation of major improvement strategies (TQM, downsizing, reengineering) as well as adaptation to the increasing turbulent environment faced by modern organisations. Organisations should identify what needs to change in an organisation's culture and for developing a strategy to initiate change in key elements. The methodology relies on a process of dialogue among individuals charged with initiating and managing the change. This usually involves managers near the top of the organisation, but it may involve organisation members at all levels. Of course, changing culture is a difficult and long-term effort. It will be necessary, over time, to address almost every aspect of the organisation to ensure that it is aligned and reinforces the preferred culture. To remember the various aspects of the organisation that need to be considered is to use a variation on the "Seven S" model which introduced by Waterman, Peters, & Phillips (1980), they recognise that successful culture change may require a change in structure, symbols, systems, staff, strategy, style of leaders, and skills of managers. Alignment of these factors will be an important part of successful culture change.

Cameron & Quinn (2011) state that without changing personal behaviour by members of the organisation, organisational culture change will be frustrated. A change in culture depends on the implementation of behaviours by individuals in the organisation that reinforce the new cultural values and are consistent with them. It is possible to identify a desired culture and specify strategies and activities designed to produce change, but without the change process becoming personalized, without individuals' willingness to engage in new behaviours without an alteration in the administrative competence in the organisation, fundamental culture of the organisation will not change. Therefore, the Competing Values Framework to include a process by which managerial behaviours that is, the skills and competencies of managers can be changed to reinforce the culture change process.

Cameron & Quinn (2011) present a six-step process that should be followed when designing and implementing an organisational culture change effort. The purpose of these six steps is to foster involvement and to minimize resistance to the culture change by those affected, to clarify for all concerned what the new cultural emphasis will be, to identify what is to remain unaltered in the organisation in the midst of change, and to generate specific action steps that can be initiated to create

momentum toward culture change. The six steps for initiating organisational culture change are as follows:

1. Reach consensus on the current culture.

2. Reach consensus on the desired future culture.

3. Determine what the changes will and will not mean.

4. Identify illustrative stories.

5. Develop a strategic action plan.

6. Develop an implementation plan.

Of course, changing culture is a difficult and long-term effort. It will be necessary, over time, to address almost every aspect of the organisation to ensure that it is aligned and reinforces the preferred culture.

Our intent in outlining these six steps for implementing culture change is to help ensure that the organisation is clear from the outset about its current culture and why it needs to change. A common mistake in organisations desiring to improve is that they do not take the time to arrive at a common viewpoint among employees about where the organisation is starting from and where it needs to go. Unsuccessful organisation often launch right into a new change program without considering the need to develop a consensual view of the current culture, the need to reach consensus of what change means and doesn't mean, and the specific changes that will be started, stopped, and continued. This six-step strategy will help you overcome these common obstacles to change and make the management of culture change more systematic.

Culture change at a deep level, of course, may require actions that supplement and build on this six-step process. As an example, we provide one more case study of an organisation that faced the need to change its culture. The key to culture change in this organisation, however, was certain actions taken by the top management team that complemented the OCAI methodology. We discuss this case in order to illustrate variations that are possible when the OCAI serves as the foundation but not the comprehensive strategy for culture change.

Shrivastava (1985) state that since organisational cultures influence the meaning attributed to information in decision-making contexts, the design of strategic information systems should explicitly consider cultural factors.

2.7 Organisational Culture and Performance Measurement Systems

Currently, there is a continuing debate in the organisational culture literature as to whether or not organisational culture has an impact on performance measurement systems. As the literature review will show, the evidence is mixed. As a consequence, a better question may be: "Under what circumstances does organisational culture impact on performance measurement system?" An observation from reviewing the literature was that there was little field research focusing on the influence of organisational culture and therefore this researcher designed this research specifically to investigate the influence of organisational culture on performance measurement systems.

Murphy & Cleveland (1995) believe that research on culture will contribute to the understanding of performance management. Magee (2002) contends that without considering the impact of organisational culture, organisational practices such as performance management could be counterproductive because the two are interdependent and change in one will impact the other. According to Kandula (2006) the key to good performance is a strong culture.

The relationship between organisational culture and performance has been examined by some researchers such as: (Abraham et al., 2004; Aljaz, 2011, 2012; Ehtesham, 2011; Eker & Eker, 2009; Grifel, 1994; Henri, 2006; Jofreh & Masoumi, 2013; Vakkuri & Meklin, 2003). However, not much research has been done on organisational culture and performance measurement systems, especially in the higher education sector. Therefore, the purpose of this study is to fill these gaps by determining the relationship between the four types of organisational culture and performance measurement systems.

Table 2:2 Studies in Organisational Culture and Performance Measurement

N	Author	Title	Year	Reference
	Vakkuri & Meklin	The impact of culture on the use of performance measurement information in the university setting	2003	(Vakkuri & Meklin, 2003)
1	Abraham, Mark,	The Impact of Organisational Culture on	2004	(Abraham et

	& Xenophon	Time-Based Manufacturing and Performance		al., 2004)
2	Henri, Jean Francois	Organizational culture and performance measurement systems	2006	(Henri, 2006)
3	Melek Eker & Semih Eker	An Empirical Analysis of the Association between the Organisational Culture and Performance Measurement Systems in the Turkish Manufacturing Sector	2009	(Eker & Eker, 2009)
4	Aljaz, Stare	The Impact Of The Organisational Structure And Project Organisational Culture On Project Performance In Slovenian Enterprises	2011	Aljaz, 2011
5	Ehtesham, U. M., Muhammad, T. M., & Muhammad, S. A	Relationship between Organizational Culture and Performance Management Practices	2011	(Ehtesham, 2011)
6	Aljaz, Stare	The impact of a project organisational culture and team rewarding on project performance	2012	(Aljaz, 2012)
7	Manouchehr Jofreh Elahe Sadat Masoumi	Diagnosing organizational culture: An empirical investigation	2013	Jofreh & Masoumi, 2013

Ehtesham (2011) points out that the statistical analysis results of his study show that participation is highly correlated with consistency and adaptability. Also, the other dimensions of organisational culture have a positive significant relationship with performance management practices, and this study is about performance measurement systems.

Kandula (2006) further maintains that due to differences in organisational culture, same strategies do not yield same results for two organisations in the same industry and in the same location. A positive and strong culture can make an average individual perform and achieve brilliantly whereas a negative and weak culture may de-motivate an outstanding employee to underperform and end up with no achievement.

Therefore, organisational culture has an active and direct role in performance management. Murphy and Cleveland (1995) believe that research on culture will contribute to the understanding of performance management. Magee (2002) contends that without considering the impact of organisational culture, organisational practices such as performance management could be counterproductive because the two are interdependent and change in one will impact the other.

Overall, there is a strong view in the literature that a good organisational culture leads to increased organisational performance. However, studies on this relationship often differ as to the extent a practice is likely to be positively or negatively related to performance.

Many researchers (e.g., Denison, Haaland, & Goelzer in Yilmaz, 2008) have called to investigate the phenomenon of organisational culture in different cultural contexts, in those of non-western nations in particular.

(Bititci et al., 2006) argue that the findings from the case studies suggest that there is indeed interplay between organisational culture, management styles and performance measurement.

Eker & Eker (2009) studied the relationship between organisational culture and performance measurement systems (PMS) in the context of the Turkish Business environment. This study has led to a greater understanding of the influence of organisational culture on the design and use of performance measurement systems. The results show that there is a noticeably positive and significant relationship between the flexibility value firms and the use of PMS for organisational attention and strategic decision-making and non-financial PMS.

This study of organisational culture and performance measurement tested the relationships between organisational culture and the acceptance, importance and use of performance measurement systems, to understand which organisational culture type has more or less influence on the acceptance of specific indicators of performance measurement and the disregarding of others, and why.

2.8 Conceptual Model and Hypotheses

Literature refers to organisational culture as a moderating factor in the acceptance and implementation of any successful changes in organisations (Van den Bosch, Volberda, & de Boer, 1999). One of the general research questions of this research is: In Libyan higher education, does organisational culture influence the acceptance, importance and use of performance measurement systems. To address this more specifically we need a measure of organisational culture, and a look at some key organisations

that have been (and can be expected to be) leading users and adopters of performance measurement systems.

2.8.1 Research Questions

The study adopted the exploratory research approach to explore the impact of the four organisational culture types (Hierarchy, Clan, Adhocracy and Market) on the acceptance, importance and use of PMS in Libyan higher education. The main and subsidiary questions for this research arise from gaps existing in the literature concerning the relationships between organisational culture and PMS acceptance, importance and use in Libyan higher education in general and in each type of Libyan higher education in particular. This leads us to the following main research question:

What influence does organisational culture have on the acceptance, importance and use of performance measurement systems in Libyan higher education?

Subsidiary questions are the following:

To achieve the first objective the researcher developed the following questions:

1- What types of organisational culture are dominant in Libya's higher education system?
2- What types of organisational performance are found in Libya's higher education system?

To achieve the second objective the researcher developed the following questions:

3- To what extent are the performance measurement systems (financial, non-financial and advanced) acceptable in Libyan education system?
4- To what extent are the performance measurement systems considered important in Libyan education system?
5- To what extent are the performance measurement systems used in Libyan education system?

To achieve the third and fourth objectives the researcher developed the following questions:

6- What influence does organisational culture have on the acceptance of performance measurement systems (PMS) in Libyan higher education system?
7- What influence does organisational culture have on the importance of performance measurement systems (PMS) in Libyan higher education system?

8- What influence does organisational culture have on the use of performance measurement systems (PMS) in Libyan higher education system?
9- Do culture types differ for different job titles and positions and levels of education?

To assess the influence of organisational culture on the acceptance of PMS, Cameron and Quinn's (1999; K. Cameron & Quinn, 2011) model was used. This model has six dimensions, namely: Organisational Characteristics, Organisational Leadership, Management of Employees, Organisational Glue, Strategic Emphasis, and Criteria of Success. Cameron and Quinn used a six dimensional model for an analysis, which then helped them derive four organisational culture types. These are: Hierarchy Culture; Clan Culture; Adhocracy Culture; and Market Culture.

2.8.2 Defining the Variables

Definition of variables is a primary objective in quantitative and qualitative research. This study defined two types of variables: dependent and independent. A dependent variable is the outcome measure in which researchers are interested (i.e., the effect under investigation). The independent variables are variables that are systematically controlled by the researchers to determine the variable's effect on the outcome (dependent variable) (VanderStoep & Johnson, 2009). For the purposes of this study, the researcher focuses on the two mentioned variables, namely:

1-The dependent variables: (Financial and Non-financial Performance Measurement Systems).

a. Performance measurement systems (PMS) acceptance.
b. Performance measurement systems (PMS) importance.
c. Performance measurement systems (PMS) use.

2-The independent variables: (Four types of organisational culture).

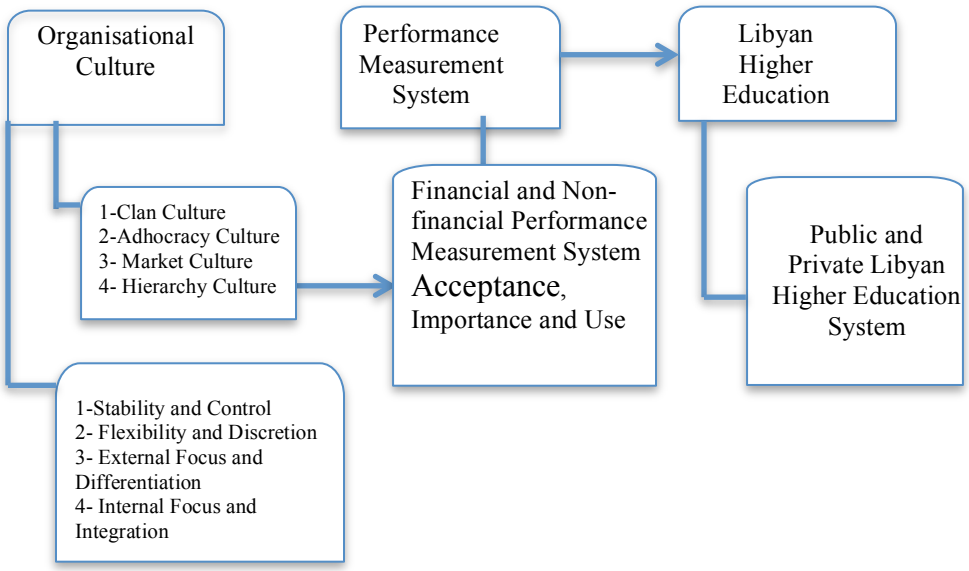
a. Clan Culture
b. Adhocracy Culture
c. Market Culture
d. Hierarchy Culture

2.8.3 The Conceptual Model of the Study

In order to address the above-mentioned problem and research questions, the researcher developed a research design based on models from the organisational culture of Cameron and Quinn (1999; K. Cameron & Quinn, 2011). Figure (3:1) explains the research theoretical model, which is the

conceptual framework of this research. The figure shows the relationship between the three parts of the model. The first part is concerned with four organisational culture types. The second part is concerned with the extent of usage of the performance measurement diversity. The third part is concerned with Libyan higher education.

Figure 2:5 Conceptual Frameworks



2.8.4 The Conceptual Model for Organisational Culture

In today's literature various models are developed for determining organisational culture. In this study, "competing values" are examined. The Organisational Culture Assessment Instrument (OCAI) has been chosen because it was planned to focus the search on major cultural dimensions useful in organising and understand organisational phenomena. Using the OCAI, an organisational culture profile can be verified by determining the organisation's dominant culture type characteristics. Cameron and Quinn (1999; 2011) acknowledge that organisational culture is extremely broad and inclusive in its scope: a reason why there are so many dimensions or perspectives to measure it. They identified two major dimensions, which orient the axis into four main quadrants. These dimensions relate to flexibility and discretion versus stability and control, and to internal focus and integration versus external focus and differentiation. The resulting Competing Values Framework (CVF) is set out in Figure 3:2 later, where each quadrant represents a different type of organisational culture.

The Competing Values Framework (CVF) model developed by Cameron and Quinn (1999; K. Cameron & Quinn, 2011) has been chosen to be a measurement tool for Organisational Culture (OC) to examine aspects of dominating organisational culture type on the acceptance, importance and use of performance measurement systems (PMS).

Thus, as there are many approaches to the study and measurement of organisational culture, the researcher has sought, for the purposes of the current study, a valid and reliable instrument that can be adapted to measure the influence of OC on the acceptance of PMS.

The OCAI is based on a theoretical model, the "Competing Values Framework" by Quinn and Rohrbaugh (1981; 1983) and Cameron and Quinn (1999; K. Cameron & Quinn, 2011). This framework refers to whether an organisation has an internal or external focus and whether it favours flexibility and individuality or stability and control. The framework is also based on six organisation Culture dimensions that form four types of dominant organisational culture types: hierarchy, clan, adhocracy, and market. Those four culture types are used to identify the organisational culture profile based on the core values, assumptions, interpretations, and approaches that characterise organisations (K. Cameron & Quinn, 2011). The OCAI is discussed more fully in next section.

2.8.4.1 **The Organisational Culture Assessment Instrument (OCAI)**

Although there are multiple ways to assess organisational culture, this instrument has been found to be both useful and accurate in diagnosing important aspects of an organisation's underlying culture. Cameron and Quinn (1999; K. Cameron & Quinn, 2011) argue that OCAI has been used in more than a thousand organisations that they know of, and it has been found to predict organisational performance.

The OCAI consisted of 24 questions organised into six organisational culture dimensions or parts of the competing values framework (dominant characteristics, organisational leadership, organisation glue, strategic emphases, management of employees and criteria of success) with four descriptions in each part (K. Cameron & Quinn, 2011). The four descriptions matched the definitions of each of the four culture types (i.e. Hierarchy, Clan, Market and Adhocracy). Respondents were asked to distribute 100 points among the four culture types in each of the parts, depending on how well the descriptions matched their view of their own organisation. Scores for each of the four culture types were then added

across the six parts. The OCAI is a simple questionnaire that has six categories in which 100 points are distributed between four sub-items, each representing the four Competing Values cultures, where:

- Type A style indicates a Clan culture
- Type B style indicates an Adhocracy culture
- Type C style indicates a Market culture
- Type D style indicates a Hierarchy culture

Table 2:3 Six Organisational Culture Dimensions

Category	Style
1.Dominant organisational characteristics	A: Personal, like a family B: Entrepreneurial, risk taking C: Competitive, achievement oriented D: Controlled and structured
2. Leadership style	A: Mentoring, facilitating, nurturing B: Entrepreneurial, innovative, risk taking C: No-nonsense, aggressive, results oriented D: Coordinating, organizing, efficiency oriented
3. Management of employees	A: Teamwork, consensus, and participation B: Individual risk taking, innovation, freedom, and uniqueness C: Competitiveness and achievement D: Security, conformity, predictability
4. Organisational glue	A: Loyalty and mutual trust B: Commitment to innovation, development C: Emphasis on achievement and goal accomplishment D: Formal rules and policies
5. Strategic emphasis	A: Human development, high trust, openness B: Acquisition of resources, creating new challenges C: Competitive actions and winning D: Permanence and stability
6. Criteria for success	A: Development of human resources, teamwork, concern for people B: Unique and new products and services C: Winning in the marketplace, outpacing the competition D: Dependable, efficient, low cost

The Organisational Culture Assessment Instrument (OCAI), which is based on the competing values framework (CVF) and provides a pragmatic toolkit for change managers "to help managers, change agents, and scholars understand, diagnose and facilitate the change of an organisation's culture to enhance its effectiveness" (K. Cameron & Quinn, 2011). The following is a discussion of the Competing Values Framework (CVF).

It should be noted that, although the OCAI is a well-developed, valid and reliable instrument (Cameron and Quinn, 1999; Kalliath et al., 1999), it does not claim to cover comprehensively all cultural phenomena in organisations (Paparone, 2003). Instead, it offers an intuitively appealing and relatively easy way to 'organise organisational culture types' (Cameron and Quinn, 1999: 17).

2.8.4.2 The competing values framework (CVF)

The Competing Values Framework (CVF) model was originally developed by Quinn and Rohrbaugh (1981). Basically, the framework was for an empirical investigation on the question of what made organisations effective (R. E. Quinn & Rohrbaugh, 1983).

The Competing Values Framework (CVF) was introduced in many studies: (Aljaz, 2012; K. S. Cameron & Quinn, 1991; Deshpande et al., 1993; Henri, 2004, 2006; Shafei, Ghaderzadeh, Salavati, & Lavei, 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006; Zu, Zhou, Zhu, & Yao, 2011). They have all identified the four types of culture: clan, adhocracy, hierarchy and market (K. S. Cameron & Quinn, 1991; R. E. Quinn & Cameron, 1983; R. E. Quinn & Rohrbaugh, 1983). The competing values framework (CVF) of Cameron and Quinn (1999; K. Cameron & Quinn, 2011) for measuring organisational culture has been adopted in this study as mentioned before. Quinn & Cameron (1983) argue that organisational culture is a complex, interrelated, comprehensive and ambiguous set of factors. It is impossible to include all relevant factors in diagnosing and assessing organisational culture.

Cameron and Quinn (2011) state that the CVF was developed initially from research conducted on the major indicators of effective organisations. The key questions asked in the investigation were these: What are the main criteria for determining if an organisation is effective or not? What key factors define organisational effectiveness? When people judge an organisation to be effective, what indicators do they have in mind? John Campbell et al (1974) created a list of thirty-nine indicators that they claimed represented a comprehensive set of all possible measures for organisational effectiveness.

Quinn and Rohrbaugh (1983) analysed that list of indicators to determine if patterns or clusters could be identified. Since thirty-nine indicators are too many to comprehend or to be useful in organisations, they sought a more parsimonious way to identify the key factors of effectiveness. The thirty-nine indicators of effectiveness were submitted to a statistical analysis, and two major dimensions emerged that organized the indicators into four main clusters. One dimension differentiates effectiveness criteria that emphasize flexibility, discretion, and dynamism from criteria that emphasize stability, order, and control. Organisations are viewed as effective if they are stable, predictable, and mechanistic. The continuum ranges from organisational versatility and pliability on one end to organisational steadiness and durability on the other end. The second dimension differentiates effectiveness criteria that emphasize internal orientation, integration, and unity from criteria that emphasize an external orientation, differentiation, and rivalry. Some organisations are viewed as effective if they have harmonious internal characteristics. Others are judged to be effective if they are focused on interacting or competing with others outside their boundaries.

On the other hand, in this study the performance measurement system defined in Neely et al., (2005, pp. 80-81) is as follows:

"Performance Measurement can be defined as the process of quantifying the efficiency and effectiveness of action.

Performance Measurement can be defined as a metric used to quantify the efficiency and/or effectiveness of action.

Performance Measurement system can be defined as a set of metrics used to quantify both the efficiency and effectiveness of actions."

From previous definitions it can be seen that the authors have focused on the effectiveness and efficiency of performance measurement actions, whereas, organisational culture has been widely considered as critical for effective quality management implementation (Prajogo and McDermott, 2005, as cited in (Zu et al., 2011). Organisational culture, however, has been an area in which conceptual work and scholarship have provided guidance for managers as they search for ways to improve their organisations' effectiveness (K. Cameron & Quinn, 2011).

This study of organisational culture and performance measurement systems tested the relationships between organisational culture and the acceptance, importance and use of performance measurement systems, in order to understand which organisational culture type has more or less influence in the adaptation of specific indicators of performance measurement and in the discarding of others, and why. Therefore, this study adapted the competing values framework (CVF) of Cameron and Quinn (1999; K. Cameron & Quinn, 2011) to measure organisational culture for several reasons. First, CVF corresponds closely to Cameron and Quinn's (2011, p. 17) definition of OC, which is the operational definition of OC used in this study. More importantly, the CVF is used widely in the literature and is the most comprehensive instrument in the field of organisational culture for studying a variety of organisational issues, including leadership, decision-making, and strategic management (Berrio, 2003; Deshpande et al., 1993; Eker & Eker, 2009; Helfrich, Li, Mohr, Meterko, & Sales, 2007; Henri, 2006; Igo & Skitmore, 2006; Naranjo-Valencia et al., 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006; Zahari & Shurbagi, 2012; Zu et al., 2011). Due to this, the CVF is argued to be a valid framework for examining OCs in this study.

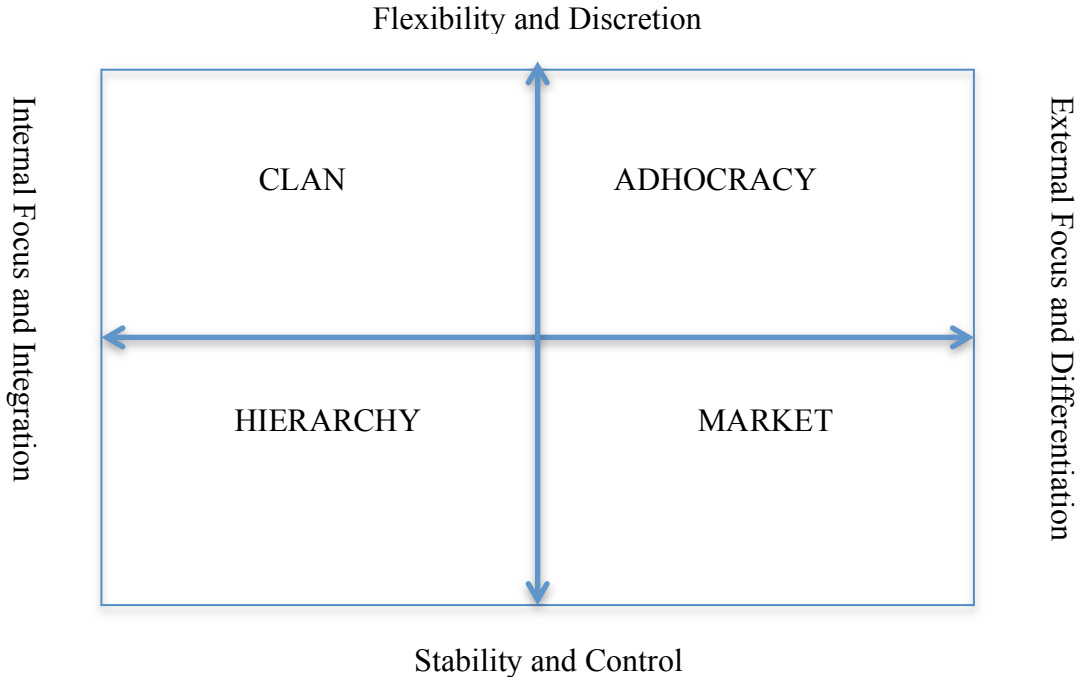
Table 2:4 Studies Used the Competing Values Framework Model

N	Author	Title	Year	Model	Reference
1	Cameron & Freeman	Cultural Congruence, Strength, and Type: Relationships to Effecteness. Research in Organisational Change and Development by JAI Press Inc,	1991	The Competing Values Framework (CVF)	(K. S. Cameron & Quinn, 1991)
2	Deshpande, et al	Corporate Culture, Customer Orientation, and Innovativeness in Japanese Firms: A Quadrad Analysis	1993	The Competing Values Framework (CVF)	(Deshpande et al., 1993)
3	John C. Smart & Edward P. St. John	Organizational Culture and Effectiveness in Higher Education: A Test of the "Culture Type" and "Strong Culture" Hypotheses	1996	The Competing Values Framework (CVF)	(Smart & St. John, 1996)
3	Berrio, A. A.	An Organizational Culture Assessment Using the Competing Values Framework: A Profile of Ohio State University Extension	2003	The Competing Values Framework (CVF)	Berrio, 2003
4	Henri, J.-F.	Organizational culture and performance measurement	2006	The Competing Values	(Henri, 2006)

		systems		Framework (CVF)	
5	Twati, J. M., & Gammack, J. G.	The impact of organisational culture innovation on the adoption of IS/IT: the case of Libya	2006	The Competing Values Framework (CVF)	(Twati & Gammack, 2006)
6	Ramachandran, Sharimllah Devi Chong, Siong Choy Ismail, Hishamuddin	Organisational Culture: An Exploratory Study Comparing Faculties' Perspectives within Public and Private Universities in Malaysia	2011	The Competing Values Framework (CVF)	Ramachandran et al. (2011)
7	Zu, X., Zhou, H., Zhu, X., & Yao, D.	Quality management in China: the effects of firm characteristics and cultural profile	2011	The Competing Values Framework (CVF)	(Zu et al., 2011)
8	Julia, C. N.-V., Daniel, J. n.-J. n., & Raquel, S.-V.	Innovation or imitation? The role of organisational culture.	2011	The Competing Values Framework (CVF)	(Naranjo-Valencia et al., 2011)
9	Aljaz, Stare	The impact of a project organisational culture and team rewarding on project performance.	2012	The Competing Values Framework (CVF)	Aljaz, S. (2012)
10	Shurbagi, A. M. A., & Zahar, I, B	The Relationship between Transformational Leadership and Organizational Culture in National Oil Corporation of Libya	2013	The Competing Values Framework (CVF)	(Shurbagi & Zahari, 2013)

The most important reason for choosing CVF is that both the performance measurement system and the Competing Values Framework focus on the effectiveness and the efficiency of organisations.

Figure 2:6 Competing Values Framework



Source: (K. Cameron & Quinn, 2011)

(R. E. Quinn & Cameron, 1983) Argue that organisational culture is a complex, interrelated, comprehensive and ambiguous set of factors. It is difficult to include all relevant factors in diagnosing and assessing organisational culture.

Competing values framework model defines four organisational cultures types – adhocracy, clan, market and hierarchy – using two dimensions (see Figure 4:4), namely flexibility and discretion versus stability and control, and external focus versus internal focus and integration, and six organisational characteristics, dominant characteristics, organisational leadership, and management of employees, organisational glue, strategic emphases and criteria of success.

The hierarchy culture (or the internal process model) refers to organisations that emphasise internal maintenance with a need for stability and control. The hierarchy culture sees key values centred on maintaining efficient, reliable, fast, smooth-flowing productions or services. The market culture (or the rational goal model) concentrates on external maintenance with a need for stability and control. Its core values are competitiveness and productivity. The clan culture (or the human relations model) has characteristics of an extended family where shared values, beliefs and goals, participation,

individuality, and a sense of "we" exist. The adhocracy culture (or the open system model) is temporary in nature and is characterised by a dynamic, entrepreneurial and creative workplace (R. E. Quinn & Cameron, 1983).

2.9 Summary

This section gave a brief summary of the conceptual model used in this study. Next the independent variables and the dependent variables are explained in terms of their theoretical and conceptual support in the literature that was reviewed. The next chapter will discuss the literature review relating to the contingency theory of performance measurement systems.

Chapter 3: Literature Review for Contingency theory of Performance Measurement Systems

3.1 Introduction

The main purpose of a literature review for contingency theory of performance measurement systems (PMS) is to provide a description of the existing knowledge in a research area and an account of independent research work done before. Chapter three reviews the literature on (PMS) as dependent variable, while also discussing the relevant literature on organisational culture, the independent variable.

The literature review consists of three main sections. The first section discusses the contingency theory of PMS, and the second section discusses from an academic perspective the financial and non-financial PMS. Finally, the third section discusses the three dependent variables of PMS: PMS acceptance, PMS importance and PMS use.

3.2 Definition and Origins of Contingency Theory

Several theories have been increasingly considered in relation to how organisations should be managed. The early theories of organisation adopted a universal approach to determine the best method to perform special tasks, regardless of the circumstances that surround the organisations (Watson, 1975). Traditional theories of management such as the theory of scientific management, administrative theory and bureaucratic theory believe that there is only one way to structure an organisation, suggesting that there is no significant relationship between organisational structure and contextual variables; thus, there is only one optimal way business should be organised to suit all organisations and all circumstances (Watson, 1975). Therefore, the administrative theory and the theory of scientific management are filled prescriptions for what is the best organisational structure to be adopted by an organisation to achieve the highest level of effectiveness. Recently, these theories have tended to be contingent, seeking to link their prescription to a situation more precisely defined (Emmanuel et al., 1990).

Contingency formulations arose in the mid-1960s as an important perspective of organisation theory, and developed in the organisation theory literature through empirical researches of Burns and Stalker (1961), Woodward (1965) and Lawrence and Lorsch (1967) as a response to the rapid changes and increasing environmental uncertainty (Kreitner, 1998). An important set of contextual factors was

tested by Bruns and Waterhouse (1975); their study offered an explanation of the differences between management accounting and between companies.

Kreitner (1998) argues that as a result of traditional theories having become insufficient, contingency theory has become a promising alternative. It seeks to take a step forward from the universal approach of management towards the contingent approach. It shows that one case depends upon another or that different aspects of an organisation depend upon the circumstances of the whole organisation (Daft, 2001). The theory explains how organisational characteristics have a causal relationship with each other.

Kreitner (1998, p. 55) defines the contingency approach as:

"An effort to determine through research which managerial practices and techniques are appropriate in specific situations"

Covaleski, Dirsmith, & Samuel (1996, p. 4) defined contingency theory as:

"A theoretical perspective of organisational behavior that emphasizes how contingent factors, such as technology and the task environment affects the design and functioning of the organisations".

Otley (1980, p. 413) (1999, p. 367) states that:

"The contingency approach to management accounting is based on the premise that there is no universally appropriate accounting system applicable to all organisations in all circumstances. Rather a contingency theory attempts to identify specific aspects of an accounting system that are associated with certain defined circumstances and to demonstrate an appropriate matching."

(Donaldson, 2001, p. 7) has defined contingency as follows:

"… any variable that moderates the effect of an organisational characteristic on organisational performance". In addition, the author argues that the contingency approach states "*the effect of one variable on another depends upon some third variable*".

The reason to consider management accounting before turning to performance measurement lies in the fact that both fields are closely related. In addition, a contingency theory framework has been widely used in management accounting research, but this stream of research has generally investigated the impact of few contingent variables relating to PMS. Thus, several researchers (e.g. Francis and Minchington, 2000; Ittner and Larcker, 2001; Speckbacher et al., 2003; Maltz et al., 2003) suggest the need to undertake more research to examine the impact of several contingent variables on the design

and use of performance measures. These suggestions provide further insights for studying PMS. (M. I. K. Zuriekat, 2005)

3.3 The Contingency Theory of Performance Measurement

Since the late 1980s, performance measurement has become very topical with growing interest in the topic. The growing interest has been driven by the increase in the rate of change in the business environment, both in the public and private sector (Rejc, 2004). Consequently, the contingency theory of PMS is also based on the assumption that there is no universally appropriate standard of performance measurement systems that applies equally to all organisations in all circumstances (Rejc, 2004). Proponents of contingency theories argue that such an approach might be appropriate in a specific set of circumstances, and may not be suitable for a different set of circumstances. Most studies in this field of research show that no single form of organisation can be the best in all circumstances (Martinez & Kennerley, 2005).

(Slocum & Tosi, 1984) argue that contingency theories have been an important part of the management literature for the past twenty years. Many studies have shown many types of contingency theories that can be utilised such as contingency theory for management, management accounting, organisation, decision-making, leadership, and performance measurement systems (Buttermann, Germain, & Iyer, 2008; Cho & Lee, 2005; Eker & Eker, 2009; Garengo & Bititci, 2007; Haldma & Lääts, 2002; Henri, 2006; Jaaskelainen et al., 2012; Tung, Baird, & Schoch, 2011; Zahirul, 2004).

Table 3:1 Contingency Theories Studies

N	Author	Title	Year	Reference
1	Toomas Haldma Kertu Lääts	Contingencies influencing the management accounting practices of Estonian manufacturing companies	2002	(Haldma & Lääts, 2002)
2	Hoque Zahirul	A contingency model of the association between strategy, environmental uncertainty and performance measurement: impact on organizational performance.	2004	Zahirul, 2004
3	Eunseong Cho / Mushin Lee	An exploratory study on contingency factors affecting R&D performance measurement	2005	Cho & Lee, 2005
4	Jean Francois Henri	Organizational culture and performance measurement systems	2006	J. F. Henri, 2006
5	Patrizia Garengo Umit Bititci	Towards a contingency approach to performance measurement	2007	Garengo & Bititci, 2007
6	Garry Buttermann Richard Germain	Contingency theory "fit" as gestalt: An application to supply chain management	2008	(Buttermann et al., 2008)

	Karthik N. S. Iyer			
7	Melek Eker / Semih Eker	An Empirical Analysis of the Association between the Organizational Culture and Performance Measurement Systems in the Turkish Manufacturing Sector	2009	Eker & Eker, 2009
8	Tung Amy / Baird Kevin / P. Schoch Herbert.	Factors influencing the effectiveness of performance measurement systems.	2011	(Tung et al., 2011)
9	Aki Jaaskelainen Harri Laihonen Antti Lonnqvist Miikka Palvalin Virpi Sillanpaa Sanna Pekkola Juhani Ukko	A contingency approach to performance measurement in service operations	2012	Jaaskelainen et al., 2012

The theory explains how organisational characteristics have a causal relationship with each other. Contingency theory states that there is no single management technique that can be considered the best in all circumstances, and that depends on the set of variables under a particular situation (Rompho, 2006, p. 155). Hoy and Miskel (1991), as cited in (Tarter & Wayne, 1998), argue that:

There is no single best way to organise, to teach, to do research, or to make decisions. However, some approaches are more effective than others. The "best approach" is the one that fits the circumstances.

The main idea of the contingency theory model is that organisational efficacy results from appropriate characteristics of the organisation, ranging from its structure to contingencies that reflect the organisation's situation. Contingencies include the environment organisational size and organisational strategy. Structural contingency theory argues that organisational structure needs to fit the three contingencies of environment, size, and strategy.

Henry at el (1984) have reported that "the common to all contingency approaches is the idea that performance is a consequence of the suitability between various factors: structure, people, technology, strategy, and culture". Smith & Reid (2000) report four factors in their study that have been noted as potentially carrying significant implications for management accounting system design. These are: 1- business strategy, 2- degree to which the adopted strategy is deliberate or emergent, 3- market orientation, and 4- firm size.

Child (2008) has argued strongly that the effects of culture must be integrated into contingency theory. In addition, (Aljaz, 2011) states that organisational culture is one of the most influential dimensions of

the work climate and to the main driving force of a business. Thus, the study is consistent with the previous PMS literature, which follows the contingency theory approach.

Wisner & Fawcett (1991) were among the first to recognize the need for performance measures to be reviewed and changed to ensure that the measures are still relevant. Dixon et al., (1990) argue that organisations need a process in place to ensure that the measures and the measurement system are reviewed and modified as circumstances change in organisations. Bourne et al., (2000) suggest that measurement systems should be reviewed and revised, and identified the need to review the objectives and performance against them, to adopt individual measures as circumstances change a set of measures to ensure they reflect the strategic direction. In addition, Rejc (2004) argues that while the authors note the potential obsolescence of PMS, they do not discuss any possible contingencies as to when an organisation should implement new performance measures.

In an attempt to understand PMS, a contingency theory theoretical framework of performance measurement has been adopted in this thesis to investigate the contingent relationships between different factors in organisational culture and the acceptance, importance and use of financial and non-financial performance measures. This thesis builds on financial and non-financial PMS.

3.3.1 Contingent Variable Categories

The literature points out that there are certain contingency theory factors affecting performance measurement in both service operations and manufacturing.

Researchers have categorised these contingent variables into many classifications to clarify them. Several earlier contingency theory researchers have examined some factors in the design and usage of performance measurement. For example, Zuriekat et al. (2011) utilised the contingency theory theoretical framework to examine the contingent relationships between several contextual factors and the usage of financial and non-financial performance measures for performance measurement and evaluation purposes; their recommendation for future research is to identify and examine the impact of other contingent variables (e.g. culture, management style). Therefore, organisational culture is an important area to be researched, especially in terms of its influence on the acceptance and usage of PMS.

The relationship between four contingency factors (corporate governance structure, management information systems, strategy, organisational culture and management style) and performance

measurement systems has been investigated in small and medium enterprises (SMEs) by Garengo & Bititci (2007), and the findings inferred that corporate governance structure is one of the main factors influencing the acceptance and use of performance measurement. Second, information on practices and behaviour from the people involved seem to be a necessary condition for the implementation and effective use of PMS in SMEs. Third, a change in the business model of a business development seems to lead to an improvement in PMS. Finally, the successful implementation of a PMS seems to be driven by an authoritarian management style. Garengo & Bititci (2007) studied the contingency factors independently, and they suggested how future research might investigate how these factors collectively influence performance measurement practices to make interdependencies more explicit which is one of the purposes of this study.

Pedersen & Sudzina (2012) argue that though much has been said about changes in the environment and business structure requiring companies to develop new ways to measure performance, less has been said about whether companies adopting multiple of performance measurement systems actually match the characteristics of the "new economy".

Jaaskelainen et al. (2012) investigated the contingency factors affecting performance measurement in the service context. This study only focuses on how organisational capabilities and perceived environmental uncertainties influence the acceptance of comprehensive PMS. However, there may be other firm, industry, and country-specific factors that influence the acceptance and use of PMS. In the future, more research is needed to better understand the complex dynamics that affect the role of PM in different types of organisations.

Eker & Eker (2009) studied the relationship between organisational culture and performance measurement systems (PMS) in the context of the Turkish business environment, Data for this study were gathered from 122 manufacturers of the top 500 companies in Turkey., while this research for higher education. Also, their study examined the relationship between an organisational culture and a performance measurement system, while this research includes variables such as four different types of organisational culture (clan, adhocracy, hierarchy and market).

Chenhall (2003) examines issues related to the purpose of the management control system (MCS), and its elements, the meaning and measurement of contextual variables, and issues relating to development theory. A final section considers the possibility that the ideas on a contingency basis could encompass

the views of a variety of theories to help understand MCS within their organisational context. Contingency-based research has approached the study of MCS assuming that managers act with the intention of their organisations adapt to changes in the contingencies in order to achieve adequate and improved performance.

Contingency-based research can provide a neat way to integrate thinking about the sociological processes affecting MCS in action, perhaps combining these ideas with conventional elements of models based on contingency. Such research agenda involves many issues of development theory and model building that provide challenges for researchers.

Table 3:2 Contingency Factors Affecting Performance Measurement

Contingency factors	Reference
Organisational size and structure	Chenhall (2003); Garengo and Bititci (2007); Lettice et al. (2006); King, et al. (2010); Jaaskelainen (2012)
Strategy	Garengo and Bititci (2007); King, et al. (2010)
Organisational level	Jaaskelainen (2012); Tillema (2005)
Social practices and organisational culture	Chenhall (2003); Garengo and Bititci (2007); Henri (2006); Bourne et al. (2005)
Existing measurement and information systems	Garengo and Bititci (2007); Bourne et al. (2005)
External factors (political environment, industry competitiveness etc.)	Chenhall (2003); Garengo and Bititci (2007); Bourne et al. (2005); King, et al. (2010); Jaaskelainen (2012)

To conclude, it is important to acknowledge generic contingency factors in the service context also. For example, the choice of what to measure is always affected by the purpose of measurement, as well as the mission, strategy and objectives of an organisation. (Amir, et al., (2010) state that while the measurement of services is complicated and it is necessary to know which PMS should be used to evaluate the organisational performance, organisational culture as a contingency factor must also be taken into account to investigate the influence of organisational culture on PMS.

This study will use a contingency approach and prior research on performance measurement to examine the influence of organisational culture on the acceptance, importance and use of PMS.

3.4 Performance Measurement systems

The performance measurement system is a component of management control systems and management accounting. The purpose of management accounting is to provide information to people

inside the company. This information is used for planning and controlling the operations of the business. Medori (1998) states that PMS are one of the important areas of management accounting that plays a major role in evaluating the achievement of organisational objectives. Management accounting is usually divided into five areas: pricing, investment analysis, integration with financial accounts, budgeting and performance measurement (ibid). PMS play a key role in organisations because of their importance as a source of information about financial transactions and internal activities, but also for their effect on the monetary success of organisations (M. I. K. Zuriekat, 2005). In order to achieve their objectives, organisations also use ratios as a method of assessing financial performance. In addition, organisations mainly depend on performance measures to evaluate, control and improve processes, to compare the performance of departments and teams, and to assess employees.

Chan (2004) says that performance measurement is an essential component of any process of change adopted. It can give information on the effectiveness of plans and their implementation. Both business managers and accountants are well aware of the important role performance measurement plays in an organisational planning and control system. Reporting on companies' past performance is one of the fundamental uses of performance measurement system.

Neely (Neely, 1999) argues that business performance measurement has become so topical because of seven main reasons: increasing competition; international and national quality awards; changing organisational roles; the changing nature of work; changing external demands; specific improvement initiatives; and the power of information technology.

In another major study, Umit et al. (2006) point out that in recent years, literature has witnessed significant research and development in the area of performance measurement system. As a result, there is a generation of different frameworks, models and methodologies by consultants, academics and practitioners. Some of these models, such as the balanced scorecard, have enjoyed wide acceptance and popularity with these communities.

Kennerley et al. (2002) summarised some factors affecting the evolution of PMS and listed them into two groups. The first group consists of factors that cause change such as customers, nature of the work, future uncertainty, effective review and actual performance. The second group consists of obstacles to change, among which corporate culture topped the list.

In recent years, great advances have been made in the development of performance measurement as a scientific discipline, but it has been imperfect from the perspective of the factors that influence the

formation of performance measurement systems.

Few organisations develop systematic processes to guide the evolution of performance measurement systems and few researchers deal adequately with the question of how to design a performance measurement system. Performance measurement, although extensively studied in the past two decades, has received relatively little attention in terms of the factors that influence the acceptance of performance measurement systems. Few organisations seem to have systematic processes to manage the evolution of their measurement systems and few researchers appear to have explored the factors that determine the acceptance of performance measurement systems in higher education in Libya.

This study will focus on the financial and non-financial PMS and how organisational culture influences the acceptance, importance and use of these PMS in higher education.

The main purpose of this section is to demonstrate the importance of PMS by providing an overview of their development, based on a literature review of performance measurement. In addition, the section aims to demonstrate the importance of financial and non-financial performance measures by providing an overview of the different approaches proposed by researchers for adopting integrated frameworks for performance measurement, including the acceptance of the balanced scorecard.

3.4.1 Definition of Performance Measurement

The purpose of measuring performance is not only to know how a business is performing but also to enable it to perform better. The ultimate aim of implementing a performance measurement system is to improve the performance of an organisation so that it may better serve its customers, employees, owners, and stakeholders (Johnson, 2007). There is a volume of published studies describing the role of performance measurement systems. Kuwaiti (2004) found that the aim of traditional PMS has been to provide operational control and external financial reporting. Grifel (1994) mentions that there are different ways to define the success of the PMS in local governments. For some local governments, success means that performance measurement is an integral part of the organisation's management and budgetary decision-making systems. For other local governments, success means developing a few measures and reporting them annually within the budget. Two well-known sayings about measurement and performance quoted by Armstrong & Baron (2000) are:

1- What gets measured gets done.
2- If you can't measure it, you can't manage it.

The authors argue that measurement of performance is a significant tool because unless quantified, performance cannot be managed, (Micheli & Manzoni, 2010) write: "Recent reports suggest that an average company with $1 billion sales spends over 25,000 person-days per year planning and measuring performance". Hence, performance measurement is an important element in a management accounting system, defined in many articles and books, such as:

1- Neely et al., (2005, pp. 80-81): "*Performance Measurement can be defined as a metric used to quantify the efficiency and/or effectiveness of the action".*

2- (NAPA, 1996): *"Performance measurement, as defined by US National Academy of Public Administration, is the application of a measure or a set of measures to the decision-making and/or operations of an organisation to assess achievement of mission goals and priorities."*

3-According to UK Audit Commission (1999), *"there are at least two key reasons why government would want to set performance measures. First is to improve public services, and second is to reinforce accountability".*

4-Marshall, Wray, Epstein and Grifel (1999) define performance measurement as *"a development of indicators and collection of data to describe and analyse performance."*

5- (Bititci, Turner, & Begemann, 2000; A. Neely, C. Adams, & M. Kennerley, 2002; A. D. Neely, C. Adams, & M. Kennerley, 2002) defines PMS as a balanced and dynamic system that supports the decision-making process by gathering, elaborating and analysing information.

To be more precise, performance measurement relates to the use of a multidimensional set of performance measures. This package is multi-dimensional if it includes both financial and non-financial performance measures. Internal and external measures of performance include quantify what has been achieved. Kulatunge et al (2007) suggest that the following factors be considered with regard to performance measurement: efficiency and effectiveness of actions (these determine the attainment of organisational goals and other influential factors); delivering value to the stakeholders; and the need for infrastructure (data collection, sorting, analysing, interpreting and disseminating).

Accordingly, the authors define performance measurement as "the evaluation of the efficiency and effectiveness of actions that determine the attainment of stakeholder satisfaction, and factors that influence this attainment". Hence, it can be seen from previous definitions that almost all of the authors agree with the "efficiency and effectiveness of actions" factor, which when defined determines its attainment. However, every author adds his or her idea when performance measurement is defined.

Effective systems of performance measurement are necessary to enable the organisation to assess whether it achieves its objectives and to facilitate the improvement of the organisation as a whole (Lebas, 1995).

Leen Yu et al. (2009) believe that performance has different meanings when used in a disparate environment. They state that performance should not be about producing reports instead of making a decision or taking a direction based on information available on a particular situation.

Marchand and Raymond (2008) use a four-period temporal scale(before 1980, 1980-1989, 1990-1999, 2000 and after) when they define performance measurement. Before 1980, the situation was generally the following: unidimensionality of performance, essentially financial, focusing on results (retrospective management). In the 1980s, performance was still envisioned as essentially financial in most organisations whereas between 1990 and 1999 performance was defined in relation to strategic objectives and stakeholder expectations. Since 2000, performance has been defined as increasing the value/cost ratio in relation to society's expectations (multiple stakeholders) and the firm's strategic objectives.

Notably, all of the previous definitions focus on quantifying the efficiency and effectiveness of the action, which is the main idea of performance measurement.

Kaplan (1984) defined a performance measurement system as an information system that aims to provide financial signals in order to help the management make decisions. The Procurement Executive Association (1998) defines performance measurement thus:

[A] Process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to clients and the extent to which clients are satisfied) and outcomes (the results of a programme of activity compared to its intended purpose.

Amaratunga and Baldry (2003) argue that "a clear performance measurement definition can help managers go in the right direction and focus on what really matters". Indeed, as Gaster (1995), referring to quality in public services, says: "Definitions are important: they drive the whole implementation process". The most quoted performance measurement definition is that of Neely et al. (2002): "The process of quantifying the efficiency and effectiveness of past actions". While this definition emphasises effectiveness as well as efficiency, it is unlikely to make managers stop and

challenge their performance measurement systems and it gives little indication to what they should quantify or why.

As Moullin (2002) suggests , "evaluating how well organisations are managed and the value they deliver for customers and other stakeholders" could be another definition. There is a deliberate circularity within the definition. Since performance measurement is itself part of how an organisation is managed, it too has to provide value to customers and other stakeholders.

Performance measurement has become something of an industry in recent years. Many organisations spend millions of pounds providing a myriad of measures, making it difficult for managers to pick the ones that really matter (Max Moullin, 2007). Neely et al (1995) argue that the choice of performance measures and performance measurement system design is a critical challenge facing organisations. Globerson (1985) identified a set of criteria for performance measurement system design depending on several guidelines. The set of guidelines (Neely et al., 1995; Neely , Gregory , & Platts 1995) are:

• Performance criteria must be chosen from the organisation's objectives.

• The aim and calculation method of each performance criterion should be clear.

• The ability of performance criteria should be comparable with those of other organisations.

• Objective performance criteria are preferable to subjective ones.

• Data collection and methods of calculating the performance must be clearly defined.

• Performance criteria should be under the control of the evaluated organisational unit.

• Ratio-based performance criteria are preferred to an absolute number.

People who are involved with the organisation should determine performance criteria.

As indicated by Neely et al. (1995; Neely et al., 2005), PMS design can be examined at three levels, which are:

(1) The individual performance measures;

(2) The set of performance measures – the performance measurement system as an entity.

(3) The relationship between the performances.

In addition, a "performance measurement system" can be analysed by asking questions such as:

- What performance measures are used?
- What are they used for?
- How much do they cost?
- What benefit do they provide?

These precise questions help organisations to choose the right performance measurement system, which are effective and helpful for them, but the use of these measurements differs between organisations. Therefore, the next section will discuss financial and non-financial performance measurements.

Although many authors use the phrases 'performance measurement' and 'performance management' interchangeably, they are different entities; performance measurement is about the past, and performance management extrapolates the data to provide information about the future (Lebas, 1995). Radnor and Barnes (2007) differentiate them thus: Performance measurement is quantifying, either quantitatively or qualitatively, the input, output or level of activity of an event or process. Performance management is action, based on performance measures and reporting, which results in improvements in behaviour, motivation and processes, and promotes innovation.

3.5 Financial performance measurements

All performance measurement systems consist of a number of individual performance measures, and there are various ways in which these performance measures can be categorized.

The main purpose of financial accounting is to report the activities of the organisation to interested parties outside the organisation, such as investors, analysts, the public, government, creditors, employees and lenders. In financial accounting, main measures of financial performance come from a profit and loss account, and a balance sheet. The profit and loss account, as the name suggests, indicates whether an organisation is making a profit or a loss. Financial measures play an important role in evaluating the prior financial conditions and performance of the organisation.

The American Accounting Association (1975) defined financial performance measurements as pieces of information expressed in monetary units, ratios resulting from mathematical manipulations of information.

According to Morgan (2007, p. 742) the development performance measurement indicates at least five identifiable phases of evolution. These start with the basic measurement of financial transactions, an element that is still in evidence today and which is focused on the traditional "buy cheap – sell dear – make profit" perspective. While this mode of measurement is as old as trading itself, it became formalized with the invention of the double entry book keeping systems in Venice during the fifteenth century, the principles of which are still embedded in modern accounting practice. The next phase of

performance measurement resulted from the industrial revolution and the development of the manufacturing environment.

Marginson et al. (2010, p. 345) state that “financial measures may have no impact on short-termism irrespective of the manner of their use”. These findings support other studies that have failed to find a relationship between financial measures and short-termism (Marginson & McAulay, 2008; Van der Stede, 2000)”. As the authors say in the previous statement, their results find that the financial measures in the short-term might have no influence irrespective of the way they are used. However, non-financial performance techniques should be used to force the company to change over time when it needs to change. In addition, qualitative indicators, such as customer service and satisfaction, product quality, learning and innovation, must be included (Kaplan & Norton, 1996c; Neely, 2002; A. Neely et al., 2002).

Accounting information can be financial or non-financial. Traditionally, the focus of performance measurement has been on financial measures such as sales growth, the balance sheet, profits, income statement, returns on investment and cash flows (Chan, 2004; Neely et al., 2005; Yeniyurt, 2003). As a consequence, decision-making in accounting usually focuses on financial ratio combinations and makes little use of non-financial indicators. However, there are many intangible assets an organisation possesses that are not reflected on the balance sheet but do contribute greatly to the performance of the organisation. Hence, the limitations of financial data as the basis for decision making in organisations has been recognised for a long time. Neely, et al (2005) point out that traditional financial measures do not match the skills and competencies of companies required for facing today's business environment. Also, Kuwaiti (2004) argues that performance measurement indicators at the early stages of the management accounting system depended on financial indicators by using financial reporting only to measure their performance. The citation by Moxham (2009, p. 742) states that “fiscally focused performance measures have long been used to provide operational control and external financial reporting in private sector organisations”. In other words, financial performance measurement has been used for a long time to offer operational control and external financial reporting.

Financial measures have faced much criticism for many reasons such as the changing nature of work, increasing competition, specific improvement initiatives, national and international awards for quality, changes in organisational roles, changing external demands, and the power of information technology (R. H. Chenhall & Langfield-Smith, 1998; Hyvonen, 2005; Neely, 1999).

Management cannot get information from financial accounting measures to make critical decisions as they do not provide the understanding of the big picture because they include too many different measures that do not directly relate to the strategy of the company (Bourne et al., 2000). Furthermore, financial accounting measures do not support modern management concepts such as just-in-time (JIT) and total quality management (TQM), so they cannot help companies to implement them (R Kaplan & Norton, 1992) as the financial measures are a poor guide to success.

Traditional lagging indicators include financial measures, such as revenue growth and profitability (Johnson, 2007) while Hussain & Gunasekaran (2002) believe that the poor reflection of performance measurement by traditional management accounting methods have prompted the need for new advanced management accounting systems.

To overcome the limitations of financial measures, many researchers have suggested that for organisations to survive in a competitive market, they must use a new set of operational performance measures (Burgess et al., 2007). These measures should provide managers, supervisors and operators with timely information that is necessary for daily decision making. These measures should be flexible, non-financial and adaptable (Ghalayini & Noble, 1996; R Kaplan & Norton, 1992).

3.5.1 Non-Financial Performance measurement

Non-financial performance measures are defined as measures that provide performance information in non-monetary terms such as customer satisfaction and employee satisfaction (Verbeeten & Boons, 2009).

Johnson (2007) stated that the major performance measurement systems in use include the Balanced Scorecard, Activity-based Costing and Management, Economic Value Added (EVA), Quality Management, Customer Value Analysis, Customer Relationship Management and Performance Prism; this study places emphasis on the balanced scorecard as a non-financial and financial performance measurement system.

This study investigates the balanced scorecard as an advanced performance measurement technique that includes non-financial and financial indicators. Said et al. (2003) found that companies that use a mixture of non-financial and financial measures perform better contemporaneously and prospectively than companies that use financial measures alone. Chan (2004) perceived shortcomings in a system of performance measurement that emphasizes traditional financial measures and has led many organisations to switch to and put more emphasis on forward-looking non-financial measures such as

customer satisfaction, employee training and innovation. Medori & Steeple (2000) argue that traditional measures are at best too aggregated to be useful and, at worst, provide a very limited and often misleading picture of the performance of the organisation.

As Said et al. (2003) suggest, a company's strategy and vision can be transformed into a tool to motivate performance and communicate planned goals by utilizing non-financial performance measures.

Neely (1999) says that traditional financial measures are criticised because, for example, they encourage short-termism, lack strategic focus and fail to provide data on quality, responsiveness and flexibility, and fail to provide information on what customers want and how competitors are performing.

From the previous studies it can be note that many researchers believe that financially oriented performance and traditional PMS are no longer acceptable for evaluating an organisation's performance. Therefore, PMS that are advanced and are a mix between financial and non-financial in their orientation are needed to evaluate an organisation's performance. Consequently, a number of helpful frameworks for planning and implementing PMS have been identified in the literature, such as the balanced scorecard, the performance prism, the performance measurement matrix, and the results and determinants framework. Many methods and techniques have been suggested to evaluate the performance in universities or higher education institutions over the years, and the balanced scorecard (BSC) is one of them (Beard, 2009; Inaam, 2012; Inianty, 2012; P. Karathanos & D. Karathanos, 2005; Kurt & Cam, 2012; Maria Manuela & Nuno Filipe, 2012; Naqi, 2013; U. Venkatesh & Kirti, 2007; Wu, Lin, & Chang, 2011; Yu, Hamid, Ijab, & Soo, 2009). Thus, this study focuses on balanced scorecard as an advanced PMS technique that includes financial and non-financial perspectives, as the balanced scorecard is the most famous and helpful framework in planning and implementing PMS (Cohen et al , 2008).

Using non-financial performance measures do not mean that they should replace financial performance measures; a balance of financial and non-financial measures is needed, which the Balanced Scorecard does provide.

According to Kaplan & Norton (1992), the scorecard was designed for private business, but is increasingly being used by governmental and non-profit organisations. As its name suggests, the balanced scorecard tries to strike a "balance" between the financial and non-financial, between internal

and external and between current performance and future performance measures in evaluating the company and its personnel. Kaplan and Norton (1996) state that the use of the balanced scorecard in organisations can translate mission and strategy into objectives and measures. They define strategy as a set of hypotheses about cause and effect, which calls for the existence of a cause-and-effect relationship in a properly constructed balanced scorecard.

3.6 Balanced Scorecard (BSC)

Balanced Scorecard (BSC) is a comprehensive performance management and measurement model, which has been developed by Kaplan & Norton in 1992 in the USA, Balanced Scorecard (BSC) can be expressed as the name of a model or mechanism, which transforms a firm's organisational strategy to operational concepts (Kaplan and Norton, 2001; Kaplan and Norton, 1992). The model emphasizes, in particular, the terms of "balance" and "measurement". Here, "balance" is explained through four desired factors of the model: (1) long and short-term purposes, (2) financial and non-financial measurements, (3) operation and result indicators, and (4) internal and external perspectives of the organisation. The "measurement" gets it's meaning in the concise expression of Kaplan and Norton (1996) - "if you cannot measure, you cannot manage". Briefly, BSC reminds us once more of how a PMS is important in affecting the attitude and behaviour of the manager and employees.

Mendoza & Zrihen (2001) argue that although the balanced scorecard (BSC) has been extremely successful in the US, it had known success in France before that. BSC is a French management control tool called *Tableaux De Bord*, which in English means *performance*. Jones (2009) states that in recent years, the balanced scorecard (BSC) has become a standard topic in journals and management accounting textbooks because companies are seeking new ways to maintain a viable position in the marketplace.

Neely et al., (2005) state that the best-known performance measurement framework is Kaplan and Norton's "balanced scorecard". The Balanced Scorecard (BSC) is a strategic performance measure that Kaplan and Norton created in the 1990s. The "Balanced Scorecard" is discussed as one of the non-financial performance measurements in an article titled "The Balanced Scorecard – Measures that Drive Performance" in the Harvard Business Review, January/February 1992. This article reveals that balanced scorecard can report on outcomes and consequences of past actions and help find ways to correct wrong actions and do right ones. The balanced scorecard is an advanced tool of the management accounting performance measurement systems, which is utilized to evaluate, control and

improve processes through comparing the performance of different organisational levels. In addition, all types of profit and non-profit organisations use the balanced scorecard, and it has become a standard management tool.

It has been found that Balanced Scorecard adopters who did not develop a causal model of their strategy experienced more specific problems than those who developed a causal model of their strategy did. It affected the outcomes and ease of implementation of the Balanced Scorecard (Othman, 2006).

From the results of their survey of Investment Management Association (IMA) members of management positions, Debusk & Crabtree (2006) argue that 88% of regular users of the balanced scorecard think that it has improved their operating performance.

Self (2004, p. 101) adopted this tool for a variety of reasons: "In essence, the BSC enables us to gain better control of our statistical operations. By limiting the number of scorecard metrics, it forces the user to decide what is important and to identify those numbers that truly make a difference. It also introduces some balance into their statistical work. Like many libraries, they have collected much data regarding resources and user services, but other areas have not received the same attention. The BSC compels them to look at finance, internal processes and the future. Another important aspect of the BSC is the assigning of targets or goals". A good balanced scorecard should have an appropriate mix of outcomes (lagging indicators) and performance drivers (leading indicators) of the business unit's strategy.

There is a large volume of published studies describing the role of the BSC as an important model. Eker & Eker (2009), in their study, discuss the possibility of a comprehensive understanding on multiple performance measures with the balanced scorecard concept. Meng & Minogue (2011, p. 472), found in their research that the Balanced Scorecard (BSC) and the Business Excellence Model (BEM), are more widely accepted as performance indicators that are more effective than other performance indicators. Lisiecka & Czyż-Gwiazda (2013) argue that to achieve a level of excellence in the new global economy, global organisations need to search for methods and models to help organisations achieve the best results. Performance measurement systems (PMS), such as Balanced Scorecard, focus on organisational performance and can be considered as a means to achieve performance objectives.

3.6.1.1 Balanced Scorecard and Education

PMS have received wide discussions in the private sector after the introduction of the Balanced Scorecard (Saunders et al., 2007), which puts strategy and vision in the core. It is argued that

developing a set of performance indicators related to strategic developments can more effectively manage an organisation; however, this idea is not without its critics. Within the public sector and especially in higher education, enforcement and understanding of PMS is less frequently reported; furthermore, the literature in relation to higher education is very limited. League tables of performance reports provide an external view of the institutions of higher education, but little research has been published on how strategy is managed internally through a system of effective performance management (Broad & Goddard, 2010).

The goal of non-profit entities, such as the public education sector, the public health care sector, charities, voluntary organisations, civil society and social enterprise, is not to obtain a profit, but to offer a service for public benefit.

Education services are considered one of the main supports of social services, which all the countries care to offer, finance or manage; they supervise these services and secure them in accordance with their various economic systems. Offering of adequate educational services to the individuals of society means at the end the continuation of human wealth, which is considered the basic pillar of the economic and social development of any society. The sectors mentioned earlier offer services for human development (like health and educational services), which rely basically on professional leadership; it is practically difficult to separate their achievements and therefore it is impossible to subject them to the direct typical measurement methods.

The educational institutions and universities discussed in this thesis are non-profit organisations (Al-Turki & Duffuaa, 2003) state that institutions play an important role in the human development. They support global development strategies with the necessary highly qualified manpower and research. The development of a strategic plan, supported by a mechanism for monitoring, controlling and adjusting it, is the way to the success of education institutions in achieving this aim. For academic development, the education of the students, and organisation of national development requests, are the objectives of universities that provide in-depth knowledge. Chen et al. (2006) argue that educational institutions should learn from business in this respect. In order to establish educational aims and standards, and to increase the competitiveness of university education in a globalised environment, it is necessary to create a set of performance management tools.

According to Beard (2009), the balanced scorecard is considered to be a successful PMS tool in higher education, even though published reports of successful applications of BSC in higher education are limited.

The balanced scorecard as a performance measurement system tool is widely accepted in many business corporations, but is less developed in the area of higher education. Karathanos & Karathanos (2005) argue that although the application of the balanced scorecard in the business sector is well documented, very little research has been reported regarding the adaptation or application of the balanced scorecard in the education sector.

Abouzar & Asghar (2011) state that evaluating the performance of a university is fundamental to understanding how teaching and research contribute to organisational and strategic objectives; evaluation methods based on pure financial measures alone are not adequate in this context. Many methods and techniques have been suggested to evaluate the performance in universities or higher education institutions over the years. However, well-known financial measures such as return on investment (ROI), internal rate of return (IRR), net present value (NPV) and payback period (PB) have been demonstrated as inadequate (Abouzar & Asghar, 2011; Fryer, Antony, & Ogden, 2009). Umashankar & Dutta (2007) reported that the balanced scorecard approach offers an institution the opportunity to make a cascade of steps to translate the mission of knowledge creation, exchange and use in a comprehensive and coherent framework. Karathanos & Karathanos (2005) have compared the Baldrige Award and balanced scorecard criteria in the context of education and have come up with measures closely aligned between both the instruments. McDevitt (2008) presented an empirical analysis that explores the impact of the balanced scorecard in strategic revitalization in universities. Therefore, most of these previous studies are focused on how to set up an effective framework to select measurement criteria.

(Umashankar & Dutta, 2007) Reported that the BSC approach offers an institution the opportunity to formulate a cascade of measures to translate the mission of knowledge creation, sharing and utilization into a comprehensive, coherent, communicable and mobilizing framework – for external stakeholders and for one another.

3.7 The Performance Measurement Systems: Acceptance, Importance and Use

The study investigated the influence of organisational culture on the acceptance of PMS; it also investigated both financial and non-financial performance measurement systems to understand the extent

of their acceptance, importance and use in Libyan higher education. Moreover, the advanced technique of the balanced scorecard was investigated for its effective and useful role in organisational performance. PMS acceptance, importance and use are dependent variables in this research, as the four types of organisational culture are independent variables.

3.7.1 PMS Acceptance

In order to measure the higher education's acceptance of PMS, a fixed set of PMS categories were developed. The respondents were asked about their use of the financial, non-financial and advanced techniques of PMS, and the relative importance of these techniques in evaluating organisational performance. Moreover, the effectiveness of using advanced PMS techniques (e.g. BSC) to evaluate organisational performance was investigated. A similar method has been applied in previous studies of the diversity of PMS (Eker & Eker, 2009; Henri, 2006; Hoque, Mia, & Alam, 2001; Pedersen & Sudzina, 2012). The PMS acceptance questions were designed according to idea of the model used in the Technology Acceptance Model (TAM) by Davis (Davis, 1986, 1989), which seeks to assess the values, reactions, perceived ease of use, and benefits of the system as professed by the user.
Investigations based on a sample of 71 New Zealand based business units in manufacturing had been done by Hoque, et al (2001) to examine the relationships among an organisation's market competition, computer-aided manufacturing processes and a multiple performance measurement usage. The results suggest that a greater emphasis on multiple measures for performance evaluation is associated with businesses facing high competition and a greater use of computer aided manufacturing processes.

In (2006), Henri published a paper in which he described the relationships between organisational culture and two attributes of performance measurement systems (PMS), namely the diversity of measurement and the nature of use in manufacturing firms. Data were collected by a structured questionnaire sent to the highest member of the corporate top management team or local top management team. Data from 2175 Canadian manufacturing firms were analysed and it was concluded that senior managers of companies that reflect a flexibility dominant type tend to use more performance measures and use PMS to focus organisational attention, support strategic decision-making and legitimate actions than senior managers of companies that reflect a control dominant type. Henri (2006) in his study adapted the (Cameron & Quinn) competing values form but he focuses on the two

dimensions of flexibility and discretion versus those of stability and control. In his detailed investigation, Henri (2006) did not define the four cultures types of organisational cultures (Hierarchy, Clan, Adhocracy, and Market).

Another study by Eker & Eker (2009), which was based on the subject of Henri's study, is about the relationship between organisational culture and performance measurement systems (PMS) in the context of the Turkish Business environment. In this study, a model of Jean-François Henri (2006) is used to understand and analyse the relationship under Turkish conditions. Specifically investigated in this study are the changes in the aims and measures of PMS used in different organisational cultures by managers. The main question was about the effect of culture on the aims and measures of a PMS. Data for this study were gathered from 122 manufacturers of the top 500 companies in Turkey. According to the results of logistic regression analysis, companies with a flexible culture tend to use non-financial performance measures, and use PMS for aims such as organisational attention focusing and supporting strategic decision-making; they use these more often than companies that have a control culture do. Companies with a control culture tend to use PMS for aims such as monitoring and legitimization more often than firms that have a flexible culture do.

Pedersen & Sudzina (2012) state that the purpose of their paper is to outline the anatomy of firms that adopt comprehensive performance measurement systems in order to gain an understanding of how internal (organisational capabilities) and external (perceived environmental uncertainties) factors shape performance measurement practices. This paper hypothesises that firms dominated by organic capabilities and operating in unpredictable markets are more likely to adopt comprehensive PM systems. The statistical test of these hypotheses is based on a 2008 survey of 299 Danish firms. The objective of this paper was to analyse the relationship between PM acceptance s, the internal, and the external characteristics of the firm. Their analysis of 299 Danish firms shows that neither the organisational capabilities nor the predictability of markets has a uniform impact on the use of comprehensive PMS. This paper concludes that a limited number of internal and external factors have a significant influence on the acceptance of PMS. There is no consistent pattern, however, between the different sub-categories of organisational capabilities /perceived environmental uncertainties and PM adoption.

3.7.2 The Importance and Use of PMS

This study to investigate the extent of the importance and use of multiple performance measurement systems (financial, non-financial, advanced techniques) to evaluate performance in Libyan higher education and how these PMS would enable organisations to evaluate organisational performance. Therefore, the importance of financial performance measurement systems was investigated to understand the importance level and use of financial PMS in evaluating the organisational performance. On the other hand, the investigation also included the importance and use of non-financial performance measurement systems criteria, such as:

1- Customer (student and staff), (e.g. customer satisfaction, customer retention).

   Results of student learning assessment will be based on a variety of methods to assess and reflect the overall mission of the organisation and improvement targets taken together to represent a holistic assessment of student learning

2- Innovation (e.g. courses or educational programs).

3- Employee (e.g. employee satisfaction, workforce capabilities).

4- Quality (e.g. academic quality awards).

5- Community (e.g. public image, community involvement).

The purpose of management accounting is to provide information to people inside the company. (Neely et al., 2005) Academics and practitioners from a variety of functional disciplines have long recognized the importance of performance measurement. Medori (1998) states that PMS are one of the important areas of management accounting that play a major role in evaluating the achievement of organisational objectives. PMS play a key role in organisations not only because of their importance as a source of information about financial transactions and the internal activities, but also for their effect on the monetary success of organisations (M. I. K. Zuriekat, 2005).

The importance of PMS variable is to identify those areas of improvement that are of long-term importance to the organisations, to explore whether the current performance measurement system (financial, non-financial, advanced technical) inhibits or supports appropriate activity, and to compare and contrast what is currently most important for the organisations with what the measurement system

emphasises. Amir, et al. (2010) explains that the importance of PMS as a source of information is to guide management decisions and the choice of actions.

Stivers et al. (1998) empirically examined the importance of 21 non-financial measures in setting company goals in USA and Canada. The study findings indicated that of the 253 responding firms, 235 (92.9%) rated customer satisfaction and delivery performance/customer service as highly important. Factors in the innovation and employee involvement categories were perceived to be less important in goal setting. For example, employee turnover in the employee involvement category was rated as highly important by only 122 (48.2%) of the responding firms. However, the findings of Stivers et al. (1998) also indicated that an individual measure was identified as highly important if it received a rating of four or greater on the five-point scale of importance.

Verbeeten and Boons (2009) included an additional question on the importance of the performance measures for several goals. Their findings indicated that PMS is important or very important for operational decisions (85%), strategic decisions (80%), evaluating economic performance (71%), evaluating managerial performance (70%), rewarding employees (68%) and communication of strategy (50%). Additionally, non-financial measures of customer satisfaction and innovation are more important for the communication of strategy.

Veen-Dirks (2010) examined how the importance that is attributed to a variety of financial and non-financial performance measures depends on periodic evaluation of performance and determination of rewards. The empirical evidence in this study is based on a survey among 84 industrial companies located in the Netherlands. Multiple interviews were conducted with both production managers and management accountants. The study provided evidence of a higher importance attached to both financial and non-financial performance measures in the periodic evaluation than in the determination of rewards. The results of the studies above indicate that PMS is used for many purposes other than evaluating and rewarding managers (Verbeeten & Boons, 2009).

Recently, Al Sawalqa (2011, p. 280) found that multiple measures of performance are important not only to support the financial performance, but also to support non-financial performance in several areas such as customer satisfaction and innovation.

3.7.3 Summary

Performance measurement has gained more recognition from researchers and higher acceptance from practitioners over the last two decades (e.g. Neely, 1998; Try and Radnor, 2007). In addition, performance measurement is perceived to be a critical management tool that can help determine success or a failure in both organisational and functional performance (Neely, 1998; Putu & Helden, 2007; Sink, 1985). The purpose of this study is to explore the influence of one of the contingency theory factors (Organisational culture) and the acceptance, importance and use of performance measurement systems (financial and non-financial) in Libyan higher education. Moreover, this study has investigated the influence of this contingency theory factor (Organisational culture) on financial and non-financial of performance measurement systems. To achieve the final objectives of this research, a contingency theory is adopted. Organisational culture as a contingent variable was identified from the literature and appropriate statistical tests were undertaken to ascertain its influence.

Contingency theory research has mostly involved the use of cross-sectional studies (in which measures of the relevant variables are obtained by questionnaires) and has attempted to identify statistical relationships between organisational culture (as a contingent variable) and PMS aspects.

The next chapter will focus on the Libyan milieu from which the participants of this study were chosen.

Chapter 4: The Libyan Context

4.1 Introduction

The purpose of this chapter is to discuss the historical, environmental, demographic and political backgrounds of Libya that influence the current HE environment of the country. In doing this, the chapter provides an in-depth understanding of the Libyan education system in general, and then proceeds to discuss Higher Education specifically.

4.2 Historical Background

Libya has been subjected to varying degrees of foreign control, and over the centuries, Phoenicians, Carthaginians, Greeks, Romans, Vandals, and Byzantines have ruled all or parts of the country. Between 1911 and World War II, Italian troops occupied Tripoli. Until 1914, the Libyans continued to fight the Italians, who controlled most of the land. Tripolitania and Cyrenaica were united in 1934 as a colony of Libya. After World War II, Libya came under the administration of the allies, and in 1949, the United Nations (UN) agreed that Libya should become independent; the result is that became the United Kingdom of Libya in 1951.

A military revolution in 1969 swept away the monarchy and instituted a revolutionary regime for about 42 years. In 17th Feb. 2011 the Libyan Civil War (also referred to as the Libyan Revolution) began; it ended on the 23th of October that year with the fall of the Gaddafi regime.

4.3 The Libyan Environment and Population

Officially known as the Libyan State, Libya is a developing economy. Islamic ideals and beliefs provide the foundation for the country's conservative customs, laws, and practices. Geographically, Libya lies between longitudes 9-25 degrees east and latitudes 18-33 degrees north. It borders Chad and Niger to the south, Egypt and Sudan to the east, and Tunisia and Algeria to the west. Libya is at the heart of the North African states, and at the crossroads between Europe and the middle of Africa, which gives it a considerable advantage over many other countries, as a potential location for investment and for manufacturing enterprises by multinational companies. Libya has a total area of 1,775,500 square kilometres, making it the fourth largest country in Africa. Its size equals the combined size of Germany, France, Holland and the Scandinavian countries (www.Libyaconnected.com, 2007). With a range of terrains and climates, the country has a long coastline of nearly 1,900 km by the

Mediterranean Sea, comprising mostly virgin beaches with outstanding natural environments, making it a productive area for water sports, diving and all kinds of beach activities. The Libyan desert lies in the southern part of the country (making up nearly 80% of the country's area), with significant tourist sites that could play a key role in making Libya one of the most important desert tourist destinations in the world (Brookes, 2001).

Libya's population is small compared to that of other countries in Africa and the Middle East. The current population is estimated at five and a half million. According to the General Census Information Authority (2008), the highest percentage of the population lives in Tripoli, the capital, with over one million inhabitants; and Benghazi is the second largest city. However, the population is not distributed evenly throughout the country, with approximately 80% concentrated in a narrow strip along the coast, where the main industrial, commercial and other activities are centred (General Authority information, 2008).

4.4 Libyan Economy and Management

The Libyan economy depends on the exploitation of oil, which accounts for about 95 % of the country's globally traded currency earnings, 60 % of public sector wages, and about 25 % of GDP (Gross Domestic Product). Non-oil sectors account for over 20 % of GDP, evolved from the processing of agricultural products and the production of petrochemicals, iron, steel and aluminium. The Oil and Gas Journal (2011) revealed that Libya has about 44 billion barrels of oil reserves, the largest in Africa, and more than 54 trillion cubic feet of natural gas reserves. Revenues from the oil sector, along with a small population, give Libya one of the highest per capita GDP figures in Africa (Saleh, 2013).

The extended family, clan, tribe, tribe, village and Islamic religion characterise the social environment in Libya, and historically the whole area of management has been affected by all these factors which play a major role in the community's life and people's relationships with each other (Agnaia, 1997). The transfer of Western management techniques and practices, and the selection of appropriate frameworks to achieve ambitious development goals are the key issues that arise in the managements of developing countries. Agnaia (1997, p. 120) argues that management decisions in Libya have a tendency to be influenced by beliefs, customs, community attitudes and personal relationships, as seen in many of its procedures, including staffing, selection and promotion. Managers in Libya are accused of being more concerned with the creation of social relations in the workplace than with the work itself.

Management procedures in Arab societies in general are often influenced by personal connections, nepotism, and sectarian and ideological affiliations.

4.5 Overview of the Libyan Education System

Education in Libya is free for all, from primary school to university, irrespective of the geographical area one belongs to, since schools are located throughout the country. The education system in Libya includes five stages as shown in Figure 2:1, kindergarten for 2 years that enrols children aged 4 or 5; basic education for 9 years which enrols students from the age of from 6; and secondary education for 3 years. Specialized Secondary Schools include Institutes for Professional Training; higher education that lasts from 4 years to 6 years, and includes universities, Higher Institutes, and technical colleges. The last stage is that of Postgraduate studies which includes masters and PhD (Doctoral) degrees and advanced degrees in various specialties.

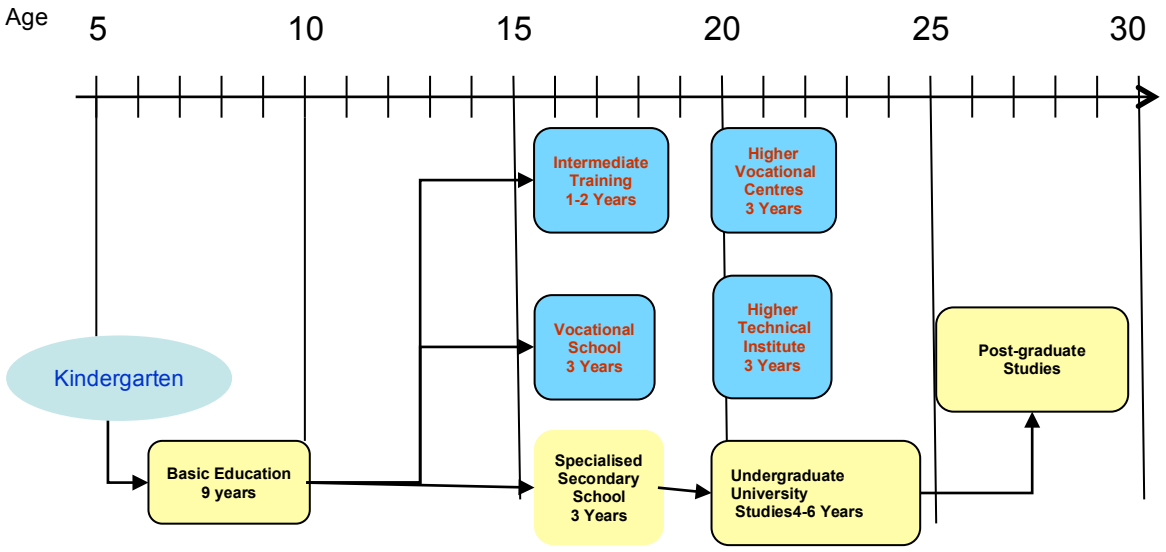


Figure 4:1 The Libyan Educational System

Source: adapted from (Porter & Yergin, 2006)

4.6 Higher Education in Libya

The higher education system in Libya plays a vital role in the intellectual, economic, cultural and social development of Libya. Its goal is to create highly qualified professionals with the education and knowledge to form the main human resources of the country, which can be trusted to deal appropriately

with international developments in technology. The Higher Education system is financed by, and under the authority of, the state. In recent years, the government has allowed the establishment of private HEIs. Education in the public sector is free up to university level, and it is completely financed by the state, and although post-graduate studies are not free; they are subsidised, except in private universities.

In Libya, higher education happens in universities and higher institutes, which have both general and specialized training colleges, and technical colleges. These include the teacher-training institutes of higher vocational colleges that train students to be trainers and instructors in polytechnics, colleges and institutes of technical sciences, both industrial and agricultural. Several colleges for teacher training were established in 1997. The new scientific institutions, which are known as scientific research centres, were created in the areas of Health and Pharmacy, Education, Environment and Basic Sciences; they act as both teaching and research institutions.

Higher education in Libya is a modern and growing area; the Faculty of Arts and Education was first established in 1955 in the city of Benghazi, with only 33 male students. This was followed in 1957 by the establishment of the Faculty of Science in Tripoli. In 1957, the Faculty of Economics and Commerce was also founded, followed by the Faculty of Law in 1962. Later, in 1966, the Faculty of Agriculture was established. In 1970, the Faculty of Medicine was founded and in the same year, the Libyan University under the name of the Faculty of Arabic Language and Islamic Studies incorporated the Islamic University in Al-Bayda City. In 1972, the Faculty of Oil and Mining Engineering was established.

In 1973, the Libyan University was separated into two independent Universities; the University of Tripoli and the University of Benghazi. Later these Universities were respectively renamed the University of Tripoli and the University of Gar-Younis in Benghazi.

Due to the increasing number of students enrolling in HE since 1981, the government established a number of universities throughout the country, so that by 1995, 13 universities were in existence, consisting altogether of 76 specialised faculties and more than 344 specialised scientific departments.

In the late 1990s, the Libyan authorities invited the private sector to play a role in the country's education system, since which time, more than 1,000 private primary and secondary schools as well as more than 30 private universities have been established (Rhema & Miliszewska, 2010). Due to recent policy changes, the number of universities was reduced (in April 2010) to fourteen.

In general, there is a dearth of current reliable social statistics on Libya (Rhema & Miliszewska, 2010), but according to some sources, the total number of students in Libyan Higher Institutes and Universities is 439,000 for academic year (2010-2011) including foreign students (Centre for Information and Documentation, 2011). More than 80,000 students are enrolled in the Technical colleges and more than 10,000 students are studying outside the country (Assistant Secretary of Higher Education, 2010).

Figure 4:2 Public Higher education institutions in Libya

n Universities

uHigher Education Institutes

The current status of Libyan HEIs as is follows (The National Committee for Libyan Universities, 2010):

- Total number of Universities: 14
- Total number of Faculties: 188

Table 4:1 Number of Students and Academic Staff Members in different Libyan Universities for the Academic Year 2008-2009

Universities	No. Of Students	No. Of Academic staff
University of Tripoli	43258	1349
Gar-Younis University	46382	1420
Sebha University	14860	648
University of Seventh April	36347	1113
7th October University	22005	841
University of Omar Almukhtar	29227	1194
Naser University	1087	251
University of Al-Jabal Al-Gharbi	19512	954
Al-Mergib University	26905	1325
Al-Tahadi University	6132	87
Al-Asmaria	3904	163
Tripoli University for Medical Science	31883	604
Al-Arab Medicine	10295	500
Open University	1325	50
Total	293122	10499

Source: Higher Education Secretary, 2010.

The curriculum in both state and private universities is controlled by the Libyan higher education and, although the curricula are based on Western models, the main language of teaching is Arabic except in

medicine and in some branches of science and engineering where the main language of teaching is English

4.7 Objectives of the Higher Education System in Libya

In Libya, higher education have three types that are, universities, higher institutes, which have both general and specialized training colleges, and technical colleges. Consequently, etch type has their objectives, the main objectives of higher education in Libya are the following (NCETR, 1996).

1. To satisfy society's needs for high-level professional personnel for all sectors of national life.

2. To perform theoretical and applied research.

3. To organize and prepare training courses and applied programmes in the continuing education.

4. To organize conferences and symposia, as well as maintaining academic relationships with research associations inside and outside the country.

5. To promote Arabisation, the translation, writing, publication and asserting the use of Arabic language in teaching.

6. To generate adequate numbers of scientists, researchers, and faculty members.

Following Libya's parliamentary elections in 2012 and the establishment of a new government, the new representatives announced a bold vision for the future of Libyan higher education. The aim is to create world-class universities that would help diversify Libya's economy and turn Libya into a hub of academic achievement. Using its significant oil resources, this aim of higher education reform showed a candid understanding of the long-term effort required making change. An improved higher education system will yield job growth, decrease reliance on foreign expertise in technical sectors and increase Libya's chances to become a higher education hub for the region.

4.7.1 Objectives of Libyan Universities

Universities offer three types of qualifications. The first degree offered is the Bachelor degree that requires four, five or six years of study in different programmes after obtaining the secondary school certificate. Universities and the National Libyan Academy also offer programmes leading to Master's degree in some specializations, which requires, on average, 2-3 years of study after obtaining the

Bachelor degree. PhD degrees in selected specializations can be obtained at certain universities as well as at the National Libyan Academy requiring three to four years of study.

According to the Ministry of Libyan Higher Education and Scientific Research, the Libya universities objectives are:

1. Improve the level of education in the universities to meet student and community educational needs in the twenty-first century.
2. Take care of vocational and technical education, development and linking it to the needs of Libya's future in construction and economic development
3. Increase the efficiency of the educational and research institutions and to emphasize the need for compliance with international standards accreditation and quality.
4. Promote scientific research and its role in economic development for the benefit of the Libyan society
5. Encourage partnership and cooperation with Arab and foreign scientific institutions.
6. Maintain that higher education remains affordable for everyone in the society.

4.7.2 Objectives of Libyan Higher Institutions

The second type of Libyan higher education is the Technical and vocational institutions, according to the (Education, 2011) several colleges for teacher training were established in 1997. The new scientific institutions, which are known as scientific research centres, were created in the areas of Health and Pharmacy, Education, Environment and Basic Sciences; they act as both teaching and research institutions. The objectives of the higher institutions are different in some points compering with the objectives of universities and they are as following:

1. Acquisition of technical skills and to those involved in it to suit the needs of the labour market.
2. Provide the country with technical and specialized technical competencies to contribute to the overall development.
3. Upgrading technical and professional education through the application of modern systems is seeking to develop training and rehabilitation programs in technical colleges and technical institutes.
4. Closer relations professional and technical tie with institutions and related companies.

4.8 Financing of Libyan Higher Education

The public higher education system is financed by, and under the authority of, the state and according to a suggestion made by it. Each university, however, manages its own budget and administration.

The Ministry of Higher Education (MHE) allocates the annual budget (current and developmental spending) for each institution according to suggestions made by it. The (MHE) also allocates the annual budget for technical colleges through the National Foundation for Technical & Vocational Education according to the budget suggested by these institutions. Libyan higher education organisations are non-profit because they are for economic and social development. (Ali, 2006, p. 199) stats that Libyan HE aims to link the plans, programs and education projects with the objectives of economic and social development within an integrated comprehensive framework aimed at in the end to raise the living level of the individual and to improve its share in this life on the one hand, and the development of society in its relations and systems and values on the other hand.

The budget is considered according to the criteria set by the (MHE), such as the institution's population, current infrastructure, needed construction and facilities. Students' fees are very small. Students pay only registration fees at the beginning of the academic year or semester. Other limited financial resources are generated through grants, investments and services provided to the public.

In accordance with the Article number 4 of the balance sheet issued by the Libyan Ministry of Finance, when the Minister of Treasury issues the annual publication in June every year to plan the budget project and prepare it. This publication is directed to all ministries, departments and offices related to the independent budget under the international financial law. The mentioned publication includes the instructions and the general rules that are followed in the preparation of the estimates of the revenue and expenditure of the new annual budget.

Article 5 of the balance sheet state that all Ministries and departments should submit to the Ministry of Treasury not later than 31st of August of every year, their estimates of their revenue and expenditure after approved from the competent Minister.

Also the Article 11 of the balance sheet said that the General office of the budget in the Ministry of Treasury has to provide all referral estimates from all Ministries and departments after studying and reviewing to the financial committee together with all their notes. Following by the Article number 12

of the balance sheet, which confirms that the Minister of Treasury presents the budget project to the Cabinet to approve and take all procedures.

In contrast, private higher institutions are self-financed, their main financial resources are from students' fees and services provided to the public, but they are under the control of the ministry of higher education and flow their regulations and rules.

4.9 Accountability and Autonomy of Libyan Higher Education

Financial accountability and autonomy report should submit to the Audit Bureau to control during and after the expenditure, and with large amounts of money must be approved by the Audit Bureau (Libyan Ministry of Finance). Article number 24 of the balance sheet issued by the Libyan Ministry of Finance offers the final report account to the financial audit in a period not exceeding six months from the date of the expiration of the fiscal year. , The financial statements on the final accounts should be submitted to the Libyan Ministry of Finance within three months at most of the fiscal year end. In addition, Article (25) includes the final account of the state of the following data:

1 - Statement of assets and liabilities (assets and liabilities).

2 - Full detailed statement of income and expenses calculates the state, and the actual expenditures for each section of the budget sections compared to the budget estimates for the same year.

3 - Full detailed data on each account from the state accounts.

4 - Any other data that the Libyan Ministry of Finance or the Libyan Ministry of financial audit should be included the final account.

These reports are provided on a regular basis, and they are not publically available. Article (25) states that it may not be disposed in the fixed or movable funds except in accordance with the rules and procedures established by a decision of the Libyan Ministry of Finance that if the money exceeds the value of the subject of disposition hundred thousand dinars in the fiscal year is not permissible to act except by law.

According to Article 22 of the balance sheet issued by the Libyan Ministry of Finance, which state that in every Ministry, there is a financial controller followed by his/her assistants in that department. Their job is to adjust and control the implementation of the budget. They make sure not to exceed the commitments undertaken by the Ministry or the department the limits of their interest credits and their

exchange of them. In the Article 24 of the balance sheet: The financial controller is particularly interested in the following:

1-Participating in the preparation of the Ministry's budget project.

2-Participating in discussing the budget project with the financial committee.

3-Preparing rules to amend and adjust the budget.

4-Preparing monthly reports

5-Supervising the Ministry's financial department.

6-Supervising the stores.

7-Submitting a report to the Deputy Minister on the progress of the financial and the accounting matters in the Ministry.

Also, in Article 25 of the same balance sheet which states that the assistants of the financial controller have to provide a periodical report every month after approved from the Head of Department of what has been collected from the revenues and expenses have been spent.

The State Law of the financial system in Article 18 said that every ministry has a financial controller and sufficient number of assistants chosen by the Minister of Treasury from his/her staff in the Ministry. All of them work in the Ministry of Treasury and responsible for doing all their work. The financial controller and his/her assistants are particularly responsible in preparing the financial records and saving them under the rules of the issued law. They have to take sufficient procedures to protect the government fund, the general storage and other expensive things and inform immediately about any missing money as soon as possible.

The financial controller has to submit to the Treasury's Deputy Minister a monthly report on the progress of the Ministry's work not later than the end of the next month and a copy of this report are for the Deputy Minister of that Ministry. Other executive regulations organize the other financial tasks of the controllers and their assistants and show their duties.

4.10 Libyan Organisational Culture

The behaviours and attitudes towards accounting and PMS are affected by culture, as are the behaviours and attitudes towards any other human activity (Douglas, 1989; R. M. C. T. E. Haniffa, 2002; Wildavsky, 1989). As a result, a substantial attention has been paid in the accounting literature to the impact of culture on PMS and its practices (Hamid, Craig, & Clarke, 1993). A number of researchers such as (Adler, 1983; Adler & Graham, 1989; Archambault & Archambault, 2003;

Belkaoui, 1992, 1997; Cravens & Oliver, 2000; Douglas, 1989; Doupnik & Salter, 1995; Hamid, Craig, & Clarke, 1993; R. Haniffa & Hudaib, 2002; Hofstede, 1991; Jaeger, 1986; Jaggi & Low, 2000; Wildavsky, 1989), have demonstrated that culture is a major factor that affects the structure of business, society as well as accounting.

A study comprising Libya and other Arab countries including Libya, Egypt, Iraq, Kuwait, Lebanon, Saudi Arabia, and the United Arab Emirates which done by (Hofstede, 1997) demonstrated that Arab countries share many characteristics in common, they differ in many aspects. Hofstede (1980) says that Libya is characterised by the extended family, tribe and village. Thus, the employees are more likely to be influenced by many members within society.

The Islamic religion, the Arabic language and reputation are the three dimensions that characterize Libyan culture. In this vein, Aghila (2000) pointed out that religion, family; language and reputation have an important effect on the behaviour and attitude of certain members of a society, both in Libya and in the other Arab countries. However, in Libyan society, individuals and employees of organisations adhere to societal values such as guarding the reputation of their families and tribes. Hence, social reputation is a very important element of societal relationships (Hofstede, 1980 (Hofstede, 1980) in Libyan society. Therefore, strict adherence to the tradition of Islam in Libya would strengthen deontological norms and codes of ethics in individuals' ethical system. Islam is the main religion of Libyan society that comprises extended families and tribes, where national culture, values and norms have their influence in all aspects of everyday life, which may also influence the accounting and auditing service.

Similarly, (El-Fathaly, 1977, p. 12) states : The strong role of religion in a traditional Islamic society like that of Libya has produced a society with special features. Conservative attitudes have been predominant in every respect. People's values and behaviour have been a function of their religious background and attachment: hence, evaluation and acceptance of innovation and change have been subject to religious beliefs and notion".

(Pargeter, 2006) Highlighted that the socio-cultural structure in Libya is integrated into the political system; for instance an informal association of popular leaders, consists of senior leaders of all the Libyan tribes. Therefore, Libya is still suffering the real limitations of a development model based on the ideology of its current administrative system that aims to impose the rule of law in the country.

4.11 Summary

In this chapter an overview of the Libyan context has been discussed in order to create an understanding of the environment where the research took place. Information has been provided about Libya's geography and historical background. The structure of the education system in general and of HE in particular was discussed. Finally, the Libyan organisational culture has been highlighted. The next chapter will discuss the research methodology of this research study, which was adopted to achieve the aim and objectives.

Chapter 5: Research Methodology

5.1 Introduction

The previous chapters have provided an introduction and a review of the literature to support this study. The aim of this chapter is to describe the research philosophy and methodology that have been adopted and the methods and procedures that have been conducted to collect the research data. This chapter is structured as follows: it starts with a justification and discussion of the research philosophy and methodology together with an explanation of the data collection methods, including the questionnaire design and interviews. This is followed by details of questionnaire construction and the pilot study. The response rate is also shown in this chapter. Finally, the chapter ends with a discussion of the statistical methods that will be used in this research.

The methodology, which is used in this study, could be described as a cross-sectional exploration adopting mixed methods (quantitative and qualitative), conducted through a survey questionnaire to investigate the specific contingency theory factor (organisational culture) on the acceptance of performance measurement systems in Libyan higher education and a case study interviews for more investigation about OC types.

5.2 Research Questions

The study adopted the exploratory research approach to explore the impact of the four organisational culture types (Hierarchy, Clan, Adhocracy and Market) on the acceptance, importance and use of PMS in Libyan higher education. The main and subsidiary questions for this research arise from gaps existing in the literature concerning the relationships between organisational culture and PMS acceptance, importance and use in Libyan higher education in general and in each type of Libyan higher education in particular. This leads us to the following main research question:

What influence does organisational culture have on the acceptance, importance and use of performance measurement systems in Libyan higher education?

To achieve the first objective the researcher developed the following questions:

1- What types of organisational culture are dominant in Libya's higher education system?
2- What types of organisational performance are found in Libya's higher education system?
3- Do culture types differ for different job titles and positions and levels of education?

4- To what extent are the performance measurement systems acceptable in Libyan education sector?

To achieve the second objective the researcher developed the following questions:

5- To what extent is the performance measurement systems (financial, non-financial and advanced) adopted in Libyan education system?
6- To what extent are the performance measurement systems considered important in Libyan education system?
7- To what extent are the performance measurement systems used in Libyan education system?

To achieve the third and fourth objectives the researcher developed the following questions:

8- What influence does organisational culture have on the acceptance of performance measurement systems (PMS) in Libyan higher education system?
9- What influence does organisational culture have on the importance of performance measurement systems (PMS) in Libyan higher education system?
10- What influence does organisational culture have on the use of performance measurement systems (PMS) in Libyan higher education system?

To assess the influence of organisational culture on the acceptance of PMS, Cameron and Quinn's (1999; K. Cameron & Quinn, 2011) model was used. This model has six dimensions, namely: Organisational Characteristics, Organisational Leadership, Management of Employees, Organisational Glue, Strategic Emphasis, and Criteria of Success. Cameron and Quinn used a six dimensional model for an analysis, which then helped them derive four organisational culture types. These are: Hierarchy Culture; Clan Culture; Adhocracy Culture; and Market Culture.

5.3 Development of the Hypotheses

Cameron and Quinn's (1999) OCAI is among the well-known instruments used to predict the influence of the four types of organisational culture on PMS acceptance, importance and use. This instrument also allows predictions to be made about the differences in PMS acceptance between organisations and cultures (Vakkuri & Meklin, 2003; (Eker & Eker, 2009). PMS acceptance, importance and use vary

significantly in each of the four types of organisational culture defined by Cameron and Quinn. (Bruns & Waterhouse, 1975)

The literature points to several studies that have used this instrument in organisational studies (Berrio, 2003; Deshpande et al., 1993; Eker & Eker, 2009; Helfrich et al., 2007; Henri, 2006; Igo & Skitmore, 2006; Naranjo-Valencia et al., 2011; Ramachandran et al., 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006; Zahari & Shurbagi, 2012; Zu et al., 2011).

Research studies on PMS make some hypotheses or predictions about the expected outcomes of the study based on one or more of the above-mentioned organisational culture types. There are different hypotheses about the association of relationships between two or more variables; some are positive and some are negative. This section will explain the relationships between the dependent and the independent variables stated above. To assess the influence of organisational culture on the acceptance, importance and use of PMS, Cameron and Quinn's (1999) model was used. This model has six dimensions, namely: Organisational Characteristics, Organisational Leadership, Management of Employees, Organisational Glue, Strategic Emphasis, and Criteria of Success. Analysing these six dimensions produced four types of organisational culture. These are: Hierarchy culture; Clan culture; Adhocracy culture; and Market culture, and using two dimensions namely as flexibility and discretion versus stability and control, and external focus versus internal focus and integration.

The first set of hypotheses of this research predicts the direct influence of the organisational culture type on PMS acceptance, importance and use in Libyan higher education in general and its branches in particular. Ehtesham (2011) accepted with sufficient evidence the hypothesis that the organisational culture has a significantly positive relationship with performance management practices (PMP) in Pakistan's higher education. In addition, Twati (2006) states that the findings of his research in the Arab Gulf region supported the hypothesis that a particular dominant organisational culture type exhibited a significant positive direct relationship associated with management information systems (MIS) adoption and use in Arab Gulf region.

Shurbagi and Zahari (2013) hypothesised that there is a relationship between transformational leadership and organisational culture in the National Oil Corporation of Libya, and they found the relationship to be positive and significant while also identifying that the dominant culture in this corporation was Hierarchy culture.

As the literature pointed out a significant positive relationship between organisational culture and performance management practices (PMP) in Ehtesham (2011), between organisational culture and management information systems MIS in (Twati & Gammack, 2006), and between organisational culture and transformational leadership in (Shurbagi & Zahari, 2013). In this study the relationship between organisational culture and the three dependent variables (performance measurement systems acceptance, importance and use) were tested and they were found to be inter-related. Therefore, it is hypothesised that:

H1: A particular dominant organisational culture type exhibits a significant positive direct relationship with the acceptance of performance measurement systems in Libyan higher education.

H2: A particular dominant organisational culture type exhibits a significant positive direct relationship with the importance of performance measurement systems in Libyan higher education.

H3: A particular dominating organisational culture type exhibits a significant positive direct relationship with the use performance measurement systems in Libyan higher education.

The acceptance, importance, and use of PMS in organisations have been developing at a rapid pace. In a fast-changing world many organisations are eager to adopt and implement advanced PMS, as many organisations depend on it for their success. However, many organisations have encountered difficulties in adopting and implementing their new PMS.

5.3.1 Hierarchy Culture

Hierarchy culture exists in bureaucratic organisations where the organisation is well established, and where most people are helpful to one another and work as a team.

Organisations dominated by a hierarchy culture are characterised as a very formalised and structured place to work, where procedures govern what people do. A hierarchy culture is typical in governmental and well-established organisations with many levels of structure and large numbers of employees (K. Cameron & Quinn, 2011).

Cameron & Quinn (2011) state that research on hundreds of organisations has shown that hierarchy and clan cultures appear more frequently in organisations than adhocracy or market cultures.

The technological aim of this type of culture is to increase and differentiate the efficiency of a technology or manufacturing process to lower its cost. Their large size, large number of employees, financial support, and expenditure on facilities characterise organisations in this culture. Well-organised and well-managed internal processes, good technical management, and adequate staff and capital resources are significant drivers of the success of organisations dominated by this type of culture. (Naranjo-Valencia et al., 2011) accepted the hypothesis that the Hierarchy culture will have a positive effect on imitative orientation. In addition, Shurbagi and Zahari (2013) poited out that the dominant culture in the National Oil Corporation of Libya was Hierarchy culture and has a positive relationship with transformational leadership.

On the other hand, Twati (2006) in his study supported the hypothesis that the organisations dominated by hierarchy culture type will exhibit a significant negative direct relationship with the acceptance and use of management information systems (MIS) applications.

Therefore, this study adopted the hypothesis of the Twati (2006) because his study was in the same country (Libya), meaning that the cultural aspects found in both studies would be similar, while the study of . (Naranjo-Valencia et al., 2011) was in Spain. Therefore, the hypothesis related to hierarchy culture is:

H4: A Hierarchy culture type will exhibit a significant negative direct relationship with the acceptance, importance and use of PMS.

5.3.2 Clan Culture

Clan culture is so called because of its similarity to a family-type organisation (K. Cameron & Quinn, 2011). The organisations of this type seem more like extended families than economic entities. Some basic assumptions in a Clan culture are: the environment can best be managed through teamwork and employee development; customers are best thought of as partners; the organisation is in the business of developing a humane work environment; and the major task of management is to empower employees and facilitate their participation, commitment, and loyalty. Clan culture emphasises flexibility but its focus is on the internal organisation. The characteristics of this type of organisational culture are self-directed teamwork (collectivist); rewards and encouragements are received on the basis of that teamwork, and there is support for employees' ideas about how to improve the work and performance of the organisation (K. Cameron & Quinn, 2011). Ramachandran et al. (2011) find that the Clan culture thus portrayed had more dominance in the organisational culture dimensions of the Competing

Values Framework, in the case of public higher education institutions (HEIs). Henri (2006) investigates the relationship between organisational culture and diversity of measurement. The researcher hypothesised that the top management teams of firms reflecting a flexibility dominant type (Clan or Adhocracy Culture) tend to be associated with greater diversity of measurement than those of firms reflecting a control dominant type (Hierarchy or Market culture). He also found that there was a significant positive direct relationship is observed between flexibility values and diversity of measurement. Shurbagi and Zahari (2013) poited out that there was a postitive relationship between transformational leadership and Clan culture in the National Oil Corporation of Libya. In addition, Keskin et al, (2005) found that Clan culture is positively related to tacit knowledge oriented management. Eker & Eker (2009) have suggested that the control values are negatively and significantly associated with PMS use in the case of measures for attention focusing and strategic decision-making, and financial and non-financial performance. Twati (2006) hypothesised that organisations dominated by a Clan culture type will exhibit a significant negative direct relationship associated with the acceptance and use of management information system (MIS) applications, but his study did not support this hypothesis. Consequently, the relationship between the acceptance, importance and use of performance measurement systems (PMS) can be hypothesised as follows:

H5: A Clan culture type will exhibit a significant positive direct relationship with the acceptance, importance and use of PMS.

5.3.3 Adhocracy Culture

According to Cameron & Quinn (1999; K. Cameron & Quinn, 2011), the adhocracy culture profile matches that of organisations that focus on external issues and value flexibility and carefulness. Rather than looking for stability and control, they value creativity and risk taking. Such organisations have an informal organisational structure.

Adhocracy culture is characterised by an active, entrepreneurial, and creative workplace. People are enthusiastic about taking risks. The relationship that keeps the organisation together is an enthusiasm to innovate, and the emphasis is on technology, products, being at the leading edge of new knowledge, being willing to change and believing that new challenges are important for success. (Naranjo-Valencia et al., 2011) state that the Adhocracy culture will have a positive effect on innovative orientation. Twati (2006) hypothesised that organisations dominated by an adhocracy culture type will exhibit a significant positive direct relationship with the acceptance and use of management information system

(MIS) applications, and his study supported this hypothesis in the Arab Gulf region only. Keskin et al, (2005) in their investigation about the relationship between Adhocracy culture and tacit knowledge oriented management, found full support for their hypothesis that the Adhocracy culture is positively related to tacit knowledge oriented management. Hence, to investigate the relationship between Adhocracy culture and PMS acceptance, importance and use can be hypothesised as follows:

H6: An Adhocracy culture type will exhibit a significant positive direct relationship with acceptance, importance and use of PMS.

5.3.4 Market Culture

The term 'market' is not to be confused with the meaning of the word in 'marketplace'. Rather, it refers to a type of organisation that serves as a market in itself. Market culture is a type of organisational culture that fits very well with organisations that focus on the market, product diversity and taking advantage of opportunities in the market environment. The new design is known as a form of market organisation. The organisations that have this type of culture are also oriented towards the external environment rather than internal relations. They focus on their main goals of profit-making, product improvement, the strength of their market position, and customer product bases (K. Cameron & Quinn, 2011). Most educational organisations in this study are public and government funded. Therefore they are unlikely to fall into this type as market culture is not dominant in Libyan higher education. Moreover, Igo & Skitmore (2006), (Igo & Skitmore, 2006) applying the OCAI method found indications that Australian companies have a dominant market culture. Zu et al (2010) investigated how organisational culture influences the implementation of various practices incorporated in the recent focus of Six Sigma related to traditional Total Quality Management (TQM). They used survey data collected from 226 manufacturing plants in the United States. Relationships between the four types and 10 practices TQM / Six Sigma were examined, and the results reveal that the type of dominant culture was a market culture.

Twati (2006) hypothesised that organisations dominated by a Market culture type will exhibit a significant positive direct relationship with acceptance and use of MIS applications, and his study supported this hypothesis in Arab Gulf region only. Also, Shurbagi and Zahari (2013) pointed out that there was a positive relationship between transformational leadership and Market culture in the National Oil Corporation of Libya. Consequently, the hypothesis is:

H7: A Market culture type will exhibit a significant positive direct relationship with the acceptance, importance and use of PMS.

According to the literature, each of the four organisational culture types varies from country to country, sector to sector, and organisation to organisation. This study investigated employees in different levels of management in different organisational culture types.

Therefore, the questionnaire for the survey undertaken aimed to investigate and identify the views of decision makers who were using performance measurement systems in Libyan higher education sector; respondents' characteristics, depending upon their job title and position, are important in terms of information to be gained about their experiences and education level. Twati (2006) states that employees in different levels of management have different organisational culture types, and he found that in the Arabian Gulf region, senior and middle management share a clan culture while middle and low management share a market culture. The employees in different management levels in the oil and gas sector as well as the banking sector in Libya have the same organisational culture. Twati (2006) also found that in employees with different levels of experience in the Arab Gulf region and the North Africa region (which includes Libya) shares the same organisational culture. Ramachandran et al. (2011) found that the dominant culture was different in private and public Malaysian universities. Henri (2006), by analysing a population consisting of 2175 Canadian manufacturing firms, concluded that top managers of firms demonstrate a clan type culture. The literature has shown the relationship between organisational culture, its performance and its leaders. Schein (1992) argues that organisational leaders create and enforce the culture of the organisation. A vast majority of senior management executives who are the creators of organisational culture prefer (and impose) a hierarchy culture in many organisations in this sector. Hierarchy Culture provides them with the authority over their subordinates, with whom they have a formal relationship.

The research hypotheses H8, H9, H10 are about the organisational culture types depending on the difference in job titles and levels of education. Libyan higher education consists of three types of institutions: universities (Public & Private), higher institutions and technical colleges.

H8: The type of organisational culture dominant is different depending on the type of higher education system.

Hypothesis 8 was to test whether the dominant organisational culture type differed, according to the type of higher education system. Some previous studies support this hypothesis; others do not. For

example Ramachandran et al. (2011) found that the dominant culture was different in private and public Malaysian universities. This result is not consistent with that of the study of Twati & Gammack (2006), who found that Hierarchy culture dominated the organisational culture profiles of both the oil and gas sector and the banking sector of Libyan industry. The researcher adopted the hypothesis of the first study by Ramachandran et al. (2011) because his study was about the higher education system and its branches, and is therefore similar to this study. Therefore, it is hypothesised that:

H9: The type of organisational culture dominant is different depending on job title and position.

Hypothesis 9 was to test whether the employees in different levels of management have different organisational culture types. Job titles and positions in Libyan higher education tested in this study are: President, vice president, chief of finance department, assistant / vice chief of administrative department and assistant/vice financial controller. Some previous studies support this hypothesis; Twati (2006) found that in the Arab Gulf region different culture types characterised the different job levels in the oil sector. The same study also found that the employees in the North African region share the same organisational culture type. Henri (2006), by analysing a population consisting of 2175 Canadian manufacturing firms, concluded that top managers of firms demonstrate a clan type culture. The literature has shown the relationship between organisational culture, its performance and its leaders. Schein (1992) argues that leaders of organisations leaders create and enforce the culture of the organisation. A vast majority of senior management executives who are the creators of organisational culture prefer (and impose) a hierarchy culture in many organisations in this sector. Hierarchy Culture provides them with the authority over their subordinates, with whom they have a formal relationship. Therefore, it is hypothesised that:

H10: The type of dominant organisational culture is different depending on level of education and experience.

Hypothesis 10 was to test whether the employees in different levels of management education and experience have different organisational culture types. Libyan higher education levels tested were Bachelor's degree, Post-graduate degree and professional qualifications. The tested experience levels in Libyan higher education were under the classifications of 'current job' and 'experience with the current organisation'. Some previous studies support this hypothesis such as; Twati (2006) found that in the Arab Gulf region the oil sector employees with different organisational culture types had different

education levels, while the same study found that the employees in the North Africa region share the same organisational culture type even at different education levels.

Also, employees with different levels of experience belong to different organisational culture types, and employees who have experiences of less than one year and those with 6-10 years share a Hierarchy culture, while those with experience between 1-5 years and more than 10 years share a clan culture. Therefore, it is hypothesised that:

5.4 Research Methodology

This study adopted the exploratory research approach to understand the impact of organisational culture on the acceptance, importance and use of financial and non-financial performance measurement systems. Research methods relate to specific activities designed to generate data (for example questionnaires, focus groups, interviews, observation) and research methodology is more about attitude and understanding of research and strategy that will answer questions on research (Greener, 2008). The research methodology consists of a number of steps that have to be determined before starting the research. The following table lists the steps of the research methodology as shown in Saunders et al (2009, p. 108).

Table 5:1 Research Steps

<table>
<tr><th>Philosophies</th><th>Approaches</th><th>Strategies</th><th>Choices</th><th>Time Horizons</th><th>Techniques and Procedures</th></tr>
<tr><td rowspan="2">Positivism</td><td rowspan="5">Deductive</td><td>Experiment</td><td rowspan="3">Mono method</td><td rowspan="5">Cross-sectional</td><td rowspan="5">Data Collection And Data Analysis</td></tr>
<tr><td>Survey</td></tr>
<tr><td rowspan="2">Realism</td><td>Case study</td></tr>
<tr><td>Action research</td><td rowspan="2">Mixed methods</td></tr>
<tr><td></td><td>Grounded theory</td></tr>
</table>

Interpretivism	Inductive	Ethnography		Longitudinal	
		Archival research			
Pragmatism			Multi-method		

Source: (Saunders et al., 2009)

Research methodology started from philosophies and ended with techniques and procedures.

a- Research philosophy is usually associated with the development of knowledge and the nature of that knowledge. Research implies something much deeper than practical; it needs a philosophical to the question, "Why research?" (Holden & Lynch, 2004).

b- Research approaches could be deductive or inductive. Walliman & Baiche (2001) state that the arguments are traditionally divided into two different types, deductive (testing theory) and inductive (building theory).

c- Each strategy can be used for descriptive research, exploratory and explanatory (Yin, 2003). Saunders et al (2009, p. 108) named seven types of research strategies such as experiment, case study, survey, action research, grounded theory, ethnography and archival research.

d- Saunders et al (2009) state that in choosing research methods researcher will use either a single data collection technique and analysis procedures (mono method) or more than one technique of data collection and analysis procedures to answer the research question (multiple methods).

e- A time horizon depends on the research question; therefore it could be a 'cross-sectional', which represents events at a particular time or a 'longitudinal', which is a representation of events over a given period.

f- Finally, the researcher selects the techniques and procedures for the research data collection and analysis, which are appropriate to the research methodology.

The following subsections will explain in more detail the research methodology steps.

5.5 Research Philosophy

Easterby-Smith et al, (2002, p. 27) emphasise that:

"There are at least three reasons why an understanding of philosophical issues is very useful. First, it can help to clarify research designs. Second, knowledge of philosophy can help the researcher to recognise which designs will work and which will not. It should enable the researcher to avoid going up too many blind alleys and should indicate the limitations of particular approaches. Third, knowledge of philosophy can help the researcher identify, and even create, designs that may be outside his or her past experience. And it may also suggest how to adapt research designs according to the constraints of different subject of knowledge structures".

Sekaran (2003) notes that research design involves a series of rational decisions. These include identifying the purpose of the study, testing whether it is exploratory, and descriptive or testing hypothesis. Also, deciding the degree of involvement of the researcher could identify the elements of the study configuration: measurement and measures; data analysis; methods of data collection, time horizon, sampling design and unit of analysis.

The development of a philosophical perspective requires the researcher to make several core assumptions concerning two dimensions; namely the nature of society and the nature of science (Burrell & Morgan, 1979) . Holden & Lynch (2004) state that the sociological dimension consists of two views of society: regulatory view and radical change view. In a regulatory view of society, the researcher assumes that society evolves rationally. On the other hand, the radical change view sees society as being in constant battle while humans struggle to free themselves from the control of societal structures. The other dimension, science, includes either a subjective or an objective approach to research, and these two main philosophical approaches are defined by several basic assumptions concerning ontology (reality), epistemology (knowledge), human nature (predetermined or not) and methodology. Research methodology writers differ in the number of paradigms that are identified, and labels that are given, but the most common classification, used, for example, by Collis and Hussey (2003) is the identification of two main research paradigms or philosophies: positivist and phenomenological. Some authors prefer the term 'interpretive' to 'phenomenological', as it implies a

broader philosophical perspective and avoids confusion with the methodology known as phenomenology. Guba and Lincoln (1989) call the positivist paradigm "conventional" and the phenomenological paradigm "constructivist". The positivist philosophy, as indicated by Cooper and Schindler (2008), is popularly associated with the natural sciences. It is characterised by systemic analysis and detached exploration of the research phenomenon. If the research philosophy reflects the principles of the philosophical stance of the natural scientist, then the research can be called positivist. Positivism is one of the research philosophies shown in table (5:1, P 135), which has three other types of philosophies such as Realism, Interpretivism and Pragmatism (Saunders et al., 2009). The researcher should decide which philosophy should be adopted in the research and which determines the other dimensions of the methodology.

In this research a positivist philosophy has been used because the literature review has been carried out first in order to deduce the hypotheses from existing literature, and these hypotheses were tested in the later stages in the research. Saunders et al (2007, 2009) argue that a positivist philosophy usually uses quantitative methods as research tools, as these are objective and the results generalizable and replicable. They look for an explanation of behaviour, not for meaning.

Easterby-Smith et al (2002) point out that the difference between the two approaches can be seen in terms of scientific paradigms, with the inductive approach representing a phenomenological paradigm and deductive approach representing the positivist paradigm. Moreover, the phenomenological paradigm can be divided into three: realism, constructivism and critical theory (Guba & Lincoln 1994). Table 5:2 is a conceptual schema of these four paradigms, using three columns that allow the evaluation of each paradigm.

Table 5:2 A three dimensional framework for categorizing four scientific paradigms

Paradigm	Deduction/ Induction	Dimension objective/ Subjective	Commensurable/ Incommensurable
Positivism	Deduction	Objective	Commensurable
Critical theory	Induction	Subjective	Commensurable
Constructivism	Induction	Subjective	Incommensurable
Realism	Induction	Objective	Commensurable

Source: (Perry, 1998, p. 786)

The research based on this philosophical perspective seeks to produce causal relationships. This research has been conducted using this perspective, because a review of contingency theory, contingent factor and PMS literature was conducted, and the population and sample frame were determined accordingly. It was decided that the study will be on Libyan higher education, the research instrument and the operationalisation of the study variables were developed and a pilot study was used to test these means. Finally, the research data was collected and analysed and a conclusion was reached.

5.6 Research Approaches

The research approach requires determining whether the research is deductive (testing theory) or inductive (building theory). According to Lancaster (2005), a deductive research develops theories or hypotheses and then tests out these theories or hypotheses through empirical observation. In the natural sciences, the deductive search is the most widely used research approach, according to Holden & Lynch (2004). On the other hand, inductive research is concerned with observations that lead to the development of a hypothesis and theories in order to explain those particular observations. Walliman & Baiche (2001, p. 128) argue that through the inductive argument we infer general truths from the particular, while through deductive argument, we infer the particular from the general. Therefore, deductive and inductive arguments can be seen as seeking the truth from opposite directions.

In addition, as highlighted by Perry (1998), the deductive approach represents the positivistic paradigm, whereas the inductive approach represents the phenomenological paradigm. Table 5:3 summarises some of the major differences between deduction and induction.

Table 5:3 Major differences between deductive and inductive approaches to research

Deduction emphasises	Induction emphasises
- Scientific principles	- Gaining an understanding of the meanings humans attach to events
- Moving from theory to data	- A close understanding of the research context
- The need to explain causal relationships between variables	- The collection of qualitative data
- The collection of quantitative data	- A more flexible structure to permit changes of research emphasis as the research progresses
- The application of controls to ensure validity of data	- A realisation that the researcher is part of the research process
- The operationalization of concepts to ensure clarity of definition	- Less concern with the need to generalise

- A highly structured approach - Researcher independence of what is being researched - The necessity to select samples of sufficient size in order to generalise conclusions

Source: (Saunders et al., 2009, p. 127)

This research will use the deductive approach because in this research one contingency theory factor (organisation culture) will be tested to determine the influence of this factor on the acceptance of financial and non-financial performance measurement systems.

5.7 Quantitative Research methods

Research methods in general can be broadly divided into two types, which are quantitative and qualitative. Qualitative research methods, such as case studies or focus groups, and quantitative research methods, such as a mail or telephone survey or a combination of both, can be used. The methodology, which is used in this study, could be described as a cross-sectional exploration adopting mixed methods (quantitative and qualitative), conducted through a survey questionnaire to investigate the influence of organisational culture on the of PMS in higher education and case study interviews is for more investigation about OC types.

Quantitative research places emphasis on methodology, procedure and statistical measures of validity. It relies on "the measurement and analysis of statistical data to determine relationships between one set of data and another" (Thietart & Wauchope, 2001, p. 77). According to Remenyi (1998), the quantitative approach involves tests using a variety of standard statistical techniques, and results of these tests provide meaningful bases for the empirical generalisations and the underlying theoretical conjecture.

Quantitative research has many advantages: (a) it can provide coverage of a range of situations; (b) it is fast and economical; and (c) it can provide aggregated results from large samples suitable for policy decisions. On the other hand, it has disadvantages too: (a) it is not very effective in understanding processes, people or actions; (b) it is not very helpful in generating theories; and (c) it has fewer implications for future actions (Easterby-Smith et al., 2002).

While quantitative research may have many benefits, it provides only an aerial (and necessarily one–dimensional) photograph of social phenomena. It is unable to tell us how important these phenomena

are to the actors involved in the process, relative to other features of the employment relationship, nor is it able to discriminate between the idiosyncrasies.

A positivist philosophy usually uses quantitative methods. Therefore, this was based mainly upon quantitative data that can be collected using a questionnaire.

Questionnaires were piloted to improve the validity and reliability of the variables measured and were supported by the relevant literature; to this end the researcher gathered and adapted questions from previous studies, and devised new ones as well, as appropriate. New questions were discussed with other researchers and academic staff who have experience in this field. Finally, the researcher used a statistical software (SPSS) to analyze the questionnaire and test the hypotheses.

Table 5:4 Qualitative and Quantitative Research – A Comparison

Dimensions	**Quantitative**	**Qualitative**
Researcher's affinity	Distant	Close
Concentration	Behaviour	Meaning
Conditions	Controlled	Natural
Data	Objective, Reliable	Subjective, Rich
Dynamics	Static	Process
Focus	Particularistic	Holistic
Instrumentation	Non-human	Human
Orientation	Verification/ Testing	Discovery/ Theory
Overview	Macro	Micro
Presentation	Numbers	Words
Purpose	Prediction	Understanding
Reliability	Stable	Dynamic
Results	Reliable	Valid
Values	Value free	Value bound
Viewpoint	Outsider/ Researcher	Insider/Participants

Source: Bryman and Bell (Bryman & Bell, 2007, p. 426)

5.7.1 Research Strategies

Saunders et al (2009, p. 108) named seven types of research strategies such as experiment, case study, survey, action research, grounded theory, ethnography and archival research. Some of these clearly belong to the deductive approach and others to the inductive approach. What is most important is not

the name of the strategy, but whether it helps the researcher to answer the research question(s) and meet research objectives.

As mentioned in the discussion on research approach earlier, this research used a deductive approach to answer the research questions and to meet the research objectives. A cross-sectional questionnaire survey technique was used in this research as it is considered to be the most widely used by empirical studies in the social sciences.

5.7.2 Survey

A survey provides a quantitative or numerical description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2009).

A survey is a popular and common strategy in business and management research and is most frequently used to answer questions that start with 'who', 'what', 'where', 'how much' and 'how many' (Saunders et al, 2007). In addition, a survey is not just a particular technique of collecting information by questionnaires; other techniques such as structured and in depth interviews and observations can also be used (De Vaus, 2002). Sharma (2008) argues that survey research is widely regarded as inherently quantitative and positivist and is contrasted to qualitative methods involving unstructured interviews, participant observation, focus groups, case studies etc.

Thus, this technique has been chosen as the main method for data collection to attain the aim and objectives of this study, because according to the literature, a survey method was the main method in similar studies: (Abraham et al., 2004; Ali Mohammad Mosadegh, 2006; Aljaz, 2011; Ehtesham, 2011; Henri, 2006; Kevin et al., 2011; Lok & Crawford, 2004; Twati & Gammack, 2006; Zahari & Shurbagi, 2012). In addition, a survey strategy is usually associated with the deductive approach and allows the researcher to collect quantitative data that can be analysed statistically in later stages. Therefore, the research mainly applied a quantitative approach to address the research objective and questions, in order to assess the likely impacts of contingency theory factors on the effectiveness of performance measurement systems.

5.7.3 Research Design

Research design is the general plan conceived to answer the research questions formulated, and it must be chosen as a function of the research situation (Saunders et al., 2007). Furthermore, Bryman and Bell, (2007), have outlined the following designs for business research:

a) Experimental design (such as the quasi-experiment, laboratory experiments);

b) Cross-sectional design, the most common form of the social survey research;

c) Longitudinal design (such as panel study and the cohort study); and

d) Case study design.

Research design is usually assumed to be a way of conducting research, which incorporates a particular style and employs different research methods. Each research design has its own specific approach to the collection and analysis of empirical data and, therefore, has its own advantages and disadvantages. Although each research has a unique design that defines overlapping areas, the complexity of design choice remains.

Research design adopting in this study mixed methods (quantitative and qualitative), conducted through a survey questionnaire and interviews to investigate the influence of the organisational culture on the acceptance of performance measurement systems in higher education and their impact on organisational performance.

The following sub-section describes in detail the questionnaire survey technique selected by the research design for this study.

5.7.4 Questionnaire Design

A considerable amount of attention was paid to the development of the questionnaire, and several drafts including an assessment and pre-test were trialled before choosing the final version of the questionnaire. The questionnaire was designed to obtain information on performance measurement systems, contingent factor of organisational culture in Libyan higher education. The questionnaire was chosen according to the literature as suggested by (Ehtesham, 2011).

Therefore, a set of requirements was taken into account during the various steps in the construction of the questionnaire, as recommended by many authors such as Oppenheim (1992) and Collis & Hussey (2009).These requirements are as follows:

1- Use clear, simple and direct language, avoid words that carry more than one meaning and use short questions as much as possible in a way that does not affect content and meaning.
2- Coordinate the questionnaire and design a good layout for the questions, using a consistent style in each section, and allow clear answers to the questions by making them easy to follow.

3- Help the participants through the questionnaire by providing questions that are similar in content in the same sections. Start the questionnaire with general questions followed by more specific questions to give more confidence to respondents, in order to enable them to respond to the rest of the questionnaire. Move through questions in a logical sequence, without making major changes or spaces for respondents.
4- Easterby-Smith et al. (2002; Van de, Wilhelmus, & Anderson, 2004) indicate that the important decisions to be considered in questionnaire design are related to the types of questions to be used and the overall format of the questionnaire. They also suggest that the type of questions is associated with the aim and paradigm adopted in the research (Van de et al., 2004).
5- Several researchers recommend using closed questions in long and comprehensive questionnaires, as they are quicker and easier to answer and then be coded (Cooper & Schindler, 2008; De Vaus, 2002; Hair, 2011; Mangione, 1995).
6- A five-point scale was used in all questions except those questions regarding general information about the respondents and general information about the organisations. In this regard, it was pointed out that a five-point scale is perfectly adequate, and that an increase to seven or nine points on a rating scale does not have an impact in improving the reliability of the ratings (Elmore & Beggs, 1975; Sekaran, 2003).
7- Present appearance of the questionnaire perfectly, because this gives an initial impression about the seriousness and importance of the questionnaire.
8- Finally, test the questionnaire in the pilot study.

5.7.5 Research Population

The study included 102 Libyan public higher education institutions listed by the Libyan as being in higher education in the year 2011/2012; this information is shown in table (5:5). The study also included about 20 private higher education institutions. According to Easterby-Smith et al (2002) when the population is small (less than 500), it is customary to use a 100 per cent sample, which is called a census sample, in which the questionnaire is sent to all the members of the research population. Because the population of this research was relatively small, the target sample was the entire population. Therefore, the entire population, which consists of 122 Libyan higher educational institutions, was targeted as the sample for this research. The main reason for choosing the entire population was to ensure that the sample is representative and not biased. The questionnaire was

distributed to the target public, private universities and institutions that were using financial and non-financial performance measurement systems in their organisations in which consisted of decision makers. The decision makers in this research comprise the research population because they have the power to adopt or not adopt the financial and non-financial performance measurement systems. In Libyan higher education, the decision makers include the president of the organisation, vice president, chief of finance department or its assistant/vice chief, and chief of administrative department or its assistant/vice chief.

Using a self-administered questionnaires is one of the most frequently used methods for collecting data in research studies (Babbie, 1998). In self- administered questionnaires, the respondents are given the questionnaires and asked to fill them out in their own time and return them by post or email, or let the researcher collect them.

Table 5:5 Libyan Public and Private Higher education

Libyan Higher Education	Universities	Institutions	Technical collages	Total
The number of public higher education	12	77	13	102
The number of private higher education	20	0	0	20

5.7.6 Pilot Study

A pilot study helps to clarify the issues likely to be faced by the researcher in the questionnaire. According to Moser and Kalton (1985), a pilot study almost always results in significant improvements to the questionnaire and in a general increase query efficiency. In addition, the pilot study is the researcher's last safeguard against the possibility that the main study may be ineffective. Prior to data collection in the current research, a pilot study was planned and conducted using a sample of 10 postgraduate employees with high level certificates and a lot of experience in their work in both public and private higher education.

All the participants had held middle and senior management positions for at least five years. A total of 10 questionnaires were distributed in two languages (Arabic and English), according to the preference of the participant. A total of 6 completed questionnaires were returned. Management experience was considered an important factor in choosing the sample respondents of the pilot study because the researcher is measuring the influence of organisational culture on the acceptance of performance measurement systems, and inexperienced employees are less likely to have a sense of the culture of the organisation. The experience of the pilot study respondents with PMS in general, and another important factor that gives us an indication of whether the organisations are using financial and non-financial of PMS to assess the response of the employees to the use of PMS.

The pilot study served as a useful training experience for administering the questionnaire. Results and feedback from the pilot study were helpful in revising the questionnaire and changes were made accordingly. Some of the questions were revised, reworded, or eliminated, according to the results of the data collected from the pilot study and by using the respondents' comments; the questionnaire was thus upgraded to its final usable version. Changes included:

1. Adjusting the wording of the Arabic version of the questionnaire to make it more understandable.
2. Deleting a number of questions that are not suitable for Libya's environment.

5.7.7 Translation of the Questionnaire

This study explores the influence of OC on PMS in Libya, where Arabic is the official language, and is not extensively utilised in the higher education sector; therefore, the questionnaire needed to be translated to make it very clear to the respondents.

To avoid potential problems related to the translation process, some steps were considered in the design of the Arabic version, such as a review of previous questionnaires related to OC and PMS in the Arab countries initially written in English and rendered to Arabic. This review provides useful information regarding the most appropriate translation of given business words and expressions used in the questionnaires. The two versions of the questionnaire (English and Arabic) were delivered to the private translation office in the capital of Libyan (Tripoli) to review them in order to avoid any prejudice that may be encountered if the researcher approved the translation herself. Moreover, one of the main objectives of pilot study was to ensure that the translation process would not yield any misinterpretation of the questionnaire itself. The pilot study offered the possibility of translation problems with participants who were familiar with both languages (e.g., professionals and academics).

Consequently, some changes and modifications were made to the questionnaire before it was finally delivered; for example, the expression "organisational glue" cannot be translated literally.

5.7.8 Data Collection

Data collection is the process of gathering the required information for each selected unit in the survey**.** There are many methods that can be considered for collecting data in survey research. The selection of the method of data collection in survey research depends mainly on the availability of samples, the desired size of the sample and the research objective and budget (A. Venkatesh & Vitalari, 1991). The most commonly used method of data collection is the self-administered questionnaire.

The first step in data collection involved the researcher using the information from the Ministry of Higher Education and Scientific Research in Libya to identify a listing of all the potential organisations that could participate in the study. Emails with questionnaires were sent to 21.5% (105 in number) of these organisations. About 50% (244 in number) of the questionnaires were distributed by post. The researcher visited about 28.5% of the target higher education universities and institutions to distribute a total of 139 questionnaires. The researcher introduced herself in the beginning of the questionnaire, and a glossary was included in the questionnaire with more information to help respondents who were willing to participate in the survey.

5.7.9 Mailing-Out of Questionnaires

Due to the nature of the research study and the large geographic area of Libya, which has a total area of 1,775,500 square kilometres, three different methods of distributing the questionnaires were used: directly handing questionnaires to respondents, using email with an attachment and using Libyan higher education post system. Organisations, which are part of the all-Libyan higher education system, were visited by the researcher, who met some of the senior and middle management officials in charge of Libyan higher education to discuss the nature of the study, to explain its aims and purposes, and to obtain their permission to conduct the study in their universities and institutions. The senior management of the higher education sector in Libya nominated a contact person from the department of services and public affairs to help introduce the researcher to the participants and to help distribute the questionnaires. The researcher personally distributed the questionnaires to some of the participants, who were given time to fill them out in their own time. The researcher personally collected each

questionnaire from the participants, received respondents' emails and received posted questionnaires in sealed envelopes to ensure their privacy, confidentiality and anonymity.

5.7.10 Follow-up and Questionnaire Collection

The literature suggests that a follow-up on survey questionnaires is strongly recommended for increasing the return rates. At the same time, it is crucial that participation is voluntary and that potential participant's feel under no obligation to be involved. In the present study, a period of one week was given to each participant to answer the questionnaire and have it ready for collection or send it by using any convenient method (email or regular post) to the researcher personally.

In the case of some of the participating organisations, after the researcher has met participants to distribute questionnaires, she later sent them a reminder by phone or email. If the questionnaire was still not filled in after a week, another week was given. If it was still not ready because the participant had lost the questionnaire, a replacement was given and a further one-week period was added to the timeframe. After three weeks, the researchers checked with the participants to find out whether they were still interested in participating in the study. If they were, the researcher offered to collect the questionnaire later that day or the next day.

5.7.11 Questionnaire Data Analysis

The respondents were asked in the questionnaire to give information about the acceptance, importance and use of the performance measurement systems. Also, to investigate the contingent factor of organisational culture types in Libyan higher education, data were analysed using the Statistical Package for Social Sciences (SPSS) version 20.0 for Mac software. Descriptive statistics, which include frequencies and percentages, were utilized to present the main characteristics of the sample and the profile of organisational culture and information related to the acceptance, importance and use of performance measurement systems.

5.7.12 Response Rate

As shown in table 4:6, the sample of this study consists of two types of Libyan higher education, namely, public and private. Libyan higher education consists of three types of institutions (universities, higher institutions and technical collages. The intended participant lists covered the entire population of

all groups (universities, higher institutions and technical collages) in public higher education. A personally administered questionnaire survey was carried out on 488 participants (see table 4:6): 80 in private higher education, and 408 in public higher education; these participants were from 48 universities, 308 higher institutions, and 52 technical collages.

The questionnaires not returned from the respondents were 172 in number (35 per cent): 37 from private higher education, and 135 for public higher education (both institution types represented by 12 universities, 110 higher institutions, and 13 technical colleges.

Received questionnaires were 316, which constituted about 65 per cent of the questionnaires distributed. Of these, 59 questionnaires were incomplete and thus not acceptable for the purpose of the research. The usable questionnaires amounted to 257 (53 per cent). As a result, the general response rate over all groups was 53%, which is considered a good response rate compared to other studies conducted in the same field, where the response rate was 38.2 (Saunders et al., 2007)

Table 5:6 The Questionnaire Distribution and Response Rate

Higher Education	The number of higher education	Distributed Question-naires	Not Received Question-naires	Received Question-naires	Excluded Question-naires	Usable Question-naires	Response Rate (%)
Private Higher Education	20	80	37	43	6	37	46%
Public Higher Education	102	408	135	273	53	220	54%
Universities	12	48	12	36	7	29	60%
Institutions	77	308	110	198	34	164	53%
Technical colleges	13	52	13	39	12	27	52%
Total	122	488	172	316	59	257	53%
Response Rate (%)		100%	35%	65%	12%	53%	

5.7.13 Organisational Culture Data Analysis

The organisational culture assessment instrument (OCAI) devised by (K. Cameron & Quinn, 2011) was been chosen to be a conceptual model for determining organisational culture type, because the research design was to focus on major cultural dimensions useful in organising and understanding organisational phenomena. Using the OCAI, an organisational culture profile can be verified by determining the organisation's dominant culture type characteristics. The Competing Values Framework (CVF) model developed by (K. Cameron & Quinn, 2011) was chosen to be a measurement tool for Organisational Culture (OC) to examine aspects of dominant organisational culture types in Libyan higher education sector.

The analysis was by using the following formulae:

Clan Culture = Mean (Clan Culture1 + Clan Culture 2 + Clan Culture 3 + Clan Culture 4 + Clan Culture 5 + Clan Culture 6)

In which Clan Culture 1 is the mean score for question C1A, and Clan Culture 2 is the mean score for question C2A, etc. (Appendix A).

Adhocracy Culture = Mean (Adhocracy Culture 1 + Adhocracy Culture 2 + Adhocracy Culture 3 + Adhocracy Culture 4 + Adhocracy Culture 5 + Adhocracy Culture 6)

In which Adhocracy Culture 1 is the mean score for question C1B, and Adhocracy Culture 2 is the mean score for question C2B, etc. (Appendix A).

Market Culture = Mean (Market Culture 1 + Market Culture 2 + Market Culture 3 + Market Culture 4 + Market Culture 5 + Market Culture 6)

In which Market Culture 1 is the mean score for question C1C, and Market Culture 2 is the mean score for question C2C, etc. (Appendix A).

Hierarchy Culture = Mean (Hierarchy Culture 1 + Hierarchy Culture 2 + Hierarchy Culture 3 + Hierarchy Culture 4 + Hierarchy Culture 5+ Hierarchy Culture 6)

In which Hierarchy Culture 1 is the mean score for question C1D, and Hierarchy Culture 2 is the mean score for question C2D, etc. (Appendix A).

5.7.14 Performance Measurement Systems Data Analysis

This subsection seeks to explore the status of performance measurement systems in Libyan higher education, through an investigation of the frequency, percentage and mean of the use of PMS on one hand, and the responses related to the importance of PMS on the other.

In order to measure higher education's acceptance of performance measurement systems (PMS), a fixed set of PMS categories were developed. The respondents were asked about their use of financial, non-financial and advanced techniques of PMS, and of the relative importance of these techniques in evaluating organisational performance. Moreover, the effectiveness of using advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance was investigated, alongside responses regarding the usefulness of using PMS in the respondents' jobs.

The present study investigated both financial and non-financial performance measurement systems acceptance and to what extent PMS influence the organisational performance. In addition, the advanced technique of the balanced scorecard was investigated for its role in the effectiveness and usefulness in the organisational performance. The first three questions in section D (D1, D2, D3) were about how using multiple performance measurement systems (financial, non-financial, advanced techniques) would enable organisations to evaluate the organisational performance. The fourth and fifth questions in the same section (D4, D5) were about the effectiveness and usefulness of performance measurement system in organisational performance (see appendix B). In addition to investigate the acceptance of performance measurement systems in Libyan higher education, the study explored the importance of performance measurement systems (financial, non-financial, and advanced techniques) to discover to what extent the performance measurement systems are important in Libyan education sector as drivers of the long-term success. The first question in section E (E1) was about the financial PMS (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student tuition and fee levels etc.), and the other questions (E2, E3, E4, E5, E6) were about non-financial PMS (Customer, innovation, employee, quality, community) (see appendix B).

This study investigated the importance of performance measurement systems in Libyan higher education; it also investigated the use of performance measurement systems (financial, non-financial, advanced techniques) to find out to what extent the performance measurements systems are used in Libyan higher education sector to evaluate performance. The first question in section F (F1) was about

the financial performance measurement systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student tuition and fee levels etc.), and the other questions (F2, F3, F4, F5, F6) were about non-financial performance measurement systems (Customer, innovation, employee, quality, community). Five-point scales (Likert scale) are used to investigate the extent of using of financial and non-financial performance measurement systems in Libyan higher education sector. (1= Not used at all, 2= Slightly used, 3= Moderately used, 4= Significantly used, 5= Highly used).

5.7.15 The Influence of PMS on OC Data Analysis

The study investigated the influence of organisational culture on the acceptance of performance measurement systems, both financial and non-financial, to understand the extent of their acceptance, importance and use in Libyan higher education. Moreover, the advanced technique of the balanced scorecard was investigated for its role in the effectiveness and usefulness in organisational performance. To investigate the influence of the acceptance, importance and use of the performance measurement systems as a dependent variables in this research, and the four types of organisational culture as an independent variables. Therefore, a Pearson correlation and a multiple linear regression analysis were used to test hypotheses in this study.

Pearson correlation, "A correlation expresses the extent to which two variables vary together. A positive correlation means that as one variable increases so does the other. A negative correlation is when one variable increases as the other decreases. Correlations vary between -1.00 and +1.00; a correlation of 0.00 means there is no relationship between the two variables." (Foster, 2002). Pearson correlation is used for exploring the strength of the relationship between two continuous variables. This gives you an indication of both the direction (positive or negative) and the strength of the relationship.

Multiple linear regression analysis: Regression analysis is a way of predicting an outcome variable from one predictor variable (simple regression) or several predictor variables (multiple regression) (Field, 2009). A multiple regression is a more sophisticated extension of correlation and is used to explore the predictive ability of a set of independent variables on one continuous dependent measure (Pallant, 2007). Different types of multiple regressions allow you to compare the predictive ability of particular independent variables and to find the best set of variables to predict a dependent variable.

The interpretation values between are between 0 and 1, and different authors suggest different interpretations; however, Cohen (1988) suggests the following guidelines:

r=0.10 to 0.29 or r=–0.10 to –0.29 small

r=0.30 to 0.49 or r=–0.30 to – 4.9 medium

r=0.50 to 1.0 or r=–0.50 to –1.0 large

This study examined one independent variable (organisational culture). However there are other potential impacts of omitted variables (e.g. government, environment or structure), which are also important. For these reasons, the study relied on several signals to illustrate the importance of the elements of organisational culture through several indicators in the multiple regression analysis. While adjusted R square is one of the indicators to show the model fit, Maddala (1977) argued that a higher R square is not necessarily better than a lower R square. Therefore, we should also look at whether coefficients have the right signs such as P value with a confidence level of 95% and an ANOVA test to show that the F statistic is significant.

Another method to detect the multicollinearity problems is to evaluate the value of the Variance Inflation Factor (VIF) and tolerance statistics, which are the common measures used to identify the degree of multicollinearity of the independent variable with the other independent variables in a regression model. In addition, the Variance Inflation Factor (VIF) is an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002). The SPSS program performs a test for 'collinearity diagnostics', which includes both the variance inflation factor and tolerance Statistics as part of multiple regression procedure (Firth, 1996; Laitinen, 2001). Many writers as (Field, 2009) and Hair et al. (1998) suggest that VIF should be below 10 to indicate that there is no problem of multicollinearity among the independent variables. In addition, it has also been recommended that the acceptable tolerance value should not be less than 0.1 (Field, 2009; Hair, 1998).

When using regression analysis in this study, Hierarchy culture and Clan culture were found to have a high VIF (Appendix E). As a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises because Clan and Hierarchy cultures have similar mean results and a strong correlation (0.649) (Pallant, 2007, p. 150). As a result, the Clan culture or Hierarchy culture types (dependent of which culture is the dominant culture type) variable will be excluded from the model in order to avoid any unstable results.

5.8 Qualitative Research Methods

Qualitative research methods explore the experiences of people and can reveal a holistic in-depth picture of a phenomenon and aim to understand human behaviour and the reasons that govern such behaviour.

Qualitative research involves the study and collection of a variety of empirical materials, which may be in the form of a case study, personal experience, life story, interview, observation, and/or visual texts; these materials are used to describe routine and problematic moments and meanings of facts, events, personalities and others (Denzin & Lincoln, 2005).

Four major sources of evidence for qualitative research have been identified in the literature: (a) Observation, (b) Analysing texts and documents, (c) Interviews, and (d) Recording and transcribing (Silverman, 2010). This thesis takes a qualitative approach with an emphasis on the case study by using the interview method.

Qualitative evidence uses words to describe the situation, individuals, or circumstances surrounding a phenomenon. Qualitative analysis deriving from open-ended questions can establish the reasons why companies behave the way they do. This facilitates a better understanding, and provides further details in relation to the practical behaviour of organisations. As a result, qualitative research methods are associated with face-to-face contact with people in the research setting, together with verbal data and observations. Qualitative data can also be collected in a number of forms, including the collection of thoughts and opinions that are recorded verbatim through the use of tape recorders and later transcribed.

Qualitative research methods can rarely handle large samples; quantitative methods, in contrast, can cope with large samples, but some of the depth permitted by qualitative techniques is beyond their reach (Glenn, 2010; Mutch & New Zealand Council for Educational Research, 2005).

Like the quantitative approach, qualitative research also has strengths and weaknesses. Strengths include the facts such as: (a) its data gathering methods are seen as more natural than artificial; (b) it has the ability to look at change processes over time; (c) it has the ability to understand people's meanings; (d) it has the ability to adjust to new issues and ideas as they emerge; and (e) it can contribute to theory generation. Its weaknesses can be summed up as: (a) it is tedious and requires more resources; (b) it is difficult to analyse and interpret the data; (c) it is difficult to control the progress of research process; and (e) it has low credibility among policy-makers (Easterby-Smith et al., 2002).

This thesis takes a qualitative approach with an emphasis on the case study

5.8.1 Qualitative Research Design: The Case Study

To identify the OC type in one of the Libyan higher education organisations in order to confirm one of the main objectives of this research, in which the content emphasises the importance of organisational culture. Yin (2003) pointed out that case studies can be utilised in many situations and that they help contribute to the knowledge of individuals, groups, organisations, social, political, and other related phenomena.

The selected case for study in this research is the University of Tripoli (UT). By way of introduction, this section will provide some background information about the university.

The University of Tripoli (UT) is the largest university in Libya and is located in the capital, Tripoli. It was founded in 1957, as a branch of the University of Libya before it was divided in 1973 and one part become what are now known as the University of Tripoli. The Faculty of Science was established in 1957. It was the first practical college in Libya at that time, and thus became a focus for Libyan students seeking a university degree. The faculty prepares specialists in fundamental and applied sciences. In addition, the faculty performs scientific research and studies in various scientific fields. Two good reasons to choose the UT for the case study are as follow:

1- The significance and contribution of the information from the selected institution from employees of various levels support the questionnaire results of the OC type.

2- An earlier-established university is assumed to be more resilient and resistant to change than universities that have been established more recently.

According to the University of Tripoli (UT, 2012), there were 43258 male and female students in 12 faculties in Tripoli, while there were two branch faculties of teachers training outside the University.

5.8.2 Descriptive of the Interviews Sample

The underlying purpose in conducting the interviews was to obtain more information about the organisational culture type of the education sector in general, and of the University of Tripoli (UT) in particular, in order to test the survey results drawn from decision makers' responses. The majority of the interviewees were employees in the finance and administrative departments, and the other interviewees were employed as members of university teaching staff.

The data revealed that 50% of the interviewees had been in their current job for 1 -5 years. On the other hand, 37.5% had 6-10 years' experience with their current organisation, and 12.5% had more than 10 years' experience. The interviewees of this group were highly experienced in their current organisation as the result of their long period of employment with their organisation; all the case study participants held a post-graduate degree (e.g. MSc, MBA, Ph.D.).

5.8.3 Data Collection: The interview methods

The interviews in this research constituted the second method of data collection to support the questionnaire results regarding the OC types in Libyan higher education and to answer deep questions of "why". Robson, (2002, p. 371) argues that "multiple methods can be used in a complementary fashion to enhance interpretability. For example, in a primarily quantitative study, the interpretation of statistical analyses may be enhanced by a qualitative narrative account."

Saunders, et al. (2007) classified interviews into three categories: structured, semi structured and unstructured. Furthermore, they are used in different contexts: structured interviews are used in descriptive studies to attain quantitative data whereby the researcher uses questionnaires based on a set of questions that is prearranged and standardised or equal. Collies and Hussey (2003) noted that the interview is "a technique of assembling information data within which designated participants are asked as to search out what they are doing, assume or feel".

Interviews make it simple to compare responses and they may be face-to-face or screen-to-screen, conducted with individuals or groups who can meaningfully help us address the research questions and objectives. Interviews are particularly conducive to the production of data that deal with issues in depth or in detail.

This qualitative study complements and affirms the quantitative component. The qualitative analysis presented here is used as a follow-up for further clarification of the results of the survey. It helps to confirm the results of the survey findings of the OC types in Libyan higher education.

In this research, the main techniques used to collect the field data were face-to-face interviews, while both domestic and international telephone interviews were also undertaken as a supplementary tool.

To address the two research questions, there will be a reliance on two sets of interview questions. Each set of interview questions has a unique purpose to serve and constructs the efficient data related to each research question. The two sets of interview questions used during the field study were:

1. "General information about the interviewers", presented in appendix C.

2. “Organisational culture types”, presented in appendix C.

There are several ways in which an interview may be conducted. These include face-to-face, telephonic and online interaction. To answer research questions, the researcher conducted semi-structured face-to-face interviews and recorded the responses. In the first part, introductory questions were asked at the beginning of each interview including those that sought the respondent personal information. Bailey (2007) recommends beginning the interview with an overview to help put participants at ease.

5.8.4 Structured interview

In using the structured interview, the preparation of the interview questions was controlled and guided by a set of predetermined questions. In particular, this thesis discusses the questions involving the six key elements derived from the adoption of the Competing Values Framework. Therefore, the structured interviews discussed in this thesis were accomplished through the aspects of (1) organisation’s domain characteristics (2) organisational leadership style (3) management of employees (4) organisation glue/cohesion (5) strategic emphases (6) criteria of success.

With respect to the structured interview, it tailored the data collection process in such a way as to allow the researcher to examine the level of understanding of the informants. Moreover, the technique helped to create a space for standardisation in which all respondents provided their views in answer the same series of questions. Finally, the structured interview provided a reliable source of data. A particularly important aspect of this thesis is that the use of structured interviews is regarded as one of the ways to collect quantitative data. It has a specific characteristic of being very simple. This thesis uses the structured interview as a complementary tool to compensate for what the thesis may have lost via the use of questionnaires and survey methods.

5.8.5 Semi-Structured Interview

The qualitative methods discussed in this thesis relied on in-depth and semi-structured interviews. Semi structured interviews bring about the opportunity for the interviewees to include additional issues that they might be of interest and are related to the thesis’s findings. Furthermore, many Libyan researchers advocate the use of face-to-face semi-structured interviews as a means of gathering data, together with the survey questionnaire, to carry out research studies (Khorwatt, 2006). The researcher started by reading out the questions and then recorded the responses on a standardised schedule, frequently with pre-coded answers. All semi-structured interviews were conducted between the researcher and the

participant face to-face. They were therefore conducted on a one to-one basis with a single participant, and the choice of the time and date of interviews was left to the respondents. The interviews took between 30 to 40 minutes on average, depending on the length of the answers.

All interviews were recorded on audio taped with the prior permission of the respondents. To avoid a tape recording being misplaced, lost or damaged, each interview was recorded as a separate audio document, and the questions of each interview were divided into three parts. The written questions are exactly what were asked orally. In addition, the researcher took notes during each interview.

5.8.6 Source of Data

Eight participants from Libyan public universities were involved in identifying the organisational cultural profile for Libyan higher education. Each interview session consisted of two main interviewing activities – asking fixed-choice questions and open-ended questions.

The first activity concentrated on a set of fixed-choice questions called Organisational Culture Assessment Instrument (OCAI), in which a particular set of questions (presented in Appendix C) was used. The participants were asked to choose from among four answer alternatives to indicate the most appropriate way to describe their organisation; the six aspects were originally adopted from the Organisational Culture Assessment Instrument (OCAI) by Cameron and Quinn (2006).

Once the answers to the fixed-choice questions were successfully recorded, the researcher proceeded to the next activity that sought answers to open-ended questions (see Appendix C).

In order to gain rich and insightful data reflecting the six key aspects mentioned above, the participants were asked to give in-depth details to explain and describe their organisation in the light of the four organisational culture types.

5.8.7 Interview data Analysis

The interviewees were asked in the interviews to investigate the contingent factor of organisational culture types in one of the main public universities in Libyan higher education. Data were analysed using the Statistical Package Nvivo - version 10.0 for Mac software. One of the key features of the Nvivo software is that it has powerful tools to help the researcher examine possible relationships among themes. Furthermore, the use of software in the analysis process helped the researcher to organise the interview transcripts and to generate codes linked to the information before performing the

analysis. Descriptive statistics, which include frequencies and percentages, were utilised to present the main characteristics of the sample and the profile of organisational culture.

5.9 Validity and Reliability

Validity is considered to be one of the most important criteria of the research (Bryman & Bell, 2011). Validity refers to the degree to which a measure actually measures the concept being measured (Bryman & Cramer, 2005). This implies that validity draws attention to the question whether or not researchers are measuring the right concept. Therefore, the concept of validity relates to the accuracy of the results of the research, and it is representative of the real situation.

To establish content validity, existing and validated scales used in the existing literature have been employed. Moreover, the questionnaire was pre-tested in three steps. First, several academics were asked to revise the questionnaire. They were asked to complete the questionnaire and to provide comments on its form and content. Second, a pilot study was conducted to help clarify the issues the researcher may face with regard to the questionnaire. A total of 10 questionnaires were distributed for the participants who had held middle and senior management positions for at least five years, and a total of 6 completed questionnaires were returned.

Finally, regarding this study, many procedures have been followed to achieve questionnaire validity:

• An extensive literature review was carried out to define the topic and understand the purpose of the study and the research methodology (chapter 2 and 3).

• The study questionnaire was assessed and refereed by a number of people who have adequate knowledge and experience in the study area; a pilot study was also conducted (see subsection 5.6).

• By using a self-administered questionnaire the respondents were provided the outline of the research and its objectives and encouraged to contact the researcher at any time with any questions using the contact details provided by the researcher.

• Organisational culture questions were tested by using the Organisational Culture Assessment Instrument (OCAI) and the Competing Values Framework (CVF) model of (K. Cameron & Quinn, 2011), who argue that OCAI has been used in more than a thousand organisations that they know of. The CVF is used widely in the literature and is one of the most comprehensive instruments in the field of organisational culture for assessing a variety of organisational issues, including leadership, decision-making, and strategic management (Berrio, 2003; Deshpande et al., 1993; Eker & Eker,

2009; Helfrich et al., 2007; Henri, 2006; Igo & Skitmore, 2006; Naranjo-Valencia et al., 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006; Zahari & Shurbagi, 2012; Zu et al., 2011). Due to this, the CVF is argued to be a valid framework for examining OCs in this study.

• Questions about performance measurement systems were driven by previous studies that used different populations at different times. A similar method has been applied in previous studies with regard to the diversity of PMS (Eker & Eker, 2009; Henri, 2006; Hoque et al., 2001; Pedersen & Sudzina, 2012), thereby contributing to a construct (see Subsection 3.4).

Reliability refers to the extent to which the instrument is unbiased and consistent over time (Bryman & Bell, 2011; Sekaran, 2003). In other words, reliability is primarily concerned with the stability of the measurements and the results of the research, and refers to the consistency of a method in measuring concepts that it is designed to measure. Reliability is said to be present when other researchers are able to repeat the study and get the same results (Easterby-Smith, Thorpe, & Jackson, 2008; Ghauri & GrnÃúhaug, 2006). Pallant (2007) argues that when selecting scales to include in the study, it is important to find scales that are reliable. One of the most used indicators of internal consistency is Cronbach's alpha coefficient. Therefore, to measure the reliability, Cronbach's alpha was used to determine the internal consistency of the research variables. Table 5.6 shows the test result for each contingent variable, each performance measurement system and each classification of PMS and its purposes. The results confirm the relatively high internal consistency of each classification item, which ranged from 0.628 to 0.838. (Hair, 1998) Recommends that the acceptable level of reliability for Cronbach's alpha is 0.60 or more. In the case of this study, therefore, the results indicate a rather high reliability, which indicates the internal integrity of the questionnaire.

Table 5:7 Reliability Test Results

Variable	The Items	Cronbach Alpha
Performance Measurement Systems	17	0.838
Performance Measurement Systems acceptance	5	0.691
Performance Measurement Systems Importance	6	0.628
Performance Measurement Systems Use	6	0.818

The reliability of this model of organisational culture was used to develop a standardised diagnostic tool, the OCAI (K. Cameron & Quinn, 2011), used in the current study to analyse the organisational

culture in Libyan education sector in order to explore any variations in the acceptance and implementation of PMS. The OCAI is also used to discover any similarities in organisational culture between the different Libyan education sector types. It should be noted that, although the OCAI is a well-developed, valid and reliable instrument (K. Cameron & Quinn, 2011; Kalliath, Bluedorn, & Gillespie, 1999), it does not claim to cover comprehensively all cultural phenomena in organisations (Paparone, 2003). Instead, it offers an intuitively appealing and relatively easy way to 'organise organisational culture types' (Cameron and Quinn, 1999: 17). In addition, the established strength in validity and reliability is an attribute which none of its rivals have demonstrated (Paparone, 2003).

5.10 Summary

This section discussed a Research Methodology, and its aim was to describe the philosophy behind the methods and procedures that have been adopted to collect and analyse the research data. The chapter started with a reminder of the research questions, and moved to the research hypotheses derived from the literature reviewed. A discussion of the research philosophy and methodology were provided together with an explanation of the research data collection methods, including the questionnaire design. This was followed by the details of questionnaire construction and pilot study. The responses rate was also shown in this chapter. The chapter ended with a discussion of the statistical methods that were used in this research.

Chapter 6: Organisational Culture and Performance Measurement Systems Results

6.1 Introduction

The previous chapter outlined the research methodology. The aim of this chapter is to present, analyse and discuss the data obtained from questionnaires filled in by respondents, with a view to understand the dominant type of organisational culture and the influential relationships of that culture, at organisational level, on the acceptance, importance and use of performance measurement systems. The results of this chapter are presented in five main sections, following this introductory paragraph. The first section, presents the respondents' profile in general, the second section contains organisational culture profiles, the third section reports organisational performance profiles, the fourth section discusses the performance measurement system profiles and finally the fifth section summarises the chapter in section 6.5.

6.2 Respondents' Profile in General

Work title, location, qualifications and experience of the respondents could have influenced their perceptions and the quality of their responses to the questionnaire. It was important to make sure that the respondents held senior positions and could be considered sufficiently knowledgeable and experienced about organisational performance and performance measurement systems, in general and in relation to their own organisations.

A total of 257 completed questionnaires, from different user groups in Libyan higher education, were analysed. The questionnaire sought information about the respondents' job title and position, level of education, years of experience in the current job and organisation. Also, the questionnaire collected information about the organisations' age, the types of higher education they were involved in, and whether their ownership was public or private.

The presidents and vice presidents of organisations together constituted about 94 participants (about 37%) and the chief and assistant/vice chief of administrative departments constituted 36 participants (10%). Others with different job titles and positions (such as a former employee in the financial department) constituted about 26 participants (14%). As can be seen from table 6:1, about 101 participants (25%+ 15%=40%) occupied senior accounting and financial management positions in their organisations (Chief of Finance Department and Assistant/ Vice Chief and Financial Controller).

Table 6:1 Job Title and Position

Job title and position	Freq.	%
The President Of Organisation	**45**	**18**
Vice President	**49**	**19**
Chief of Finance Department /Assistant/ Vice	**63**	**25**
Chief of Administrative Department /Assistant/ Vice	**36**	**14**
Financial Controller	**38**	**15**
Others	**26**	**10**
Total	**257**	**100**

The data revealed that 35.8% of the respondents had been in the current job for 1 -5 years; this was the result of new appointments made after the regime change in Libya in 2012. On the other hand, 33.9% had 6-10 years' experience with the current organisation, and 26.8% had an experience of over 10 years. This group of respondents were highly experienced in accounting and finance in general as the result of their long period of employment with their organisation (See table 6:2).

Table 6:2 Experiences

Category	Freq.	%
Experience		
In the current job		
Less than one year	**32**	**13**
1-5 years	**92**	**36**
6-10 years	**76**	**30**
More than 10 years	**57**	**22**
Total	**257**	**100**
With the current organisation		
Less than one year	**22**	**9**
1-5 years	**79**	**31**
6-10 years	**87**	**34**
More than 10 years	**69**	**27**
Total	**257**	**100**

Table 6:3 shows that more than a half of the study participants (57.6%) hold a post-graduate degree (e.g. MSc, MBA, Ph.D.). This group dominates the middle and senior management positions (and hence are decision makers). A significant percentage of the study participants (26.8%) indicated that

they hold a Bachelor degree. Professional qualifications were held by about 12.5%; this may be because such qualifications are not popular in the Libyan environment. Only 3.1% revealed that they hold other qualifications such as medium and higher diplomas.

Table 6:3 Education Level

Category	Freq.	%
Education Level		
Bachelor's degree	**69**	**27**
Post-graduate (e.g. MSc, MBA, Ph.D.)	**148**	**58**
Professional qualifications	**32**	**13**
Others	**8**	**3**
Total	**257**	**100**

The organisation age was between 11-20 years in 56.4%, and more than 20 years were 32% of the cases as the Libyan public higher education was established in 1955 (Education, 2011). Table 6:4 also shows that 31.9% of the organisations were more than 20 years old, and 11.7% were between 5-11 years old, while none of the organisations in question was less than 5 years old (See table 6:4).

Table 6:4 Organisational Age

Category	Freq.	%
Organisational Age		
Less than 5 years	**0**	**0**
5- 11years	**30**	**12**
11-20 years	**145**	**56**
More than 20 years	**82**	**32**
Total	**257**	**100**

Types of higher education ownership were both public and private (See table 6:5). The majority of respondents were from public organisations (about 86%) because Libyan higher education depends mainly on public universities and institutions, which are older than the private ones. However, respondents from private organisations made up 14%, and they were all from universities and not from other kinds of private institutes, because such universities are more organised and larger than private institutes. As mentioned earlier, Libyan higher education consists of three types of higher education

(universities, institutions and technical colleges). More than half of the respondents (64%) were from institutions as a result of the large number of local educational institutions (in almost every large and medium sized city) that have been made necessary by the large geographical area of Libya (almost 1.8 million square kilometres). Therefore, Libyan higher education has about 107 institutions and the researcher distributed questionnaires to 77 of them because during the period in which the distribution of data took place, many institutes were still closed after the Libyan revolution in 2011.

The results from table 6:5 also indicate that the respondents from universities and technical colleges were about 26% and 11% respectively.

Table 6:5 Types of Higher Education and Ownership

Category	Freq.	%
Type of higher education Ownership		
Public	**220**	**86**
Private	**37**	**14**
Total	**257**	**100**
Type of higher education		
University	**66**	**26**
Higher institution	**164**	**64**
Technical colleges	**27**	**11**
Total	**257**	**100**

6.2.1 Organisational Culture Profile by Job Title and Position

This study considers the impact on performance measurement systems of organisational culture, defined as a pattern of shared values and beliefs that help individuals understand organisational functions and provide them the norm for the behaviour in organisations (Deshpande et al., 1993). The questionnaire used was aimed at decision makers who use performance measurement systems in their organisations; therefore, it was important to get enough information about respondents' experiences and education level, as these aspects are related to job tile and position of respondents.

6.2.2 Organisational Culture Profile by experience and education level

An analysis of these characteristics of the respondents showed that there was a difference in the experience and education level according to the difference of the job title and position in Libyan higher education. It can be seen from table 6:6 that the majority of the presidents of organisations (62.2%) had between 1-5 years' experience in the current job, while the vice president participants with 1-5 years of experiences in their current job constituted 36.7%.

It can also be noted that around 42.9% of chief (or assistant/vice chief) of finance department had 6-10 years' experience in the current job. In addition, the results in the same table also show that the chiefs (or assistant/vice chief) of administrative departments with 6-10 years' experience constituted the same proportion of the population (30.6%) as those in the same job with over 10 years' experience. The highest proportion of respondents with 1-5 years' experience in the current job were financial controllers (36.8%), while those in other job titles and positions were of the same percentage of the total in both the 6-10 years' and the more than 10 years' current job experience groups. Overall, it can be concluded from table 6:6 that regardless of the job title and position, the majority of employees in the upper levels of Libyan higher education have between 1-5 years' (35.5%) or 6-10 years' (29.5%) experience in their current jobs. It should also be noted that 22.5% have been in their current jobs for over 10 years.

Table 6:6 Experiences in the Current Job

Current Occupation	Period of Experience								Total	
	Less than one year		1-5 years		6-10 years		More than 10 years			
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
The President Of Organisation	3	6.7	28	62.2	10	22.2	4	8.9	45	100
Vice President	10	20.4	18	36.7	10	20.4	11	22.4	49	100
Chief of Finance Department /Assistant/ Vice	4	6.3	14	22.2	27	42.9	18	28.6	63	100

Chief of Administrative Department /Assistant/ Vice	6	16.7	8	22.2	11	30.6	11	30.6	36	100
Financial Controller	6	15.8	14	36.8	8	21.1	10	26.3	38	100
Others	3	11.5	10	38.5	10	38.5	3	11.5	26	100
Total	32	12.5	92	35.5	76	29.5	57	22.5	257	100

Table 6:7 is about experiences with the current organisation and it can be noted that this table has similar results to the above table (experience in the current job). Overall, it can be concluded that most people's experience in their current organisation has been of 1-5 years (30.7%) or of 6-10 years (33.9%). However, there was about 26.8% who had work experience of more than10 years in the current organisation.

Table 6:7 Experiences with the Current Organisation

Current Occupation	**Period of Experience**								**Total**	
	Less than one year		**1-5 years**		**6-10 years**		**More than 10 years**			
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
The President Of Organisation	3	6.7	17	37.8	10	22.2	15	33.3	45	100
Vice President	3	6.1	13	26.5	18	36.7	15	30.6	49	100
Chief of Finance Department /Assistant/ Vice	6	9.5	19	30.2	24	38.1	14	22.2	63	100
Chief of Administrative Department	4	11.1	3	8.3	20	55.6	9	25.0	36	100

/Assistant/ Vice										
Financial Controller	6	15.8	13	34.2	12	31.6	7	18.4	38	100
Others	0	0	14	53.8	3	11.5	9	34.6	26	100
Total	22	8.6	79	30.7	87	33.9	69	26.8	257	100

The education level also varied depending on the job title and position. Table 6:8 shows that the majority of the presidents of organisations (96.6 per cent) obtained a post-graduate degree (e.g. MSc, MBA, PhD), while 77.6% of the vice presidents had the same level of education. A similar percentage of respondents in the post of chief/assistant chief / vice chief of finance department or of chief /assistant chief / vice chief of administrative department hold graduate or post-graduate degrees. In addition, it can be noted that financial controllers have the highest percentage of the professional qualifications (26.3%) compared to other respondents.

Table 6:8 Education Level

Current Occupation	**Education Level**								**Total**	
	Bachelor's Degree		Post-graduate (e.g. MSc, MBA, Ph.D.)		Professional Qualifications		Others			
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
The President Of Organisation	2	4.4	43	96.6	0	0	0	0	45	100
Vice President	10	20.4	38	77.6	0	0	0	0	49	100
Chief of Finance Department /Assistant/ Vice	25	39.7	24	38.1	13	20.6	1	2.0	63	100

Chief of Administrative Department /Assistant/ Vice	13	36.1	15	41.7	4	11.1	4	11.1	36	100
Financial Controller	7	18.4	19	50.0	10	26.3	2	3.2	38	100
Others	12	46.2	9	34.6	5	19.2	0	0	26	100
Total	69	26.8	148	57.6	32	12.5	7	2.7	257	100

In summary, the results arrived at from analysing the frequency and percentage distribution of the respondents' demographic data show that the percentages were close to each other in terms of the experience in current job or current organisation. The decision makers in Libyan higher education from both sectors were characterised by 1-5, 6-10 and more than10 years of experience, with the majority (96.6 per cent) of the organisation presidents holding a post-graduate degree (e.g. MSc, MBA, Ph.D.), 57.6 per cent of all respondents holding a post-graduate degree and 26.8 per cent of them holding a bachelor's degree. Therefore, overall the respondents in this study were well-educated people with good experience in the current job and with the current organisation.

6.2.3 Organisational Culture Profile by Institution Type

Table 6:9 Percentage of Who Have the Dominant Culture Type

Institution Type	Usable Questionnaires	Hierarchy culture (HC)	Clan Culture (CC)	Market culture (MC)	Adhocracy culture (AC)	Dominant Culture for institution type	Percentage of Who Have the Dominant Culture Type
Private Universities	37	3	32	0	2	**(CC)**	%86
Public Universities	29	24	1	1	3	**(HC)**	%83
Higher	164	73	91	0	0	**(CC)/**	%55

Institutions						**(HC)**	
Technical colleges	27	18	6	1	2	**(HC)**	%59

6.3 Organisational Culture Profile

Organisational culture was assessed using the Organisational Culture Assessment Instrument (OCAI), an organisational culture profiler that can determine the organisation's culture type from its dominant characteristics. The model developed by Cameron and Quinn (1999, 2006) was used to examine aspects of dominating organisational culture type and was considered to be the most suitable for the purpose of this research. The OCAI is based on a theoretical model, the "Competing Values Framework" by Quinn and Rohrbaugh (1981; 1983). The framework is based on six organisation culture dimensions that form four dominant organisational culture types: hierarchy, clan, adhocracy, and market. Those four culture types are used here to identify the organisational culture profile of organisations in Libyan higher education, based on their core values, assumptions, interpretations, and approaches.

6.3.1 Higher Education Organisational Culture

One of the aims in this study is to investigate the organisational culture type of Libyan higher educational institutions in general their branches in particular. Table 6:9 illustrate the dominant organisational culture for this education sector, broken down according to the characteristics of the sample.

The first section of the questionnaire (section A) was intended to gather respondents' personal background information. The respondents were asked to provide the information related to their present position, their years of experience in the current position, in the current organisation, and their level of education and their organisation's age and type. Also, they were asked about their organisation ownership type. Thus, the demography, job, experience and educational background are important in this study. These are aspects might influence their perceptions and the quality of their responses to the questionnaire, particularly in relation to their perceptions of the culture type their organisations belong to and the impact of this culture type on their performance measurement systems.

As can be seen in table 6:9, employees in different managerial job levels have different organisational culture types. The highest levels in job title and position (The President of Organisation, Vice

President) are of the clan culture type, indicating that they hold similar attitudes, values, and beliefs that characterise this type. On the other hand, other levels of job title and position (e.g. Chief/Assistant Chief/Vice Chief of Finance Department, Chief/Assistant Chief/Vice Chief of Administrative Department, Financial Controller/Assistant Financial Controller/Vice Financial Controller) share the Hierarchy culture type.

As for experience in the current job and current organisation, employees with different levels of experience have different organisational culture types. As can be seen in table 6:9, employees who have less than one year's experience and employees who have 6-10 years' experience belong to a Hierarchy culture, while those with experience of 1-5 years and of more than 10 years have a clan culture. Table 6:9 also shows that there are some differences with respect to the level of education on the organisational culture type. Employees with bachelor's degree qualifications, professional qualifications and other qualifications share a Hierarchy culture. However, those with post-graduate (e.g. MSc, MBA, Ph.D.) qualifications share a Clan culture, and are almost always in the highest levels in the organisation as regards job title and position (The President, Vice President). In addition, the results in the same table also show that organisations that are 5-11 years old share a Clan culture (New organisations), while those between 11 to 20 years of age and more than 20 years of age share a Hierarchy culture (old organisations and located in cities).

Table 6:10 The Dominating Organisational Culture Profile

Category	N	Mean	S.D	Dominant Culture
Job title and position				
The President Of Organisation	45	33.80	11.045	Clan
Vice President	49	30.65	8.087	Clan
Chief of Finance Department /Assistant/ Vice	63	30.32	11.303	Hierarchy
Chief of Administrative Department /Assistant/	36	29.33	8.669	Hierarchy
Financial Controller	38	33.20	10.560	Hierarchy
Others	26	32.08	8.480	Hierarchy
Total	257			
Experience				
In the current job				
Less than one year	32	32.27	10.435	Hierarch
1-5 years	92	30.46	10.529	Clan
6-10 years	76	29.62	8.652	Hierarch
More than 10 years	57	29.75	8.899	Clan

Total				
With the current organisation				
Less than one year	22	29.47	10.201	Hierarch
1-5 years	79	30.71	9.445	Clan
6-10 years	87	30.95	10.836	Hierarch
More than 10 years	69	31.62	9.175	Clan
Total				
Education Level				
Bachelor's degree	69	29.66	9.652	Hierarchy
Post-graduate (e.g. MSc, MBA, Ph.D.)	148	30.16	10.404	Clan
Professional qualifications	32	31.98	11.874	Hierarchy
Others	8	32.19	7.305	Hierarchy
Total				
Organisational age				
Less than 5 years	0	0	0	
5- 11years	30	31.53	6.388	Clan
11-20 years	145	29.30	9.746	Hierarch
More than 20 years	82	32.79	9.390	Hierarch
Total				
Type of higher education Ownership:				
Public	220	31.03	9.532	Hierarch
Private	37	34.39	4.822	Clan
Total				
Type of higher education:				
University				
Public	29	38.53	11.215	Hierarchy
Private	37	34.39	4.822	Clan
Total				
Higher institution	164	30.26	8.886	Clan
Technical colleges	27	33.67	12.727	Hierarchy
Total	257	29.66	9.650	Hierarchy

An analysis of the highest means in Table 6:10 show that the education sector represents the dominant culture of this sector. Table 6:10 and Figure 6:1 show that when using the organisational culture formulae, the overall organisational culture type that scores the highest mean in Libya education sector is the Hierarchy culture; hence this is the current dominant culture type in this sector. This is followed closely (in terms of the difference in means) by the Clan culture, and this in turn is followed by the Adhocracy and Market cultures in that order. Therefore, it can be noted that Hierarchy and Clan culture are the dominant organisational culture types in Libyan higher education.

Table 6:11 The Dominating of Organisational Culture type in Libyan Higher Education

Culture Type	N	Mean	Std. Deviation	Rank
Clan culture	257	29.05	9.45	2
Adhocracy culture	257	21.53	5.02	3
Market culture	257	19.67	5.51	4
Hierarchy culture	**257**	**29.66**	**9.65**	**1**

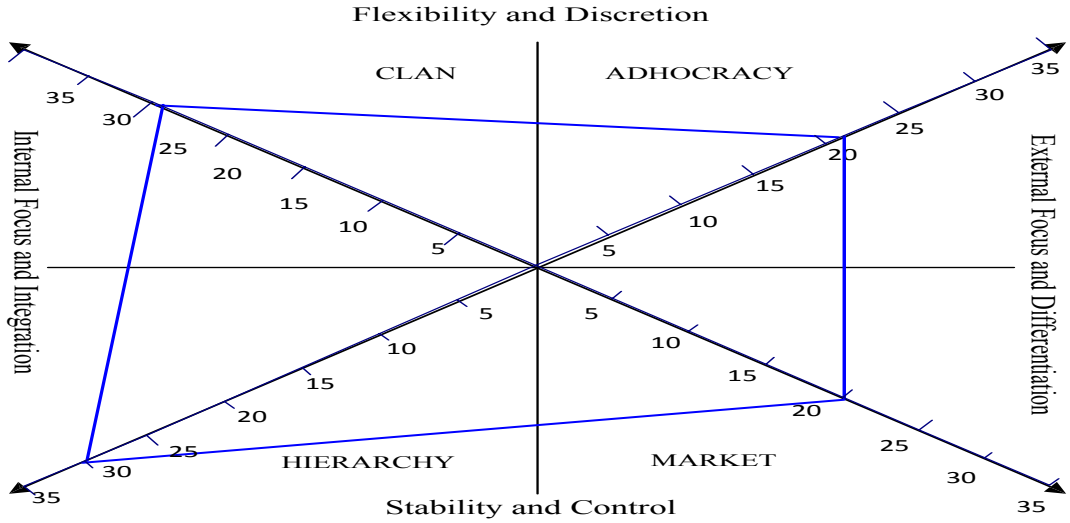


Figure 6:1 Profile of The Higher Education Organisational Culture

An organisation with a Hierarchy Culture focuses on internal maintenance with a need for stability and control (table 6:11) and an organisation with a Clan culture focuses on internal maintenance with flexibility, concern for people, and sensitivity to customers. Consequently, in Libyan higher education, organisational performance type is a mixture of flexibility and stability with internal focus and integration.

Table 6:12 Organisational Performance Type in Libyan Higher Education

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	257	25.26	4.60
Stability and Control	**257**	**24.66**	**4.49**
Internal Focus and Integration	**257**	**29.33**	**3.97**
External Focus and Differentiation	257	20.60	3.99

The culture profiles were then subjected to a closer examination, with the six dimensions of the organisational culture assessment instrument being analysed.

Table 6:13 Mean of Organisational Culture Dimensions in Higher Education

Dimensions	N	Clan	Adhocracy	Market	Hierarchy	Dominant culture type
Dominant Characteristics	257	31.05	16.48	15.66	36.77	Hierarchy
Organisational Leadership	257	23.74	22.49	24.59	28.52	Hierarchy
Management of Employees	257	34.12	22.08	17.39	26.40	Clan
Organisation Glue	257	26.89	17.45	22.88	32.70	Hierarchy
Strategic Emphases	257	26.34	20.91	20.19	32.45	Hierarchy
Criteria of Success	257	31.81	29.75	17.28	21.13	Clan

In this study the Hierarchy culture (Table 6:13) shows more dominance in the organisational culture dimensions of the competing values framework in higher education especially in dominant characteristics, organisational leadership, organisation glue and strategic emphases, while the other two dimensions such as management of employees and criteria of success reflect a Clan type culture.

A one-way ANOVA was then used to test for differences in organisational culture among the institutions with different type of higher education (University, Higher institution, Technical colleges as shown in table 6:14) and among those with different types (private, public, universities as shown table 6:15).

Table 6:13 shows that the organisational culture type of Libyan higher education was different depending on the type of higher education and ownership. As can be seen from the table, universities and technical colleges share the same dominant organisational culture type, while the higher institutions share different culture type (Clan culture).

Table 6:14 Dominant Organisational Culture Type in Different Higher Education Organisations

Culture	**Universities**			**Higher institutions**			**Technical colleges**		
	N	**Mean**	**Rank**	**N**	**Mean**	**Rank**	**N**	**Mean**	**Rank**
Clan	66	28.14	2	164	30.26	**1**	27	23.92	2
Adhocracy	66	21.87	3	164	21.49	3	27	20.90	4
Market	66	21.16	4	164	18.80	4	27	21.30	3
Hierarchy	66	29.00	**1**	164	29.27	2	27	33.67	**1**
Dominant culture type	Hierarchy			Clan			Hierarchy		

The study was devoted to discovering the types of organisational culture dominant in Libya's higher education system in general and in its branches in particular on the basis of the type of higher education and ownership; therefore, the next subsections will explain this aspect further.

6.3.2 Universities' Organisational Culture Types

Libyan universities are public and private, and this research investigated the organisational culture types in both of them to identify the similarities and the differences.

6.3.2.1 Public Universities' Organisational Culture Type

Table 6:15 and figure 6:2 show the culture types in Libyan public universities. They both show that this culture type is Hierarchy (83% of public universities), followed by Adhocracy, Clan and Market in order. It can be noted that the difference in means between Hierarchy culture and Adhocracy culture is high (38.53, 22.50).

Table 6:15 Dominant Organisational Culture Type for Public Universities

Culture Type	N of Qus.	%	Mean	Std. Deviation	Rank
Clan culture	1	3.6%	20.16	7.602	3
Adhocracy culture	3	10%	22.50	5.446	2
Market culture	1	3.5%	19.20	4.281	4
Hierarchy culture	**24**	**83%**	**38.53**	**11.215**	**1**
Total	**29**	**100%**			

Ous. = Questionnaire

Hierarchy culture type values internal focus and integration while maintaining stability and control (Table 6:16) and it is the organisational performance type for Libyan public universities.

Table 6:16 Organisational Performance Type for Public Universities

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	29	21.08	5.08
Stability and Control	29	**28.86**	**5.00**
Internal Focus and Integration	29	**29.09**	**3.68**
External Focus and Differentiation	29	20.85	3.70

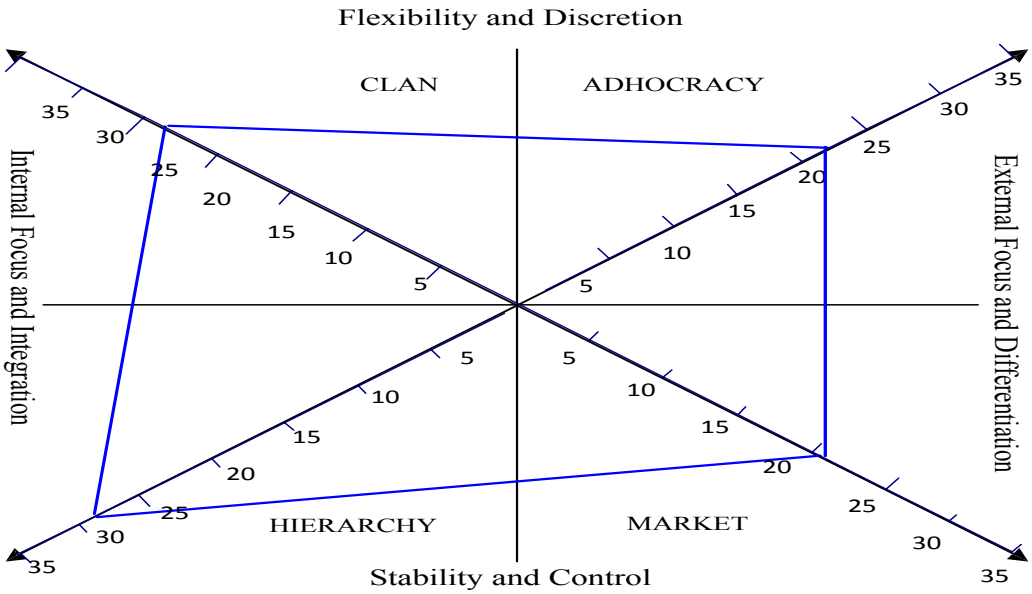


Figure 6:2 The Dominant Organisational Culture Type for Public Universities

6.3.2.2 Private Universities' Organisational Culture Type

Table 6:16 and figure 6:2 represent the current dominant culture type in Libyan private universities. They both show that Clan culture is the dominant organisational culture type in such universities because it got a high percentage 87% for 32 private questionnaires out of 37, followed by Hierarchy, Market and Adhocracy cultures in that order. It can be noted that the difference in means between Clan culture and Market culture is high (34.39, 22.70).

Table 6:17 Organisational Performance Type for private Universities

Culture Type	N of Qus.	%	Mean	Std. Deviation	Rank
Clan culture	**32**	**87%**	**34.39**	**4.822**	**1**
Adhocracy culture	0	0%	21.37	3.978	4
Market culture	2	5%	22.70	4.359	3
Hierarchy culture	3	8%	21.53	5.484	2
Total	**37**	**100%**			

Ous. = Questionnaire

Clan culture type values internal focus and integration while maintaining flexibility and discretion (Table 6:18) and it is the organisational performance type for Libyan private universities.

Table 6:18 Organisational Performance Type for Private Universities

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	**37**	**27.88**	**2.31**
Stability and Control	37	22.12	2.31
Internal Focus and Integration	37	**27.96**	**2.28**
External Focus and Differentiation	37	22.04	2.28

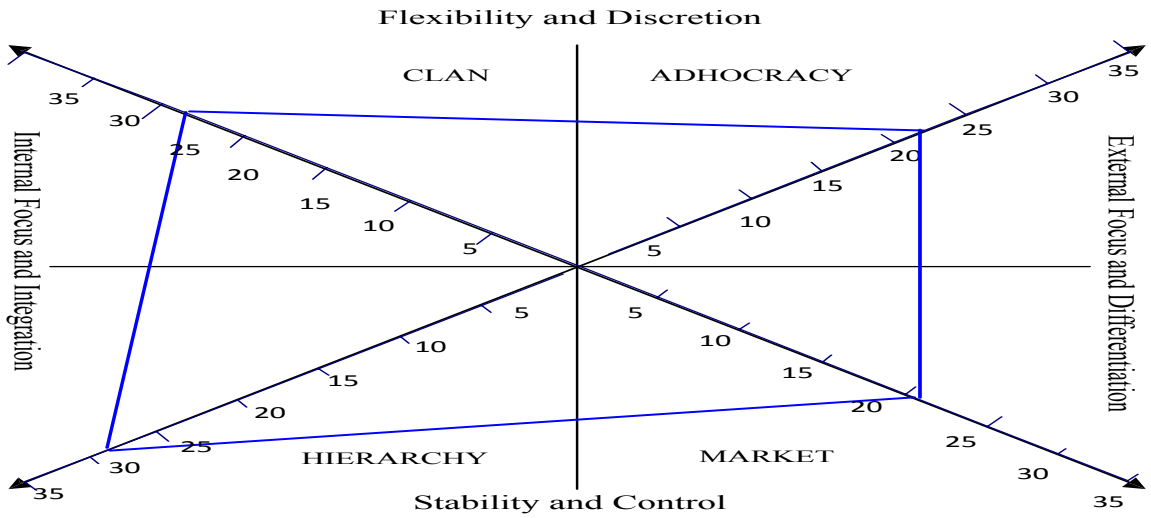


Figure 6:3 The Dominant Organisational Culture Type for Private Universities

6.3.3 Higher Institutions' Organisational Culture Type

Local scientific institutions were created in many cities all over Libya. While the dominant organisational culture type for universities of this description is Hierarchy culture, the dominant organisational culture type for higher institutions with about 55% percent is Clan culture (table 6:19) and 43% percent is Hierarchy culture. After that the Adhocracy and Market cultures are the third and fourth in order with a low percentage and mean.

Table 6:19 Dominant Organisational Culture Type for Higher Institutions

Culture Type	N of Qus.	%	Mean	Std. Deviation	Rank
Clan culture	**91**	**55%**	**30.26**	**8.89**	**1**
Adhocracy culture	2	1.5%	21.49	5.21	3
Market culture	1	0. 5%	18.80	5.53	4
Hierarchy culture	70	43%	29.27	7.77	2
Total	**164**	**100%**			

Ous. = Questionnaire

The organisational performance type for Clan culture is characterised by its focus on internal maintenance with flexibility, concern for people, and sensitivity to customers. (Table 6:19).

Table 6:20 Organisational Performance Type for Higher Institutions

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	164	**25.88**	**3.79**
Stability and Control	164	24.03	3.64
Internal Focus and Integration	164	**29.76**	**4.16**
External Focus and Differentiation	164	20.14	4.18

Figure 6:4 shows the graphical representation of the highest mean scores in the four culture types for the current situation. It is clear from the graph that Clan culture is dominant.

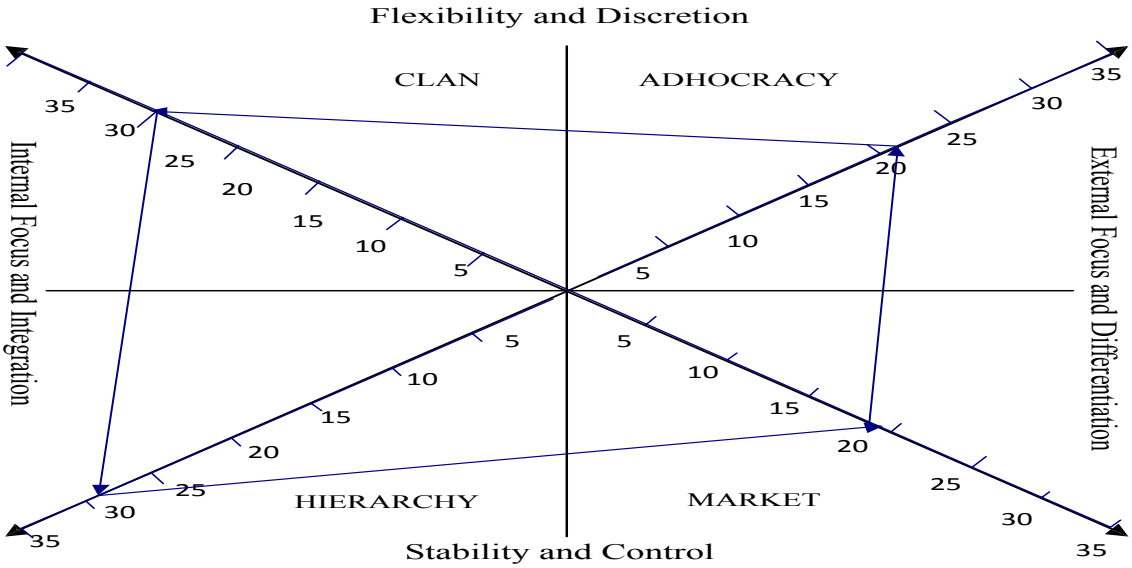


Figure 6:4 Dominant Organisational Culture Types for Higher Institutions

6.3.4 Technical Colleges' Organisational Culture Type

It is clearly evident that the dominant culture type for the Technical colleges is Hierarchy culture, with 60% percentage followed by Clan culture with 22% percentage; this is for the first time followed by Market and Adhocracy cultures, in that order. Also, the difference in means between Hierarchy culture and Clan culture is high (Table 6:21).

Table 6:21 Dominant Organisational Culture Type for Technical Colleges

Culture Type	N of Ous.	%	Mean	Std. Deviation	Rank
Clan culture	**6**	**22%**	23.92	11.13	2
Adhocracy culture	2	7%	20.90	4.79	4
Market culture	3	11%	21.30	6.39	3
Hierarchy culture	16	60%	**33.67**	**12.73**	**1**
Total	**27**	**100%**			

Ous. = Questionnaire

Hierarchy culture indicates that this organisation values internal focus and integration while maintaining stability and control (Table 6:22).

Table 6:22 Organisational Performance Type for Technical Colleges

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	27	22.41	6.540
Stability and Control	**27**	**27.48**	**6.44**
Internal Focus and Integration	27	**28.80**	**4.58**
External Focus and Differentiation	27	21.10	4.53

Figure 6:5 shows the graphical representation of the highest mean scores in the four culture types for the current situation. It is clear from the graph that Hierarchy culture is dominant.

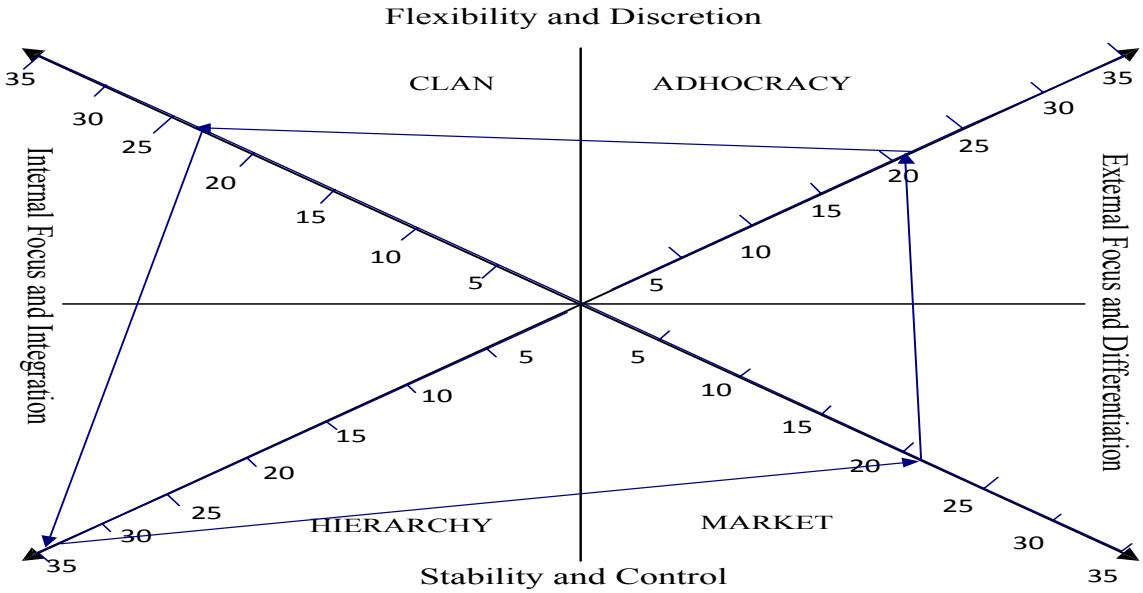


Figure 6:5 Dominant Organisational Culture Type for Technical Colleges

6.3.5 Organisational Culture Type in Public and Private Universities

Table 6:23 and table 6:24 shows that organisational culture profile depended on ownership type (private, public) as Libyan universities were different and did not share the same dominate organisational culture type. It can be noted from the table that the order of organisational culture types between public and private universities was also different because while public universities show Hierarchy culture type followed by Adhocracy, Clan and Market, the private universities show Clan culture followed by Market, Hierarchy and Adhocracy. (See figures 6.6 and 6.7)

Table 6:23 Organisational Culture Type for Public and Private Universities

Culture	Public Universities			Private Universities		
	N	**Mean**	**Rank**	**N**	**Mean**	**Rank**
Clan	29	19.66	3	37	34.39	**1**
Adhocracy	29	22.50	2	37	21.37	4
Market	29	19.20	4	37	22.70	2
Hierarchy	29	38.53	**1**	37	21.53	3
Dominant culture type	Hierarchy			Clan		

Table 6:24 Organisational Performance Type for Public and Private Universities

Organisational Performance Type	Public Universities			Private Universities		
	N	Mean	Std. Deviation	N	Mean	Std. Deviation
Flexibility and Discretion	29	21.08	5.08	37	**27.88**	**2.31**
Stability and Control	29	28.86	4.98	37	22.12	2.31
Internal Focus and Integration	29	29.10	3.68	37	**27.96**	**2.28**
External Focus and Differentiation	29	20.85	3.70	37	22.04	2.28

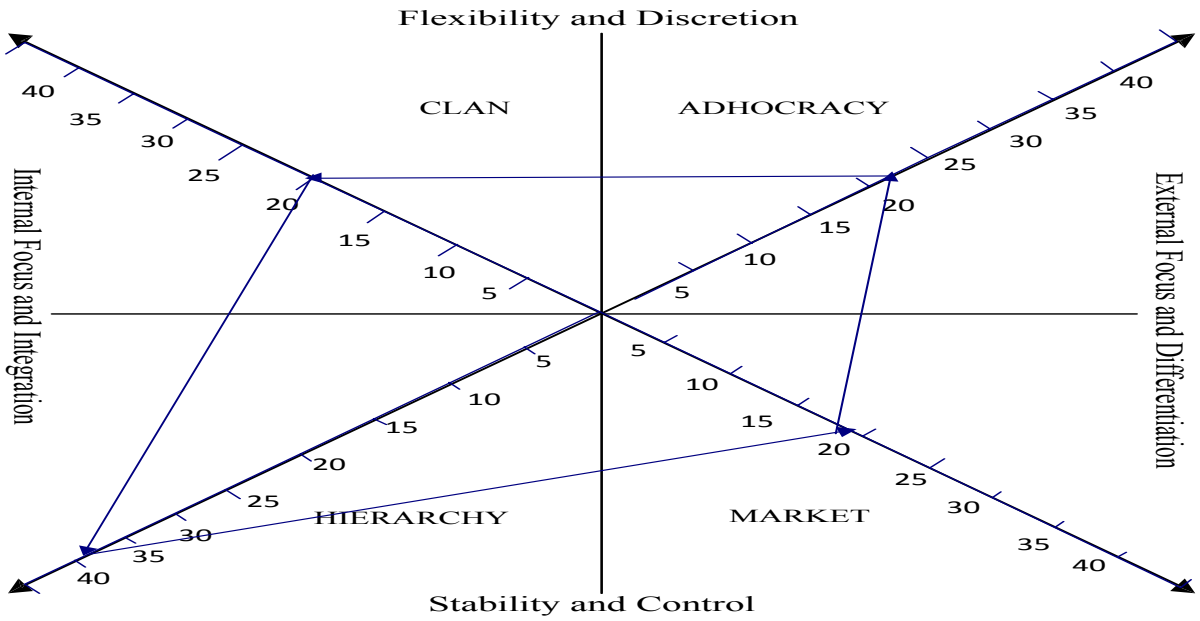


Figure 6:6 Dominant Organisational Culture Type for Public Universities

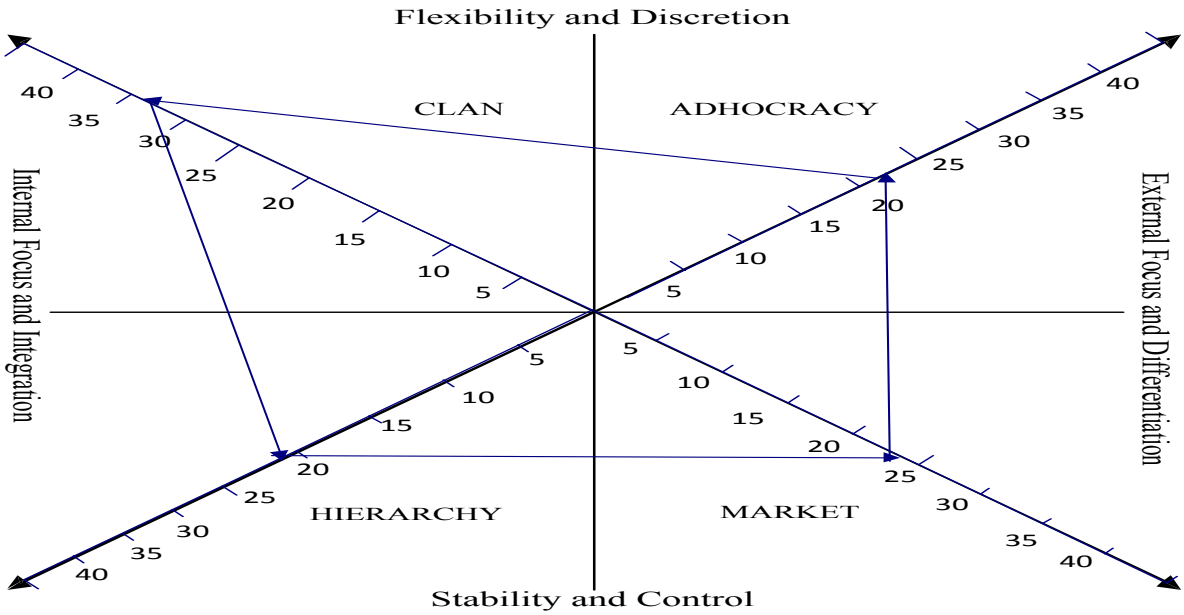


Figure 6:7 Dominant Organisational Culture Type for Private Universities

6.4 Interviews Results for Organisational Culture Profile

The empirical investigation demonstrated in this thesis relies primarily on the analysis of both the quantitative and qualitative data; the former is analysed in the previous sections.

The quantitative data to investigate the OC types firstly and to investigate the extent of the acceptance, importance and use of PMS, finally the influence of OC types on PMS. While the qualitative case study data to determine perceptions of organisational culture types, in order to strengthen the findings that the researcher got them from the quantitative data.

This section emphasises that qualitative data analyses are founded on the structured and semi-structured interviews carried out on a sample of one Libyan public university throughout the organisation at numerous levels (employee and member staff). The objective of the interviews was to promote the information attained from the questionnaire. The outcomes of the interview enabled the researcher to determine the collective views on organisational culture and to assess whether they are the same as the views of the decision makers.

The results of the first activity were concentrated on a set of fix-choice questions called, Organisational Culture Assessment Instrument (OCAI). Interviewees were asked to divide 100 points among the four alternatives depending on the extent to which each alternative fitted their own organisation and give a higher number of points to the alternative fitted their organisation.

6.4.1 Interviewees' Profile in General

The first section in the interview was about general information of interviewees. A total of eight completed interviews, from the University of Tripoli, were analysed. The interviews sought information about the interviewees' job title and position, level of education, years of experience in the current job and organisation.

As shown in table 6:25, the interviewees were from two different categories in Libyan public university, four interviewers were employees in the finance and administrative department, and the other four interviewees were employees as academic staff university.

Table 6:25 Job title and position

Interviewees	Job title and position	Level of Education
1	Employee in Finance Department	Post-graduate degree (MSc)
2	Employee in Administrative Department	Post-graduate degree (MSc)
3	Employee in Finance Department	Post-graduate degree (MSc)
4	Employee in Administrative Department	Post-graduate degree (MPA)
5	Business school Staff	Post-graduate degree (Ph.D.)

6	Business school Staff	Post-graduate degree (Ph.D.)
7	School of Engineering Staff	Post-graduate degree (Ph.D.)
8	School of Computing Science Staff	Post-graduate degree (Ph.D.)
Total	**8**	**8**

The data revealed that 50% of the interviewers had been in their current job for 1 -5 years. This was the result of new appointments made after the regime change in Libya in 2012. On the other hand, 37.5% had 6-10 years' experience with their current organisation and 12.5% had an experience of over 10 years. This group of interviewees were highly experienced in their current organisation as the result of their long period of employment (See table 6:26) and all of the case study participants held a post-graduate degree (e.g. MSc, MBA, Ph.D.).

Table 6:26 Experience

Experience	Freq.	%
In the current job		
Less than one year	0	0
1-5 years	4	50
6-10 years	3	37.5
More than 10 years	1	12.5
Total	**8**	**100**
With the current organisation		
Less than one year	0	0
1-5 years	1	12.5
6-10 years	5	62.5
More than 10 years	2	25.0
Total	**8**	**100**

6.4.2 Organisational Culture Profile

The second section in the interview was about organisational culture profile, in the interview was about the first six aspects adopted from the Organisational Culture Assessment Instrument (OCAI) of Cameron and Quinn (2006). The participants were asked to choose among the four alternatives, which refer to four types of culture to indicate the most appropriate choice to describe their organisation.

Table 6:27 represents the current dominate culture type in the University of Tripoli. It shows that the culture type is Hierarchy for eight interviewees and the percentage is 87.5%University of Tripoli, followed by Adhocracy, Clan and Market in that order. It can be noted that the difference in means between Hierarchy culture and Adhocracy culture is high (35.73, 22.50). These results supported the

questionnaire survey's results (see table 6.15), which shown that the culture type in Libyan public universities is Hierarchy followed by Adhocracy, Clan and Market in that order.

Table 6:27 Dominant Organisational Culture Type for University of Tripoli

Culture Type	N of Interviewees	%	Mean	Std. Deviation	Rank
Clan culture	0	0%	21.77	10.878	3
Adhocracy culture	1	12.5%	22.50	7.015	2
Market culture	0	0%	20.00	6.156	4
Hierarchy culture	**7**	**87.5%**	**35.73**	**19.187**	**1**
Total	**8**	**100%**			

The second part of the interview consisted of open-ended questions, to which the participants were asked to give in-depth details to explain, describe, and elaborate which of the four types of organisational culture types describe their organisation and why.

The responses of the interviewees were about to describe their organisational culture type. Based on the OC profile in the education sector (the hierarchy culture), the interviewees stated that this culture was the best fit with their organisation. In this respect, one of the interviewers, for instance, pointed out that:

The relationship between the managers and staffs in the organisation is very formal. The friendly relationship does not work very much. It means that laws, rules, govern this relationship and issued decisions from the Higher Departments, which apply and follow by other offices and departments according to their specialisation. Although all offices or departments have their goals, which they seek to achieve, at the end, they work together to achieve the overall goals, stability, progress and competence of the performance of the organisation. In my opinion, this is very good because the unofficial relationships could be changed to friendly between the staffs and then to a kind of mess, which may affect the institution to achieve its goals.

Another interviewer believes that:

The shape of university looks like a pyramid, on the top of this pyramid the chairman and his deputy. The Committee headed governs universities and the dean represents each faculty. These committees are responsible for implementing the general policy of higher education set by the Ministry of Higher Education and Scientific Research. Recently, Ministry of Higher Education and Scientific Research is

preparing a new law on higher education. It targets to restructure and consolidate Libyan higher education provision, focusing on access, equity, diversity, and to build greater capacity for high-level research. The university Dean based on the recommendations by the concerned department and faculty appoints the academic staff members.

Overall, eight interviews answers were consistent with the hierarchy culture characteristics, and the summaries of the answers are in the following points: -

1-The relationships between staff/employees are very formal/official.

2- There are no or limited friendly relationships between the staff.

3-The relationships are according to hierarchical cultural characteristics of their job positions in the organisation.

4-The organisations follow the decisions, laws and regulations of the higher authority, such as the Ministry of Higher education.

5-Each department aims to achieve its goals according to its specialization alongside with the organisation's goals. They all work together to achieve the overall goals.

All above points fits with the hierarchy culture characteristics, which is consistent with the questionnaire results that pointed out that the hierarchy culture is the dominant culture type of Libyan public universities. In addition, one of the interviews adds the following answer:

The University of Tripoli is seeking to focus on growth and access to new resources in the long term.

The above statement is consistent with the adhocracy culture characteristics, which are also consistent with the questionnaire results that pointed out that the adhocracy culture is the second dominant culture type in Libyan public universities.

6.5 Performance Measurement Systems Profile

This section seeks to explore the status of performance measurement systems in Libyan higher education, through an investigation of the frequency and percentage of the use of PMS on the one hand, and how Libyan higher education responds to the importance of PMS on the other. Nearly all items in the performance measurements systems were adopted from previously published works. Specifically, the questionnaire was structured to indicate on a five point Likert scale, the extent of the acceptance, importance and use of performance measurement systems. This investigation used a set of performance measurements systems coming from academic/practitioner management accounting

literature (Gosselin, 2005; Robert Kaplan & Norton, 1996; Kaplan Robert & Norton David, 2001). Moreover, the research investigated the influence of financial, non-financial and advanced PMS to evaluate organisational performance, in particular the effectiveness and usefulness of advanced techniques of performance measurement systems for organisational performance. Therefore, in section D of the questionnaire, the respondents were asked about the extent to which they used financial, non-financial and advanced PMS, with regard to the following points:

- To evaluate the organisational performance of Libyan higher education
- To enhance performance effectiveness in Libyan higher education
- How a useful it is for Libyan higher education performance

6.5.1 Performance Measurement Systems acceptance and Influence on Organisational Performance

The present study investigated the acceptance of both financial and non-financial performance measurement systems and to what extent this influenced the organisational performance. In addition, the advanced technique of the balanced scorecard was investigated for its effectiveness and usefulness in organisational performance. The first three questions in section D (D1, D2, D3) were about how using multiple performance measurement systems (financial, non-financial, advanced techniques) would enable organisations to evaluate organisational performance. The fourth and fifth questions in the same section (D4, D5) were about the effectiveness and usefulness of performance measurement system in organisational performance.

6.5.1.1 Financial Performance Measurement system

A 5-point scale as shown in the table 6:24 (1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree) was used to investigate the extent of the use of financial performance measurement systems to evaluate organisational Performance.

The respondents were requested in this section of the questionnaire to indicate to what extent financial performance measurement systems were used to evaluate organisational Performance.

It can be noted from table 6:24 that the value of the mean of using financial performance measurement systems to evaluate organisational performance is above 3 (i.e. above neutral). The results show that 7% of the respondents were below neutral (Strongly Disagree or Disagree), about 36% were neutral

and about 57% were above neutral (Strongly Agree or Agree) as regards their use of financial performance measurement systems to evaluate organisational performance.

Table 6:28 Financial Performance Measurement Systems

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Strongly Disagree	10	3.9	3.9		
2	Disagree	8	3.1	7.0		
3	Neutral	92	35.8	42.8		
4	Agree	80	31.1	73.9		
5	Strongly Agree	67	26.1	100		
Total		257	100		3.72	1.010

6.5.1.2 Non-Financial Performance Measurement Systems

More attention was given to non-financial performance measurement systems, in order to understand the extent to which non-financial performance measurement systems are used to evaluate organisational performance.

Table 5:25 shows that the value of the mean of using non-financial PMS to evaluate organisational performance is above 3 (i.e. above neutral). The results show that 25% of the respondents were below neutral (Strongly Disagree or Disagree), about 30% were neutral and about 45%were above the neutral mark (Strongly Agree or Agree) with regard to their use of non-financial performance measurement systems to evaluate organisational performance.

Table 6:29 Non-Financial Performance Measurement Systems

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Strongly Disagree	7	2.7	2.7		
2	Disagree	57	22.2	24.9		
3	Neutral	77	30.0	54.9		
4	Agree	73	28.4	83.3		
5	Strongly Agree	43	16.7	100		
Total		257	100		3.34	1.082

6.5.1.3 Advanced Techniques of Performance Measurement Systems

Table 6:26 shows the extent to which the respondents agree or disagree that the use of advanced techniques of performance measurement systems (e.g. balanced scorecard) would enhance the evaluation of organisational performance.

The value of the mean of advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance is above 3 (i.e. above neutral). The results in table 6:26 show that about 11% of the respondents were below neutral (Strongly Disagree or Disagree), about 32% were neutral and about 57% were above the neutral point (Strongly Agree or Agree) for using advanced techniques of performance measurement systems (e.g. balanced scorecard) in enhancing the evaluation of organisational performance.

Table 6:30 Advanced Techniques of Performance Measurement Systems

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Strongly Disagree	12	4.7	4.7		
2	Disagree	17	6.6	11.3		
3	Neutral	81	31.5	42.8		
4	Agree	99	38.5	81.3		
5	Strongly Agree	48	18.7	100		
Total		257	100		3.60	1.015

6.5.1.4 Effectiveness of Using Advanced Techniques of Performance Measurement Systems

The value of the mean of effectiveness of using advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance was above 3 (i.e. above neutral). The results in table 6:27 show that about 13% of the respondents were under the neutral point (Strongly Disagree or Disagree), about 35% per cent were neutral and about 52% were above neutral (Strongly Agree or Agree) as regards their use of performance measurement systems (e.g. balanced scorecard) to enhance the effectiveness of their job.

Table 6:31 Effectiveness of Using Advanced Techniques of Performance Measurement Systems

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Strongly Disagree	19	7.4	7.4		
2	Disagree	13	5.1	12.5		

3	Neutral	91	35.4	47.9		
4	Agree	89	34.6	82.5		
5	Strongly Agree	45	17.5	100		
Total		257	100		3.50	1.072

6.5.1.5 Using Performance Measurement Systems

The results in table 6:28 show that about 0% of the respondents strongly disagree, about 5%were below neutral (Disagree), about 37% were neutral and about 58% were above the neutral mark (Strongly Agree or Agree) as regards the usefulness of performance measurement systems (e.g. balanced scorecard) in their job. The value of the mean was 3.77 (above neutral).

Table 6:32 Useful of Using Performance Measurement Systems (e.g. Balanced Scorecard)

5-point scales		**Frequency**	**Percent**	**Cumulative Percent**	**Mean**	**Std. Deviation**
1	Strongly Disagree	0	0	5.4		
2	Disagree	14	5.4	42.0		
3	Neutral	94	36.6	75.1		
4	Agree	85	33.1	100		
5	Strongly Agree	64	24.9			
Total		257	100		3.77	0.886

6.5.1.6 Summary Performance Measurement Systems acceptance and Influence on Organisational Performance

The performance measurement systems acceptance and the influence on organisational performance in Libyan higher education are presented in table 6:29.

It can be noted from table 6:29 that the highest value mean of useful of using performance measurement systems (e.g. balanced scorecard), which was 3.77 and above 3. The second rank was for using financial performance measurement systems to evaluate organisational performance, and the third was for using advanced techniques of performance measurement systems. The fourth rank was for effectiveness of using advanced techniques of performance measurement systems and the last was using non-financial performance measurement systems to evaluate organisational performance.

Table 6:33 Summary

N	Performance Measurement Systems acceptance and Influence on Organisational Performance	Mean	Rank
1	Using Financial Performance Measurement Systems to Evaluate Organisational Performance	3.72	2
2	Using Non-Financial Performance Measurement Systems to Evaluate Organisational Performance	3.43	5
3	Using Advanced Techniques of Performance Measurement Systems (e.g. Balanced Scorecard) to Evaluate Organisational Performance	3.60	3
4	Effectiveness of Using Advanced Techniques of Performance Measurement Systems (E.G. Balanced Scorecard) to Evaluate Organisational Performance	3.50	4
5	Useful of Using Performance Measurement Systems (e.g. Balanced Scorecard)	3.77	1

6.5.2 Importance of Performance Measurement Systems

In addition to investigating the acceptance of performance measurement systems in Libyan higher education, the research explored the importance of performance measurement systems (financial, non-financial, advanced techniques) to discover to what extent performance measurement systems are important in Libyan education sector as drivers of long-term success. The first question in section E (E1) was about the financial PMS (e.g. annual earnings, return on assets, cost reduction, general administrative expenditure per student, tuition and fee levels etc.), and the other questions (E2, E3, E4, E5, E6) were about non-financial PMS (customer, innovation, employee, quality, community).

6.5.2.1 Importance of financial performance measurement systems

The study investigated the use of financial performance measurement systems and their importance (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.) to organisations. The 5-point scale as shown in the table 6:30 (1= Not at all

important, 2= Not important, 3= Moderate importance, 4= Important, 5= Extremely important) was used to investigate the extent of the usage of financial performance measurement systems and of their importance in the Libyan higher education sector.

The respondents were requested in this section of the questionnaire to indicate to what extent the use of financial performance measurement systems is important. It can be noted from table 6:30 that the value of the mean of 'using financial performance measurement systems are important' is above 3 (i.e. above moderate importance). The results show that about 12% of the respondents considered the use of financial PMS less than moderately important (Not at all important or Not important), about 22% considered it moderately important and about 66% considered it to have above moderate importance (Important or Extremely important).

Table 6:34 Financial Performance Measurement Systems Importance

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	3	1.2	1.2		
2	Not important	30	11.7	12.8		
3	Moderate importance	57	22.2	35.0		
4	Important	92	35.8	70.8		
5	Extremely important	75	29.2	100		
Total		257	100		3.80	1.025

6.5.2.2 Importance of Non-Financial Performance Measurement Systems: Customer Satisfaction

The study investigated the use of non-financial performance measurement systems (Customers Satisfaction) in Libyan higher education. Customers' satisfaction is one of the non-financial performance measurement systems (student and staff) to know the importance of customer satisfaction and retention in Libyan higher education sector. The results in table 6:31 shows that about 10% of the questionnaire respondents view non-financial PMS (Customers) as not at all important, about 0.4% view then as having less than moderate importance (Not important), about 9% consider them moderately important and about 81 think they are above moderate importance (Extremely important or important). The value of the mean was 3.96 (above moderate importance).

Table 6:35 Non-Financial Performance Measurement Systems Importance: Customer Satisfaction

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	26	10.1	10.1		

2	Not important	1	.4	10.5		
3	Moderate importance	23	8.9	19.5		
4	Important	115	44.7	64.2		
5	Extremely important	92	35.8	100		
Total		257	100		3.96	1.173

6.5.2.3 Importance of Non-Financial Performance Measurement Systems: Innovation

It can be seen from table 6:32 that the value of the mean of 'importance of using non-financial performance measurement systems (Innovation)' is above 4 (i.e. above important). The results show that about 2% of the respondents answered ('Not at all important' and about 8% of them felt that innovation (e.g. new courses and educational programmes) was of moderate importance, while about 90 considered this aspect to be more than moderately important (Important or Extremely important).

Table 6:36 Non-Financial Performance Measurement Systems Importance: Innovation

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	6	2.3	2.3		
2	Not Important	0	0	0		
3	Moderate importance	20	7.8	10.1		
4	Important	112	43.6	53.7		
5	Extremely important	119	46.3	100		
Total		257	100		4.32	0.809

6.5.2.4 Importance of Non-Financial Performance Measurement Systems: Employee

The importance of other types of non-financial performance measurement systems (employee satisfaction, workforce capabilities) have been measured in this research; the results show that about 2% of the respondents answered 'Not at all important' or 'Not Important' and about 23% felt that this aspect was of moderate importance. However, about 76 considered this aspect to be of above moderate importance (Important or Extremely important). As shown in table 6:33, the value of the mean of 'using non-financial performance measurement systems (employee)' is above 4 (i.e. above 'Important').

Table 6:37 Non-Financial Performance Measurement Systems Importance: Employee

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	2	0.8	0.8		
2	Not Important	3	1.2	1.9		
3	Moderate importance	59	23.0	24.9		
4	Important	89	34.6	59.5		
5	Extremely important	104	40.5	100		
Total		257	100		4.13	0.859

6.5.2.5 Importance of Non-Financial Performance Measurement Systems: Quality

The importance of quality as one of the measurement systems of non-financial performance had been measured, and indications are that quality in the education sector refers to academic quality awards. As shown in table 6:34, the values of the mean of 'using non-financial performance measurement systems (quality) are important' is above 3 (i.e. above moderate importance). The results show that about 5% of the respondents answered 'Not at all important' or 'Not Important' and about 22% considered this aspect to be of moderate importance. About 73% answered that it was more than moderately important (Important or Extremely Important).

Table 6:38 Non-Financial Performance Measurement Systems Importance: Quality

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	7	2.7	2.7		
2	Not Important	13	5.1	7.8		
3	Moderate importance	56	21.8	29.6		
4	Important	87	33.9	63.4		
5	Extremely important	94	36.6	100		
Total		257	100		3.96	1.017

6.5.2.6 Importance of Non-Financial Performance Measurement Systems; Community

The last non-financial performance measurement system whose importance was measured was community (e.g. public image, community involvement, etc.). It can be noted from table 6:35 that the values of the mean of 'using non-financial performance measurement systems (community) are important' is above 3 (i.e. above moderate importance). The results show that about 11% of the respondents answered 'Not at all important' or 'Not Important' and about 26% felt that this aspect was

of moderate importance. About 63% felt that this was more than moderately important (Important or Extremely important).

Table 6:39 Non-Financial Performance Measurement Systems Importance/ Community

5-point scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not at all important	12	4.7	4.7		
2	Not Important	28	10.9	15.6		
3	Moderate importance	67	26.1	41.6		
4	Important	75	29.2	70.8		
5	Extremely important	75	29.2	100		
Total		257	100		3.67	1.143

6.5.2.7 Summary of Financial and Non-Financial Performance Measurement Systems Importance

Respondents' perception of the importance of financial and non-financial performance measurement systems in Libyan higher education is presented in table 6:36.

It can be noted from table 6:36 that the highest value mean of 'the importance of using non-financial performance measurement systems for innovation', which was 4.32 (i.e. above 4 and above 'Important'). The second rank in terms of value mean went to 'employee', the third to 'customer' and 'quality', the fourth to 'financial performance measurement systems' and the last to 'community'.

Table 6:40 Summary of Financial and Non-Financial Performance Measurement Systems Importance

N	Importance of Performance Measurement Systems	Mean	Rank
1	Financial Performance Measurement Systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels etc.)	3.80	4
2	Non-Financial Performance Measurement Systems: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	3.96	3
3	Non-Financial Performance Measurement Systems : Innovation (e.g. courses or educational programs)	4.32	1
4	Non-Financial Performance Measurement Systems: Employee (e.g. employee satisfaction, workforce capabilities, etc.)	4.13	2

5	Non-Financial Performance Measurement Systems: Quality (e.g. academic quality awards, etc.)	3.96	3
6	Non-Financial Performance Measurement Systems: Community (e.g. public image, community involvement, etc.)	3.67	5

6.5.3 Use of performance measurement system

This study investigated the importance of performance measurement systems in Libyan higher education; it also investigated the use of performance measurement systems (financial, non-financial, advanced techniques) to find out to what extent the performance measurements systems are used in Libyan higher education sector to evaluate performance. The first question in section F (F1) was about the financial performance measurement systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditure per student, tuition and fee levels etc.), and the other questions (F2, F3, F4, F5, F6) were about non-financial performance measurement systems (Customer, innovation, employee, quality and community). A 5-point scale was used to investigate the extent of using of financial and non-financial performance measurement systems in Libyan higher education sector**.** (1= Not used at all, 2= Slightly used, 3= Moderately used, 4= Significantly used, 5= Highly used).

6.5.3.1 Financial Performance Measurement Systems Use

The respondents were requested in this section of the questionnaire to indicate to what extent the financial performance measurement systems are used. It can be noted from table 6:37 that the values of the mean of 'using financial performance measurement systems in Libyan higher education sector to evaluate performance' are 2.98 (i.e. about 3, which is 'Moderately used'. The results show that 6.6% of the respondents had not used financial performance measurement systems at all to evaluate performance; about 3% were had used them occasionally ('Slightly used') and about 30 per cent had used them moderately. In addition, about 30% used them 'Significantly' or 'Highly'.

Table 6:41 Financial Performance Measurement Systems Use

5-point scales		**Frequency**	**Percent**	**Cumulative Percent**	**Mean**	**Std. Deviation**
1	Not used at all	17	6.6	6.6		
2	Slightly used	85	33.1	39.7		

3	Moderately used	78	30.4	70.0		
4	Significantly used	41	16.0	86.0		
5	Highly used	36	14.0	100		
Total		257	100		2.98	1.149

6.5.3.2 Use of Non-Financial Performance Measurement Systems: Customer Satisfaction

Customers are one of the non-financial performance measurement systems (student and staff) for understanding the use of customer satisfaction and customer retention when evaluating performance in the Libyan higher education sector. The results in table 6:38 show that about 13% of the respondents to the questionnaire feel that customer satisfaction is not at all used to evaluate performance**,** about 17% of them feel that they are 'Slightly used' (which is below the 'Moderately used' mark). The highest percentage, which was about 42% felt they were moderately used and about 28% felt they were used more than moderately (Significantly used or Highly used). The value of the mean was 2.93 (just under 3 or 'Moderately used).

Table 6:42 Non-Financial Performance Measurement Systems Use: Customer Satisfaction

5-Point Scales		**Frequency**	**Percent**	**Cumulative Percent**	**Mean**	**Std. Deviation**
1	Not used at all	33	12.8	12.8		
2	Slightly used	43	16.7	29.6		
3	Moderately used	108	42.0	71.6		
4	Significantly used	54	21.0	92.6		
5	Highly used	19	7.4	100		
Total		257	100		2.93	1.090

6.5.3.3 Use of Non-Financial Performance Measurement Systems: Innovation

It can be seen from table 6:39 that the value of the mean of 'using non-financial performance measurement systems (Innovation)' in Libyan higher education sector to evaluate performance is above 3 (Moderately used). The results show that about 37% of the respondents answered 'Not used at all' or 'Slightly used', about 25% answered 'Moderately used' and about 39% answered 'Significantly used' or 'Highly used' – which is above 'moderately used' for 'using of non-financial performance measurement systems (Innovation)'. Here, 'innovation' includes courses or educational programs.

Table 6:43 Non-Financial Performance Measurement Systems Use: Innovation

5-Point Scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not used at all	35	13.6	13.6		
2	Slightly used	59	23.0	36.6		
3	Moderately used	65	25.3	61.9		
4	Significantly used	50	19.5	81.3		
5	Highly used	48	18.7	100		
Total		257	100		3.07	1.311

6.5.3.4 Use of Non-Financial Performance Measurement Systems: Employee

The importance of other types of non-financial performance measurement systems (employee satisfaction, workforce capabilities) had been measured in this research to find out to what extent the employees are seen as one of the non-performance measurement systems used in Libyan higher education sector to evaluate performance. As shown in table 6:40, the value of the mean of using 'non-financial performance measurement systems (employee)' to evaluate performance is 2.95, and the results show that about 34% of the respondents answered 'Not used at all' or 'Slightly used'. Also, about 35% said they were moderately used and about 31% said they were more than moderately used ('Significantly used' or 'Highly used').

Table 6:44 Non-Financial Performance Measurement Systems Use: Employee

5-Point Scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not used at all	16	6.2	6.2		
2	Slightly used	71	27.6	33.9		
3	Moderately used	90	35.0	68.9		
4	Significantly used	70	27.2	96.1		
5	Highly used	10	3.9	100		
Total		257	100		2.95	0.977

6.5.3.5 Use of Non-Financial Performance Measurement Systems: Quality

The use of quality as one of the measurement systems of non-financial performance to evaluate Libyan higher education performance was measured. Results indicate that quality in the education sector refers to academic quality awards, and as shown in table 6:41, the values of the mean of 'using non-

financial performance measurement systems (quality) are important' were under 3 (i.e. under moderately used). The results also show that about 59% of the respondents answered 'Not used at all' or 'Slightly used', about 20% answered 'Moderately used', and about 22% answered 'Significantly used' or 'Highly used', which is above 'Moderately used'.

Table 6:45 Non-Financial Performance Measurement Systems Use: Quality

5-Point Scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not used at all	74	28.8	28.8		
2	Slightly used	77	30.0	58.8		
3	Moderately used	50	19.5	78.2		
4	Significantly used	34	13.2	91.4		
5	Highly used	22	8.6	100		
Total		257	100		2.43	1.268

6.5.3.6 Use of Non-Financial Performance Measurement Systems: Community

The use of Community (e.g. public image, community involvement, etc.) as a non-financial performance measurement system indicator was measured to evaluate Libyan higher education performance. It can be noted from table 6:42 that the value of the mean of 'using non-financial performance measurement systems (community) to evaluate performance' is under 3 (i.e. under 'Moderately used'). The results show that about 47% of the respondents answered 'Not used at all' or 'Slightly used', about 26% revealed that it was of moderate importance and about 30 per cent considered it above moderate importance ('Significantly used' or 'Highly used'.

Table 6:46 Non-Financial Performance Measurement Systems Use: Community

5-Point Scales		Frequency	Percent	Cumulative Percent	Mean	Std. Deviation
1	Not used at all	66	25.7	25.7		
2	Slightly used	54	21.0	46.7		
3	Moderately used	60	23.3	70.0		
4	Significantly used	43	16.7	86.8		
5	Highly used	34	13.2	100		
Total		257	100		2.71	1.362

6.5.3.7 Summary of Financial and Non-Financial Performance Measurement Systems Used to Evaluate Libyan Higher Education Performance

The use of financial and non-financial performance measurement systems to evaluate the performance in Libyan higher education is presented in table 6:43. It can be noted from the table that the highest value mean for using non-financial performance measurement systems for innovation was 3.07 and above 3 for (i.e. above moderately used). The second rank was for using financial performance measurement systems, and the third was for using non-financial performance measurement systems (innovation). The fourth and fifth ranks were for the customer and quality respectively, and the last rank was for community.

Table 6:47 Summary of Financial and Non-Financial Performance Measurement Systems Used to Evaluate Performance

N	Use of Performance Measurement System	Mean	Rank
1	Financial Performance Measurement Systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels etc.)	2.98	2
2	Non-Financial Performance Measurement Systems /Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	2.93	4
3	Non-Financial Performance Measurement Systems /Innovation (e.g. courses or educational programs)	3.07	1
4	Non-Financial Performance Measurement Systems /Employee (e.g. employee satisfaction, workforce capabilities, etc.)	2.95	3
5	Non-Financial Performance Measurement Systems /Quality (e.g. academic quality awards, etc.)	2.43	6
6	Non-Financial Performance Measurement Systems / Community (e.g. public image, community involvement, etc.)	2.71	5

6.6 Summary

This chapter has the presented questionnaire survey results, which included the respondents' profile in general, organisation culture profile, and performance measurement system profile. The purpose of this chapter was to explore the dominant type of organisational culture in Libyan higher education in general and in its branches in particular, on the basis of the type of higher education (such as universities, higher institutions and technical colleges) and of ownership (private, public). In addition, this study also explored the status of performance measurement systems in Libyan higher education, through an investigation of the frequency and percentage of use of PMS on one hand, and how decision makers respond to the importance of PMS on the other. The data was analysed using SPSS version 20 and a descriptive analysis for Libyan higher education was conducted by using a multiple linear regression. The next chapter discussed the second part of the questionnaire survey results, which are related to the influence of the organisational culture types on the acceptance, importance and use of the performance measurement systems.

Chapter 7: The Influence of Organisational Culture on Performance Measurement Systems Results

7.1 Introduction

The previous chapter outlined the questionnaire survey results for organisational culture types and the acceptance, importance and use of performance measurement systems. The aim of this chapter is to present, analyse and discuss the data obtained from these questionnaires.

The purpose is to explore the dominant type of organisational culture and the influential relationship of this culture, at organisational level, on the acceptance, importance and use of performance measurement systems. The results of this chapter are presented in five main sections, following this introductory paragraph. The first section is the introduction, the second section presents the results of the influence of organisational culture on the acceptance of PMS, the third section deals with the influence of organisational culture on the importance of PMS, and the fourth section reports the influence of organisational culture on the use of PMS. Finally the fifth section gives the summary of this chapter.

A multiple linear regression was performed to assess the relationships between the independent variable (organisational culture) by using the Organisational Culture Assessment Instrument (OCAI) for the four organisational culture types of Clan, Adhocracy, Market and Hierarchy as the independent variables, and the acceptance, importance and use of PMS as the dependent variables.

7.2 Influence of Organisational Culture on (PMS) Acceptance in Libyan Higher Education

Table 7:1 describes the organisational culture dominant in Libyan higher education and the significance of the four organisational culture types of Clan, Adhocracy, Market and Hierarchy. It can be noted from the table that although the dominant culture in Libyan higher education was Hierarchy, Clan and Adhocracy cultures were highly significant when associated with PMS acceptance, and Hierarchy and Market cultures were not significant.

Table 7:1 Dominant and Significant Organisational Cultures in Libyan Higher Education

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Libyan Higher Education	257	Clan	29.05	0.000	Hierarchy Clan	Clan Adhocracy
		Adhocracy	21.53	0.000		
		Market	19.67	0.259		
		Hierarchy	29.66	0.032		

Table 7:2 describes the correlation between, and significance of, the independent variables and the dependent variable; in this case the DV was PMS acceptance in Libyan higher education. In Libyan higher education the Adhocracy culture variable has a positive correlation impact on the acceptance of PMS, with value of 0.222, and it is one of the highest significance in relations at (p-value = .000). Clan culture variable has a negative correlation impact on PMS acceptance with the value of -0.213 and it is significant in relations at (p-value = .001). On the other hand, Hierarchy culture and Market culture have low correlation, and they were not significant on PMS acceptance.

Table 7:2 Correlations and Significant Culture in Libyan Higher Education

Category		PMS acceptance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS acceptance	Pearson Correlation	1	-0.213**	0.222**	-0.041	0.115
	Sig. (2-tailed)		0.001	0.000	0.517	0.065
	N (Libyan Higher Education)	257	257	257	257	257

The correlation matrix shows that it can be seen that Hierarchy culture shows a low positive correlation (0.115) with PMS acceptance, and its relationship with PMS acceptance is statistically not significant (p-value<0.065). On the other hand, when using regression analysis, Hierarchy culture and Clan culture were found to have a high variance inflation factor VIF (Appendix E). As a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy

cultures have similar mean results and a strong correlation (0.649) (Pallant, 2007, p. 150)[1]. As a result, the Clan culture variable will be excluded from the model in order to avoid any unstable results, but it should be kept in mind that this does not mean that Clan culture is not important.

Table 7.3 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS acceptance). The results show that two of the IVs contributed significantly to the model. Adhocracy culture is (B) = 037, t = 4.387 and p < 0.000, the confidence level is 95% and the actual value of B in the population lies somewhere between (0.020) and (0.054). Hierarchy culture is (B) = 0.013, t = 2.787 and p< 0.006, the confidence level is 95%, and the actual value of B in the population lies somewhere between (0.004) and (0.023). Market culture was not significant in this model.

Table 7:3 Linear Regression Model for Organisational Culture in Libyan higher education

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF
(Constant)	2.404	0.328		7.330	0.000	1.758	3.050		
Adhocracy	0.037	0.008	0.275	4.387	0.000	0.020	0.054	0.923	1.083
Market	-0.001	0.008	-0.005	-0.069	0.945	-0.017	0.015	0.836	1.197
Hierarchy	0.013	0.005	0.189	2.787	0.006	0.004	0.023	0.790	1.266

a. Dependent Variable: PMS acceptance

b. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

[1] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated

Table 7:4 shows that the value of R square is 0.083 (8.3%); this is the explained variance in the DV PMS by organisational culture traits. The value of R= 0.288 shows that the model is fit and this value is of low enough for the acceptance of the model.

Table 7:4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.288[a]	0.083	0.072	0.654

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:5 shows that the F statistic is significant at 0.000, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS acceptance.

Table 7:5 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.814	3	3.271	7.642	0.000[b]
	Residual	108.306	253	0.428		
	Total	118.120	256			

a. Dependent Variable: PMS acceptance
b. Predictors: (Constant), Adhocracy culture, Market culture, Clan culture

7.2.1 Influence of Organisational Culture on PMS acceptance in Libyan Universities

Table 7:6 represents the current dominant culture type for the Libyan universities. The dominant organisational culture type for Libyan universities is Hierarchy culture followed by Clan culture; these are followed by Adhocracy and Market cultures. It can be noted that the difference in means between Hierarchy culture and Clan culture is very small (29.00, 28.14).

Table 7:6 Dominant and Significant Organisational Cultures in Libyan Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
PMS acceptance	66	**Clan**	28.14	0.000	**Hierarchy**	**Hierarchy Clan**
		Adhocracy	21.87	0.301		
		Market	21.16	0.136		
		Hierarchy	**29.00**	0.002		

The correlation between the four IVs and the DV, PMS acceptance is described in Table 7:7. The Hierarchy culture variable was dominant and has a good negative correlation impact on PMS. Also, it is significant (with p-value = .003). Clan variable has a good positive correlation impact on PMS with a value of 0.407 and there is high significance of relations at (p-value = .001). On the other hand, the Adhocracy variable has a low negative correlation impact on PMS with a value of -0.065 and it has a low significance of relations at (p-value = .603) associated with the acceptance of PMS; Market culture has a low positive correlation 0.137, and is not significant with p-value = 0.271.

Table 7:7 Correlations and Significant Culture in Libyan Universities

Category		PMS acceptance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS acceptance	Pearson Correlation	1	0.407**	-0.065	0.137	-0.360**
	Sig. (2-tailed)		0.001	0.603	0.271	0.003
	N		66	66	66	66

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation matrix shows that although Hierarchy culture shows a negative correlation (-0.360) with PMS acceptance, its relationship with PMS acceptance is statistically significant (p-value<0.003). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises because Clan and Hierarchy cultures have similar

mean results (29.00, 28.14) and a strong correlation (0.851) (Pallant, 2007, p. 150)[2]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:8 reveals the results of the four IVs and the DV(The acceptance of PMS) in Libyan universities. The results show that two of the IVs contributed significantly to the model. Adhocracy culture is (B) = 023, t = -1.809 and p < 0.075, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.048) and (0.002). Hierarchy culture is (B) = -0.021, t = -3.474 and p< 0.001, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.033) and (0.009). Market culture was not significant in this model.

Table 7:8 Linear Regression Model for Organisational Culture in Libyan Universities

Model	**Unstandardised Coefficients**		**Standardised Coefficients**	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	5.583	0.629		8.876	0.000	4.326	6.841		
Adhocracy	-0.023	0.013	-0.232	-1.809	0.075	-0.048	0.002	0.804	1.244
Market	-0.021	0.015	-0.214	-1.399	0.167	-0.052	0.009	0.566	1.768
Hierarchy	-0.021	0.006	-0.541	-3.474	0.001	-0.033	-0.009	0.544	1.837

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002).

Table 7:9 shows that the value of R square is .180 (18%); this is the explained variance in the DV PMS by organisational culture traits. The value of R= .525 shows the model to be fit and is an acceptable value for acceptance of a model.

[2] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:9 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.425[a]	0.180	0.141	0.428

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:10 shows that the F statistic is significant at .006, which shows the fitness of the model. Therefore organisational culture is a strong predictor of the acceptance of PMS.

Table 7:10 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.504	3	0.835	4.549	0.006[b]
	Residual	11.377	62	0.184		
	Total	13.881	65			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.2.1.1 Influence of Organisational Culture on (PMS) acceptance in Libyan Public Universities

Table 7:11 represents the current dominate culture type for the Libyan public universities. The dominant organisational culture type for Libyan public universities is Hierarchy culture followed by Adhocracy culture; these are followed by Clan and Market cultures. It can be noted that the difference in means between Hierarchy culture and Adhocracy culture is high (38.53, 22.50).

Table 7:11 The Dominant Culture Type for the Libyan Public Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Public Universities	29	Clan	20.16	0.073	**Hierarchy**	
		Adhocracy	22.50	0.381		
		Market	19.20	0.393		

		Hierarchy	**38.53**	0.107		

The correlation between the four IVs and the DV, PMS acceptance in Libyan public universities, is described in Table 7:12. The Hierarchy culture variable was dominant in public universities and has a negative correlation impact on PMS, but it is not significant (with p-value = 0.107). Clan variable has a positive correlation impact on PMS with a value of 0.258 and there is no significance of relations (p-value = 0.088). On the other hand, the Adhocracy variable has a low positive correlation impact on the PMS with a value of 0.059; it has no significance of relations at (p-value = 0.381) associated with PMS acceptance. Market culture has a low positive correlation of 0.053 and is not significant with (p-value = 0.393).

Table 7:12 Correlations and Significant Culture in Libyan Public Universities

Category		**PMS acceptance**	**Clan culture**	**Adhocracy culture**	**Market culture**	**Hierarchy culture**
PMS acceptance	Pearson	1	0.258	0.059	0.053	-0.238
	Sig. (2-tailed)		0.145	0.762	0.787	0.214
	N (Public	29	29	29	29	29

The correlation matrix shows that although Hierarchy culture shows a negative correlation (-0.360) with PMS acceptance, its relationship with PMS acceptance is statistically significant (p-value<0.003). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises because Clan and Hierarchy cultures have a strong correlation (0.715) (see appendix F) (Pallant, 2007, p. 150)[3]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:13 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and DV (PMS acceptance) in Libyan universities. The results show that two of the IVs contributed significantly to the

[3] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

model. Adhocracy culture is (B) = 022, t = -0.958 and p < 0.347, the confidence level is 95%, and the actual value of B in the population lies somewhere between (0.070) and (0.025). Market culture is (B) = -0.015, t = -0.618 and p< 0.542, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.063) and (0.034). Hierarchy culture is (B) = -0.020, t = -1.566 and p< 0.130, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.046) and (0.006). None of the cultures (Hierarchy culture, Market culture and Adhocracy) were significant in this model.

Table 7:13 Linear Regression Model for Organisational Culture in Libyan Public Universities

Model	**Unstandardised Coefficients**		**Standardised Coefficients**	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	5.362	1.203		4.456	.000	2.884	7.839		
Adhocracy	-.022	.023	-.270	-.958	.347	-.070	.025	.457	2.19
Market	-.015	.024	-.139	-.618	.542	-.063	.034	.712	1.40
Hierarchy	-.020	.013	-.494	-1.566	.130	-.046	.006	.364	2.74

a- Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002).

Table 7:14 show that the value of R square is 0.094 (9.4%); this is the explained variance in the DV, PMS, by organisational culture traits. The value of R= 0.307 shows the model is fit and is quite an acceptable value for acceptance of a model.

Table 7:14 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.307[a]	0.094	-0.014	0.450

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:15 shows that the F statistic is significant at .006, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS acceptance.

Table 7:15 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.526	3	.175	.867	.471[b]
	Residual	5.052	25	.202		
	Total	5.578	28			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.2.1.2 Influence of Organisational Culture on (PMS) acceptance in Libyan Private Universities

Table 7:16 describes the organisational culture dominant in Libyan private universities and the significance of four organisational culture types of Clan, Adhocracy, Market and Hierarchy Cultures. It can be noted from the same table that although the dominant cultures in Libyan Private Universities were Clan culture, none of the organisational culture types were significant associated with PMS acceptance.

Table 7:16 Dominant and Significant Organisational Cultures in Libyan Private Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
PMS acceptance	37	**Clan**	**34.39**	0.224	**Clan**	None of OC type is significant
		Adhocracy	21.37	0.254		
		Market	22.70	0.371		
		Hierarchy	21.53	0.470		

The correlation between the four IVs and the DV, PMS acceptance, in Libyan private universities is described in Table 7:17. Clan culture variable was dominant and has a negative correlation impact on PMS; also, it is significant (with p-value = .003). The Clan culture variable has a good positive correlation impact on PMS with a value of 0.407 and there is a high significance of relations at (p-value = .001). On the other hand, the Adhocracy variable has a low negative correlation impact on PMS with a value of -0.065; it has a low significance of relations at (p-value = .603) associated with PMS acceptance. Market culture has a low positive correlation of 0.137 and is not significant with (p-value = .271).

Table 7:17 Correlations and Significant Culture in Libyan Private Universities

Category		PMS acceptance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS acceptance	Pearson	1	0.129	-0.112	-0.056	0.013
	Sig. (2-tailed)		0.448	0.508	0.742	0.940
	N (Public	37	37	37	37	37

The correlation matrix shows that although Hierarchy culture has a negative correlation (-0.360) with PMS acceptance, its relationship with PMS acceptance is statistically significant (p-value<0.003). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have similar mean

results (29.00, 28.14) and a strong correlation (0.851) (Pallant, 2007, p. 150)[4]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:17 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and DV (PMS acceptance) in Libyan universities. The results show that two of the IVs contributed significantly to the model. Adhocracy culture is (B) = 023, t = -1.809 and p < 0.075, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.048) and (0.002). Hierarchy culture is (B) = -0.021, t = -3.474 and p< 0.001, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.033) and (0.009). Market culture was not significant in this model.

Table 7:17 Linear Regression Model for Organisational Culture in Libyan Universities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	5.583	0.629		8.876	0.000	4.326	6.841		
Adhocracy	-0.023	0.013	-0.232	-1.809	0.075	-0.048	0.002	0.804	1.244
Market	-0.021	0.015	-0.214	-1.399	0.167	-0.052	0.009	0.566	1.768
Hierarchy	-0.021	0.006	-0.541	-3.474	0.001	-0.033	-0.009	0.544	1.837

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002).

[4] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:18 shows that the values of R square is .180 (18%); this is the explained variance in the DV, PMS, by organisational culture traits. The value of R= .525, which shows that the model fit and it is quite an acceptable value for the acceptance of a model.

Table 7:18 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.425[a]	0.180	0.141	0.428

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:19 shows that the F statistic is significant at .006, which shows the fitness of the model. Therefore organisational culture is a strong predictor of performance measurement system acceptance.

Table 7:19 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.504	3	0.835	4.549	0.006[b]
	Residual	11.377	62	0.184		
	Total	13.881	65			

7.2.2 Influence of Organisational Culture on PMS acceptance for Higher Institutions in Libya

Table 7:20 describes the organisational culture which is dominant in higher institutions in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy. It can be noted from Table 7:20 that the dominant culture in higher institutions in Libya was Clan culture followed by Hierarchy culture. Adhocracy and Market cultures have a lower mean compared to Clan and Hierarchy cultures. On the other hand, the four types of cultures (Clan, Adhocracy, Market, and Hierarchy) were highly significantly associated with PMS acceptance.

Table 7:20 Dominant and Significant Organisational Cultures for Higher Institutions in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
PMS acceptance	146	Hierarchy	29.27	0.000	**Clan**	Hierarchy
		Clan	**30.26**	0.000		Adhocracy
		Adhocracy	21.49	0.000		**Clan**
		Market	18.80	0.003		Market

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV, PMS acceptance, in Higher Institutions in Libya is described in Table 7:21. The four organisational culture types of Clan, Adhocracy, Market, and Hierarchy have similar correlation impact on PMS acceptance with value of (-.347, .328, -.229, .332) respectively. Clan and Market culture variables have negative correlation, while Adhocracy and Hierarchy have a positive correlation. It can be seen from the table that all the four culture types have high significance of relations at (p-value = .000, .000, .003, .000) and could impact on PMS acceptance in Libya higher institutions.

Table 7:21 Correlations and Significant Culture for Higher Institutions in Libya

Category		PMS acceptance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS acceptance	Pearson Correlation	1	-0.347**	0.328**	-0.229**	0.332**
	Sig. (2-tailed)		0.000	0.000	0.003	0.000
	N		164	164	164	164

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation matrix shows that although Clan culture shows a negative correlation (-0.347) with PMS acceptance, its relationship with PMS acceptance is statistically significant (p-value<0.000). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have similar

mean results (30.26, 29.27) and a strong correlation (0.507) (Pallant, 2007, p. 150)[5]. As a result, the Hierarchy culture variable will be excluded from the model in order to avoid any unstable results.

Table 7:22 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS acceptance) in Libyan higher institutions. The results show that three of the four IVs contributed significantly to the model. Adhocracy culture is (B) = 028, t = 2.752 and p < 0.007, the confidence level is 95% and the actual value of B in the population lies somewhere between (0.020) and (0.054). Market culture, (B) = -0.052, t = -5.859 and p < 0.000, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.069) and (-0.034). Clan culture is (B) = -0.030, t = -4.731 and p< 0.000, and the candidate is 95% confident that the actual value of B in the population lies somewhere between (-0.042) and (-0.017).

Table 7:22 Linear Regression Model for Organisational Culture for Higher Institutions in Libya

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	4.649	0.417		11.15	0.000	3.826	5.472		
Adhocracy	0.028	0.010	0.214	2.75	0.007	0.008	0.049	0.722	1.385
Market	-0.052	0.009	-0.417	-5.85	0.000	-0.069	-0.034	0.865	1.156
Clan	-0.030	0.006	-0.387	-4.73	0.000	-0.042	-0.017	0.655	1.526

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002).

[5] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:23 shows that the values of R square is 0.300 (30%); this is the explained variance in the DV, PMS, by organisational culture traits. The value of R= 0.548 shows that the model fit and the value is acceptable for the acceptance of the model.

Table 7:23 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.548[a]	0.300	0.287	0.580

a. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS acceptance

Table 7:24 shows that the F statistic is significant at .000, which shows the fitness of the model. Therefore organisational culture is a strong predictor of performance measurement system acceptance.

Table 7:24 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.038	3	7.679	22.833	0.000[b]
	Residual	53.812	160	0.336		
	Total	76.850	163			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

7.2.3 Influence of Organisational Culture on (PMS) Acceptance for Public Technical colleges in Libya

Table 7:25 describes the organisational culture which is dominant in Public Technical colleges in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy Cultures. It can be noted from the table that the dominant culture in Public Technical colleges in Libya was Hierarchy culture followed by Clan culture with high difference. Adhocracy and Market cultures have a lower mean compared to Hierarchy culture. On the other hand, none of the four types of cultures (Clan, Adhocracy, Market, and Hierarchy) were significantly associated with PMS acceptance.

Table 7:25 Dominant and Significant Organisational Cultures for Public Technical colleges in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
PMS acceptance	27	**Hierarchy**	33.67	0.583	**Hierarchy**	Not any one significant
		Clan	23.92	0.263		
		Adhocracy	20.90	0.432		
		Market	21.30	0.525		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV, PMS acceptance, in Technical colleges in Libya is described in Table 7:26. The four organisational culture types of Clan, Adhocracy, Market, and Hierarchy have similar correlation impacts on PMS acceptance with a value of (-.347, .328, -.229, .332) respectively. The Clan and Market culture variables have negative correlation, while Adhocracy and Hierarchy have a positive correlation. It can be seen from the table that all the four culture types have a high significance of relations at (p-value = .000, .000, .003, .000), and could impact on PMS acceptance in Libya higher institutions.

Table 7:26 Correlations and Significant Culture for Public Technical colleges in Libya

Category		PMS acceptance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS acceptance	Pearson Correlation	1	-0.171	0.072	0.024	0.110
	Sig. (2-tailed)		0.395	0.722	0.905	0.583
	N		27	27	27	27

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix shows that although Clan culture shows a negative correlation (-0.347) with PMS acceptance, its relationship with PMS acceptance is statistically significant (p-value<0.000). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have similar

mean results (30.26, 29.27) and a strong correlation (0.507) (Pallant, 2007, p. 150)[6]. As a result, the Hierarchy culture variable will be excluded from the model in order to avoid any unstable results.

Table 7:27 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS acceptance) in Libyan higher institutions. The results of the IVs and the DV (PMS use) in the technical colleges in Libya show that none of the IVs contributed significantly to the model.

Table 7:27 Linear Regression Model for Organisational Culture for Public Technical colleges in Libya

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	3.968	0.588		6.749	0.000	2.752	5.184		
Adhocracy	0.020	0.025	0.188	0.799	0.432	-0.031	0.071	0.741	1.350
Market	-0.013	0.020	-0.167	-0.646	0.525	-0.055	0.029	0.613	1.630
Clan	-0.013	0.011	-0.291	-1.148	0.263	-0.037	0.011	00..638	1.568

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:28 shows that the value of R square is 0.059 (5.9%); this is the explained variance in the DV (PMS) by organisational culture traits. The value of R= 0.521, which shows that the model is fit and this is an acceptable value for the acceptance of the model.

[6] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:28 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.243[a]	0.059	-0.064	0.521

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS acceptance

Table 7:29 shows that the F statistic is not significant at .700, which shows the fitness of the model. Therefore, organisational culture is a weak predictor of PMS acceptance.

Table 7:29 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.390	3	.130	.479	.700[b]
	Residual	6.244	23	.271		
	Total	6.634	26			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

7.3 Influence of Organisational Culture on Performance Measurement Systems Importance in Libyan Higher Education

Organisational culture dominant types are described in Table 7:30. This table includes Libyan higher education, Libyan universities (Public & Private), Libyan higher institutions and technical colleges. It can be noted from Table 7:30 that the dominant culture in Libyan higher education, public universities and technical colleges was Hierarchy culture; while the higher institutions and private universities were dominated by Clan culture. On the other hand, none of the four cultures types (Clan, Adhocracy, Market, and Hierarchy) were significant when associated with PMS's importance in Libyan higher education, higher institutions and technical colleges, while Adhocracy culture was significantly associated with PMS's importance in Libyan public universities with values of (p-value= 0.052). In addition, Market culture was significantly associated with PMS's importance in Libyan private universities.

Table 7:30 Dominant and Significant Organisational Cultures in Libyan Higher Education

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Libyan Higher Education	257	Clan	29.05	0.897	**Hierarchy Clan**	Not any one significant
		Adhocracy	21.53	0.208		
		Market	19.67	0.967		
		Hierarchy	**29.66**	0.566		

Table 7:31 describes the correlation and significance between the four IVs and the depended variable, PMS's importance, in Libyan higher education in general in its branches in particular. In the Libyan higher education sector there is a low correlation between PMS's importance and all the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy. Also, none of the four culture types were significantly associated with PMS's importance.

Table 7:31 Correlations and Significant Culture in Libyan Higher Education

Category		PMS importance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS importance	Pearson Correlation	1	-0.031	0.086	0.012	-0.036
	Sig. (2-tailed)		0.618	0.169	0.851	0.566
	N (Libyan Higher Education)	257	257	257	257	257

By using linear regression analysis, Hierarchy and Clan cultures were found to a have high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have similar mean results and a strong correlation (Pallant, 2007, p. 150). As a result, the culture Clan variable will be excluded from the models of Libyan higher education in order to avoid any unstable results as shown in Table 7:32.

Table 7:32 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and DV (PMS's importance) in Libyan higher education. The results show that none of the IVs contributed significantly to the model.

Table 7:32 Linear Regression Model for Organisational Culture in Libyan Higher Education

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF
(Constant)	2.404	0.328		7.33	0.000	1.758	3.050		
Adhocracy	0.037	0.008	0.275	4.38	0.000	0.020	0.054	0.923	1.083
Market	-0.001	0.008	-0.005	-0.06	0.945	-0.017	0.015	0.836	1.197
Hierarchy	0.013	0.005	0.189	2.78	0.006	0.004	0.023	0.790	1.266

a. Dependent Variable: PMS acceptance

b. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

As shown in Table 7:33, the value of R square in Libyan higher education is 0.008 (0.8%); this is the explained variance in the DV (PMS's importance) by organisational culture traits (Hierarchy culture, Adhocracy culture, Market culture). As the value of R= 0.087, the model is fit and the value low enough for the model to be important.

Table 7:33 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.087[a]	0.008	-0.004	0.600

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS importance

Table 7:34 shows that the F statistic is not significant at 0.568, which shows the fitness of the model. Therefore organisational culture is not a strong predictor of the importance of PMS.

Table 7:34 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.699	3	0.233	0.647	0.586[b]
	Residual	91.147	253	0.360		
	Total	91.846	256			

a. Dependent Variable: PMS Importance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.3.1 Influence of Organisational Culture on PMS's importance in Libyan Universities

Table 7:35 represents the current dominate culture type for the Libyan universities. The dominant organisational culture type for Libyan universities is Hierarchy culture followed by Clan; this is followed by Adhocracy and Market cultures. It can be noted that the difference in means between Hierarchy culture and Clan culture is very small (29.00, 28.14).

Table 7:35 Dominant and Significant Organisational Cultures in Libyan Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Libyan Universities	66	Clan	28.14	0.347	**Hierarchy**	**Hierarchy** Market
		Adhocracy	21.87	0.483		
		Market	21.16	0.005		
		Hierarchy	**29.00**	0.040		

It can be noted from Table 7:36 that in Libyan universities there is a low correlation and no significance between PMS's importance and Clan and Adhocracy cultures, while there is positive correlation, with a value of (0.339) between Market culture and PMS's importance with high significant relationship at (p-value= 0.005), which could impact on PMS's importance in Libyan universities. Also, there is a negative correlation with value (-0.253) between Hierarchy culture and

PMS's importance at (p-value= 0.040).

Table 7:36 Correlations and Significant Culture in Libyan Universities

Category		PMS Importance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Importance	Pearson Correlation	1	0.117	0.088	0.339**	-0.253*
	Sig. (2-tailed)		0.347	0.483	0.005	0.040
	N		66	66	66	66

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7:37 reveals the results of the IVs and the DV (PMS's importance) in Libyan universities. The results show that one of the IVs contributed significantly to the model. Market culture is (B) = 034, t = 2.250 and p < 0.028, and the candidate is 95% confident that the actual value of B in the population lies somewhere between (0.004) and (0.064).

Table 7:37 Linear Regression Model for Organisational Culture in Libyan Universities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	3.193	0.624		5.119	0.000	1.946	4.439		
Adhocracy	0.013	0.013	0.140	1.061	0.293	-0.012	0.038	0.804	1.244
Market	0.034	0.015	0.353	2.250	0.028	0.004	0.064	0.566	1.768
Hierarchy	0.000	0.006	-0.013	-0.083	0.934	-0.012	0.011	0.544	1.837

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002).

Table 7:38 shows that the value of R square is 0.138 (13.8%); this is the explained variance in the DV PMS by organisational culture traits. The value of R= .368, which shows that the model is fit, and the value is quite acceptable for the model to be important.

Table 7:38 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.368[a]	0.136	0.094	0.425

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:39 shows that the F statistic is significant at .006, which shows the fitness of the model. Therefore organisational culture is a strong predictor of performance measurement system acceptance.

Table 7:39 ANOVA for Libyan Universities

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.754	3	0.585	3.241	0.028[b]
	Residual	11.184	62	0.180		
	Total	12.938	65			

a. Dependent Variable: PMS Importance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.3.1.1 Influence of Organisational Culture on (PMS) Importance in Libyan Public Universities

Table 7:40 represents the current dominate culture type for the Libyan public universities. The dominant organisational culture type for Libyan public universities is Hierarchy culture followed by Adhocracy culture; this is followed by Clan and Market cultures. It can be noted that the difference in means between Hierarchy culture and Adhocracy culture is high (38.53, 22.50).

Table 7:40 The Dominant Culture Type for the Libyan Public Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Public Universities	29	Clan	20.16	0.427	**Hierarchy**	Adhocracy
		Adhocracy	22.50	0.052		
		Market	19.20	0.088		
		Hierarchy	**38.53**	0.092		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the dependant variable (PMS's importance) in Libyan public universities is described in Table 7:41. The Hierarchy culture variable was dominant in public universities and has a negative correlation impact on PMS but it is not significant. In addition, all four organisational culture types of Clan, Adhocracy, Market, and Hierarchy were not significant when associated with the importance of PMS.

Table 7:41 Correlations and Significant Culture in Libyan Public universities

Category		PMS Importance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Importance	Pearson Correlation	1	0.001	0.308	0.258	-0.254
	Sig. (2-tailed)		0.996	0.104	0.176	0.183
	N (Public Universities)	29	29	29	29	29

The correlation matrix shows that although Hierarchy culture shows a negative correlation (0.254) with PMS's importance, its relationship with PMS's importance is statistically not significant (p-value<0.183). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a

strong correlation (0.715) (see appendix F) (Pallant, 2007, p. 150)[7]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:42 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS acceptance) in Libyan public universities. The results show that none of the IVs contributed significantly to the model. None of the cultures (Hierarchy culture, Market culture and Adhocracy) were significant in this model.

Table 7:42 Linear Regression Model for Organisational Culture in Libyan Public Universities

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	2.545	1.322		1.925	.066	-.178	5.268		
Adhocracy culture	.033	.025	.353	1.293	.208	-.019	.085	.457	2.190
Market culture	.031	.026	.262	1.195	.243	-.022	.084	.712	1.404
Hierarchy culture	.005	.014	.118	.386	.703	-.023	.034	.364	2.746

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:43 shows that the value of R square is 0.146 (14.6%); this is the explained variance in the DV (PMS) by organisational culture traits. The value of R= 0.383 shows that the model is fit, and the value is quite acceptable for acceptance of a model.

Table 7:43 Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.383[a]	0.146	0.044	0.494

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

[7] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

b. Dependent Variable: PMS Importance

Table 7:44 shows that the F statistic is not significant at 0.258, which shows the fitness of the model. Therefore organisational culture is a strong predictor of performance measurement system importance.

Table 7:44 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.046	3	.349	1.430	.258[b]
	Residual	6.099	25	.244		
	Total	7.146	28			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.3.1.2 Influence of Organisational Culture on (PMS) Importance in Libyan Private Universities

Table 7:45 describes the organisational culture dominant in Libyan private universities and the significance of four organisational culture types of Clan, Adhocracy, Market and Hierarchy. It can be noted from the same table that the dominant culture in Libyan private universities is Clan culture. On the other hand, the Market type was significantly associated with PMS's importance with (p-value= 0.055).

Table 7:45 Dominant and Significant Organisational Cultures in Libyan Private Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Private Universities	37	**Clan**	**34.39**	0.129	**Clan**	Market
		Adhocracy	21.37	0.368		
		Market	22.70	0.055		
		Hierarchy	21.53	0.632		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the dependant variable (PMS acceptance) in Libyan private universities is described in Table 7:46. The Clan culture variable was dominant and has a negative correlation impact on PMS that is not significant. On the other hand, the Market variable has a good positive correlation impact on PMS with a value of 0.318 and it has a low significance of relation at (p-value = .055) associated with PMS's importance.

Table 7:46 Correlations and Significant Culture in Libyan Private Universities

Category		**Clan culture**	**Adhocracy culture**	**Market culture**	**Hierarchy culture**
PMS importance	Pearson Correlation	-0.254	-0.152	0.318	0.081
	Sig. (2-tailed)	0.129	0.368	0.055	0.632
	N	37	37	37	37

The correlation matrix shows that although Hierarchy culture shows a negative correlation (-0.360) with PMS acceptance, and that its relationship with PMS acceptance is statistically significant (p-value<0.003). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a strong correlation (0.715) (Pallant, 2007, p. 150)[8]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:47 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS's importance) in Libyan universities. The results show that Clan culture contributed significantly to the model. Clan culture is (B) = 030, t = -2.171 and p < 0.037, and the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.058) and (0.002).

[8] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:47 Linear Regression Model for Organisational Culture in Libyan Universities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	5.243	.900		5.823	.000	3.411	7.075		
Clan	-.030	.014	-.381	-2.171	.037	-.058	-.002	.774	1.292
Adhocracy	-.021	.018	-.223	-1.170	.250	-.058	.016	.654	1.529
Market	.023	.015	.262	1.540	.133	-.007	.053	.826	1.211

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:48 shows that the value of R square is .214 (21.4%); this is the explained variance in the DV (PMS) by organisational culture traits. The value of R= .463 shows that the model is fit, and the value is quite acceptable for the acceptance of the model.

Table 7:48 Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.463[a]	.214	.142	.351

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

Table 7:49 shows that the F statistic is significant at .045, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS's importance.

Table 7:49 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.108	3	.369	2.994	.045[b]
	Residual	4.071	33	.123		
	Total	5.179	36			

7.3.2 Influence of Organisational Culture on PMS's importance for Higher Institutions in Libya

Table 7:50 describes the organisational culture which is dominant in higher institutions in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy. It can be noted from Table 7:50 that the dominant culture in higher institutions in Libya was Clan culture followed by Hierarchy culture. Adhocracy and Market cultures have a lower mean compared to Clan and Hierarchy cultures. On the other hand, none of the four cultures types (Clan, Adhocracy, Market, and Hierarchy) were significant when associated with PMS's importance in higher institutions.

Table 7:50 Dominant and Significant Organisational Cultures for Higher Institutions in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Higher Institutions	146	Hierarchy	29.27	0.228	**Clan**	Hierarchy
		Clan	**30.26**	0.146		Adhocracy
		Adhocracy	21.49	0.293		**Clan**
		Market	18.80	0.446		Market

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV (PMS acceptance) in Higher Institutions in Libya is described in Table 7:51. In Libyan higher institutions there is a low correlation between PMS's importance and all four

organisational culture types of Clan, Adhocracy, Market, and Hierarchy. Also, none of the four types of cultures were significantly associated with PMS's importance.

Table 7:51 Correlations and Significant Culture for Higher Institutions in Libya

Category		PMS importance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS importance	Pearson Correlation	1	-0.095	0.085	-0.097	0.085
	Sig. (2-tailed)		0.228	0.281	0.216	0.279
	N		164	164	164	164

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

By using linear regression analysis, Hierarchy and Clan cultures were found to a have high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a similar mean results and a strong correlation (Pallant, 2007, p. 150). As a result, the culture Hierarchy variable will be excluded from the models of higher institutions in order to avoid any unstable results as shown in Table 7:52.

Table 7:52 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS's importance) in Libyan higher education. The results show that none of the IVs contributed significantly to the model.

Table 7:52 Linear Regression Model for Organisational Culture for Higher Institutions in Libya

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF[a]
(Constant)	4.340	0.454		9.565	0.000	3.444	5.236		
Clan culture	-0.009	0.007	-0.123	-1.279	0.203	-0.022	0.005	0.655	1.526
Adhocracy culture	0.006	0.011	0.053	0.578	0.564	-0.016	0.029	0.722	1.385

Market culture	-0.018	0.010	-0.154	-1.835	0.068	-0.037	0.001	0.865	1.156

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

It can be seen from 7:53 that in Libyan higher institutions the R square is 0.031 (3.1%); this is the explained variance in the DV (PMS's importance) by organisational culture traits (Clan culture, Adhocracy culture, Market culture). As the value of R= 0.176 shows the model to be fit as this value is low enough for the acceptance of the model.

Table 7:53 Model Summary

Category	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Higher Institutions	1	0.176[a]	0.031	0.013	0.631

a. Predictors: (Constant), Clan culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Importance

Table 7:54 shows that the F statistic is not significant at 0.168, which shows the fitness of the model. Therefore organisational culture is not a strong predictor of PMS's importance.

Table 7:54 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.042	3	0.681	1.707	0.168[b]
	Residual	63.779	160	0.399		
	Total	65.820	163			

a. Dependent Variable: PMS Importance

b. Predictors: (Constant), Market culture, Adhocracy culture, Clan culture

7.3.3 Influence of Organisational Culture on PMS's importance for Public Technical colleges in Libya

Table 7:55 describes the organisational culture which is dominant in technical colleges in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy Cultures. It can be noted from Table 7:55 that the dominant culture in higher institutions in Libya was Hierarchy culture followed by Clan culture. Adhocracy and Market cultures have a lower mean compared to Clan and Hierarchy cultures.

On the other hand, none of the four cultures types (Clan, Adhocracy, Market, and Hierarchy) were significant when associated with PMS's importance in technical colleges.

Table 7:55 Dominant and Significant Organisational Cultures for Public Technical colleges in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Public Technical colleges	27	Clan	23.92	0.166	Hierarchy	Not any one significant
		Adhocracy	20.90	0.788		
		Market	21.30	0.402		
		Hierarchy	33.67	0.375		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV (PMS's importance) in technical colleges is also described in Table 7:56. There is one positive good correlation between PMS's importance and Clan culture with a value of (0.274), while Adhocracy culture has a low positive correlation with PMS's importance and a low negative correlation with Market and Hierarchy cultures. No culture type was significantly associated with PMS's importance.

Table 7:56 Correlations and Significant Culture for Public Technical colleges in Libya

Category		PMS Importance	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Importance	Pearson Correlation	1	0.274	0.054	-0.168	-0.178
	Sig. (2-tailed)		0.166	0.788	0.402	0.375
	N (Technical colleges)	27	27	27	27	27

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation matrix shows that although Hierarchy culture shows a negative correlation (-0.178) with PMS's importance, its relationship with PMS's importance is not statistically significant (p-value<0.375). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a strong correlation (0.715) (Pallant, 2007, p. 150)[9]. As a result, the Clan culture variable will be excluded from the model in order to avoid any unstable results.

Table 7:57 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS's importance) in technical colleges in Libya. The results show that none of the IVs contributed significantly to the model.

Table 7:57 Linear Regression Model for Organisational Culture for Public Technical colleges in Libya

Model	**Unstandardised Coefficients**		**Standardised Coefficients**	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	2.654	.987		2.689	.013	.612	4.695		
Adhocracy	.032	.031	.307	1.038	.310	-.032	.097	.072	.212
Market	.001	.017	.008	.038	.970	-.034	.035	.024	.008
Clan	.013	.011	.331	1.145	.264	-.011	.037	.110	.232

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:58 shows that the value of R square is 0.081 (8.1%); this is the explained variance in the DV (PMS) by organisational culture traits. The value of R= 0.285 shows the model to be fit and it is an acceptable value for the acceptance of the model.

[9] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:58 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.285[a]	0.081	-0.038	0.585

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS importance

Table 7:59 shows that the F statistic is not significant at 0.574, which shows the fitness of the model. Therefore organisational culture is not a strong predictor of PMS's importance

Table 7:59 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.698	3	0.233	0.679	0.574[b]
	Residual	7.884	23	0.343		
	Total	8.582	26			

a. Dependent Variable: PMS acceptance
b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

7.4 Influence of Organisational Culture on Performance Measurement Systems Use in Libyan Higher Education

Dominant organisational culture t types are described in Table 7:60; this table includes an overview of Libyan higher education in this regard. It can be noted from the table that the dominant culture in Libyan higher education was Hierarchy culture.

It can be noted from the same table that although the dominant culture in Libyan higher education was Hierarchy culture, Clan, Adhocracy and Market cultures were highly significant when associated with PMS use, but Hierarchy culture was less significant with 0.360 P-value.

Table 7:60 Dominant and Significant Organisational Cultures in Libyan Higher Education

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Libyan Higher Education	257	Clan	29.05	0.000	Hierarchy	Adhocracy Market Clan
		Adhocracy	21.53	0.000		
		Market	19.67	0.000		
		Hierarchy	29.66	0.360		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV (PMS use) in Libyan higher education- Universities, higher institutions and technical colleges - is described in Table 7:61. In the Libyan higher education sector there are different levels of correlation between PMS use IVs, and it can be noted that the highest level of correlation was between PMS use and Adhocracy culture with a positive value of (0.364). Also, three of the IVs (Clan, Adhocracy and Market) were significantly associated with PMS use.

Table 7:61 Correlations and Significant Culture in Libyan Higher Education

Category		**PMS Use**	**Clan culture**	**Adhocracy culture**	**Market culture**	**Hierarchy culture**
PMS Use	Pearson Correlation	1	-0.291**	0.364**	0.262**	-0.057
	Sig. (2-tailed)		0.000	0.000	0.000	0.360
	N (Libyan Higher Education)	257	257	257	257	257

By using linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises because Clan and Hierarchy cultures have similar mean results and a strong correlation (Pallant, 2007, p. 150). As a result, the Clan culture variable will be excluded from the models of Libyan higher education; the Hierarchy culture variable will be included because it is the dominant culture type. On the other hand, the Hierarchy culture will be excluded from the models of higher institutions in order to avoid any unstable results, while the Clan culture will be included because it is the dominant culture type as shown in Table 7:62. The same table reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS use) for Libyan higher education. The results show that three of the IVs contributed significantly to the model. Adhocracy culture is (B) = 063, t = 6.243 and $p < 0.000$, the confidence level is 95% and the actual value of B in the population lies somewhere between (0.043) and (0.083). Market culture is (B) = 0.043, t = 4.375 and $p< 0.000$, the confidence level is 95% and the actual value of B in the population lies somewhere between (0.023) and (0.062). Hierarchy culture is (B) = 0.014, t = 2.395 and $p< 0.017$, the confidence level is 95% and the actual value of B in the population lies somewhere between (0.002) and (0.025).

Table 7:62 Linear Regression Model for Organisational Culture in Libyan Higher Education

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Toleran ce	VIF
(Constant)	0.238	0.393		0.606	0.545	-0.536	1.011		
Adhocracy	0.063	0.010	0.366	6.243	0.000	0.043	0.083	0.923	1.083
Market	0.043	0.010	0.270	4.375	0.000	0.023	0.062	0.836	1.197
Hierarchy	0.014	0.006	0.152	2.395	0.017	0.002	0.025	0.790	1.266

a-Dependent Variable: PMS Use

b-Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

As shown in Table 7:63, the value of R square in Libyan higher education is 0.195 (19.5%); this is the explained variance in the DV (PMS's importance) by organisational culture traits (Hierarchy culture, Adhocracy culture, Market culture). As the value of R= 0.442 shows the model to be fit, it is a good value for the model for PMS's importance.

Table 7:63 Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.442[a]	0.195	0.186	0.784

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

Table 7:64 shows that the F statistic is significant at 0.000, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS use.

Table 7:64 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.742	3	12.581	20.490	0.000[b]
	Residual	155.342	253	0.614		
	Total	193.083	256			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.4.1 Influence of Organisational Culture on PMS Use in Libyan Universities

Table 7:65 represents the current dominant culture type for the Libyan universities. The dominant organisational culture type for Libyan universities is Hierarchy culture followed by Clan culture; this is followed by Adhocracy and Market cultures. It can be noted that although in Libyan universities Hierarchy culture was dominant Hierarchy and Clan were significant when associated with PMS use.

Table 7:65 Dominant and Significant Organisational Cultures in Libyan Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Libyan Universities	66	Clan	28.14	0.015	**Hierarchy**	**Hierarchy** Clan
		Adhocracy	21.87	0.668		
		Market	21.16	0.456		
		Hierarchy	**29.00**	0.018		

Table 7:66 also presents the results obtained from Libyan universities which show that there is a negative correlation with a value of (-0.292) between PMS use and Hierarchy culture at (p-value= 0.018). In addition, there is a positive correlation with value of (0.298) between Clan culture and PMS use, and it is a highly significant relationship at (p-value= 0.015), which shows its impact on PMS use in Libya universities.

Table 7:66 Correlations and Significant Culture in Libyan Universities

Category		PMS Use	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Use	Pearson Correlation	1	0.298*	-0.054	0.093	-0.292*
	Sig. (2-tailed)		0.015	0.668	0.456	0.018
	N		66	66	66	66

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table 7:67 reveals the results of the IVs and the DV (the acceptance of PMS) higher institutions in Libya. The results show that two of the four IVs contributed significantly to the model. Adhocracy culture is (B) = 071, t = 5.300 and p < 0.000, and the candidate is 95% confident that the actual value of B in the population lies somewhere between (0.045) and (0.098). Clan culture is (B) = -0.019, t = -2.313 and p< 0.022, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.035) and (-0.003). Market culture is not significant in this model.

Table 7:67 Linear Regression Model for Organisational Culture in Libyan Universities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	1.428	0.546		2.613	0.010	0.349	2.507		
Adhocracv	0.071	0.013	0.408	5.300	0.000	0.045	0.098	0.722	1.38
Market	0.014	0.012	0.083	1.177	0.241	-0.009	0.037	0.865	1.15
Hierarchy	-0.019	0.008	-0.187	-2.313	0.022	-0.035	-0.003	0.655	1.52

b. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:68 shows that the value of R square for Libyan universities is 0.136 (13.6 %); the value of R= 0.368 shows that the model is fit and it is quite an acceptable value for accepting the model.

Table 7:68 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.368[a]	0.136	0.094	0.425

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

Table 7:69 shows that the F statistic is significant at .006, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS acceptance.

Table 7:69 ANOVA for Libyan Universities

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.742	3	12.581	20.490	0.000[b]
	Residual	155.342	253	0.614		
	Total	193.083	256			

a. Dependent Variable: PMS Importance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.4.1.2 Influence of Organisational Culture on (PMS) Use in Libyan Public Universities

Table 7:70 represents the current dominant culture type for the Libyan public universities. The dominant organisational culture type for Libyan public universities is Hierarchy culture followed by Adhocracy culture; these are followed by Clan and Market cultures. It can be noted that the difference in means between Hierarchy culture and Adhocracy culture is high (38.53, 22.50).

Table 7:70 The Dominant Culture Type for the Libyan Public Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Public Universities	29	Clan	20.16	0.409	**Hierarchy**	Not any one significant
		Adhocracy	22.50	0.269		
		Market	19.20	0.385		
		Hierarchy	**38.53**	0.150		

The correlation between the four IVs and the dependant variable (PMS's use) in Libyan public universities is described in Table 7:71. The Hierarchy culture variable was dominant in public universities and has a negative correlation impact on PMS but it is not significant. In addition, all four organisational culture types of Clan, Adhocracy, Market, and Hierarchy were not significant associated with the use of PMS.

Table 7:71 Correlations and Significant Culture in Libyan Public universities

Category		PMS Use	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Use	Pearson Correlation	1	0.215	0.119	0.057	-0.199
	Sig. (2-tailed)		0.263	0.538	0.770	0.301
	N (Public Universities)	29	29	29	29	29

The correlation matrix shows that although Hierarchy culture shows a negative correlation (-0.199) with PMS use, its relationship with PMS use is statistically not significant (p-value<0.150). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E). As a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a strong correlation

(0.715) (see appendix F) (Pallant, 2007, p. 150)[10]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

Table 7:72 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS use) in Libyan public universities. The results show that none of the IVs contributed significantly to the model. All cultures (Hierarchy culture, Market culture and Adhocracy) were not significant in this model.

Table 7:72 Linear Regression Model for Organisational Culture in Libyan Public Universities

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	3.905	1.631		2.394	0.024	0.546	7.265		
Adhocracy culture	-0.007	0.031	-0.066	-0.229	0.821	-0.072	0.057	0.457	2.190
Market culture	-0.009	0.032	-0.062	-0.269	0.790	-0.074	0.057	0.712	1.404
Hierarchy culture	-0.014	0.017	-0.275	-0.849	0.404	-0.049	0.021	0.364	2.746

a-Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:73 shows that the value of R square is 0.043 (4.3%); this is the explained variance in the DV, PMS by organisational culture traits. The value of R= 0.208 shows that the model is fit, and the value is quite acceptable for the acceptance of a model.

[10] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:73 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.208[a]	0.043	-0.071	0.609

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

Table 7:74 shows that the F statistic is not significant at 0.770, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS use.

Table 7:74 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.421	3	0.140	0.377	0.770[b]
	Residual	9.286	25	0.371		
	Total	9.707	28			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

7.4.1.3 Influence of Organisational Culture on (PMS) Use in Libyan Private Universities

Table 7:75 describes the organisational culture dominant in Libyan private universities and the significance of four organisational culture types of Clan, Adhocracy, Market and Hierarchy. It can be noted from the same table that although the dominant culture in Libyan Private universities is Clan culture, Hierarchy organisational culture type is significant when associated with PMS use with (p-value= 0.002).

Table 7:75 Dominant and Significant Organisational Cultures in Libyan Private Universities

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Private Universities	37	**Clan**	**34.39**	0.101	Clan	Hierarchy
		Adhocracy	21.37	0.190		
		Market	22.70	0.098		
		Hierarchy	21.53	0.002		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV (PMS use) in Libyan private universities is described in Table 7:76. The Clan culture variable was dominant and has a negative correlation impact on PMS; although it is not significant. On the other hand, the Hierarchy variable has a good positive correlation impact on PMS with a value of 0.470, and it has a significance of relations at (p-value = .003) associated with PMS use.

Table 7:76 Correlations and Significant Culture in Libyan Private Universities

Category		Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Use	Pearson Correlation	-0.215	-0.149	-0.218	0.470
	Sig. (2-tailed)	0.202	0.380	0.195	0.003
	N	37	37	37	37

The correlation matrix shows that although Clan culture shows a negative correlation (-0.215) with PMS use, its relationship with PMS use is statistically not significant (p-value<0.101). By using multiple linear regression analysis, Hierarchy and Clan cultures were found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a strong correlation (0.715) (Pallant, 2007, p. 150)[11]. As a result, this variable will be excluded from the model in order to avoid any unstable results.

[11] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Table 7:77 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS use) in Libyan universities. The results show that Clan culture contributed significantly to the model. Clan culture is (B) = 043, t = -2.370 and p < 0.024, the confidence level is 95% and the actual value of B in the population lies somewhere between (-0.084) and (0.005).

Table 7:77 Linear Regression Model for Organisational Culture in Libyan Universities

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	7.370	1.183		6.231	.000	4.964	9.777		
Clan	-.043	.018	-.408	-2.370	.024	-.080	-.006	.774	1.292
Adhocracy	-.063	.024	-.490	-2.616	.013	-.111	-.014	.654	1.529
Market culture	-.044	.019	-.379	-2.273	.030	-.084	-.005	.826	1.211

a.Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:78 shows that the value of R square is 0.243 (24.3%); this is the explained variance in the DV (PMS) by organisational culture traits. The value of R= 0.493 which shows that the model is fit, is quite acceptable for the acceptance of a model.

Table 7:78 Model Summary

Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.493[a]	0.243	0.174	0.461

a. Predictors: (Constant), Clan culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

Table 7:79 shows that the F statistic is significant at 0.025, which shows the fitness of the model. Therefore organisational culture is a strong predictor PMS use.

Table 7:79 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.254	3	.751	3.529	.025[b]
	Residual	7.026	33	.213		
	Total	9.281	36			

7.4.2 Influence of Organisational Culture on PMS Use for Higher Institutions in Libya

Table 7:80 describes the organisational culture which is dominant in higher institutions in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy. It can be noted from Table 7:80 that the dominant culture in higher institutions in Libya was Clan culture, followed by Hierarchy culture. Adhocracy and Market cultures have a lower mean compared to Clan and Hierarchy cultures.

On the other hand, three (Clan, Adhocracy, Market) of the four cultures types were significant when associated with PMS use in higher institutions.

Table 7:80 Dominant and Significant Organisational Cultures for Higher Institutions in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Higher Institutions	146	Hierarchy	29.27	0.000	**Clan**	**Clan**
		Clan	**30.26**	0.000		Adhocracy
		Adhocracy	21.49	0.002		Market
		Market	18.80	0.764		

As can be seen from Table 7:81 that there was a significant positive correlation between PMS use and Adhocracy culture in Libyan higher institutions with value of (0.524), while a negative correlation was found between PMS use and Clan culture with value of (-0.432) in Libyan higher institutions. Also, Market culture is significantly associated with PMS use with a positive correlation value of (0.239). On the other hand, Hierarchy culture type is not significantly associated with PMS use and has a low negative correlation value of (0.024) in Libyan higher institutions.

Table 7:81 Correlations and Significant Culture for Higher Institutions in Libya

Category		**PMS Use**	**Clan culture**	**Adhocracy culture**	**Market culture**	**Hierarchy culture**
PMS Use.	Pearson Correlation	1	-0.432**	0.524**	0.239**	-0.024
	Sig. (2-tailed)		0.000	0.000	0.002	0.764
	N		164	164	164	164

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

By using linear regression analysis, Hierarchy and Clan cultures were found to a have high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable as multicollinearity arises, because Clan and Hierarchy cultures have a similar mean results and a strong correlation (Pallant, 2007, p. 150). As a result, the Hierarchy culture variable will be excluded from the models of higher institutions in order to avoid any unstable results, as shown in Table 7:82.

Table 7:82 reveals the results of the IVs (Hierarchy, Adhocracy, Market and Clan cultures) and the DV (PMS use) in Libyan higher education. The results show that none of the IVs contributed significantly to the model.

Table 7:82 Linear Regression Model for Organisational Culture for Higher Institutions in Libya

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF[a]
(Constant)	1.428	0.546		2.613	0.010	0.349	2.507		
Adhocracy	0.071	0.013	0.408	5.300	0.000	0.045	0.098	0.722	1.385
Market	0.014	0.012	0.083	1.177	0.241	-0.009	0.037	0.865	1.156
Clan	-0.019	0.008	-0.187	-2.313	0.022	-0.035	-0.003	0.655	1.526

a.Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

It can be seen from Table 7:83 that in Libya higher institutions the R square is 0.315 (31.5%); this is the explained variance in the DV (PMS use) by organisational culture traits (Clan, Adhocracy, and Market). The value of R= 0.561 shows the model fit, as it is a low enough value for a model of PMS use.

Table 7:83 Model Summary

Category	**Model**	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
Higher Institutions	1	0.561[a]	0.315	0.302	0.760

a. Predictors: (Constant), Clan culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

Table 7:84 shows that the F statistic is highly significant at 0.000, which shows the fitness of the model. Therefore organisational culture is a strong predictor of PMS use.

Table 7:84 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.479	3	14.160	24.492	0.000[b]
	Residual	92.500	160	0.578		
	Total	134.978	163			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Market culture, Adhocracy culture, Clan culture

7.4.3 Influence of Organisational Culture on PMS Acceptance for Public Technical colleges in Libya

Table 7:85 describes the organisational culture which is dominant in technical colleges in Libya and the significance of the four organisational culture types of Clan, Adhocracy, Market, and Hierarchy Cultures. It can be noted from Table 7:85 that the dominant culture in technical colleges was Hierarchy culture, while the significant culture associated with PMS use with values of (p-value= 0.074) was Clan culture.

On the other hand, none of the four cultures types (Clan, Adhocracy, Market, and Hierarchy) were significant when associated with PMS use in technical colleges.

Table 7:85 Dominant and Significant Organisational Cultures for Public Technical colleges in Libya

Category	N	Culture	Mean	Sig	Dominant Culture	Significant Culture
Public Technical colleges	27	Clan	23.92	0.074	**Hierarchy**	Not any one significant
		Adhocracy	20.90	0.956		
		Market	21.30	0.216		
		Hierarchy	**33.67**	0.393		

The correlation between the IVs (four organisational culture types of Clan, Adhocracy, Market, and Hierarchy) and the DV (PMS use) in technical colleges is also described in Table 7:86. There is a good negative correlation between PMS use and Clan culture with a value of (0.349), and it has not a significantly relationship between PMS use and Clan culture with p-value= 0.074. Adhocracy culture has a low positive correlation (0.011) with PMS use, and a low negative correlation with Market and

Hierarchy cultures. Adhocracy, Market and Hierarchy cultures types were not significantly associated with PMS use.

Table 7:86 Correlations and Significant Culture for Public Technical colleges in Libya

Category		PMS Use	Clan culture	Adhocracy culture	Market culture	Hierarchy culture
PMS Use	Pearson Correlation	1	-0.349	0.011	0.246	0.171
	Sig. (2-tailed)		0.074	0.956	0.216	0.393
	N (Technical colleges)	27	27	27	27	27

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

By looking at the correlation matrix, although the Hierarchy culture shows a negative correlation (-0.178) with PMS importance, its relationship with PMS importance is not statistically significant (p-value<0.375). By using multiple linear regression analysis, the Hierarchy and Clan cultures are found to have a high variance inflation factor VIF (Appendix E), and as a result the estimated coefficients of the fitted model will be unstable multicollinearity arises because Clan and Hierarchy cultures have a strong correlation (0.715) (Pallant, 2007, p. 150)[12]. As a result, the Clan culture variable will be excluded from the model in order to avoid any unstable results.

Table 7:87 reveals the results of the IVs and the DV (PMS use) in the technical colleges in Libya. The results show that none of the IVs contributed significantly to the model.

Table 7:87 Linear Regression Model for Organisational Culture for Higher Institutions in Libya

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	B	Tolerance	VIF[a]
(Constant)	1.018	1.295		0.787	0.440	-1.660	3.697		
Adhocracy	0.029	0.041	0.198	0.699	0.492	-0.056	0.113	0.469	2.130

[12] If VIF value of above 10 in your own results, you should seriously consider removing one of the highly intercorrelated independent variables from the model.

Market	0.029	0.022	0.272	1.339	0.194	-0.016	0.075	0.911	1.097
Clan	0.020	0.015	0.375	1.349	0.191	-0.011	0.052	0.489	2.047

a. Variance inflation factor (VIF): an indicator of the effect the other explanatory variables have on the variance of a regression coefficient of a particular variable, given by the reciprocal of the square of the multiple correlation coefficient of the variable with the remaining variables (Everitt, 2002)

Table 7:88 shows that the value of R square is 0.133 (13.3%); this is the explained variance in the DV PMS by organisational culture traits. The value of R= 0.365 which shows the model to be fit, as the value is acceptable for use in the model.

Table 7:88 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.365[a]	0.133	0.020	0.684

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

Table 7:89 shows that the F statistic is not significant at 0.339, which shows the fitness of the model. Therefore organisational culture is not a strong predictor of PMS use.

Table 7:89 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.655	3	0.552	1.180	0.339[b]
	Residual	10.752	23	0.467		
	Total	12.407	26			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

7.5 Summary

This chapter has the presented questionnaire survey results, which included the influence of organisational culture types on the acceptance, importance and use of performance measurement systems. The purpose of this chapter was to explore the dominant type of organisational culture in Libyan higher education in general and in its branches in particular, on the basis of the type of higher education (such as universities, higher institutions and technical colleges) and ownership (private or public). In addition, the influential relationship of the four types of organisational culture on the acceptance, importance and use of performance measurement systems was found in the results. The data was analysed using SPSS version 20 and a descriptive analysis for Libyan higher education was conducted by using a multiple linear regression. The next chapter will discuss the findings and results of the quantitative and qualitative aspects of this research study.

Chapter 8: Discussion of Research main findings

8.1 Introduction

The main aim of this chapter is to discuss the key findings from the quantitative and qualitative analyses. It is structured into six sections: the first section is the introduction, and the second section provides key findings from the research survey. The third section reviews the research objectives of this study, Key findings in relation to the research objectives are discussed in section four, five and six. The fourth section discusses the results related to the acceptance, importance and use of performance measurement systems in Libyan higher education. The fifth section discusses the influence of the four types of organisational culture on the acceptance, importance and use of performance measurement systems. The sixth section discusses the organisational culture types that vary according to the differences in the job title and position and level of education.

The aim of this study is to provide a better understanding of the relationships between organisational culture and performance measurement systems developed for top management. A number of theoretical contributions and practical implications can be derived from the results. First of all, this study attempts to fill a part of the gap in the literature by identifying the different types of organisational culture within the Libyan higher education sector. Secondly, this study has produced results based on contingency theory in this sector, and its influence on the acceptance, importance and use of PMS, providing a theoretical contribution to this research by expanding the concept of organisational culture to answer the research question. Thirdly, this study is perhaps the first to compare three higher education types with regard to the acceptance, importance and use of performance measurement systems, and the four organisational culture variables. Fourthly, this study found that even in the same sector organisational culture types were different, when previous studies in Libyan context found that different sectors have the same organisational culture type. Finally, the study supports the contingency theory that there is no universally appropriate system applying equally to all organisations in all circumstances and the influence of organisational culture as a contingency with regard to the acceptance, importance and use of performance measurement systems acceptance, which can be different according to different circumstances.

From a theoretical point of view, this study extends prior literature on performance measurement systems that use a contingency approach and previous research on performance measurement systems (PMS). No other studies were found that incorporate organisational culture and PMS acceptance,

importance and use. This study examines the influence of organisational culture (by using the Cameron Quinn model) on the acceptance of PMS. Despite the knowledge evident from previous investigations, the relationships between organisational culture and the attributes of PMS have been overlooked in these studies. Without neglecting the importance of previously studied contingent factors (e.g., environmental uncertainty, strategy, size), it is important to see culture as an omnipresent factor that affects virtually all aspects of organisational interactions.

Understanding this contingent factor (organisational culture) is necessary to examine and understand PMS from a holistic perspective. Moreover, this is one of the few studies of performance measurement systems that have examined organisational culture while using a cross-sectional and large sample approach in the higher education sector.

8.2 Descriptive of the Survey Sample

The sample of this study consists of three types of Libyan higher education institutions (universities, higher institutions and technical collages). The participant lists covered the entire population of all groups (universities, higher institutions and technical collages) in Libyan higher education.

To have an overview about the survey findings, this section provides a summary of the demographic information obtained from the survey, which showed that the presidents and vice presidents of organisations comprised 37% of the respondents, and the chiefs/assistant chiefs/vice chiefs of administrative departments made up 10%. Others with different job titles and positions (such as a former employee in the financial department and a faculty member in the business school) were about 13%, and about 40% occupied senior accounting and financial management positions in their organisations (Chief/Assistant Chief/Vice Chief of Finance Department /Assistant/ Vice or Financial Controller). The results also revealed that (58%) of the respondents had Post-graduate qualifications (e.g. MSc, MBA, Ph.D.), and 26% had a Bachelor's degree. Rated third were holders of professional qualifications (13%), while the smallest group of 'others' (3%) included those with qualifications other than these. In addition, 35.8% of the respondents had –1 – 5 years' experience in the current job; this is a result of the new appointments made after the regime change in Libya in 2012. 33.9% had 6 – 10 years' experience with the current organisation and 26.8 % had more than 10 years' experience. The respondents were highly experienced in terms of how long they had been in their current organisation (10 years or more) as well as in accounting and finance in general.

The distribution of the sample population showed that 56.4 % of the organisations where the respondents worked were between 11-20 years old, 31.9% of them were more than 20 years old, 11.7 % were between 5-11 years old, while none of the organisations in question was less than 5 years old. As mentioned earlier in chapter five, Libyan higher education consists of three types of higher education institutions (universities, institutions and technical colleges). More than a half of Libyan higher education respondents (64%) were from the higher education institutions because the Libyan higher education sector has about 107 institutions, of which universities constitute 26% and technical colleges 11%. More than a half of the respondents (64%), who were from higher institutions, were dominated by Clan culture; Libyan higher education over all was dominated by Hierarchy culture.

8.3 Research Questions, Objectives and Discussion

The study adopted an exploratory research approach to understand the impact of four organisational culture types (Hierarchy, Clan, Adhocracy and Market) on the acceptance, importance and use of performance measurement systems (PMS) in Libyan higher education. The research questions and sub- questions arose from gaps existing in the literature concerning the relationships between organisational culture and PMS acceptance, their importance and use in Libyan higher education in general and in each type of Libyan higher education in particular. This leads us to the following main research question:

What influence does organisational culture have on the acceptance, importance and use of performance measurement systems in Libyan higher education?

This section reviews the research aim and related objectives and addresses the research questions and hypothesis. The study set out four specific aims and objectives as follows:

Objective 1: To identify the organisational culture types in Libyan higher education.

1- What types of organisational culture are dominant in Libya's higher education system?
2- What types of organisational performance are found in Libya's higher education system?

Objective 2: To identify the use of performance measurement systems in Libyan higher education.

3- To what extent are the performance measurement systems (financial, non-financial and advanced) acceptable in Libyan education system?

4- To what extent are the performance measurement systems considered important in Libyan education system?
5- To what extent are the performance measurement systems used in Libyan education system?

Objective 3: To investigate the role of organisational culture in the use of performance measurement systems in Libyan higher education.

6- What influence does organisational culture have on the acceptance of performance measurement systems (PMS) in Libyan higher education system?
7- What influence does organisational culture have on the importance of performance measurement systems (PMS) in Libyan higher education system?
8- What influence does organisational culture have on the use of performance measurement systems (PMS) in Libyan higher education system?
9- Do culture types differ for different job titles and positions and levels of education?

8.3.1 Research objective one: Organisational Culture Types

The first objective with the first two questions in this study was to investigate the organisational culture types that dominant in Libya's higher education system in general and in its branches in particular, depending on the type of higher education and ownership. To achieve this first objective, the organisational culture assessment instrument (OCAI) developed by Cameron and Quinn (1999, 2006) which is based on the Competing Values Framework (CVF) of Quinn and Rohrbaugh (1981), is used to describe and categorize types of cultures in Libyan higher education organisations.

From the results, the current dominant organisational culture type for the education sector in Libya is Hierarchy culture which scores the highest mean (as shown in table 8:1 below)

Table 8:1 The Dominating of Organisational Culture type in Libyan Higher Education

Culture Type	N	Mean	Std. Deviation	Rank
Clan culture	257	29.05	9.45	2
Adhocracy culture	257	21.53	5.02	3
Market culture	257	19.67	5.51	4
Hierarchy culture	**257**	**29.66**	**9.65**	**1**

The organisational performance for this type is characterised by stability and control with internal focus and integration, which appears on the lower left hand side in the Competing Values Framework (CVF), and this to answer question number two.

Table 8:2 Organisational Performance Type in Libyan Higher Education

Organisational Performance Type	N	Mean	Std. Deviation
Flexibility and Discretion	257	25.26	4.60
Stability and Control	**257**	**24.66**	**4.49**
Internal Focus and Integration	**257**	**29.33**	**3.97**
External Focus and Differentiation	257	20.60	3.99

Hierarchy is the dominant organisational culture type in Libyan higher education in general, Libyan public universities and Libyan Technical colleges (Table 8:3).

Table 8:3 Dominant Organisational Culture Type in Different Higher Education Organisations

Culture	**Private Universities**			**Public Universities**			**Higher institutions**			**Technical colleges**		
	N	**Mean**	**Rank**	**N**	**Mean**	**Rank**	**N**	**Mean**	**Rank**	**N**	**Mean**	**Rank**
Clan	**37**	**34.39**	**1**	29	20.16	3	164	30.26	**1**	27	23.92	2
Adhocracy	37	21.37	4	29	22.50	2	164	21.49	3	27	20.90	4
Market	37	22.70	2	29	19.20	4	164	18.80	4	27	21.30	3
Hierarchy	37	21.53	4	29	**38.53**	**1**	164	29.27	2	27	33.67	**1**
Dominant culture type	Clan			Hierarchy			Clan			Hierarchy		

The finding of the case study of the University of Tripoli found that the Hierarchy culture is the dominant organisational culture type (Table 8:4).

Table 8:4 Dominant Organisational Culture Type for University of Tripoli

Culture Type	N of Interviewees	%	Mean	Std. Deviation	Rank
Clan culture	0	0%	21.77	10.878	3
Adhocracy culture	1	12.5%	22.50	7.015	2
Market culture	0	0%	20.00	6.156	4
Hierarchy culture	**7**	**87.5%**	**35.73**	**19.187**	**1**
Total	**8**	**100%**			

Overall, all interviews answers were consistent with the hierarchy culture characteristics which state that the relationships between staff and employees are very formal. There are no or limited friendly relationships between the staff and the relationships are according to hierarchical cultural characteristics of their job positions in the organisation. In addition, the organisations follow the decisions, laws and regulations of the higher authority, such as the Ministry of Higher education.

These findings are consistent with the study of Twati & Gammack (2006), which explored the impact of organisational culture innovation on the acceptance of information systems. This study found that the organisational culture profiles of both the oil and gas and banking sectors of Libyan industry fit predominantly in the lower left quadrant, or the Hierarchy culture. Similarly, Zahari & Shurbagi (2012) studied the effect of organisational culture and the relationship between transformational leadership and job satisfaction in the petroleum sector of Libya and found that the Hierarchy culture type was the dominant culture in the Libyan Oil sector.

Even though Twati & Gammaack (2006) and Zahari & Shurbagi (2012) studied different sectors, their findings are consistent with this study, and this suggests that their studies and this study were in the same environment (Libyan environment), and that respondents' organisations shared values, belief, and assumptions and practices that shape and guide the members' attitudes and behaviour.

In addition (Parker & Bradley, 2000) in their study of the organisational culture in the public sector, found evidence from six organisations in the Queensland University that four out of six departments were dominated by a Hierarchy culture. Trivellas & Dargenidou (2009), in their study on a sample of faculty and administration members at the Technological Educational Institution of Larissa, found that the Hierarchy culture proved to be the most prevalent among administrative staff, while Clan and Hierarchy cultures dominated among faculty members.

The studies of (Parker & Bradley, 2000)and of Trivellas & Dargenidou (2009) were about education sector and they both found that the dominant organisational culture type was a Hierarchy culture, even

though their studies were in different countries. Their findings are consistent with this study, and this suggests that in the same sector, researchers could find the same results.
Cameron & Quinn (2011) in their research on hundreds of organisations have shown that Hierarchy and Clan cultures appear more frequently in organisations than Adhocracy or Market cultures. A Hierarchy culture is typical in governmental and well-established organisations with many levels of structure and large numbers of employees (K. Cameron & Quinn, 2011).

A Hierarchy culture focuses on the internal maintenance and strives for internal stability and control through the establishment of clear tasks and compliance with strict rules. It follows a formal relationship approach in which leaders have to be good organizer and coordinator. Great value to the economy, formality, rationality, order and obedience is given. Cameron and Quinn (1999, 2006) stated that government agencies fit very well in a Hierarchy culture, which confirms this study's findings. Moreover, organisations in a Hierarchy culture are characterised by a formalised and structured workplace—governed by formal rules, policies and procedures, with efficiency-minded leaders valuing coordination and smooth organisation—where stability, dependability, predictability and employment security are highlighted (Cameron and Quinn, 1999).

The findings of this study did not find measurable differences between Libyan public universities and Libyan Technical colleges. The researcher concludes that there are no great differences between these two different types of Libyan higher education organisations (public universities, Technical colleges) in terms of organisational culture, especially because these two types of institutions are located in big cities, and characterised by Hierarchy culture more than other organisational culture types.

The acceptance and use of new PMS can also vary according to different social and cultural contexts. However, in different countries there are different organisational types that do not consistent with this study, the organisational culture type undertaken in previous studies were in developed countries. For example, the results of the application of OCAI by Igo & Skitmore (2006) indicated that companies in Australian engineering consultancy had a dominant market-oriented culture. Zu et al (2010) investigated how organisational culture influences the implementation of different practices incorporated in the recent Six Sigma approach as well as those associated with traditional total quality management (TQM), using survey data collected from 226 US manufacturing plants. The relationships between four culture types and 10 TQM/Six Sigma practices were examined, and the results revealed

that the dominant culture type was a Market culture. Zu, et al (2010) were not consistent in this study because it was in one of the developed countries (USA) and also in manufacturing plants sector which is a different environment, where the focus is on market product diversity and taking advantage of opportunities in the market environment, profit making and product improvement. Organisations in this study are within the education system and most of them are public and funded by government; therefore, market culture is not expected to be one of the dominant cultures in Libyan higher education.

The dominant culture in the Libyan public universities is Hierarchy, while in the private universities it is Clan, with discretionary and flexible organisational performance type. This type appears in the upper left hand side of the Competing Values Framework (CVF). This result is consistent with the previous study of Ramachandran et al. (2011) who found that the Clan culture got the highest mean score in public higher educational institutions in Malaysia, while the private universities were dominanted by Hierarchy culture. In contrast, the Libyan public universities were dominated by a Hierarchy culture and the private universities were dominated by a Clan culture.

In addition, the dominant organisational culture type for higher institutions in Libyan higher education is a Clan culture, which scored the highest mean of the organisational culture types. This result is consistent with previous studies, such as that of Abousaber & Papazafeiropoulou (2011), which shows that Small and Medium Enterprises (SMEs) in Saudi Arabia are clearly dominated by a Clan culture. Florida and Kenney (1991) have established that the culture type is Clan in Japanese organisations and Henri (2006), after his analysis of a population of 2175 Canadian manufacturing firms, concluded that top managers of firms reflect a Clan type culture. Thomas et al (2002) found in a study of the relationship between project cultures, as assessed by Quinn's Competing Values Framework and the quality of outcomes on thirteen construction sites, that the Clan type culture was found to correlate with improved quality outcomes, whereas Market culture was more common for construction projects.

There are 107 higher institutions in Libya, which are distributed in large and small cities. In small cities, most of the people know each other, and clan and tribal attitudes are still strong. Libyan higher institutions with a Clan culture are characterized as friendly workplaces, with shared values, beliefs, goals, unity and participation. This type of culture focuses on internal issues, flexible values and carefulness rather than stability (Cameron and Quinn, 1999).

In conclusion, the Hierarchy culture is the dominant organisational culture type in the Libyan higher education sector in general. On the other hand, the dominant organisational culture type was different between the different types of organisations (Libyan higher education in general and its branches in particular) this study explored, even though they are in the same sector, education. Libyan public universities and Libyan Technical colleges are dominated by a Hierarchy culture, while Libyan higher institutions and private universities are dominated by a Clan culture. This result is not consistent with the previous study of Twati & Gammack (2006), who found that the organisational culture profiles of both the oil and gas and banking sectors of Libya was a Hierarchy culture. Twati & Gammack (2006) investigated about 15 government and public organisations in these sectors, while this study investigated 122 organisations in Libyan higher education (see table 4:6); this may explain the inconsistency.

8.3.2 Research objective two: The Use of PMS

The second objective with questions 3, 4, and 5 are discusses the acceptance, importance and use of performance measurement systems, which is reported by respondents in Libyan higher education. It discusses views on the importance of using PMS, and determines the currently existing use of PMS in Libyan higher education. The study investigated the influence of organisational culture on PMS acceptance, and as well as the use of multiple performance measurement in order to understand the extent of the acceptance, importance and use of financial and non-financial performance measurement systems in Libyan higher education. Moreover, the use of the advanced technique of the balanced scorecard was investigated for its effectiveness and usefulness in organisational performance.

8.3.2.1 PMS Acceptance

In order to measure the PMS in Libyan higher education, a fixed set of PMS categories were developed which include financial, non-financial and advanced techniques, as well the effectiveness and useful of using PMS to evaluate performance. The respondents were asked about the following:

1- The use of financial performance measurement systems to evaluate organisational performance.

2- The use of non-financial performance measurement systems to evaluate organisational performance.

3- The use of advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance.

4- The effectiveness of the use of advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance.

5- The usefulness of performance measurement systems (e.g. balanced scorecard)

All the means of the responses to these questions were above 3 on a 5-point scale where the average mark is 3.6 (See table 8:5). This suggests that the decision makers in Libyan higher education use financial, non-financial, and advanced techniques performance measurement systems to evaluate organisational performance. The respondents agreed that using advanced techniques of performance measurement systems (e.g. balanced scorecard) to evaluate organisational performance is effective; statistically the mean value was above 3 (i.e. moderately used). The agreement about the usefulness of using performance measurement systems, such as the balanced scorecard, had the highest of the means regards to performance measurement systems acceptance. Abugalia (2011) found that the values of the mean of 'the use of all the community' performance category (financial and non-financial) were below 3 (i.e. under moderately used). However, the two highest rates of usage and mean values were for financial performance measurement practices.

Table 8:5 Performance Measurement Systems acceptance Items

N	Performance Measurement Systems acceptance	Mean	S.D	R	Sig. Model	Sig. Culture
1	Using Financial Performance Measurement Systems to Evaluate Organisational Performance	3.72	1.010	10.5%	0.000	AD, MC
2	Using Non-Financial Performance Measurement Systems to Evaluate Organisational Performance	3.43	1.082	3%	0.051	AD

3	Using Advanced Techniques of Performance Measurement Systems (e.g. Balanced Scorecard) to Evaluate Organisational Performance	3.60	1.015	3.8%	0.019	AD, HC
4	Effectiveness of Using Advanced Techniques of Performance Measurement Systems (e.g. Balanced Scorecard) to Evaluate	3.50	1.072	3.1%	0.047	HC
5	Usefulness of Using Performance Measurement Systems (e.g. Balanced Scorecard) to Evaluate Organisational Performance	3.77	0.886	4.1%	0.015	AD, HC

Adhocracy= AC / Hierarchy= HC / Market=MC

A similar method has been applied in previous studies about the diversity of PMS (Eker & Eker, 2009; Henri, 2006; Hoque et al., 2001; Pedersen & Sudzina, 2012). Hoque et al (2001) examined the relationships among an organisation's market competition, computer-aided manufacturing processes and multiple performance measurement usage. The results suggest that a greater emphasis on multiple measures for performance evaluation is associated with businesses facing high levels of competition and greater use of the processes of computer aided manufacturing. Eker & Eker (2009) state that in a flexible culture (Clan or Adhocracy types), multiple performance measures can be seen as the most important concepts in a dynamic and changing environment. Because of their structural features, flexible firms prefer to use multiple performance measures, including financial and non-financial activities and measures.

In this study the researcher separated out the financial and non-financial measures for PMS acceptance, and run more regressions to support the PMS results from the questionnaire where was found some elements were more important for others. The performance measurement systems acceptance has five elements, and by the mean analysis it can be note (See table 8:5) that the first and the fifth elements have the highest mean. Moreover, by running the regressions to investigate the culture influence, the

study found that the same elements have the highest R square and significant and they were the most important elements.

Table 8:5 shows that the value of R square in item one (Using Financial Performance Measurement Systems to Evaluate Organisational Performance) is (10.5%); this is the explained variance in the DV PMS by organisational culture traits. The value of R shows that the model is fit and this value is of low enough for the acceptance of the model, F statistic is significant at 0.000, which shows the fitness of the model. Therefore organisational culture types (AD, MC) are a strong predictor of using financial PMS to evaluate organisational performance. Those results showed that the external focus cultures like (Adhocracy and marcket types, See figure 2:7) were the most important concepts Libyan higher education.

8.3.2.2 Performance Measurement Systems Importance and Use

To achieve this objective, the financial and non-financial performance measures were ranked according to the mean of the extent to which respondents from Libyan higher education rank them as important to long term success of the long term, and the extent to which they are being used in the aforementioned practices. In addition to investigating the acceptance of performance measurement systems in Libyan higher education, this study investigated the importance and use of performance measurement systems (financial, non-financial, advanced techniques) to discover to what extent the performance measurement systems are important, and to what extent Libyan higher education uses performance measurement systems as drivers of long-term success.

The importance of financial performance measurement systems, such as annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, were investigated to understand the importance level and use of financial PMS to evaluate organisational performance.

1- Financial Performance Measurement Systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels etc.).

The non-financial performance measurement systems whose importance and use were studied include:

2- Non-Financial Performance Measurement Systems /Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.).

3- Non-Financial Performance Measurement Systems /Innovation (e.g. courses or educational programs).

4- Non-Financial Performance Measurement Systems /Employee (e.g. employee satisfaction, workforce capabilities, etc.).

5- Non-Financial Performance Measurement Systems /Quality (e.g. academic quality awards, etc.).

6- Non-Financial Performance Measurement Systems /Community (e.g. public image, community involvement, etc.).

Non-financial performance measurement systems /innovation (e.g. courses or educational programs) got the highest mean and the same rank in both the importance and use of performance measurement systems (table 8:6). The employees (e.g. employee satisfaction, workforce capabilities, etc.) got the second rank in importance, while the financial performance measurement systems got the second rank in the use. The third rank was for non-financial performance measurement systems /customer and non-financial performance measurement systems /quality in the performance measurement systems importance category, while non-financial performance measurement systems /employee were in the third rank in the performance measurement systems use category. The fourth rank in PMS importance was for financial performance measurement systems and the fifth was for non-financial performance measurement systems /community. On the other hand, in PMS use, the fourth rank was for non-financial performance measurement systems /customer, the fifth was for non-financial performance measurement systems /community. Finally the sixth rank went to Non-Financial Performance Measurement Systems /Quality.

Table 8:6 accounts for the overall diverse measurements; the last two columns highlight this indicator, which is calculated by the average standardised rating of importance and use for each category (financial and non-financial measures). This indicator shows that if the level of overall diverse measurements is up to 3, then it means Libyan higher education uses diverse sets of performance measures at a high level. However if the rate is less than 3, it means that diverse sets of PMS do not receive use of a high level. From the table 8:5, it can be noted clearly that in Libyan higher education, *non-financial performance measurement systems /innovation* got the highest mean and the rank in both the importance and use of PMS. On the other hand, institutions still rely on using financial performance

measurements systems, as it got the second rank in the use of PMS. The highest rating in the overall diverse measurement column goes to financial measures, which is ranked by the mean (3.530), while non-financial measures are ranked at less than the level of (ranked +3).

Table 8:6 Performance Measurement Systems Importance and Use

N	Performance Measurement Systems	Importance					Use				
		Mean	S.D	R	Sig. Model	Sig. Culture	Mean	S.D	R	Sig. Model	Sig. Culture
1	Financial Performance Measurement Systems (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels etc.)	3.80	1.02	3.7%	0.021	AD, HC	2.98	1.14	6.6%	0.001	AD, MC, HC
2	Non-Financial Performance Measurement Systems /Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	3.96	1.17	2.2%	0.131	MC	2.93	1.09	3.5%	0.029	AD, HC
3	Non-Financial Performance Measurement Systems /Innovation (e.g. courses or educational programs)	4.32	0.80	0.0%	0.989	None	3.07	1.31	27.3%	0.000	AD, MC, HC

4	Non-Financial Performance Measurement Systems /Employee (e.g. employee satisfaction, workforce capabilities, etc.)	4.13	0.85	4.8%	0.006	HC	2.95	0.97	10.9%	0.000	AD, MC, HC
5	Non-Financial Performance Measurement Systems /Quality (e.g. academic quality awards, etc.)	3.96	1.01	4.2%	0.012	HC	2.43	1.26	9.7%	0.000	AD, MC, HC
6	Non-Financial Performance Measurement Systems /Community (e.g. public image, community involvement, etc.)	3.67	1.14	1.8%	0.197	None	2.71	1.36	17.8%	0.000	AD, MC

Adhocracy= AC / Hierarchy= HC / Market=MC

These findings are consistent with previous empirical studies, such as that of Verbeeten and Boons (2009) who included an additional question on the importance of the performance measures for several goals. Their findings indicated that PMS was important or very important, and non-financial measures of customer and innovation are more important for the communication of strategy. Stivers et al. (1998), examined the importance of 21 non-financial measures by surveying top executives in U.S. Fortune 500 firms and in Canadian Post 300 companies; their study findings indicated that customer satisfaction and delivery performance / customer service were rated as highly important.

On the other hand, Veen-Dirks (2010) examined how the importance that is attributed to a variety of financial and non-financial performance measures depends on the periodic evaluation of performance and determination of rewards, and the study provided evidence of grades importance being attached to both financial and non-financial performance measures in the periodic evaluation than in the determination of rewards. Neely et al, (2005) found that academics and practitioners from a variety of

functional disciplines have long recognized the importance of performance measurement. Medori (1998) states that performance measurement systems are one of the most important areas of management accounting that play a major role in evaluating the achievement of organisational objectives. In addition, performance measurement systems play a key role in organisations not only because of their importance as a source of information about financial transactions and internal activities, but also because of their effect on the monetary success of organisations (M. I. K. Zuriekat, 2005).

Amir et al (2010) explain the importance of PMS as a source of information to guide management decisions and the choice of actions. Al Sawalqa (2011, p. 280) found that multiple measures of performance are important to support not only financial performance but also non-financial performance in several areas such as customer satisfaction and innovation.

Zuriekat et al (2011), in their study of the participation in performance measurement systems and levels of satisfaction, indicate the importance of financial and non-financial performance categories as drivers of long-term organisational success; they found that financial measures are the most important category. In terms of non-financial performance measures, the results show that customer measures are the only non-financial measures that are significantly used to evaluate managerial performance, reward managers and to identify problems, improve opportunities and develop action plans. The results also show that on average, operational innovation and quality tend to be moderately used for these purposes. Finally, supplier and employee performance measures tend not to be used extensively in the management accounting processes. Ittner, Larcker and Randall (2003) reported that the community performance category received relatively great importance as a driver of long-term organisational success.

A survey of data gathered from 122 manufacturers of the top 500 firms in Turkey found that financial performance measures are used more than non-financial performance measures, and financial and non-financial performance measures are at an above medium level (Eker & Eker, 2009)

Fakhri (2012), in his study of the application of financial and non-financial performance measures in the Libyan banking sector, which was to assess the extent to which Libyan banks adopt modern performance measurement techniques, found that they are still rely on financial

In this study the researcher separated out the financial and non-financial measures for PMS important and use, and run more regressions to support the PMS results from the questionnaire where was found

some elements were more important for others. The results of the performance measurement systems importance and use show that the non-financial performance measurement systems (innovation) got the highest mean in both importance and use of PMS (See table 8:6). Therefore, by running the regressions to investigate the influence of OC types on separated elements of the PMS importance and the PMS use.

Table 8:6 shows that the highest values of R square in PMS use on the item of non-financial performance measurement systems (innovation), which were (27.3%). The value of R shows that the model is fit and this value is of low enough for the acceptance of the model, F statistic is significant at 0.000, which shows the fitness of the model. Therefore organisational culture types (AD, MC, and HC) are a strong predictor of using non-financial PMS (innovation), and a particular organisational culture driving this. Those results showed that three of OC types are influenced by the non-financial PMS (innovation). One the other hand, none of OC types influenced the importance of non-financial PMS (innovation), see appendix F.

In addition, it can be note in table 8:6 that the OC types influence the all elements of PMS use, and the F statistic is significant, which shows the fitness of the model, while the OC types do not influence the all elements of PMS importance.

8.3.3 Research objective Three: Influence and role of Organisational Culture on Performance Measurement Systems

The third objective, and questions 6, 7, and 8 is to discuss the relationships between the four organisational culture types of Clan, Adhocracy, Market and Hierarchy Cultures as independent variables, and their influence on PMS acceptance, importance and use as the dependent variables were tested by using a multiple linear regression.

8.3.3.1 Results of the Testing Research of Hypotheses

Research hypotheses were designed to be measures to answer the research questions and meet the research objectives. Seven hypotheses were tested, with the results shown in Table 8:7. The first three hypotheses considered the dominant organisational culture type with the three variables (PMS acceptance, importance and use), while the rest of the hypotheses examined the main variables of the organisational culture types; the research hypotheses (H1- H7) were supported by the empirical test.

Table 8:7 Summary of Results of the Research Hypothesis Test

N	Hypothesis	Results
1	H1: A particular dominating organisational culture type exhibited a significant positive direct relationship associated with the acceptance of performance measurement systems in Libyan higher education.	Supported in UNIs and INSTs.
2	H2: A particular dominating organisational culture type exhibited a significant positive direct relationship associated with the importance of performance measurement systems in Libyan higher education.	Supported in UNIs Only
3	H3: A particular dominating organisational culture type exhibited a significant positive direct relationship associated with the use performance measurement systems in Libyan higher education.	Supported in INSTs Only
4	H4: A Hierarchy culture type will exhibit a significant negative direct relationship associated with the acceptance, importance and use of PMS.	Supported in LHEs in PMS importance and use, in UNIs with PMS acceptance, importance and use. In PrUNIs with PMS use, and in TCs with PMS importance
5	H5: A Clan culture type will exhibit a significant positive direct relationship associated with acceptance, importance and use of PMS.	Supported in with PMS acceptance, importance and use.
6	H6: An Adhocracy culture type will exhibit significant positive	Supported in LHEs

	direct relationship associated with acceptance, importance and use of PMS.	and PuUNIs with PMS acceptance and use, in UNIs with PMS use. Supported in INSTs with PMS acceptance.
7	H7: A Market culture type will exhibit a significant positive direct relationship associated with acceptance, importance and use of PMS.	Supported in LHEs and UNIs with PMS use, and supported in INSTs and PrUNIs with PMS importance.

LHEs= Higher education in general, UNIs= Universities, PuUNIs= Public Universities, PrUNIs= Private Universities, INSTs= Institutions, TCs= Technical colleges

8.3.3.2 Findings Related to the Research Hypotheses of Organisational Culture

The following section will discuss the outcomes arising from the hypotheses tests regarding organisational culture, which evolved from the research objectives and the internal variables. Table 8:8 shows the findings related to the research hypotheses regarding organisational culture in relation to PMS acceptance, importance and use. Table 8:8 shows the findings of the relationship between the dominant organisational culture types and the PMS acceptance (H1), PMS importance (H2) and PMS use (H3).

Table 8:8 Findings Related to the Research Hypotheses

Category	Dominated culture	Relationship	PMS acceptance H1	PMS Importance H2	PMS Use H3
Higher education in general	Hierarchy	Correlation	0.115	- 0.036	- 0.057
		Significant	0.065	0.566	0.360
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	8.3%	0.8%	19.5%
Universities	Hierarchy	Correlation	- 0.360	- 0.266	- 0.292

		Significant	0.003	0.040	0.360
		Hypothesis	Supported	Supported	Not Supported
		Model fit	8%	13.6%	12.6%
Public Universities	Hierarchy	Correlation	-0.238	-0.254	-0.199
		Significant	0.107	0.183	0.150
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	9.4%	14.6%	4.3%
Private Universities	Clan	Correlation	0.258	-0.254	-0.215
		Significant	0.088	0.129	0.101
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	18%	21.4%	24.3%
Institutions	Clan	Correlation	- 0.347	- 0.095	- 0.432
		Significant	0.000	0.228	0.000
		Hypothesis	Supported	Not Supported	Supported
		Model fit	30%	3.1%	31.5%
Technical colleges	Hierarchy	Correlation	0.110	- 0.178	0.171
		Significant	0.583	0.375	0.393
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	5.9%	12.6%	13.3%

H1: A particular dominant organisational culture type exhibits a significant positive direct relationship with the acceptance of performance measurement systems in Libyan higher education.

The H1 hypothesis is not supported and the dominant organisational culture type does not show a significant relationship with the acceptance of PMS in Libyan higher education in general. A positive correlation means that as one variable increases so does the other; therefore when organisational culture increases so should the PMS acceptance. Since this was not the case, the dominant organisational culture type, Hierarchy, has a low positive influence on PMS acceptance in Libyan higher education in general.

Culture has an influence on the acceptance of new systems in organisations; this study explored such influences on the acceptance, importance and use of PMS in the Libyan context. The acceptance and use of new PMS can also vary according to different social and cultural contexts, as shown in previous discussion. In this study, they varied even within the same sector. Thus, organisational culture is considered to be an important vehicle for implementing organisational change.

A range of studies in the existing literature has indicated a significant positive relationship between organisational culture and performance measurement systems. The findings of this study are in line

with those of the study by Eker & Eker (2009) who found a noticeably positive and significant relationship between organisational culture and the design and use of performance measurement systems. Eker & Eker (2009) state that the results of a survey reveal that top managers of Canadian firms reflecting a flexibility dominant type (Clan) tend to use more performance measures and to use PMS to focus organisational attention and to support strategic decision-making and legitimate actions to a greater extent than top managers of firms reflecting a dominant control type.

Ehtesham & Shakil (2011) state that the results of their study indicate that there is a significant positive relationship between elements of organisational culture and performance management practices. Ehtesham (2011) reveals that there is a statistically significant difference in the mean for all the OC types between public and private higher education institutions HEIs, and that the differences are highly significant.

Lim (1995) found that after a critical review of methodologies and the results of recent research, that there is a link between culture and performance. Academics and practitioners suggested that the performance of an organisation depends on the degree to which values of the culture are widely shared (D. R. Denison, 1990).

Shurbagi and Zahari (2013) found a significant positive relationship between organisational culture and the use of Management Information Systems (MIS). Shahzad et al, (2012) in their study found that the results do not show positive correlations between culture and employees' performance. In their study the Hierarchy culture shows more dominance in the organisational culture dimensions of the competing values framework in higher education, especially with regard to most dimensions (dominant characteristics, organisational leadership, organisation glue and strategic emphases), while the r two other dimensions (management of employees and criteria of success) reflected Clan culture.

The current study showed that Hierarchy culture is the dominant organisational culture in the Libyan higher education sector, but the low PMS acceptance rate shows that a hierarchical culture is not sufficient to ensure this acceptance. This low rate of acceptance is seen as a result of many organisational culture barriers in this sector. Some organisations deal with highly confidential information and only a few employees in the organisations have the right to use this information. This in turn reduces the benefits of sharing information among various levels of management in the organisation. Some organisations favour structure and control and stress order, standardisation, efficiency, certainty, and stability, thus reflecting internally oriented and formalised values. Therefore,

most of the organisations in the sector will not be keen to adopt PMS. The organisations in this sector are highly respect rules and resist any changes that may affect the structure and hierarchy of the organisation. This also contributes negatively to the acceptance of PMS in the sector.

Resistance to change is not always just due to human factors, but may be related to the existing infrastructure of the organisation (both human and physical). The acceptance of PMS in this sector faces resistance from people who lack the basic infrastructure needed for PMS acceptance. This sector suffers from insufficient personnel and expertise to successfully manage and implement PMS. Many senior executives and decision makers lack the experience and the ability to use sophisticated computer-based accounting programs for implementing PMS. This limits their understanding of and enthusiasm for PMS acceptance, (Twati & Gammack, 2006) state that the low rates of computer literacy at the executive level senior management limit the ability to use computers for daily tasks. Most employees, including senior executives, resist using computers to generate the necessary information. Many senior executives prefer, and rely on, old manual systems instead of computerised systems. Therefore, a systemic relationship between literacy, experience and attitudes strengthens a slow acceptance rate.

H2: A particular dominant organisational culture type exhibits a significant positive direct relationship with the importance of performance measurement systems in Libyan higher education.

The H2 hypothesis is not supported and none of the dominant cultural types (Clan and Hierarchy) are shown to have a positive relationship with the importance of performance measurement systems (PMS) in Libyan higher education, Libyan universities, Libyan higher institutions and Libyan technical colleges (see table 6:4). This means that Clan and Hierarchy have a negative influence on the importance of PMS, which indicates that when these culture types increase, the importance attached to PMS in these institutions decrease.

H3: A particular dominant organisational culture type exhibits a significant positive direct relationship with the use of performance measurement systems in Libyan higher education.

The H3 hypothesis is not supported and the dominant organisational culture type does not show a positive significant relationship with the use of performance measurement systems in Libyan higher education (see table 8:8). This means that these types of dominant organisational cultures (Clan and

Hierarchy) have a negative influence on the use of performance measurement systems in Libyan higher education, Libyan universities and Libyan higher institutions, which indicates that when the traits related to these culture types increase, the use of the performance measurement systems of these institutions decrease. On the other hand, in Libyan technical collages the dominant organisational culture type shows a positive but not significant relationship with the use of performance measurement systems. This finding is in line with the findings of (Ehtesham, 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006), who found that organisational culture did not exhibit a significant positive direct relationship with the acceptance and use of MIS applications in Libyan oil and bank sectors. Particularly, both studies found that the Hierarchy culture was the dominant organisational culture.

On the other hand, this finding is not in line with other findings of (Ehtesham, 2011; Shurbagi & Zahari, 2013; Twati & Gammack, 2006). Ehtesham (2011) pointed out a significant positive relationship between organisational culture and performance management practices (PMP) in the University of Pakistan. Shurbagi and Zahari (2013) found that the relationship between transformational leadership and organisational culture was positive and significant while the dominant culture in National Oil Corporation NOC of Libya was Hierarchy.

Hoque, et al (2001) in their study based on a sample of 71 business units located in New Zealand's manufacturing industry, examined the effect of market competition and the implementation of processes in computer aided manufacturing using multiple performance measures. That study is relevant to the body of research on contingency theory. The results presented in Hoque et al's paper indicate a positive and significant relationship between the intensity of competition in the market and the use of multiple measures of performance evaluation.

Ji-Young, et al (2011) investigated the correlations and predictors of organisational effectiveness, focusing on organisational culture and quality of work life using a convenience sample of 145 nurses working in Korean university hospitals who responded to a self-administered questionnaire; their findings showed that there were significant correlations between organisational culture, quality of work life, and organisational effectiveness.

H4: A Hierarchy cultural type will exhibit a significant negative direct relationship with acceptance, importance and use of PMS.

Table 8:9 Findings Related to the Research Hypotheses

Category	Culture	Relationship	PMS a Acceptance H4	PMS Importance H4	PMS Use H4
Higher education in general	Hierarchy	Correlation	0.115	- 0.036	- 0.057
		Significant	0.065	0.566	0.360
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit (R^2)	8.3%	0.8%	19.5%
Universities	Hierarchy	Correlation	- 0.360	- 0.266	- 0.292
		Significant	0.003	0.040	0.360
		Hypothesis	Supported	Supported	Not Supported
		Model fit (R^2)	8%	13.6%	12.6%
Public Universities	Hierarchy	Correlation	-0.238	-0.254	-0.199
		Significant	0.107	0.183	0.150
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit (R^2)	9.4%	14.6%	4.3%
Private Universities	Hierarchy	Correlation	-0.238	0.081	0.470
		Significant	0.107	0.632	0.002
		Hypothesis	Not Supported	Not Supported	Supported
		Model fit (R^2)	18%	21.4%	24.3%
Institutions	Hierarchy	Correlation	0.332**	0.085	-0.024
		Significant	0.000	0.279	0.764
		Hypothesis	Supported	Not Supported	Not Supported
		Model fit (R^2)	30%	3.1%	31.5%
Technical colleges	Hierarchy	Correlation	0.110	- 0.178	0.171
		Significant	0.583	0.375	0.393
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit (R^2)	5.9%	12.6%	13.3%

The previous hypotheses H1, H2 and H3 assumed that the dominant organisational culture type exhibits a significant positive direct relationship with the acceptance, importance and use of performance measurement systems in Libyan higher education. This study found the dominant organisational culture types were either Hierarchy or Clan, while Market and Adhocracy types do not appear as dominant culture types in Libyan higher education. The literature pointed out a positive and a negative relationship between organisational culture types and performance measurement systems; the

first three hypotheses tested the positive relationship, while H4 and H5 tested the negative relationship between the variables.

The Hierarchy culture type is the dominant in Libyan higher education in general—in Libyan universities and in Libyan technical colleges—but it is not dominant in Libyan higher institutions. Thus H4 is supported and Hierarchy shows a significant negative relationship (p-value<0.003 and correlation -0.360 and R^2 = 8%) with the acceptance of PMS in Libyan universities (see table 6:5).

In addition, the Hierarchy culture type shows a negative relationship with the importance of PMS in Libyan universities with (p-value<0.040, correlation -0.266 and R^2 = 13.6%) as shown in table 6:5.

A significant negative relationship between Hierarchy and PMS use was supported in Libyan higher education in general; this relationship was positive as regards PMS acceptance but positive and not supported in PMS importance/ use. In Libyan universities a significant negative correlation relationship between a Hierarchy culture type and the PMS was supported with PMS acceptance, importance and use. In Libyan universities the hypothesis is also supported and the dominating organisational culture type shows a significant negative relationship (p-value<0.003 and correlation -0.360) with PMS acceptance. A negative correlation is when one variable increases as the other decreases, therefore when the OC increased, PMS acceptance decreased and the correlation was high and significant. Therefore, the dominating organisational culture type, which was Hierarchy, has a negative influence on the PMS acceptance in Libyan universities.

On the other hand, in Libyan technical colleges this hypothesis was not supported in the case of PMS acceptance, importance and use.

Twati (2006) found that organisations dominated by a Hierarchy culture exhibited a significant negative direct relationship with the acceptance and use of MIS applications. On the other hand, (Naranjo-Valencia et al., 2011), in their study of a sample of 471 Spanish companies to analyse the organisational culture that fosters or inhibits organisational innovation and imitation strategy, found that Hierarchy culture had a positive effect on imitative orientation.

H5: A Clan culture type will exhibit a significant negative direct relationship with the acceptance, importance and use of PMS.

Table 8:10 Findings Related to the Research Hypotheses 5

Category	Culture	Relationship	PMS acceptance H5	PMS Importance H5	PMS Use H5
Higher education in general	Clan	Correlation	-0.213**	-0.031	-0.291**
		Significant	0.001	0.618	0.000
		Hypothesis	Supported	Not Supported	Supported
		Model fit	8.3%	0.8%	19.5%
Universities	Clan	Correlation	0.407**	0.117	0.298*
		Significant	0.001	0.347	0.015
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	8%	13.6%	12.6%
Public Universities	Clan	Correlation	0.258	0.036	0.045
		Significant	0.088	0.855	0.409
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	9.4%	14.6%	4.3%
Private Universities	Clan	Correlation	0.258	-0.254	-0.215
		Significant	0.088	0.129	0.101
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	18%	21.4%	24.3%
Institutions	Clan	Correlation	- 0.347	- 0.095	- 0.432
		Significant	0.000	0.228	0.000
		Hypothesis	Supported	Not Supported	Supported
		Model fit	30%	3.1%	31.5%
Technical colleges	Clan	Correlation	-0.171	0.274	-0.349
		Significant	0.395	0.166	0.074
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	5.9%	12.6%	13.3%

The Clan culture type is dominant in Libyan higher institutions only. This culture type was the second dominant one in the Libyan higher education sector in general (see table 8:10). A significant negative relationship between Clan culture type and the acceptance and use of PMS was supported in Libyan higher education. In Libyan higher institutions the relationship was significant and negative as regards the acceptance of and use of PMS.

In other words, Clan culture has an influence on the acceptance and use of performance measurement systems, but has no influence on the importance of performance measurement systems. The findings of this study support one part of the hypothesis H5 and this is consistent with Twati (2006), whose study did not support the hypothesis that the organisations dominated by a Clan culture type exhibit a significant positive direct relationship with the acceptance and use of management information system (MIS) applications. Henri (2006) stated that the results of his structural model study suggest that flexibility values are associated with greater diversity of measurement, which brings support for the hypothesis that the top management teams of firms reflecting a flexibility dominant type tend to be associated with a greater diversity of measurement than firms reflecting a control dominant type. Moreover, this relationship has been described as direct and indirect through the use of PMS, which is supported by the indirect effect through the use of PMS.

H6: An Adhocracy culture type will exhibit a significant positive direct relationship with the acceptance, importance and use of PMS.

Table 8:11 Findings Related to the Research Hypotheses 6

Category	Culture	Relationship	PMS Acceptance H6	PMS Importance H6	PMS Use H6
Libyan Higher Education	Adhocracy	Correlation	0.222**	0.086	0.364**
		Significant	0.000	0.169	0.000
		Hypothesis	Supported	Not Supported	Supported
		Model fit	8.3%	0.8%	19.5%
Universities	Adhocracy	Correlation	-0.065	0.085	0.054**
		Significant	0.603	0.281	0.000
		Hypothesis	Not Supported	Not Supported	Supported
		Model fit	8%	13.6%	12.6%
Public Universities	Adhocracy	Correlation	0.059	0.308	0.119
		Significant	0.762	0.104	0.538
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	9.4%	14.6%	4.3%
Private Universities	Adhocracy	Correlation	-.112	-.152	-0.215
		Significant	0.508	0.368	0.380
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	18%	21.4%	24.3%
Institutions	Adhocracy	Correlation	0.328**	0.088	-0.054
		Significant	0.000	0.483	0.668

		Hypothesis	Supported	Not Supported	Not Supported
		Model fit	30%	3.1%	31.5%
Technical colleges	Adhocracy	Correlation	0.072	0.054	0.011
		Significant	0.722	0.788	0.956
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit	5.9%	12.6%	13.3%

Adhocracy culture type, this culture has shown a significant relationship with some of the Libyan higher education organisations. The characteristics of the 'Adhocracy' culture are focus on external issues and the value given to flexibility and carefulness. Rather than looking for stability and control, they value creativity and risk taking. Such organisations have an informal organisational structure. Moreover, the Adhocracy culture is characterised by an active, entrepreneurial, and creative workplace. People are enthusiastic about taking risks. The aspect that keeps the organisation together is an enthusiasm to innovate, and the emphasis is on being at the leading edge of new knowledge, technology and products, with a willingness to change and accept new challenges that are important for success.

Libyan higher education in general and its branches in particular were not dominated by Adhocracy culture. Adhocracy culture is significant and has a direct relationship associated with PMS acceptance in Libyan higher education and Libyan higher institutions, and a significant relationship with PMS use in Libyan higher education in general in its branches in particular. This means that Adhocracy culture is a strong culture and has a positive influence on the acceptance and use of PMS.

H7: A Market culture type will exhibit a significant positive direct relationship associated with PMS acceptance, importance and use.

Table 8:12 Findings Related to the Research Hypotheses 7

Category	Culture	Relationship	PMS Acceptance H7	PMS Importance H7	PMS Use H7
Libyan Higher Education	Market	Correlation	-0.041	0.012	0.364**
		Significant	0.517	0.851	0.000
		Hypothesis	Not Supported	Not Supported	Supported
		Model fit (R^2)	8.3%	0.8%	19.5%
Universities	Market	Correlation	0.137	-0.097	0.524**

		Significant	0.271	0.216	0.000
		Hypothesis	Not Supported	Not Supported	Supported
		Model fit (R^2)	8%	13.6%	12.6%
Public Universities	Market	Correlation	0.053	0.258	0.057
		Significant	0.787	0.176	0.770
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit (R^2)	9.4%	14.6%	4.3%
Private Universities	Market	Correlation	-0.056	0.318	-0.218
		Significant	0.742	0.055	0.195
		Hypothesis	Not Supported	Supported	Not Supported
		Model fit (R^2)	18%	21.4%	24.3%
Institutions	Market	Correlation	-0.229**	0.339**	-0.054
		Significant	0.003	0.005	0.668
		Hypothesis	Not Supported	Supported	Not Supported
		Model fit (R^2)	30%	3.1%	31.5%
Technical colleges	Market	Correlation	0.024	-0.168	0.011
		Significant	0.905	0.402	0.956
		Hypothesis	Not Supported	Not Supported	Not Supported
		Model fit (R^2)	5.9%	12.6%	13.3%

Market culture has shown a significant relationship with the use of PMS in Libyan higher education and in Libyan universities. Moreover, it has a significant direct relationship with PMS importance in Libyan higher institutions.

As has been explained earlier in this thesis the word Market in this term does not the characteristics of a marketplace. It is a type of work culture that focuses on the market, product diversity and taking advantage of opportunities in the market environment. The organisations in this type of culture are also oriented towards the external environment instead of internal relations. They focus on profit making, product improvement, the strength of their market position, and customer product bases (K. Cameron & Quinn, 2011). Most of the organisations in this study are government funded public insitutions; therefore Market culture, which is more common in private profit-oriented organisations, cannot be seen in Libyan higher education in general.

In addition, the organisational culture types according to the difference of the job title, position and level of education have been investigated in this study. Since this questionnaire was aimed at decision makers who were using performance measurement systems in their organisations, it was important to understand those characteristics of the respondents that depended on their job title and position, as their work experience and levels of education level that varied according to these titles and positions.

Therefore, this study investigated employees in different job levels of management in organisations with the same or different organisational culture types.

8.3.3.3 Results of Research Hypotheses Tests

The highest level of the job title and position (The President of Organisation, Vice President) share the same Clan culture type, indicating that they hold similar attitudes, values, and beliefs. On the other hand, other levels of job title and position (Chief/Assistant Chief/Vice Chief of Finance Department, Chief/Assistant Chief/Vice Chief of Administrative Department, Financial Controller and Others) share the same Hierarchy culture. These results are consistent with those of Twati (2006), who states that employees in different job levels of management have different organisational culture types. However, this researcher found that senior and middle management share a Clan culture while middle and low management share a Market culture at Arab Gulf region's organisational culture profile. While Libya's organisational culture profile for the oil and gas sector as well as for the banking sector shows that employees in different job levels of management have the same organisational culture type, which is Hierarchy, this research found different results.

The research hypotheses H8, H9, H10 are about the organisational culture types according to the difference of the job title and position and level of education.

Table 8:13 Summary of Results of the Research Hypothesis Test

N	Hypothesis	Results
1	H8: The type of organisational culture dominant is different depending on the type of higher education system.	Supported
2	H9: The type of organisational culture dominant is different depending on job title and position.	Supported
3	H10: The type of dominant organisational culture is different depending on level of education and experience.	Supported

8.3.3.4 Findings Related to the Research Hypotheses of Organisational Culture in Different Job Titles, Positions and Levels of Education

Hypothesis 8 was to test whether the dominant organisational culture type differed, according to the type of higher education system.

H8: The dominant organisational culture is different depending on the type of higher education.

This hypothesis was supported because the type of organisational culture that was dominant varied according to the type of higher education. The Hierarchy type is dominant in Libyan higher education in general, that is, in Libyan public universities and Libyan Technical colleges, while the private universities are dominated by Clan culture. On the other hand, the results show that the dominant organisational culture types in the institutions in Libyan higher education are the Clan and Hierarchy cultures.

The study found that the dominant organisational culture was different in Libyan higher education, and this result is consistent with the previous study of Ramachandran et al. (2011), who found that the dominant culture was different in private and public Malaysian universities. By contrast, this result is not consistent with that of Twati & Gammack (2006), who found that the organisational culture profiles of both the oil and gas and banking sectors of Libyan industry was a Hierarchy culture.

These differences in OC types between the Libyan higher education universities and institutions are as a result of differences in their objectives, geographical location in the cities or villages and the university age. In this study has been noted that the public university has different OC type with the private university, and old universities, institutions have different OC type with the new ones. Public universities and institutions have a Hierarchy culture type while private universities and institutions have a Clan culture type. Old universities and institutions, which located in cities, have a Hierarchy culture type while new institutions, which located in small cities have a Clan culture type (see Table 6:10). The dominant characteristics in all organisational culture types are different for example the organisation with clan culture type is a very personal place and it is like an extended family. While the organisation in a hierarchy culture type is a very controlled and structured place and formal procedures generally govern what people do.

H9 was to answer question number 9 which was about whether the culture types differ for different job titles and positions and levels of education

H9: The type of dominant organisational culture is different depending on job title and position.

Hypothesis 9 was to test whether the employees in different levels of management have different organisational culture types. Job titles and positions in Libyan higher education tested in this study are: President, vice president, chief of finance department, assistant / vice chief of administrative department and assistant/vice financial controller.

This hypothesis was supported, and employees in different levels of management have different organisational culture types. The highest level as regards job title and position (The President of Organisation, Vice President) shares the Clan culture type, indicating that they hold similar attitudes, values, and beliefs. On the other hand, other levels of job title and position (Chief/Assistant Chief/Vice Chief of Finance Department, Chief/Assistant Chief/Vice Chief of Administrative Department, Financial Controller and Others) share the Hierarchy culture type.

Some results of this study concur with those Twati (2006) who found that in the Arab Gulf region there were a differences in OC type according to the job level of oil sector employees, while in the same study it was found that the employees in the North Africa region share the same organisational culture type. Also, Henri (2006) who's his analysis of a population consisting of 2175 Canadian manufacturing firms concluded that top managers of firms reflect a Clan type culture. The literature has shown the relationship between the organisational culture, its performance and its leaders. Schein (1992) argues that organisational leaders create and enforce the culture of the organisation. In many organisations in this culture, a vast majority of senior management executives who are the creators of organisational culture impose and prefer a Hierarchy culture. Hierarchy Culture provides them with the authority over their subordinates in a formal relationship.

H10: The type of dominant organisational culture is different depending on the level of education and experience.

Hypothesis 10 was to test whether the employees in different levels of management education an experience have different organisational culture types. Libyan higher education levels tested were Bachelor's degree, Post-graduate degree and professional qualifications.

This hypothesis was supported, and there are some differences in the OC type with respect to the level of education. Employees with Bachelor's degree qualifications, professional qualifications and other

qualifications share a Hierarchy culture. However, those with post-graduate (e.g. MSc, MBA, Ph.D.) qualifications share a Clan culture and almost all of them are in the highest job titles and positions (The President, Vice President)**.** In this respect, the results of this study concur with those of Twati (2006), who found that in the Arab Gulf region there were differences in the OC types among the oil sector employees according to their education, while the same study found that the employees in the North Africa region share the same organisational culture type at different educational levels.

Also, employees with different levels of experience have different organisational culture types, and employees who have been in an organisation for less than one year or for 6-10 years share a Hierarchy culture, while those who have been in the organisation for 1-5 years and for more than 10 years share a Clan culture type. This finding does not concur with that of Twati (2006), who found that employees in different levels of experience in the Arab Gulf region and the North African region share the same organisational culture types.

8.4 Summary

The quantitative and qualitative results of this study have been discussed in this chapter in relation to the literature and according to the research aims and objectives that investigated the following:

1- The organisational culture and organisational performance types in higher education in general and in its branches in particular, depending on the type of higher education.
2- PMS acceptance, importance and use in Libyan higher education.
3- The influential and significance relationships of organisational culture in the acceptance, importance and use of PMS in both public and private universities and institutions in Libyan higher education.
4- The organisational culture types according to the difference in the job title and position and level of education.

It was demonstrated that organisational cultures and the role played by it have affected the acceptance, importance and use of PMS in Libyan higher education. From the discussions in this chapter, it is concluded that organisational culture plays a vital role in the acceptance, importance and use of PMS. Most of the findings of this research support the existing literature, but some specific differences have also been found. The next chapter presents the conclusions from these findings, their future implications, and their contribution to theory and practice

Chapter 9: Conclusion

9.1 Introduction

This chapter provides a summary of the main findings of the research that relate to the research main question, and puts forward the conclusions, which may be drawn from these findings.

The first section contains the findings of the research which are presented in ways that show how these findings meet the research objectives, and the research questions that the researcher proposed at the beginning of the thesis; the second section identifies and discusses the contribution of this research to existing knowledge; in the third section the limitations of this research are presented; and finally, in the fourth section there are some proposals for future research.

The aim of this study was to provide a better understanding of the relationships between organisational culture and the acceptance, importance and use of performance measurement systems developed for top management.

The conclusion of this study focuses on the research aim and related objectives and provides answers to the research questions and hypotheses.

The next section discusses the way in which the aim and the objectives have been achieved. Answers to the research questions are also provided.

9.2 Research Aim, Objectives and Conclusions

To meet the aim and the objectives, all organisations were selected from Libyan higher education. The questionnaire survey and the interviews were carried out to gain an understanding of organisational culture as a contingency theory factor affecting the acceptance, importance and use of PMS within these institutions. The findings from the survey, and the interviews were compared with the literature to verify whether what had been predicted was similar to or different from what was illustrated in the theoretical framework.

The aim of this research was **"*to investigate the influence of organisational culture on the acceptance, importance and use of performance measurement systems in Libyan higher education*".** Organisational culture as a factor of contingency theory was applied in this research, and a contingency theory theoretical framework of performance measurement was adopted to investigate the contingent

relationships between different factors in organisational culture and in the acceptance, importance and use of performance measurement systems.

The contingency theory of performance measurement systems is based on the assumption that there is no universally appropriate use of performance measurement systems that applies equally to all organisations in all circumstances, and the findings of this research is consistent with contingency theory. Therefore, organisational culture as a factor of contingency theory has influence on some variables of performance measurement systems and does not influence others, and it depends on organisational circumstances.

Moreover, the aim has been achieved by addressing the research objectives as follows:

The first objective was to identify the dominant organisational culture and organisational performance types in Libya's higher education system in general and in its branches in particular, depending on the type of higher education and ownership. This objective was achieved by using the organisational culture assessment instrument (OCAI) developed by Cameron and Quinn (1999, 2006), which is based on the Competing Values Framework (CVF) of Quinn and Rohrbaugh (1981) to investigate the dominant organisational culture and organisational performance type.

The current dominant organisational culture type for the education sector, public universities, technical colleges, is a Hierarchy culture type that carried out from the questionnaire survey. Moreover, the University of Tripoli has a Hierarchy culture type, which the interview method confirm that. These findings are consistent with those of the studies of (Parker & Bradley, 2000); Trivellas & Dargenidou, (2009); Twati & Gammack, (2006) and Zahari & Shurbagi, (2012). A Hierarchy culture focuses on internal maintenance and strives for stability and control in organisational performance through the establishment of clear tasks and compliance with strict rules. Therefore, it tends to adopt a formal approach to relationships within the organisation, in which leaders have to be good organiser and coordinator. Thus, they will not be keen to change. This is especially relevant since there is no competition between organisations in Libya, where the government owns everything.

The dominant organisational culture type for higher institutions and private universities in Libyan higher education is Clan culture. Clan culture is typical of organisations that focus on internal maintenance with flexibility of organisational performance, concern for people, and sensitivity to customers. Emphasis is placed on human relations and the acceptance of flexible operating procedures regarding internal relationships. The core values include cooperation, consideration, agreement, justice

and social equality. Such an organisation is generally a very pleasant place to work where people share a lot of themselves. It is like a big family where leaders are seen as mentors, and where loyalty and tradition keep the organisation together. This result is consistent with the previous studies of Abousaber & Papazafeiropoulou, (2011); Florida & Kenney, (1991); Henri, (2006); (Abousaber & Papazafeiropoulou, 2011; Florida & Kenney, 1991; Henri, 2006; Thomas et al., 2002).

On the other hand, none of the Libyan higher education organisations were dominated by Market or Adhocracy cultures, and these cultures got the third and fourth mean results rank after the Clan and Hierarchy (see table 6:9). Respondents in Libyan higher education organisations did not show the in their organisations of Adhocracy culture, which focuses on external issues and values creativity, flexibility and risk taking, rather than stability and control. Such organisations have an informal organisational structure. Moreover, Adhocracy culture is characterised by an active, entrepreneurial, and creative workplace. People are enthusiastic about taking risks. The ideal that keeps the organisation together is an enthusiasm to innovate, and the emphasis is on being at the leading edge of new knowledge, technology and products, and on being willing to change and accept that new challenges are important for success (K. Cameron & Quinn, 2011).

Libyan higher education organisations do not have the characteristics of a Market culture, which is seen in organisations that focus on the market, product diversity and opportunities in the market environment. This design is known as a form of Market organisation. The organisations with this type of culture are also oriented towards the external environment instead of internal relations. They focus on profit-making, product improvement, the strength of their market position, and customer product bases (K. Cameron & Quinn, 2011).

Most Libyan education is public and uses government funding; therefore, the Market culture is not likely to be one of the dominant cultures in Libyan higher education.

The second objective was to identify the extent of the acceptance, importance and use of performance measurement systems. This objective was achieved by using a fixed set of PMS categories (financial, non-financial and advanced techniques) as well as the effectiveness and usefulness of using PMS to evaluate performance.

The respondents were asked about the use of (and the effectiveness of) financial, non-financial, and advanced techniques (like the balanced scorecard) as PMS categories to evaluate organisational

performance. The respondents agreed that the balanced scorecard is useful in Libyan higher education; it was considered to be a successful tool for use for higher education with mean value above 3 (i.e. moderately used) in the questionnaires. On the other hand, 'using financial PMS to evaluate organisational performance' got the second rank even though the most of the Libyan educational institutions are non profit, government-funded organistions. In the 'importance'-related questions, the second rank went to 'non-financial performance measurement systems /employee' (e.g. employee satisfaction, workforce capabilities, etc.), and employee satisfaction appears to be the second most important criterion for assessing organisational performance in non-financial terms.

To sum up, it can be noted that what is considered important, though not necessarily used. Only in the case of 'non-financial performance measurement systems /innovation' both 'importance' and 'used' got the same rank. As for 'PMS importance', the first three ranks were for non-financial PMS and the fourth rank was for financial, while in case of 'PMS use', financial PMS got the second rank (see table 6:2).

More investigation has been done for PMS importance and use, by running a regression test for separated elements. The results shows that the highest values of R square in PMS use on the item of non-financial PMS (innovation), that mean the OC types (see table 8:5) have an influence on the use of PMS. Organisational culture types (AD, MC, and HC) are a strong predictor of using non-financial PMS (innovation), and a particular organisational culture driving this. These results showed that the three types of OC are influenced the non-financial PMS (innovation). One the other hand, none of OC types influenced the importance of non-financial PMS (innovation). To sum up the OC types have more influence on the PMS use than on the PMS importance, and the Libyan higher education use less PMS than what they agree are important to their organisation these results could be related to the following reasons:

1- PMS has been seen as an increasingly bureaucratic process. Organisations should make their systems more aligned to their companies' culture and strategy and improving how they engage their employees to choose the most important PMS.
2- The nature of work has changed after the new Libyan revolution because of the change of regime. The workforce should be evolving as employees, to get the opportunity for development and coaching and organisations should use technology to use the PMS effectively.

3- Embedding cultural change and rebuilding trust in some sectors to change aspects of their organisational culture. Performance management can support this change by making sure that the desired behaviours and goals are mapped into the PMS.

Libyan higher education administration must identify the barriers to the use of PMS even though there are fewer PMS used that are agreed to be important

The third objective was to investigate the influence and relationships between the four organisational culture types of Clan, Adhocracy, Market and Hierarchy, and the (PMS) acceptance, importance and use of performance measurement systems. This thesis extends previous management accounting literature using a contingency approach and prior research on PMS, by examining the influence of organisational culture on the acceptance, importance and use of one component of management control systems, namely performance measurement.

A particular dominant organisational culture type (Hierarchy and Clan) exhibited a significant positive direct relationship with performance measurement systems acceptance in Libyan higher education, Libyan universities and Libyan higher institutions. It showed no influence in the case of Libyan technical colleges, and influenced 'performance measurement systems (importance)' only in Libyan universities. In the case of 'performance measurement systems (use)', it showed influence in Libyan universities and Libyan higher institutions, while not influencing Libyan technical colleges and Libyan higher education in general. Based upon the results of the hypothesis testing, which showed in the case of PMS acceptance, Hierarchy seemed to significantly influence the Libyan education sector in general and the other two types of Libyan higher education. On the other hand, this dominant culture type does not have a significant relationship with all Libyan higher education types in the case of PMS importance and use. Such findings could encourage higher education to accelerate its efforts to adopt such tools, in order to increase its effectiveness and global competitiveness.

Cameron and Quinn (1999) stated that most organisations progress from an initial Clan culture to a Hierarchy culture. Some organisations look for stability and control, and focus more on the internal issues to keep their organisation going; thus, they will not be keen to change. This is especially relevant since there is no competition between organisations in Libya, where the government owns everything.

Overall, this study shows different results in Libyan higher education organisations in terms of the acceptance, importance and use of PMS. When PMS related literature is reviewed, it is seen that different cultural environments could require a different PMS to increase organisational success.

Therefore, managers have to define organisational culture and design PMS convenient to the existing organisational culture, because if there is an incompatibility between PMS and organisational culture, a designed system can never achieve any success for business. Thus, top management must provide PMS appropriate to the needs of decision-making and organisational culture. Moreover, the results suggest that the behaviour and attitude of the respondents are influenced by the dominate organisational culture types (Clan and Hierarchy), and organisations should shift from the Clan and Hierarchy cultures types to other cultures types that have a positive influence on PMS acceptance, importance and use to evaluate the organisational performance of their institutions.

Also, this objective was to investigate the employees in different levels of management, who have the same or different organisational culture types. The hypotheses were tested, and the results showed that the type of organisational culture that is dominant varies depending on various factors: the type of higher education system, job title and position, and level of education and experience.

The Hierarchy type is dominant in Libyan higher education in general, and in Libyan public universities and Libyan Technical colleges, while the private universities are dominated by the Clan culture. On the other hand, Clan culture is dominant in higher institutions in Libyan higher education.

The dominant organisational culture depends on job title and position, and different levels of management have different organisational culture types. The highest level (The President of the Organisation, Vice President) shares the Clan culture type. On the other hand, other levels (Chief/Assistant Chief/Vice Chief of Finance, Chief/Assistant Chief/Vice Chief of Administrative Department, Financial Controller and Others) share the Hierarchy culture type.

The dominant organisational culture is different depending on level of education and experience. Employees with Bachelor's degree qualifications, professional qualifications and other qualifications share a Hierarchy culture. However, those with post-graduate (e.g. MSc, MBA, Ph.D.) qualifications share a Clan culture and almost all of them are at the highest level of job title and position (The President of Organisation, Vice President) and share a Clan culture. Also, employees with different levels of experience have different organisational culture types, and employees who have an experience of less than one year and of 6-10 years share a Hierarchy culture while those with an experience of 1-5 years and of more than 10 years share a Clan culture.

9.3 Research contributions

The research contribution has two perspectives: theory and knowledge; and empirical and practical. The main contributions of this study are as follows:

9.3.1 Contributions to Knowledge and Theory

Research on cultural influences on performance measurement systems to date has been very limited for developing countries. Moreover, no previous studies incorporate organisational culture and PMS acceptance, importance and use. Therefore, this study has generally contributed to the literature on management accounting in general and to the performance measurement systems gap in particular; it also has specific implications for researchers and practitioners.

Firstly, there is a the scarcity of literature in organisational culture and performance measurement systems studies throughout the developing countries, and throughout the higher education sector; this study attempts to fill part of this gap by identifying the different types of organisational culture within the higher education sector, either neglected or conflated in previous studies. Secondly, this study has produced results based on contingency theory and a defined conceptual model of organisational culture, employing it in the Libyan education sector to understand the influence of OC on PMS acceptance, importance and use, this study has thus provided a theoretical contribution to existing knowledge by expanding the concept of organisational culture to answer the research questions. Thirdly, this study is perhaps the first to compare three higher education types in relation to PMS acceptance, importance and use, and four organisational culture variables. Fourthly, this study found that even in the same sector organisational culture types were different, when previous studies in the Libyan context found that different sectors have the same organisational culture type. Finally, the study supports the contingency theory that there is no universally appropriate system applying equally to all organisations in all circumstances; it has demonstrated that the influence of organisational culture on PMS acceptance, importance and use of performance differed according to different circumstances.

The findings could be used to design a PMS framework according to organisational culture type for each type of higher education. For example Libyan universities have hierarchy culture type which is controlled and structured place, while the Libyan institutions have a clan culture type which has flexibility and discretion because of these different types of characteristics, therefore these findings could be used to design a PMS framework and this relate to contingency theory in that there is no universally appropriate system applying equally to all organisations in all circumstances.

9.3.2 Empirical and Practical Contributions

One of the advantages of the study is that it has investigated the Libyan education sector by using a contingency theory factor.

Firstly, this study has applied this theory to the education sector in Libya, a developing country that has context and culture different from those in which most previous studies have been conducted; these previous studies have all been in developed and western countries, and in sectors other than education. Secondly, this study is an empirical test of the contingency theory, as it achieved results in an investigation of the influence of a contingency theory factor (organisational culture) on the acceptance, importance and use of performance measurement systems in Libyan higher education. Thirdly, the study investigated financial and non-financial performance measurement systems that can be applied in higher education. Fourthly, this research study may draw attention to the influence of organisational culture on performance measurement systems; Culture, regardless of how powerfully it may be established, it is not stable or fixed, but may be changed and affected by its environment. Finally, this study being the most recent to investigate the organisational culture profile within Libya, it contributes to the most contemporary insight into which cultural values are operating within this society; the findings of this study could be used for designing a PMS framework to be implemented in Libyan higher education.

9.4 Limitations

There are several limitations in this research study: they should be taken into account in any schema for further research. These limitations can be summarized as follows:

1- The respondents were Libyans, so the findings are limited only to the context of Libya, and reflect only the views of the participants residing in Libya. These views are affected by the culture, rules and structure of the country. Consequently, the results cannot be extended or generalised to other countries; studies of originations operating in different social, political and economic environments may obtain other results.

2- The sample was composed of only top managers of Libyan higher education sector. Therefore, a more comprehensive sample may be useful for future studies.

3- The absence of similar studies in Libyan higher education prevented the researcher from assimilating thesis findings of this research with those of other studies. Although this is a

restriction, it is at the same time one of the assets of this study; as mentioned earlier this may be the first attempt to explore the influence of OC on PMS in Libyan higher education. Therefore, the findings of this study invite other researchers to use and extend them.

4- The current study adopted a cross-sectional design, and was conducted at one point in time. This cross-departmental study therefore represents only one timeframe.

9.5 Future Studies

This study could point to many interesting areas that could be explored in further research, and as such it represents a beginning rather than an end. Clearly, more research on PMS in the service sectors is needed. The suggestions are as follows:

1- As this study concentrated only on the Libyan higher education sector, it is recommended that future efforts should involve other sectors in order to learn whether a generalisation of the findings is possible beyond their setting.

2- As this study focused on the Libyan higher education sector, it is recommended that the methodology be used with other higher education institutions in countries with a similar culture (i.e. other Arab countries) in order to conduct a comparative analysis and facilitate the development of a deeper understanding of the topic in the Arab world.

3- In this context, future research may test how sub dimensions of BSC and the use of PMS affect organisational performance, depending on four different types of organisational culture.

4- Future research may be designed to compare the findings in this study with findings that relate to organisations in other countries.

5- This outlook suggests that organisations can implement management practices that foster job security and internal career development in order to keep turnover low, and maintain those social phenomena that comprise organisational culture (values, beliefs, norms, assumptions) within the organisation, and thus form a strong organisational culture.

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Appendix A

Organisational Culture Assessment Instrument (OCAI) (K. Cameron & Quinn, 2011)

The Organisational Culture Assessment Instrument (OCAI), to be used to diagnose your organization's culture. The instrument is in the form of a questionnaire that requires individuals to respond to just six items. Longer versions of the OCAI containing more items have been developed (one is a twenty-four-item version), but the six items in this version have been found to be equally predictive of an organisation's culture.

The OCAI consists of six items. Each item has four alternatives. Divide 100 points among these four alternatives, depending on the extent to which each alternative is similar to your own organization. Give a higher number of points to the alternative that is most similar to your organization. For example, on item 1, if you think alternative A is very similar to your organization, alternatives B and C are somewhat similar, and alternative D is hardly similar at all, you might give 55 points to A, 20 points each to B and C, and 5 points to D. Just be sure that your total equals 100 for each item. That the left-hand response column for the instrument is labelled "Now". These responses mean that you are rating your organisation as it is currently. Complete that rating first.

Scoring the OCAI

Scoring the OCAI is very easy. It requires simple arithmetic calculations. The first step is to add together all a responses in the "Now" column and divide by 6. That is, compute an average score for the A alternatives in the "Now" column. You may use the worksheet if you'd like. Next, add together all B responses and divide by 6. Repeat this computation for the C and D alternatives.

The Organisational Culture In this section we are going to characterise your organisation's culture. This part consists of 6 questions that you are asked to rate your organisation. Each question has four alternatives. Divide 100 points among the four alternatives depending on the extent to which each alternative fit to your own organisation. Give a higher number of points to the alternative that is most fit to your organisation. (For example, in question 1, if you think alternative A is very similar to your organisation, alternative B and C are somewhat similar, and alternative D is hardly similar at all, you might give 50 points to A, 25 points to B and 20 points C, and give 5 points to D. Be sure that your total equals 100 for each question).

Note that the response column labelled "Now". These responses mean that you are rating your

organisation as it is currently.

C1. Dominant Characteristics		**Score**
A	The organisation is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
B	The organisation is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	
C	The organisation is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	
D	The organisation is very controlled and structured place. Forma procedures generally govern what people do.	
	Total	**100**
C2. Organisational Leadership		**Score**
A	The leadership in the organisation is generally considered to exemplify mentoring, facilitating, or nurturing.	
B	The leadership in the organisation is generally considered to exemplify entrepreneurship, innovating, or risk taking.	
C	The leadership in the organisation is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	
D	The leadership in the organisation is generally considered to exemplify coordinating, organising, or smooth-running efficiency.	
	Total	**100**
C3. Management of Employees		**Score**
A	The management style in the organisation is characterised by teamwork, consensus, and participation.	
B	The management style in the organisation is characterised by individual risk-taking, innovation, freedom, and uniqueness.	

C	The management style in the organisation is characterised by hard-driving competitiveness, high demands, and achievement.	
D	The management style in the organisation is characterised by security of employment, conformity, predictability, and stability in relationships.	
	Total	**100**
C4. Organisation Glue		**Score**
A	The glue that holds the organisation together is loyalty and mutual trust. Commitment to this organisation runs high.	
B	The glue that holds the organisation together is commitment to innovation and development. There is an emphasis on being on the cutting edge.	
C	The glue that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	
D	The glue that holds the Maintaining a smooth-running organisation is important organisation together is formal rules and policies.	
Total		100
C5. Strategic Emphases		Score
A	The organisation emphasises human development. High trust, openness, and participation persist.	
B	The organisation emphasises acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
C	The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	

D	The organisation emphasises permanence and stability. Efficiency, contro and smooth operations are important.	
Total		100
C6. Criteria of Success		Score
A	The organisation defines success on the basis of the development o human resources, teamwork, employee commitment, and concern for people.	
B	The organisation defines success on the basis of having the most unique or newest products. It is a product leader and innovator.	
C	The organisation defines success on the basis of the winning in the marketplace and outpacing the competition. Competitive market leadership is key.	
D	The organisation defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.	
Total		100

Appendix B: Thesis Questionnaire

Dear Participant

I am a Ph.D. student at the University of Huddersfield, UK, currently preparing my doctoral project on the:

The Influence of Organisational Culture on Performance Measurement Systems in Libyan Higher Education

This research aims to explore and investigate the dominant type of organisational culture on the acceptance of financial, non-financial performance measurement systems, and their impact on organisations performance. The final results of this study will be available to all those who participated in the study upon request.

This questionnaire is aimed at decision makers who are using financial and non-financial performance measurement system in their organisations. Your assistance in completing the attached questionnaire would be greatly appreciated. Please remember that it is important to complete the survey according to the instructions provided for each part.

I would like to reassure you that your response will be treated as strictly confidential and will only be used for the purposes of this research. It will not be disclosed to third parties under any circumstances

Should you need further information or clarification regarding this research study, please do not hesitate to contact me or my main supervisor at the addresses below.

Thank you for your co-operation in completing this questionnaire.

Yours sincerely

Samia Aboajela

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Glossary

1. Organisational Culture (OC)

Organisational culture refers to a set of shared values, belief, and assumptions and practices that shape and guide member's attitudes and behaviour in the organisation.

2. Performance Measurement System (PMS)

Process of assessing progress toward achieving predetermined goals, including information on the efficiency and can be defined as a metric used to quantify the efficiency and/or effectiveness of action.

3. Balanced Scorecard (BSC)

The Balanced Scorecard (BSC) is a strategic performance management framework that allows organisations to manage and measure the delivery of their strategy, it consists of four perspectives that are mixed between financial and non-financial metrics (Financial perspective, Customer perspective, Learning and growth perspective, Internal business process perspective) to evaluate and improve the performances

4. Organisational Performance (OP)

The organisational performance is the ability of the organisation to achieve its goals and objectives.

Section A- General Information about Your Self

For questions A1 to A3 below please tick [✓] relevant answers to indicate:

Job title an position
[ ] The President Of Organisation
[ ] Vice President
[ ] Chief of Finance Department /Assistant/ Vice
[ ] Chief of Administrative Department /Assistant/ Vice
[ ] Financial Controller
[ ] Other *(please specify)* ……..

Experience	Less than one year	1-5 years	6-10 years	More than 10 years
In the current job	[ ]	[ ]	[ ]	[ ]
With the current organisation	[ ]	[ ]	[ ]	[ ]

Qualification
[ ] Bachelor's degree
[ ] Post-graduate (e.g. MSc, MBA, Ph.D.)
[ ] Professional qualifications (*please specify*)……..
[ ] Other *(please specify)*……

Section B- General Information about Your Organisation

Organisational age	
[ ] Less than 5 years	[ ] 5- Less than 11 years
[ ] 11-20 years	[ ] More than 20 years

Type of higher education Ownership:	
Public	[ ]
Private	[ ]

Type of higher education:	
University	[ ]
Higher institution	[ ]
Technical colleges	[ ]

Section C - Organisational Culture

In this section we are going to characterise your organisation's culture. This part consists of 6 questions that you are asked to rate your organisation. Each question has four alternatives, which refer to four types of culture. Divide 100 points among the four alternatives depending on the extent to which each alternative fit to your own organisation. Give a higher number of points to the alternative that is most fit to your organisation. (For example, in question 1, if you think alternative A is very similar to your organisation, alternative B and C are somewhat similar, and alternative D is hardly similar at all, you might give 50 points to A, 25 point to B and 20 points C, and give 5 points to D. Be sure that your total equals 100 for each question).

These responses mean that you are rating your **organisation as it is currently**.

C1. Dominant Characteristics		**Score**
A	The organisation is a very personal place. It is like an extended family. People seem to share a lot of themselves.	
B	The organisation is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.	
C	The organisation is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.	

D	The organisation is very controlled and structured place. Formal procedures generally govern what people do.	
Total		**100**

C2. Organisational Leadership		**Score**
A	The leadership in the organisation is generally considered to exemplify mentoring, facilitating, or nurturing.	
B	The leadership in the organisation is generally considered to exemplify entrepreneurship, innovating, or risk taking.	
C	The leadership in the organisation is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.	
D	The leadership in the organisation is generally considered to exemplify coordinating, organising, or smooth-running efficiency.	
Total		**100**

C3. Management of Employees		**Score**
A	The management style in the organisation is characterised by teamwork, Consensus and participation.	
B	The management style in the organisation is characterised by individual risk-taking, innovation, freedom and uniqueness.	
C	The management style in the organisation is characterised by hard-driving competitiveness, high demands, and achievement.	
D	The management style in the organisation is characterised by security of employment, conformity, predictability, and stability in relationships.	
Total		**100**

C4. Organisation Glue	**Score**

A	The glue that holds the organisation together is loyalty and mutual trust. Commitment to this organisation runs high.	
B	The glue that holds the organisation together is commitment to innovation and development. There is an emphasis on being at the cutting edge.	
C	The glue that holds the organisation together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.	
D	The glue that holds the organisation together is formal rules and policies. Maintaining a smooth-running organisation is important.	
Total		100

C5. Strategic Emphases		Score
A	The organisation emphasises human development. High trust, openness, and participation persist.	
B	The organisation emphasises acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.	
C	The organisation emphasises competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.	
D	The organisation emphasises permanence and stability. Efficiency, control and smooth operations are important.	
Total		100

C6. Criteria of Success		Score
A	The organisation defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.	
B	The organisation defines success on the basis of it is a product leader and innovator.	

C	The organisation defines success on the basis of the winning in the market place and outpacing the competition. Competitive market leadership is key.	
D	The organisation defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.	
Total		100

Section D – Financial and non-financial performance measurement system acceptance

Please answer the items below by circling the number from the scale below. Please circle the chosen number clearly and if you want to correct your answer, erase the wrong answer carefully first.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

D1	Using financial performance measurement systems in my job would enable me to evaluate organisational performance.	1 2 3 4 5
D2	Using non-financial performance measurement systems in my job would enable me to evaluate organisational performance.	1 2 3 4 5
D3	Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance.	1 2 3 4 5
D4	Using performance measurement systems (e.g. balanced scorecard) would enhance my effectiveness on the job.	1 2 3 4 5
D5	I would find performance measurement systems (e.g. balanced scorecard) useful in my job.	1 2 3 4 5

Section E: The Performance Measurement System With in Your Organisation Unit

Part 1: For each of the categories listed below, please indicate the importance of performance indicators falling within each category as drivers of the long-term success of your organisation. Using the scale below, please circle the chosen number clearly and if you want to correct your answer, erase the wrong answer carefully first.

1	2	3	4	5
Extremely important	Important	Moderate importance	Not important	Not at all important

Performance categories	Importance Level
El. Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels etc.)	1 2 3 4 5
E2. Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	1 2 3 4 5
E3. Innovation (e.g. courses or educational programs)	1 2 3 4 5
E4. Employee (e.g. employee satisfaction, workforce capabilities, etc.)	1 2 3 4 5
E5. Quality (e.g. academic quality awards, etc.)	1 2 3 4 5
E6. Community (e.g. public image, community involvement, etc.)	1 2 3 4 5

Part 2: For each of the categories listed below, please indicate the extent to which relevant indicators within each category are used to evaluate performance. Using the scales below, please circle the chosen number clearly and if you want to correct your answer, erase the wrong answer carefully first.

1	2	3	4	5
Not used at all	Slightly used	Moderately used	Significantly used	Highly used

Performance categories	
Fl. Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student,	1 2 3 4 5
F2. Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	1 2 3 4 5
F3. Innovation (e.g. courses or educational programs)	1 2 3 4 5
F4. Employee (e.g. employee satisfaction, workforce capabilities, etc.)	1 2 3 4 5
F5. Quality (e.g. academic quality awards, etc.)	1 2 3 4 5
F6. Community (e.g. public image, community involvement, etc.)	1 2 3 4 5

Appendix C: An interview guide

I am conducting a research on organisational cultural studies in Libyan higher education. This interview does not seek to conduct for commercial purpose, in which the information contributed during the interview sessions are to be remaining strictly confidential and will be used for this PhD thesis and is in the academic purpose only.

To ensure anonymity, both name and position of the participant are not being included in any parts of the thesis.

As a material, this interview guide gives an introductory of the two main parts each interview session is to be engaged.

Part 1: Getting to know the organisation

This part is associated with the information on organisation's background and other general areas relevant to the work with Libyan higher education.

Part 2: Diagnosing organisational culture

This part is associated with the actual picture of the organisational culture of the Libyan public and private universities to support the questionnaire survey results.

Section 1- General Information about Your Self

Job title an position

[ ] The President Of Organisation

[ ] Vice President

[ ] Chief of Finance Department /Assistant/ Vice

[ ] Chief of Administrative Department /Assistant/ Vice

[ ] Financial Controller

[ ] Other *(please specify)* ……..

Experience	Less than one year	1-5 years	6-10 years	More than 10 years
In the current job	[ ]	[ ]	[ ]	[ ]
With the current organisation	[ ]	[ ]	[ ]	[ ]

Qualification

[ ] Bachelor's degree

[ ] Post-graduate (e.g. MSc, MBA, Ph.D.)

[ ] Professional qualifications (*please specify*)……..

[ ] Other *(please specify)*…….

Section 2 – Organisational Culture Type

Part 1- Fixed-choice questions

The first six aspects were originally adopted from the Organisational Culture Assessment Instrument (OCAI) by Cameron and Quinn (2006). The participants will be asked to choose among the four alternatives to indicate the most appropriate choice to describe their organisation.

1.1 Domain characteristics

a. The organisation is a very personal place. It is like an extended family. People seem to share a lot of themselves.

b. The organisation is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.

c. The organisation is very result-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented.

d. The organisation is a very controlled and structured place. Formal procedures generally govern what people do.

1.2 Organisational leadership

a. The leadership in the organisation is generally considered to exemplify mentoring, facilitating, or nurturing.

b. The leadership in the organisation is generally considered to exemplify entrepreneurship, innovation, or risk taking.

c. The leadership in the organisation is generally considered to exemplify a no-nonsense, aggressive, or results-oriented focus.

d. The leadership in the organisation is generally considered to exemplify coordinating, organising, or

smooth-running efficiency.

1.3 Management of employees

a. The management style in the organisation is characterised by teamwork, consensus, and participation.

b. The management style in the organisation is characterised by individual risk taking, innovation, freedom, and uniqueness.

c. The management style in the organisation is characterised by hard-driving competitiveness, high demands, and achievement.

d. The management style in the organisation is characterised by security of employment, conformity, predictability, and stability in relationships.

1.4 Organisation glue/cohesion

a. The glue that holds organisation together is loyalty and mutual trust.

Commitment to this organisation runs high.

b. The glue that holds organisation together is commitment to innovation and development. There is an emphasis on being on the cutting edge.

c. The glue that holds organisation together is the emphasis on achievement and goal accomplishment.

d. The glue that holds organisation together is formal rules and policies.

Maintaining a smooth-running organisation is important.

1.5 Strategic emphasis

a. The organisation emphasizes human development. High trust, openness, and participation persist.

b. The organisation emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.

c. The organisation emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.

d. The organisation emphasizes permanence and stability. Efficiency, control, and smooth operations are important.

1.6 Criteria of success

a. The organisation defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.

b. The organisation defines success on the basis of having the most unique or newest products. It is a

product leader or innovator.

c. The organisation defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.

d. The organisation defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are critical.

Part 2 – Open-ended questions

The participants were asked to give in-depth details to explain, describe, and elaborate which of the following organisational culture types describe their organisation and why.

1- The Clan Culture

The organisation in this type of culture is a very friendly place to work where people share a lot of themselves. It is like an extended family. The leaders, or head of the organisation, are considered to be mentors and, maybe even, parent figures. The organisation is held together by loyalty or tradition. Commitment is high. The organisation emphasizes the long-term benefit of human resource development and attaches great importance to cohesion and morale. Success is defined in terms of sensitivity to customers and concern for people. The organisation places a premium on teamwork, participation, and consensus.

2- The Adhocracy Culture

A dynamic, entrepreneurial, and creative place to work. People stick their necks out and take risks. The leaders are considered to be innovators and risk takers. The glue that holds the organisation together is commitment to experimentation and innovation. The emphasis is on being on the leading edge. The organisation's long-term emphasis is on growth and acquiring new resources. Success means gaining unique and new products or services. Being a product or service leader is important. The organisation encourages individual initiative and freedom.

3- The Market Culture

The organisation is a results-oriented organisation. The major concern is getting the job done. People are competitive and goal-oriented. The leaders are hard drivers, producers, and competitors. They are tough and demanding. The glue that holds the organisation together is an emphasis on winning. Reputation and success are common concerns. The long-term focus is on competitive actions and achievement of measurable goals and targets. Success is defined in terms of market share and penetration. Competitive pricing and market leadership are important. The organisational style is hard-

driving competitiveness.

4-The Hierarchy Culture

The organisation is a very formalized and structured place to work. Procedures govern what people do. The leaders pride themselves on being good coordinators and organizers, who are efficiency-minded. Maintaining a smooth-running organisation is most critical. Formal rules and policies hold the organisation together. The long-term concern is on stability and performance with efficient, smooth operations. Success is defined in terms of dependable delivery, smooth scheduling, and low cost. The management of employees is concerned with secure employment and predictability.

Appendix D

CC = Clan Culture / AC= Adhocracy Culture / MC= Market Culture / HC= Hierarchy Culture								
N	**Institution Type**	**Job Title**	**CC**	**AC**	**MC**	**HC**	**Dominant Culture for each Questionnaire**	**Dominant Culture for institution type**
1	Public University	Vice President	17	27	20	37	HC	HC
2	Public University	Chief of Finance Department	24	19	22	35	HC	HC
3	Public University	Financial Controller	27	22	18	33	HC	HC
4	Public University	Others	15	27	25	33	HC	HC
5	Public University	The President	13	27	18	43	HC	HC
6	Public University	Chief of Finance Department	25	22	22	32	HC	HC
7	Higher institution	The President	48	22	12	18	CC	CC / HC
8	Higher institution	Financial Controller	35	20	20	25	CC	CC / HC
9	Higher institution	Financial Controller	22	25	12	35	HC	CC / HC
10	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC
11	Higher institution	Other	40	18	8	35	HC	CC / HC
12	Higher institution	Vice President	33	20	23	24	CC	CC / HC
13	Higher institution	The President	31	24	13	32	HC	CC / HC
14	Higher institution	Chief of Administrative Department	27	23	25	25	CC	CC / HC
15	Higher institution	Chief of Finance Department	33	23	20	23	CC	CC / HC
16	Higher institution	Vice President	37	21	18	24	CC	CC / HC
17	Higher institution	The President	50	14	18	18	CC	CC / HC
18	Higher institution	Other	23	24	26	28	HC	CC / HC
19	Higher institution	Chief of Administrative Department	22	27	17	35	HC	CC / HC
20	Higher institution	Vice President	23	29	19	29	HC	CC / HC

21	Higher institution	The President	36	16	23	26	CC	CC / HC
22	Higher institution	Other	42	15	10	33	CC	CC / HC
23	Higher institution	Other	21	15	17	48	HC	CC / HC
24	Higher institution	Chief of Administrative Department	23	27	23	27	HC	CC / HC
25	Higher institution	Chief of Finance Department	19	24	9	48	HC	CC / HC
26	Higher institution	Other	33	25	19	23	CC	CC / HC
27	Higher institution	Chief of Finance Department	28	25	25	23	CC	CC / HC
28	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
29	Higher institution	Other	36	18	20	27	CC	CC / HC
30	Higher institution	Chief of Finance Department	37	19	22	23	CC	CC / HC
31	Higher institution	The President	22	16	20	38	HC	CC / HC
32	Higher institution	Financial Controller	13	23	26	38	HC	CC / HC
33	Higher institution	Chief of Finance Department	32	29	21	18	CC	CC / HC
34	Higher institution	Financial Controller	22	24	23	32	HC	CC / HC
35	Higher institution	Other	40	18	8	35	CC	CC / HC
36	Higher institution	Other	22	32	12	35	HC	CC / HC
37	Higher institution	The President	36	16	23	26	CC	CC / HC
38	Higher institution	Chief of Finance Department	19	24	9	48	HC	CC / HC
39	Higher institution	Chief of Finance Department	33	23	20	23	CC	CC / HC
40	Higher institution	Chief of Administrative Department	22	27	17	35	HC	CC / HC
41	Higher institution	The President	48	22	12	18	CC	CC / HC
42	Higher institution	Chief of Finance Department	30	25	20	25	CC	CC / HC
43	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC
44	Higher institution	Other	23	24	26	28	HC	CC / HC
45	Higher institution	Other	33	25	19	23	CC	CC / HC

46	Higher institution	Financial Controller	28	23	23	26	CC	CC / HC
47	Higher institution	Vice President	33	20	23	24	CC	CC / HC
48	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
49	Higher institution	Chief of Administrative Department	23	27	23	27	HC	CC / HC
50	Higher institution	Chief of Administrative Department	40	18	8	35	CC	CC / HC
51	Higher institution	Chief of Finance Department	37	19	22	23	CC	CC / HC
52	Higher institution	The President	48	22	12	18	CC	CC / HC
53	Higher institution	The President	36	18	20	27	CC	CC / HC
54	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC
55	Higher institution	The President	22	16	20	38	HC	CC / HC
56	Higher institution	Vice President	23	29	19	29	HC	CC / HC
57	Higher institution	Financial Controller	31	26	20	23	CC	CC / HC
58	Higher institution	Chief of Finance Department	33	23	20	23	CC	CC / HC
59	Higher institution	Vice President	37	21	18	24	CC	CC / HC
60	Higher institution	Vice President	33	20	23	24	CC	CC / HC
61	Higher institution	Chief of Administrative Department	22	27	17	35	HC	CC / HC
62	Higher institution	Vice President	48	22	12	18	CC	CC / HC
63	Higher institution	Other	23	24	26	28	HC	CC / HC
64	Higher institution	Other	40	18	8	35	CC	CC / HC
65	Higher institution	The President	36	16	23	26	CC	CC / HC
66	Higher institution	Chief of Administrative Department	27	23	25	25	CC	CC / HC
67	Higher institution	Financial Controller	23	23	28	26	CC	CC / HC
68	Higher institution	The President	50	14	18	18	CC	CC / HC
69	Higher institution	Other	22	32	12	35	HC	CC / HC
70	Higher institution	Vice President	42	15	10	33	CC	CC / HC
71	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC

72	Higher institution	Chief of Finance Department	19	24	9	48	HC	CC / HC
73	Higher institution	The President	48	22	12	18	CC	CC / HC
74	Higher institution	The President	31	24	13	32	HC	CC / HC
75	Higher institution	Chief of Administrative Department	23	27	23	27	HC	CC / HC
76	Higher institution	Chief of Finance Department	33	23	20	23	CC	CC / HC
77	Higher institution	Chief of Finance Department	37	19	22	23	CC	CC / HC
78	Higher institution	Financial Controller	23	26	28	23	CC	CC / HC
79	Higher institution	Financial Controller	33	25	19	23	CC	CC / HC
80	Higher institution	Chief of Finance Department	35	20	20	25	CC	CC / HC
81	Higher institution	Other	22	32	12	35	HC	CC / HC
82	Higher institution	Vice President	36	18	20	27	CC	CC / HC
83	Higher institution	Vice President	31	24	13	32	HC	CC / HC
84	Higher institution	The President	36	16	23	26	CC	CC / HC
85	Higher institution	The President	48	22	12	18	CC	CC / HC
86	Higher institution	Vice President	23	29	19	29	HC	CC / HC
87	Higher institution	Chief of Finance Department	27	23	25	25	CC	CC / HC
88	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC
89	Higher institution	The President	50	14	18	18	CC	CC / HC
90	Higher institution	Financial Controller	40	18	8	35	CC	CC / HC
91	Higher institution	Chief of Finance Department	22	27	17	35	HC	CC / HC
92	Higher institution	Financial Controller	40	20	15	25	CC	CC / HC
93	Higher institution	The President	31	24	13	32	HC	CC / HC
94	Higher institution	Vice President	37	21	18	24	CC	CC / HC
95	Higher institution	Financial Controller	23	24	26	28	HC	CC / HC
96	Higher institution	Chief of Finance Department	22	32	12	35	HC	CC / HC
97	Higher institution	Chief of Finance	33	23	20	23	CC	CC / HC

		Department						
98	Higher institution	The President	36	16	23	26	CC	CC / HC
99	Higher institution	Vice President	33	20	23	24	CC	CC / HC
100	Higher institution	Vice President	27	23	25	25	CC	CC / HC
101	Higher institution	Other	42	15	10	33	CC	CC / HC
102	Higher institution	Other	23	24	26	28	HC	CC / HC
103	Higher institution	Chief of Finance Department	30	12	17	42	HC	CC / HC
104	Higher institution	Chief of Finance Department	19	24	9	48	HC	CC / HC
105	Higher institution	Vice President	22	27	17	35	HC	CC / HC
106	Higher institution	Vice President	23	29	19	29	HC	CC / HC
107	Higher institution	The President	31	24	13	32	HC	CC / HC
108	Higher institution	Vice President	33	25	19	23	CC	CC / HC
109	Higher institution	Chief of Administrative Department	27	23	25	25	CC	CC / HC
110	Higher institution	The President	50	14	18	18	CC	CC / HC
111	Higher institution	Financial Controller	23	27	23	27	HC	CC / HC
112	Higher institution	Chief of Administrative Department	22	32	12	35	HC	CC / HC
113	Higher institution	The President	22	16	20	38	HC	CC / HC
114	Higher institution	Chief of Finance Department	37	19	22	23	CC	CC / HC
115	Higher institution	The President	36	18	20	27	CC	CC / HC
116	Higher institution	Vice President	33	20	23	24	CC	CC / HC
117	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
118	Higher institution	The President	36	16	23	26	CC	CC / HC
119	Higher institution	Other	40	18	8	35	CC	CC / HC
120	Higher institution	Financial Controller	13	23	26	38	HC	CC / HC
121	Higher institution	Chief of Finance Department	33	23	20	23	CC	CC / HC
122	Higher institution	Other	23	24	26	28	HC	CC / HC
123	Higher institution	Vice President	30	20	10	40	HC	CC / HC
124	Higher institution	Chief of Administrative	27	23	25	25	CC	CC / HC

		Department						
125	Higher institution	Vice President	23	29	19	29	HC	CC / HC
126	Higher institution	Chief of Finance Department	33	25	19	23	CC	CC / HC
127	Higher institution	The President	31	24	13	32	HC	CC / HC
128	Higher institution	Chief of Administrative Department	23	27	23	27	HC	CC / HC
129	Higher institution	Chief of Finance Department	32	29	21	18	CC	CC / HC
130	Higher institution	Other	21	15	17	48	HC	CC / HC
131	Higher institution	Vice President	37	21	18	24	CC	CC / HC
132	Higher institution	Financial Controller	22	24	23	32	HC	CC / HC
133	Higher institution	Vice President	42	15	10	33	CC	CC / HC
134	Higher institution	Vice President	22	16	20	38	HC	CC / HC
135	Higher institution	The President	50	14	18	18	CC	CC / HC
136	Higher institution	Chief of Administrative Department	22	27	17	35	HC	CC / HC
137	Higher institution	Vice President	23	29	19	29	HC	CC / HC
138	Higher institution	Financial Controller	22	24	23	32	HC	CC / HC
139	Higher institution	Vice President	37	21	18	24	CC	CC / HC
140	Higher institution	Chief of Finance Department	32	29	21	18	CC	CC / HC
141	Higher institution	Financial Controller	23	24	26	28	HC	CC / HC
142	Higher institution	Financial Controller	22	24	23	32	HC	CC / HC
143	Higher institution	Vice President	33	20	23	24	CC	CC / HC
144	Higher institution	Financial Controller	13	23	26	38	HC	CC / HC
145	Higher institution	Chief of Finance Department	30	10	10	50	HC	CC / HC
146	Higher institution	Financial Controller	19	24	9	48	HC	CC / HC
147	Higher institution	The President	50	14	18	18	CC	CC / HC
148	Higher institution	Financial Controller	33	25	19	23	CC	CC / HC
149	Higher institution	Vice President	37	21	18	24	CC	CC / HC
150	Higher institution	Other	21	15	17	48	HC	CC / HC
151	Higher institution	Vice President	37	19	22	23	CC	CC / HC
152	Higher institution	Other	42	15	10	33	CC	CC / HC

153	Higher institution	The President	22	16	20	38	HC	CC / HC
154	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
155	Higher institution	Other	21	15	17	48	HC	CC / HC
156	Higher institution	Chief of Finance Department	32	29	21	18	CC	CC / HC
157	Higher institution	Financial Controller	36	18	20	27	CC	CC / HC
158	Higher institution	Financial Controller	22	24	23	32	HC	CC / HC
159	Higher institution	Chief of Finance Department	20	10	10	60	HC	CC / HC
160	Higher institution	Chief of Finance Department	13	23	26	38	HC	CC / HC
161	Higher institution	Chief of Administrative Department	23	27	23	27	HC	CC / HC
162	Higher institution	Financial Controller	21	15	17	48	HC	CC / HC
163	Higher institution	The President	22	16	20	38	HC	CC / HC
164	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
165	Higher institution	Chief of Finance Department	19	24	9	48	HC	CC / HC
166	Higher institution	Chief of Finance Department	37	19	22	23	CC	CC / HC
167	Higher institution	Financial Controller	42	15	10	33	CC	CC / HC
168	Higher institution	Vice President	36	18	20	27	CC	CC / HC
169	Higher institution	Other	33	25	19	23	CC	CC / HC
170	Higher institution	Chief of Administrative Department	40	13	15	32	CC	CC / HC
171	Technical colleges	The President	18	18	26	38	HC	HC
172	Technical colleges	Chief of Finance Department	32	23	17	28	CC	HC
173	Technical colleges	Financial Controller	8	20	21	52	HC	HC
174	Technical colleges	Vice President	35	17	20	28	CC	HC
175	Technical colleges	Chief of Administrative Department	40	20	10	30	CC	HC
176	Technical colleges	Financial Controller	53	20	15	12	CC	HC
177	Technical colleges	The President	18	18	26	38	HC	HC

178	Technical colleges	Chief of Finance Department	25	28	21	27	AC	HC
179	Technical colleges	Financial Controller	13	20	25	42	HC	HC
180	Technical colleges	Chief of Finance Department	32	23	17	28	CC	HC
181	Technical colleges	Financial Controller	8	20	21	52	HC	HC
182	Technical colleges	Vice President	35	17	20	28	CC	HC
183	Technical colleges	Financial Controller	9	12	24	53	HC	HC
184	Technical colleges	Vice President	22	26	23	30	HC	HC
185	Technical colleges	Chief of Finance Department	27	24	23	27	HC	HC
186	Technical colleges	Chief of Administrative Department	40	20	10	30	CC	HC
187	Technical colleges	Chief of Finance Department	25	28	21	27	AC	HC
188	Technical colleges	Financial Controller	13	20	25	42	HC	HC
189	Technical colleges	Financial Controller	9	12	24	53	HC	HC
190	Technical colleges	Chief of Finance Department	27	24	23	27	HC	HC
191	Technical colleges	Chief of Administrative Department	32	21	12	36	HC	HC
192	Technical colleges	The President	22	26	23	30	HC	HC
193	Technical colleges	The President	24	17	25	34	HC	HC
194	Technical colleges	Chief of Administrative Department	23	27	33	18	MC	HC
195	Technical colleges	Vice President	14	12	9	65	HC	HC
196	Technical colleges	Chief of Administrative Department	23	27	33	18	MC	HC
197	Technical colleges	Chief of Administrative Department	23	27	33	18	MC	HC
198	Private University	Chief of Administrative Department	24	19	21	36	HC	CC
199	Private University	Vice President	29	23	18	31	HC	CC
200	Private University	Chief of Administrative Department	33	28	22	18	CC	CC
201	Private University	Chief of Finance	43	28	17	13	CC	CC

		Department						
202	Private University	Vice President	33	23	23	22	CC	CC
203	Private University	Others	39	18	21	23	CC	CC
204	Private University	The President	41	22	17	21	CC	CC
205	Private University	Chief of Finance Department	28	30	23	20	AC	CC
206	Private University	The President	29	25	23	23	CC	CC
207	Private University	Vice President	31	23	21	26	CC	CC
208	Private University	The President	33	19	31	18	CC	CC
209	Private University	Chief of Finance Department	30	23	18	28	CC	CC
210	Private University	Vice President	36	20	29	15	CC	CC
211	Private University	Chief of Finance Department	31	21	19	29	CC	CC
212	Private University	Other	37	23	27	14	CC	CC
213	Private University	Vice President	35	23	24	18	CC	CC
214	Private University	Chief of Finance Department	32	21	28	19	CC	CC
215	Private University	Vice President	31	21	19	29	CC	CC
216	Private University	Chief of Administrative Department	40	20	22	18	CC	CC
217	Private University	The President	32	18	35	16	CC	CC
218	Private University	Other	35	19	18	28	CC	CC
219	Private University	Chief of Finance Department	42	13	30	15	CC	CC
220	Private University	Vice President	36	17	29	18	CC	CC
221	Private University	Chief of Finance Department	33	26	22	20	CC	CC
222	Private University	The President	43	17	25	15	CC	CC
223	Private University	Vice President	46	13	23	18	CC	CC
224	Private University	Chief of Finance Department	33	24	24	19	CC	CC
225	Private University	The President	34	23	23	19	CC	CC
226	Private University	Chief of Administrative Department	38	21	24	18	CC	CC

227	Private University	Chief of Administrative Department	38	13	22	27	CC	CC
228	Private University	Chief of Finance Department	27	27	18	29	HC	CC
229	Private University	Other	31	24	22	23	CC	CC
230	Private University	Vice President	35	20	21	24	CC	CC
231	Private University	Chief of Finance Department	33	21	27	19	CC	CC
232	Private University	Vice President	37	23	19	21	CC	CC
233	Private University	The President	33	19	18	29	CC	CC
234	Private University	Chief of Administrative Department	36	26	19	19	CC	CC
235	Private University	Other	23	27	14	5	AC	CC
236	Public University	Vice President	23	24	18	4	AC	HC
237	Public University	Chief of Finance Department	0	17	17	67	HC	HC
238	Public University	Chief of Administrative Department	22	23	24	32	HC	HC
239	Public University	Chief of Finance Department	25	32	13	30	AC	HC
240	Public University	The President	27	33	22	18	AC	HC
241	Public University	Vice President	22	18	20	42	HC	HC
242	Public University	Financial Controller	35	33	18	14	CC	HC
243	Public University	Chief of Finance Department	8	22	21	50	HC	HC
244	Public University	Chief of Finance Department	28	21	15	37	HC	HC
245	Public University	Financial Controller	21	24	22	33	HC	HC
246	Public University	Chief of Finance Department	24	12	12	53	HC	HC
247	Public University	The President	27	23	28	24	MC	HC
248	Public University	Vice President	28	26	17	30	HC	HC
249	Public University	The President	19	28	23	30	HC	HC
250	Public University	Vice President	18	17	21	43	HC	HC
251	Public University	Chief of Finance Department	13	27	13	47	HC	HC

252	Public University	Chief of Finance Department	13	17	26	42	HC	HC
253	Public University	Financial Controller	20	17	20	43	HC	HC
254	Public University	The President	19	20	23	38	HC	HC
255	Public University	Vice President	10	26	18	46	HC	HC
256	Public University	Chief of Finance Department	23	22	16	40	HC	HC
257	Public University	Chief of Administrative Department	17	23	14	45	HC	HC

Institution Type	**Usable Questionnaires**	**Hierarchy culture**	**Clan Culture**	**Market culture**	**Adhocracy culture**	**Dominant Culture for institution type**	**Percentage of Who Have the Dominant Culture Type**
Private Universities	37	3	32	0	2	**Clan Culture**	%86
Public Universities	29	24	1	1	3	**Hierarchy culture**	%83
Higher Institutions	164	73	91	0	0	**Clan Culture**	%55
Technical colleges	27	18	6	1	2	**Hierarchy culture**	%59

N	Institution Type	Job Title	Clan culture	Adhocracy culture	Market culture	Hierarchy culture	Dominant Culture for each Questionnaire	Dominant Culture for institution type
1	Public University	Vice President	17	27	20	37	Hierarchy culture	Hierarchy culture
2	Public University	Chief of Finance Department	24	19	22	35	Hierarchy culture	Hierarchy culture
3	Public University	Financial Controller	27	22	18	33	Hierarchy culture	Hierarchy culture
4	Public University	Others	15	27	25	33	Hierarchy culture	Hierarchy culture
5	Public University	The President	13	27	18	43	Hierarchy culture	Hierarchy culture
6	Public University	Chief of Finance Department	25	22	22	32	Hierarchy culture	Hierarchy culture

Appendix E

Descriptive

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Job Title and Position	257	1	6	822	3.20	1.582
Experience in Current Job	257	1	4	672	2.61	.966
Experience with the Current Organisation	257	1	4	717	2.79	.937
Highest Qualification	257	1	4	493	1.92	.716
Organisational Age	257	2	4	823	3.20	.630
Type of Higher Education Ownership	257	1	2	294	1.14	.352
Type of Higher Education	257	1	3	475	1.85	.583
Valid N (listwise)	257					

Frequencies

Statistics

		Job Title and Positi-on	Experience in Current Job	Experience with the Current Organisat-ion	Highest Qualifica-tion	Organisat-ional Age	Type of Higher Education Ownersh-ip	Type of Higher Education
N	Valid	257	257	257	257	257	257	257
	Missing	0	0	0	0	0	0	0
Mean		3.20	2.61	2.79	1.92	3.20	1.14	1.85
Median		3.00	3.00	3.00	2.00	3.00	1.00	2.00
Std. Deviation		1.582	.966	.937	.716	.630	.352	.583
Variance		2.503	.933	.878	.513	.396	.124	.340
Skewness		.248	-.001	-.201	.636	-.185	2.040	.031
Std. Error of Skewness		.152	.152	.152	.152	.152	.152	.152
Kurtosis		-1.013	-1.004	-.934	.661	-.589	2.180	-.210
Std. Error of Kurtosis		.303	.303	.303	.303	.303	.303	.303
Sum		822	672	717	493	823	294	475

Frequency Table

Job Title and Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	President	45	17.5	17.5	17.5
	Vice President	49	19.1	19.1	36.6
	Chief of Finance Department/Assistant/ Vice	63	24.5	24.5	61.1
	Chief of Administrative Department/Assistant/ Vice	36	14.0	14.0	75.1
	Financial Controller	38	14.8	14.8	89.9
	Others	26	10.1	10.1	100.0
	Total	257	100.0	100.0	

Experience in Current Job

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than one year	32	12.5	12.5	12.5
	1-5 years	92	35.8	35.8	48.2
	6-10 years	76	29.6	29.6	77.8
	More than 10 years	57	22.2	22.2	100.0
	Total	257	100.0	100.0	

Experience with the Current Organisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than one year	22	8.6	8.6	8.6
	1-5 years	79	30.7	30.7	39.3
	6-10 years	87	33.9	33.9	73.2
	More than 10 years	69	26.8	26.8	100.0
	Total	257	100.0	100.0	

Highest Qualification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor's degree	69	26.8	26.8	26.8
	Post-graduate (e.g. MSc, MBA, Ph.D.)	148	57.6	57.6	84.4

	Professional qualifications	32	12.5	12.5	96.9
	Other	8	3.1	3.1	100.0
	Total	257	100.0	100.0	

Organisational Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5- Less than 11years	30	11.7	11.7	11.7
	11-20 years	145	56.4	56.4	68.1
	More than 20 years	82	31.9	31.9	100.0
	Total	257	100.0	100.0	

Type of Higher Education Ownership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public	220	85.6	85.6	85.6
	Private	37	14.4	14.4	100.0
	Total	257	100.0	100.0	

Type of Higher Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	University	66	25.7	25.7	25.7
	Higher institution	164	63.8	63.8	89.5
	Technical colleges	27	10.5	10.5	100.0
	Total	257	100.0	100.0	

One way ANOVA

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
University	66		9.460	1.164	25.59	30.24	0	46
Higher institution	164		8.886	.694	28.89	31.63	13	50
Technical colleges	27		11.125	2.141	19.52	28.32	8	53
Total	257		9.466	.590	27.83	30.15	0	53

University	66		4.675	.576	20.72	23.02	12	33
Higher institution	164		5.207	.407	20.69	22.30	12	32
Technical colleges	27		4.792	.922	19.00	22.79	12	28
Total	257		5.022	.313	20.91	22.14	12	33
University	66		4.636	.571	20.02	22.30	10	35
Higher institution	164		5.526	.431	17.94	19.65	8	28
Technical colleges	27		6.394	1.231	18.77	23.83	9	33
Total	257		5.513	.344	18.99	20.34	8	35
University	66		11.964	1.473	26.06	31.94	13	67
Higher institution	164		7.768	.607	28.07	30.47	18	48
Technical colleges	27		12.727	2.449	28.64	38.71	12	65
Total	257		9.650	.602	28.48	30.85	12	67

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Clan culture	.415	2	254	.661
Adhocracy culture	2.568	2	254	.079
Market culture	2.575	2	254	.078
Hierarchy culture	10.360	2	254	.000

Alpha

Alpha				Sum of Squares	df	Mean Square	F	Sig.
Alpha		(Combined)		1034.294	2	517.147	5.997	.003
	Between Groups	Linear Term	Unweighted	306.108	1	306.108	3.549	.061
			Weighted	50.015	1	50.015	.580	.447
			Deviation	984.279	1	984.279	11.413	.001
	Within Groups			21905.049	254	86.240		
	Total			22939.343	256			
Alpha		(Combined)		18.667	2	9.334	.368	.692
	Between Groups	Linear Term	Unweighted	18.164	1	18.164	.717	.398
			Weighted	18.012	1	18.012	.711	.400

			Deviation	.656	1	.656	.026	.872
		Within Groups		6436.753	254	25.342		
		Total		6455.420	256			
Alpha		(Combined)		343.604	2	171.802	5.868	.003
	Between Groups	Linear Term	Unweighted	.348	1	.348	.012	.913
			Weighted	34.349	1	34.349	1.173	.280
			Deviation	309.254	1	309.254	10.562	.001
		Within Groups		7436.757	254	29.279		
		Total		7780.361	256			
Alpha		(Combined)		488.469	2	244.235	2.657	.072
	Between Groups	Linear Term	Unweighted	417.943	1	417.943	4.546	.034
			Weighted	264.785	1	264.785	2.880	.091
			Deviation	223.685	1	223.685	2.433	.120
		Within Groups		23351.749	254	91.936		
		Total		23840.218	256			

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Clan culture	Public Universities	29	19.66	7.195	1.336	16.92	22.39	0	35
	Private Universities	37	34.39	4.822	.793	32.78	36.00	24	46
	Total	66	27.92	9.460	1.164	25.59	30.24	0	46
Adhocracy culture	Public Universities	29	22.50	5.446	1.011	20.43	24.57	12	33

	Private Universities	37	21.37	3.978	.654	20.05	22.70	13	30
	Total	66	21.87	4.675	.576	20.72	23.02	12	33
	Public Universities	29	19.20	4.281	.795	17.57	20.82	10	28
Market culture	Private Universities	37	22.70	4.359	.717	21.25	24.16	17	35
	Total	66	21.16	4.636	.571	20.02	22.30	10	35
	Public Universities	29	38.53	11.215	2.083	34.27	42.80	14	67
Hierarchy culture	Private Universities	37	21.53	5.484	.902	19.70	23.36	13	36
	Total	66	29.00	11.964	1.473	26.06	31.94	13	67

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Clan culture	3.588	1	64	.063
Adhocracy culture	2.736	1	64	.103
Market culture	.016	1	64	.900
Hierarchy culture	8.599	1	64	.005

ANOVA

				Sum of Squares	df	Mean Square	F	Sig.
Clan culture	Between Groups	(Combined)		3530.672	1	3530.672	98.832	.000
		Linear Term	Unweighted	3530.672	1	3530.672	98.832	.000
			Weighted	3530.672	1	3530.672	98.832	.000
	Within Groups			2286.342	64	35.724		
	Total			5817.014	65			
Adhocracy culture	Between Groups	(Combined)		20.617	1	20.617	.942	.335
		Linear Term	Unweighted	20.617	1	20.617	.942	.335

Market culture	Between Groups	Linear Term	Weighted	20.617	1	20.617	.942	.335
	Within Groups			1400.300	64	21.880		
	Total			1420.918	65			
	Between Groups	(Combined)		199.987	1	199.987	10.692	.002
		Linear Term	Unweighted	199.987	1	199.987	10.692	.002
			Weighted	199.987	1	199.987	10.692	.002
	Within Groups			1197.067	64	18.704		
	Total			1397.054	65			
Hierarchy culture	Between Groups	(Combined)		4700.071	1	4700.071	65.330	.000
		Linear Term	Unweighted	4700.071	1	4700.071	65.330	.000
			Weighted	4700.071	1	4700.071	65.330	.000
	Within Groups			4604.401	64	71.944		
	Total			9304.472	65			

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
Clan culture	Welch	89.990	1	46.685	.000
	Brown-Forsythe	89.990	1	46.685	.000
Adhocracy culture	Welch	.874	1	49.572	.354
	Brown-Forsythe	.874	1	49.572	.354
Market culture	Welch	10.739	1	60.776	.002
	Brown-Forsythe	10.739	1	60.776	.002
Hierarchy culture	Welch	56.137	1	38.428	.000
	Brown-Forsythe	56.137	1	38.428	.000

a. Asymptotically F distributed.

Appendix F

		Using financial performance measurement system in my job would enable me to evaluate organisational performance	Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	I would find performance measurement system(e.g. balanced scorecard) useful in my job.
N	Valid	257	257	257	257	257
	Missing	0	0	0	0	0
Mean		3.72	3.34	3.60	3.50	3.77
Std. Deviation		1.010	1.082	1.015	1.072	.886
Range		4	4	4	4	3

Frequency Table

Using financial performance measurement system in my job would enable me to evaluate organisational performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	10	3.9	3.9	3.9
	Disagree	8	3.1	3.1	7.0
	Neutral	92	35.8	35.8	42.8
	Agree	80	31.1	31.1	73.9
	Strongly Agree	67	26.1	26.1	100.0
	Total	257	100.0	100.0	

Using non-financial performance measurement system in my job would enable me to evaluate organisational performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	7	2.7	2.7	2.7

	Disagree	57	22.2	22.2	24.9
	Neutral	77	30.0	30.0	54.9
	Agree	73	28.4	28.4	83.3
	Strongly Agree	43	16.7	16.7	100.0
	Total	257	100.0	100.0	

Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	12	4.7	4.7	4.7
	Disagree	17	6.6	6.6	11.3
	Neutral	81	31.5	31.5	42.8
	Agree	99	38.5	38.5	81.3
	Strongly Agree	48	18.7	18.7	100.0
	Total	257	100.0	100.0	

Using performance measurement system (e.g. balanced scorecard)would enhance my effectiveness on the job.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	19	7.4	7.4	7.4
	Disagree	13	5.1	5.1	12.5
	Neutral	91	35.4	35.4	47.9
	Agree	89	34.6	34.6	82.5
	Strongly Agree	45	17.5	17.5	100.0
	Total	257	100.0	100.0	

I would find performance measurement system (e.g. balanced scorecard) useful in my job.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	14	5.4	5.4	5.4
	Neutral	94	36.6	36.6	42.0
	Agree	85	33.1	33.1	75.1
	Strongly Agree	64	24.9	24.9	100.0
	Total	257	100.0	100.0	

Descriptive Statistics

	Mean	Std. Deviation	N
Using financial performance measurement system in my job would enable me to evaluate organisational performance	3.72	1.010	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Using financial performance measurement system in my job would enable me to evaluate organisational performance	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Using financial performance measurement system in my job would enable me to evaluate organisational performance	1.000	.291	.139	-.021
	Adhocracy culture	.291	1.000	.146	-.274
	Market culture	.139	.146	1.000	-.404
	Hierarchy culture	-.021	-.274	-.404	1.000
Sig. (1-tailed)	Using financial performance measurement system in my job would enable me to evaluate organisational performance	.	.000	.013	.367
	Adhocracy culture	.000	.	.009	.000
	Market culture	.013	.009	.	.000
	Hierarchy culture	.367	.000	.000	.
N	Using financial performance measurement system in my job would enable me to evaluate organisational performance	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.325[a]	.105	.095	.961	.105	9.932	3	253	.000

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Using financial performance measurement system in my job would enable me to evaluate organisational performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.540	3	9.180	9.932	.000[b]
	Residual	233.845	253	.924		
	Total	261.385	256			

a. Dependent Variable: Using financial performance measurement system in my job would enable me to evaluate organisational performance
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.526	.482		3.166	.002	.577	2.475
	Adhocracy culture	.061	.012	.302	4.887	.000	.036	.085
	Market culture	.026	.012	.143	2.204	.028	.003	.050
	Hierarchy culture	.013	.007	.119	1.785	.075	-.001	.026

a. Dependent Variable: Using financial performance measurement system in my job would enable me to evaluate organisational performance

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.08	4.35	3.72	.328	257
Std. Predicted Value	-1.971	1.919	.000	1.000	257
Standard Error of Predicted Value	.061	.247	.115	.035	257

Adjusted Predicted Value	3.10	4.36	3.72	.327	257
Residual	-2.800	1.872	.000	.956	257
Std. Residual	-2.912	1.948	.000	.994	257
Stud. Residual	-2.939	1.964	.000	1.003	257
Deleted Residual	-2.852	1.905	-.001	.973	257
Stud. Deleted Residual	-2.985	1.976	-.001	1.007	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.040	.004	.008	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Using financial performance measurement system in my job would enable me to evaluate organisational performance

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	3.34	1.082	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	1.000	.124	-.084	.061
	Adhocracy culture	.124	1.000	.146	-.274
	Market culture	-.084	.146	1.000	-.404

	Hierarchy culture	.061	-.274	-.404	1.000
Sig. (1-tailed)	Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	.	.023	.090	.166
	Adhocracy culture	.023	.	.009	.000
	Market culture	.090	.009	.	.000
	Hierarchy culture	.166	.000	.000	.
N	Using non-financial performance measurement system in my job would enable me to evaluate organisational performance	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.174[a]	.030	.019	1.072	.030	2.627	3	253	.051

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Using non-financial performance measurement system in my job would enable me to evaluate organisational performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.059	3	3.020	2.627	.051[b]
	Residual	290.808	253	1.149		
	Total	299.868	256			

a. Dependent Variable: Using non-financial performance measurement system in my job would enable me to evaluate organisational performance
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.681	.537		4.989	.000	1.623	3.740
	Adhocracy culture	.034	.014	.155	2.413	.017	.006	.061
	Market culture	-.015	.013	-.078	-1.145	.253	-.041	.011
	Hierarchy culture	.008	.008	.072	1.032	.303	-.007	.023

a. Dependent Variable: Using non-financial performance measurement system in my job would enable me to evaluate organisational performance

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.79	3.85	3.34	.188	257
Std. Predicted Value	-2.925	2.682	.000	1.000	257
Standard Error of Predicted Value	.068	.276	.128	.039	257
Adjusted Predicted Value	2.77	3.83	3.34	.189	257
Residual	-2.415	2.138	.000	1.066	257
Std. Residual	-2.253	1.994	.000	.994	257
Stud. Residual	-2.261	2.037	.001	1.001	257
Deleted Residual	-2.433	2.230	.002	1.081	257
Stud. Deleted Residual	-2.280	2.049	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.045	.003	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Using non-financial performance measurement system in my job would enable me to evaluate organisational performance

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	3.60	1.015	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	1.000	.118	-.065	.116
	Adhocracy culture	.118	1.000	.146	-.274
	Market culture	-.065	.146	1.000	-.404
	Hierarchy culture	.116	-.274	-.404	1.000
Sig. (1-tailed)	Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	.	.029	.148	.032
	Adhocracy culture	.029	.	.009	.000
	Market culture	.148	.009	.	.000
	Hierarchy culture	.032	.000	.000	.

N	Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.196[a]	.038	.027	1.001	.038	3.363	3	253	.019

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.112	3	3.371	3.363	.019[b]
	Residual	253.608	253	1.002		
	Total	263.720	256			

a. Dependent Variable: Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.532	.502		5.045	.000	1.543	3.520
	Adhocracy culture	.033	.013	.163	2.540	.012	.007	.058
	Market culture	-.005	.012	-.029	-.432	.666	-.030	.019
	Hierarchy culture	.016	.007	.149	2.143	.033	.001	.030

a. Dependent Variable: Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.04	4.07	3.60	.199	257
Std. Predicted Value	-2.791	2.360	.000	1.000	257
Standard Error of Predicted Value	.064	.257	.120	.036	257
Adjusted Predicted Value	2.97	4.11	3.60	.201	257
Residual	-2.557	1.955	.000	.995	257
Std. Residual	-2.554	1.953	.000	.994	257
Stud. Residual	-2.564	1.992	.001	1.001	257
Deleted Residual	-2.577	2.035	.002	1.010	257
Stud. Deleted Residual	-2.593	2.004	.000	1.006	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.040	.004	.006	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Using advanced techniques of performance measurement systems (e.g. balanced scorecard) in my job would enable me to evaluate organisational performance

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	3.50	1.072	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	1.000	.093	-.073	.114
	Adhocracy culture	.093	1.000	.146	-.274
	Market culture	-.073	.146	1.000	-.404
	Hierarchy culture	.114	-.274	-.404	1.000
Sig. (1-tailed)	Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	.	.068	.123	.034
	Adhocracy culture	.068	.	.009	.000
	Market culture	.123	.009	.	.000
	Hierarchy culture	.034	.000	.000	.
N	Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.176[a]	.031	.019	1.062	.031	2.690	3	253	.047

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.094	3	3.031	2.690	.047[b]
	Residual	285.155	253	1.127		
	Total	294.249	256			

a. Dependent Variable: Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.568	.532		4.826	.000	1.520	3.616
	Adhocracy culture	.029	.014	.136	2.113	.036	.002	.056
	Market culture	-.007	.013	-.038	-.555	.580	-.033	.019
	Hierarchy culture	.015	.008	.136	1.952	.052	.000	.030

a. Dependent Variable: Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.96	3.95	3.50	.188	257
Std. Predicted Value	-2.839	2.400	.000	1.000	257
Standard Error of Predicted Value	.068	.273	.127	.038	257
Adjusted Predicted Value	2.88	4.00	3.50	.191	257
Residual	-2.507	2.037	.000	1.055	257
Std. Residual	-2.361	1.919	.000	.994	257
Stud. Residual	-2.370	1.957	.000	1.001	257
Deleted Residual	-2.526	2.120	.000	1.070	257
Stud. Deleted Residual	-2.392	1.968	-.001	1.005	257

Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.040	.003	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Using performance measurement system(e.g. balanced scorecard)would enhance my effectiveness on the job.

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
I would find performance measurement system(e.g. balanced scorecard) useful in my job.	3.77	.886	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		I would find performance measurement system(e.g. balanced scorecard) useful in my job.	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	I would find performance measurement system(e.g. balanced scorecard) useful in my job.	1.000	.121	-.049	.122
	Adhocracy culture	.121	1.000	.146	-.274
	Market culture	-.049	.146	1.000	-.404
	Hierarchy culture	.122	-.274	-.404	1.000
Sig. (1-tailed)	I would find performance measurement system(e.g. balanced scorecard) useful in my job.	.	.026	.215	.025
	Adhocracy culture	.026	.	.009	.000
	Market culture	.215	.009	.	.000
	Hierarchy culture	.025	.000	.000	.
N	I would find performance measurement system(e.g. balanced scorecard) useful in my job.	257	257	257	257

Adhocracy culture	257	257	257	257
Market culture	257	257	257	257
Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.202[a]	.041	.029	.873	.041	3.579	3	253	.015

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: I would find performance measurement system(e.g. balanced scorecard) useful in my job.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.179	3	2.726	3.579	.015[b]
	Residual	192.732	253	.762		
	Total	200.911	256			

a. Dependent Variable: I would find performance measurement system(e.g. balanced scorecard) useful in my job.
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.714	.438		6.203	.000	1.852	3.575
	Adhocracy culture	.029	.011	.167	2.609	.010	.007	.052
	Market culture	-.001	.011	-.007	-.109	.913	-.023	.020
	Hierarchy culture	.015	.006	.165	2.379	.018	.003	.028

a. Dependent Variable: I would find performance measurement system(e.g. balanced scorecard) useful in my job.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.30	4.19	3.77	.179	257
Std. Predicted Value	-2.662	2.351	.000	1.000	257
Standard Error of Predicted Value	.056	.224	.104	.031	257
Adjusted Predicted Value	3.23	4.28	3.77	.179	257
Residual	-2.042	1.702	.000	.868	257
Std. Residual	-2.339	1.950	.000	.994	257
Stud. Residual	-2.358	1.989	.001	1.002	257
Deleted Residual	-2.075	1.771	.001	.881	257
Stud. Deleted Residual	-2.380	2.000	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.040	.004	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: I would find performance measurement system(e.g. balanced scorecard) useful in my job.

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	3.80	1.025	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	Adhocracy culture	Market culture	Hierarchy culture

Pearson Correlation	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	1.000	.177	.098	-.100
	Adhocracy culture	.177	1.000	.146	-.274
	Market culture	.098	.146	1.000	-.404
	Hierarchy culture	-.100	-.274	-.404	1.000
Sig. (1-tailed)	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	.	.002	.059	.056
	Adhocracy culture	.002	.	.009	.000
	Market culture	.059	.009	.	.000
	Hierarchy culture	.056	.000	.000	.
N	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.194[a]	.037	.026	1.011	.037	3.284	3	253	.021

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.078	3	3.359	3.284	.021[b]
	Residual	258.801	253	1.023		
	Total	268.879	256			

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.970	.507		5.858	.000	1.972	3.968
	Adhocracy culture	.033	.013	.160	2.491	.013	.007	.058
	Market culture	.011	.013	.062	.917	.360	-.013	.036
	Hierarchy culture	-.003	.007	-.031	-.444	.657	-.018	.011

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.24	4.25	3.80	.198	257
Std. Predicted Value	-2.814	2.245	.000	1.000	257
Standard Error of Predicted Value	.064	.260	.121	.036	257
Adjusted Predicted Value	3.13	4.25	3.80	.200	257
Residual	-2.969	1.757	.000	1.005	257
Std. Residual	-2.935	1.737	.000	.994	257
Stud. Residual	-2.953	1.792	.000	1.002	257
Deleted Residual	-3.004	1.871	.000	1.022	257
Stud. Deleted Residual	-2.999	1.800	-.001	1.005	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.052	.004	.007	257

Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	3.96	1.173	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	1.000	.095	.048	-.135
	Adhocracy culture	.095	1.000	.146	-.274
	Market culture	.048	.146	1.000	-.404
	Hierarchy culture	-.135	-.274	-.404	1.000
Sig. (1-tailed)	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	.	.064	.221	.015
	Adhocracy culture	.064	.	.009	.000
	Market culture	.221	.009	.	.000
	Hierarchy culture	.015	.000	.000	.
N	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.148[a]	.022	.010	1.167	.022	1.893	3	253	.131

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.739	3	2.580	1.893	.131[b]
	Residual	344.790	253	1.363		
	Total	352.529	256			

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.122	.585		7.043	.000	2.969	5.274
	Adhocracy culture	.015	.015	.063	.978	.329	-.015	.045
	Market culture	-.002	.014	-.010	-.152	.879	-.031	.026
	Hierarchy culture	-.015	.009	-.122	-1.741	.083	-.032	.002

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.31	4.35	3.96	.174	257
Std. Predicted Value	-3.715	2.270	.000	1.000	257
Standard Error of Predicted Value	.074	.300	.139	.042	257
Adjusted Predicted Value	3.30	4.38	3.96	.174	257
Residual	-3.069	1.344	.000	1.161	257
Std. Residual	-2.629	1.152	.000	.994	257
Stud. Residual	-2.641	1.168	.001	1.002	257
Deleted Residual	-3.098	1.383	.001	1.179	257
Stud. Deleted Residual	-2.673	1.169	-.002	1.009	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.058	.004	.008	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Innovation (e.g. courses or educational programs)	4.32	.809	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Innovation (e.g. courses or educational programs)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Innovation (e.g. courses or educational programs)	1.000	-.005	-.019	-.002
	Adhocracy culture	-.005	1.000	.146	-.274
	Market culture	-.019	.146	1.000	-.404
	Hierarchy culture	-.002	-.274	-.404	1.000
Sig. (1-tailed)	Innovation (e.g. courses or educational programs)	.	.467	.383	.489

	Adhocracy culture	.467	.	.009	.000
	Market culture	.383	.009	.	.000
	Hierarchy culture	.489	.000	.000	.
N	Innovation (e.g. courses or educational programs)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.022[a]	.000	-.011	.813	.000	.040	3	253	.989

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Innovation (e.g. courses or educational programs)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.080	3	.027	.040	.989[b]
	Residual	167.391	253	.662		
	Total	167.471	256			

a. Dependent Variable: Innovation (e.g. courses or educational programs)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	4.430	.408		10.866	.000	3.627	5.233
	Adhocracy culture	-.001	.011	-.005	-.080	.936	-.022	.020
	Market culture	-.003	.010	-.023	-.333	.739	-.023	.017
	Hierarchy culture	-.001	.006	-.012	-.176	.861	-.013	.011

a. Dependent Variable: Innovation (e.g. courses or educational programs)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.28	4.35	4.32	.018	257
Std. Predicted Value	-1.970	2.194	.000	1.000	257
Standard Error of Predicted Value	.052	.209	.097	.029	257
Adjusted Predicted Value	4.25	4.37	4.31	.021	257
Residual	-3.321	.720	.000	.809	257
Std. Residual	-4.082	.885	.000	.994	257
Stud. Residual	-4.098	.904	.001	1.000	257
Deleted Residual	-3.346	.754	.002	.819	257
Stud. Deleted Residual	-4.233	.903	-.002	1.014	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.032	.003	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Innovation (e.g. courses or educational programs)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Employee (e.g. employee satisfaction, workforce capabilities, etc.)	4.13	.859	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Employee (e.g. employee satisfaction, workforce capabilities, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	1.000	-.030	-.038	-.170
	Adhocracy culture	-.030	1.000	.146	-.274

	Market culture	-.038	.146	1.000	-.404
	Hierarchy culture	-.170	-.274	-.404	1.000
Sig. (1-tailed)	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	.	.317	.270	.003
	Adhocracy culture	.317	.	.009	.000
	Market culture	.270	.009	.	.000
	Hierarchy culture	.003	.000	.000	.
N	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.220[a]	.048	.037	.843	.048	4.283	3	253	.006

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.123	3	3.041	4.283	.006[b]
	Residual	179.640	253	.710		
	Total	188.763	256			

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B

		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	5.436	.422		12.869	.000	4.604	6.268
	Adhocracy culture	-.013	.011	-.078	-1.220	.224	-.035	.008
	Market culture	-.019	.010	-.125	-1.858	.064	-.040	.001
	Hierarchy culture	-.022	.006	-.242	-3.507	.001	-.034	-.009

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.45	4.63	4.13	.189	257
Std. Predicted Value	-3.570	2.641	.000	1.000	257
Standard Error of Predicted Value	.054	.217	.101	.030	257
Adjusted Predicted Value	3.42	4.61	4.13	.188	257
Residual	-2.787	1.334	.000	.838	257
Std. Residual	-3.307	1.583	.000	.994	257
Stud. Residual	-3.341	1.606	.000	1.002	257
Deleted Residual	-2.844	1.372	.000	.850	257
Stud. Deleted Residual	-3.410	1.611	-.001	1.005	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.062	.004	.007	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Quality (e.g. academic quality awards, etc.)	3.96	1.017	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Quality (e.g. academic quality awards, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Quality (e.g. academic quality awards, etc.)	1.000	-.047	-.103	.203
	Adhocracy culture	-.047	1.000	.146	-.274
	Market culture	-.103	.146	1.000	-.404
	Hierarchy culture	.203	-.274	-.404	1.000
Sig. (1-tailed)	Quality (e.g. academic quality awards, etc.)	.	.224	.049	.001
	Adhocracy culture	.224	.	.009	.000
	Market culture	.049	.009	.	.000
	Hierarchy culture	.001	.000	.000	.
N	Quality (e.g. academic quality awards, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.205[a]	.042	.031	1.001	.042	3.699	3	253	.012

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Quality (e.g. academic quality awards, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.122	3	3.707	3.699	.012[b]
	Residual	253.563	253	1.002		
	Total	264.685	256			

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.402	.502		6.779	.000	2.414	4.390
	Adhocracy culture	.002	.013	.010	.154	.877	-.024	.028
	Market culture	-.005	.012	-.025	-.379	.705	-.029	.020
	Hierarchy culture	.021	.007	.196	2.829	.005	.006	.035

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.60	4.73	3.96	.208	257
Std. Predicted Value	-1.764	3.685	.000	1.000	257
Standard Error of Predicted Value	.064	.257	.120	.036	257
Adjusted Predicted Value	3.54	4.74	3.96	.211	257
Residual	-2.844	1.401	.000	.995	257
Std. Residual	-2.840	1.399	.000	.994	257
Stud. Residual	-2.851	1.429	.001	1.001	257
Deleted Residual	-2.865	1.461	.001	1.008	257
Stud. Deleted Residual	-2.892	1.432	-.001	1.005	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.038	.003	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Community (e.g. public image, community involvement, etc.)	3.67	1.143	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Community (e.g. public image, community involvement, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Community (e.g. public image, community involvement, etc.)	1.000	.082	.034	.063
	Adhocracy culture	.082	1.000	.146	-.274
	Market culture	.034	.146	1.000	-.404
	Hierarchy culture	.063	-.274	-.404	1.000
Sig. (1-tailed)	Community (e.g. public image, community involvement, etc.)	.	.095	.295	.158
	Adhocracy culture	.095	.	.009	.000
	Market culture	.295	.009	.	.000
	Hierarchy culture	.158	.000	.000	.
N	Community (e.g. public image, community involvement, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.135[a]	.018	.007	1.139	.018	1.571	3	253	.197

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Community (e.g. public image, community involvement, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.120	3	2.040	1.571	.197[b]
	Residual	328.425	253	1.298		
	Total	334.545	256			

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	2.473	.571		4.331	.000	1.349	3.598
	Adhocracy culture	.024	.015	.105	1.619	.107	-.005	.053
	Market culture	.014	.014	.066	.971	.332	-.014	.042
	Hierarchy culture	.014	.008	.118	1.688	.093	-.002	.030

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.31	4.03	3.67	.155	257
Std. Predicted Value	-2.356	2.337	.000	1.000	257
Standard Error of Predicted Value	.073	.293	.136	.041	257
Adjusted Predicted Value	3.27	4.01	3.67	.155	257
Residual	-2.724	1.680	.000	1.133	257
Std. Residual	-2.391	1.474	.000	.994	257
Stud. Residual	-2.400	1.498	.000	1.000	257
Deleted Residual	-2.745	1.735	.001	1.147	257
Stud. Deleted Residual	-2.423	1.502	-.001	1.003	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.034	.003	.004	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	2.98	1.149	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	1.000	.240	.103	-.145
	Adhocracy culture	.240	1.000	.146	-.274
	Market culture	.103	.146	1.000	-.404
	Hierarchy culture	-.145	-.274	-.404	1.000
Sig. (1-tailed)	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	.	.000	.050	.010
	Adhocracy culture	.000	.	.009	.000
	Market culture	.050	.009	.	.000
	Hierarchy culture	.010	.000	.000	.
N	Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)	257	257	257	257

Adhocracy culture	257	257	257	257
Market culture	257	257	257	257
Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.257[a]	.066	.055	1.117	.066	5.948	3	253	.001

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.258	3	7.419	5.948	.001[b]
	Residual	315.602	253	1.247		
	Total	337.860	256			

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.977	.560		3.532	.000	.875	3.080
	Adhocracy culture	.049	.014	.215	3.396	.001	.021	.078
	Market culture	.009	.014	.044	.666	.506	-.018	.037
	Hierarchy culture	-.008	.008	-.068	-.993	.322	-.024	.008

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.11	3.67	2.98	.295	257
Std. Predicted Value	-2.940	2.340	.000	1.000	257
Standard Error of Predicted Value	.071	.287	.133	.040	257
Adjusted Predicted Value	2.12	3.69	2.97	.294	257
Residual	-2.152	2.274	.000	1.110	257
Std. Residual	-1.927	2.036	.000	.994	257
Stud. Residual	-1.935	2.060	.001	1.001	257
Deleted Residual	-2.169	2.337	.002	1.127	257
Stud. Deleted Residual	-1.945	2.073	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.041	.004	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Financial (e.g. annual earnings, return on assets, cost reduction, general administrative expenditures per student, tuition and fee levels, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	2.93	1.090	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	Adhocracy culture	Market culture	Hierarchy culture

Pearson Correlation	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	1.000	.150	.001	.064
	Adhocracy culture	.150	1.000	.146	-.274
	Market culture	.001	.146	1.000	-.404
	Hierarchy culture	.064	-.274	-.404	1.000
Sig. (1-tailed)	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	.	.008	.492	.153
	Adhocracy culture	.008	.	.009	.000
	Market culture	.492	.009	.	.000
	Hierarchy culture	.153	.000	.000	.
N	Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.187[a]	.035	.024	1.077	.035	3.058	3	253	.029

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.632	3	3.544	3.058	.029[b]
	Residual	293.244	253	1.159		
	Total	303.875	256			

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.583	.540		2.933	.004	.520	2.645
	Adhocracy culture	.039	.014	.180	2.804	.005	.012	.067
	Market culture	.005	.013	.025	.365	.715	-.021	.031
	Hierarchy culture	.014	.008	.123	1.777	.077	-.002	.029

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.46	3.37	2.93	.204	257
Std. Predicted Value	-2.328	2.119	.000	1.000	257
Standard Error of Predicted Value	.069	.277	.129	.039	257
Adjusted Predicted Value	2.44	3.38	2.93	.203	257
Residual	-2.195	2.318	.000	1.070	257
Std. Residual	-2.038	2.153	.000	.994	257
Stud. Residual	-2.050	2.164	.001	1.001	257
Deleted Residual	-2.220	2.342	.002	1.086	257
Stud. Deleted Residual	-2.063	2.180	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.018	.004	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Customer (student and staff), (e.g. customer satisfaction, customer retention, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Innovation (e.g. courses or educational programs)	3.07	1.311	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Innovation (e.g. courses or educational programs)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Innovation (e.g. courses or educational programs)	1.000	.476	.258	-.113
	Adhocracy culture	.476	1.000	.146	-.274
	Market culture	.258	.146	1.000	-.404
	Hierarchy culture	-.113	-.274	-.404	1.000
Sig. (1-tailed)	Innovation (e.g. courses or educational programs)	.	.000	.000	.036
	Adhocracy culture	.000	.	.009	.000
	Market culture	.000	.009	.	.000
	Hierarchy culture	.036	.000	.000	.
N	Innovation (e.g. courses or educational programs)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.522[a]	.273	.264	1.124	.273	31.658	3	253	.000

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Innovation (e.g. courses or educational programs)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	120.057	3	40.019	31.658	.000[b]
	Residual	319.818	253	1.264		
	Total	439.875	256			

a. Dependent Variable: Innovation (e.g. courses or educational programs)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-1.132	.564		-2.009	.046	-2.242	-.022
	Adhocracy culture	.123	.015	.472	8.467	.000	.095	.152
	Market culture	.056	.014	.234	3.995	.000	.028	.083
	Hierarchy culture	.015	.008	.111	1.844	.066	-.001	.031

a. Dependent Variable: Innovation (e.g. courses or educational programs)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.75	4.46	3.07	.685	257
Std. Predicted Value	-1.922	2.038	.000	1.000	257
Standard Error of Predicted Value	.072	.289	.134	.041	257
Adjusted Predicted Value	1.74	4.50	3.06	.684	257
Residual	-2.822	2.372	.000	1.118	257
Std. Residual	-2.510	2.110	.000	.994	257
Stud. Residual	-2.522	2.123	.001	1.002	257
Deleted Residual	-2.849	2.401	.002	1.135	257
Stud. Deleted Residual	-2.549	2.137	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.023	.004	.005	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Innovation (e.g. courses or educational programs)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Employee (e.g. employee satisfaction, workforce capabilities, etc.)	2.95	.977	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Employee (e.g. employee satisfaction, workforce capabilities, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	1.000	.212	.278	-.116
	Adhocracy culture	.212	1.000	.146	-.274
	Market culture	.278	.146	1.000	-.404
	Hierarchy culture	-.116	-.274	-.404	1.000
Sig. (1-tailed)	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	.	.000	.000	.032
	Adhocracy culture	.000	.	.009	.000
	Market culture	.000	.009	.	.000
	Hierarchy culture	.032	.000	.000	.
N	Employee (e.g. employee satisfaction, workforce capabilities, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.330[a]	.109	.098	.928	.109	10.298	3	253	.000

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.591	3	8.864	10.298	.000[b]
	Residual	217.751	253	.861		
	Total	244.342	256			

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.113	.465		2.394	.017	.197	2.029
	Adhocracy culture	.036	.012	.184	2.979	.003	.012	.059
	Market culture	.048	.012	.269	4.142	.000	.025	.070
	Hierarchy culture	.004	.007	.043	.642	.522	-.009	.018

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.25	3.69	2.95	.322	257
Std. Predicted Value	-2.174	2.305	.000	1.000	257
Standard Error of Predicted Value	.059	.238	.111	.033	257
Adjusted Predicted Value	2.21	3.68	2.95	.324	257
Residual	-2.240	2.267	.000	.922	257
Std. Residual	-2.415	2.444	.000	.994	257
Stud. Residual	-2.425	2.461	.001	1.002	257
Deleted Residual	-2.259	2.363	.001	.936	257
Stud. Deleted Residual	-2.448	2.487	.000	1.005	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.107	.004	.008	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Employee (e.g. employee satisfaction, workforce capabilities, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Quality (e.g. academic quality awards, etc.)	2.43	1.267	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Quality (e.g. academic quality awards, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Quality (e.g. academic quality awards, etc.)	1.000	.218	.180	.032
	Adhocracy culture	.218	1.000	.146	-.274
	Market culture	.180	.146	1.000	-.404
	Hierarchy culture	.032	-.274	-.404	1.000
Sig. (1-tailed)	Quality (e.g. academic quality awards, etc.)	.	.000	.002	.307
	Adhocracy culture	.000	.	.009	.000
	Market culture	.002	.009	.	.000
	Hierarchy culture	.307	.000	.000	.
N	Quality (e.g. academic quality awards, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.312[a]	.097	.086	1.211	.097	9.066	3	253	.000

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: Quality (e.g. academic quality awards, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.886	3	13.295	9.066	.000[b]
	Residual	371.032	253	1.467		
	Total	410.918	256			

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-.574	.607		-.945	.345	-1.769	.622
	Adhocracy culture	.060	.016	.236	3.799	.000	.029	.090
	Market culture	.051	.015	.221	3.377	.001	.021	.080
	Hierarchy culture	.024	.009	.185	2.757	.006	.007	.042

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.60	3.09	2.43	.395	257
Std. Predicted Value	-2.088	1.687	.000	1.000	257
Standard Error of Predicted Value	.077	.311	.145	.044	257
Adjusted Predicted Value	1.62	3.15	2.43	.395	257
Residual	-2.089	2.653	.000	1.204	257
Std. Residual	-1.725	2.191	.000	.994	257
Stud. Residual	-1.749	2.198	.000	1.001	257
Deleted Residual	-2.147	2.670	.000	1.220	257
Stud. Deleted Residual	-1.756	2.215	.001	1.003	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.026	.003	.004	257
Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Quality (e.g. academic quality awards, etc.)

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
Community (e.g. public image, community involvement, etc.)	2.71	1.362	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		Community (e.g. public image, community involvement, etc.)	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	Community (e.g. public image, community involvement, etc.)	1.000	.259	.299	.014
	Adhocracy culture	.259	1.000	.146	-.274
	Market culture	.299	.146	1.000	-.404
	Hierarchy culture	.014	-.274	-.404	1.000
Sig. (1-tailed)	Community (e.g. public image, community involvement, etc.)	.	.000	.000	.415
	Adhocracy culture	.000	.	.009	.000
	Market culture	.000	.009	.	.000
	Hierarchy culture	.415	.000	.000	.
N	Community (e.g. public image, community involvement, etc.)	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.422[a]	.178	.168	1.242	.178	18.259	3	253	.000

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: Community (e.g. public image, community involvement, etc.)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	84.560	3	28.187	18.259	.000[b]
	Residual	390.553	253	1.544		
	Total	475.113	256			

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-1.540	.623		-2.472	.014	-2.766	-.313
	Adhocracy culture	.073	.016	.270	4.552	.000	.042	.105
	Market culture	.087	.015	.352	5.642	.000	.057	.117
	Hierarchy culture	.032	.009	.230	3.579	.000	.015	.050

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.51	3.81	2.71	.575	257
Std. Predicted Value	-2.087	1.911	.000	1.000	257
Standard Error of Predicted Value	.079	.319	.148	.045	257
Adjusted Predicted Value	1.52	3.80	2.71	.574	257
Residual	-2.153	2.838	.000	1.235	257
Std. Residual	-1.733	2.284	.000	.994	257
Stud. Residual	-1.740	2.298	.000	1.001	257
Deleted Residual	-2.170	2.873	.001	1.253	257
Stud. Deleted Residual	-1.747	2.318	.001	1.004	257
Mahal. Distance	.041	15.910	2.988	2.536	257
Cook's Distance	.000	.025	.004	.005	257

Centered Leverage Value	.000	.062	.012	.010	257

a. Dependent Variable: Community (e.g. public image, community involvement, etc.)

Appendix G

Regression

E.A: Regression for Libyan Higher Education acceptance

Descriptive Statistics

	Mean	Std. Deviation	N
Clan culture	29.05	9.446	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257
PMS acceptance	3.59	.679	257

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS **acceptance**
Clan culture	Pearson Correlation	1	-.322**	-.251**	-.649**	-.213**
	Sig. (2-tailed)		.000	.000	.000	.001
	N	257	257	257	257	257
Adhocracy culture	Pearson Correlation	-.322**	1	.146*	-.274**	.222**
	Sig. (2-tailed)	.000		.019	.000	.000
	N	257	257	257	257	257
Market culture	Pearson Correlation	-.251**	.146*	1	-.404**	-.041
	Sig. (2-tailed)	.000	.019		.000	.517
	N	257	257	257	257	257
Hierarchy culture	Pearson Correlation	-.649**	-.274**	-.404**	1	.115
	Sig. (2-tailed)	.000	.000	.000		.065
	N	257	257	257	257	257
PMS acceptance	Pearson Correlation	-.213**	.222**	-.041	.115	1
	Sig. (2-tailed)	.001	.000	.517	.065	
	N	257	257	257	257	257

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Descriptive Statistics

	Mean	Std. Deviation	N
PMS acceptance	3.59	.679	257
Clan culture	29.05	9.446	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		PMS acceptance	Hierarchy culture	Market culture	Clan culture	Adhocracy culture
Pearson Correlation	PMS acceptance	1.000	.115	-.041	-.213	.222
	Hierarchy culture	.115	1.000	-.404	-.649	-.274
	Market culture	-.041	-.404	1.000	-.251	.146
	Clan culture	-.213	-.649	-.251	1.000	-.322
	Adhocracy culture	.222	-.274	.146	-.322	1.000
Sig. (1-tailed)	PMS acceptance	.	.032	.259	.000	.000
	Hierarchy culture	.032	.	.000	.000	.000
	Market culture	.259	.000	.	.000	.009
	Clan culture	.000	.000	.000	.	.000
	Adhocracy culture	.000	.000	.009	.000	.
N	PMS acceptance	257	257	257	257	257
	Hierarchy culture	257	257	257	257	257
	Market culture	257	257	257	257	257
	Clan culture	257	257	257	257	257
	Adhocracy culture	257	257	257	257	257

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.289[a]	.084	.069	.655	1.556

a. Predictors: (Constant), Adhocracy culture, Market culture, Clan culture, Hierarchy culture

b. Dependent Variable: PMS acceptance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.878	4	2.470	5.749	.000[b]
	Residual	108.242	252	.430		
	Total	118.120	256			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Adhocracy culture, Market culture, Clan culture, Hierarchy culture

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	3.691	3.347		1.103	.271	-2.901	10.284					
Hierarchy culture	.000	.034	.004	.009	.993	-.067	.067	.115	.001	.001	.016	64.067
Market culture	-.014	.035	-.111	-.392	.696	-.082	.055	-.041	-.025	-.024	.046	21.891
Clan culture	-.013	.033	-.179	-.386	.699	-.079	.053	-.213	-.024	-.023	.017	59.244
Adhocracy culture	.025	.034	.182	.734	.464	-.041	.091	.222	.046	.044	.059	16.929

a. Dependent Variable: PMS acceptance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Hierarchy culture	Market culture	Clan culture	Adhocracy culture
1	1	4.689	1.000	.00	.00	.00	.00	.00
	2	.158	5.444	.00	.01	.00	.00	.00
	3	.103	6.744	.00	.00	.01	.00	.00
	4	.050	9.711	.00	.00	.02	.00	.04
	5	.000	200.713	1.00	.99	.96	.99	.96

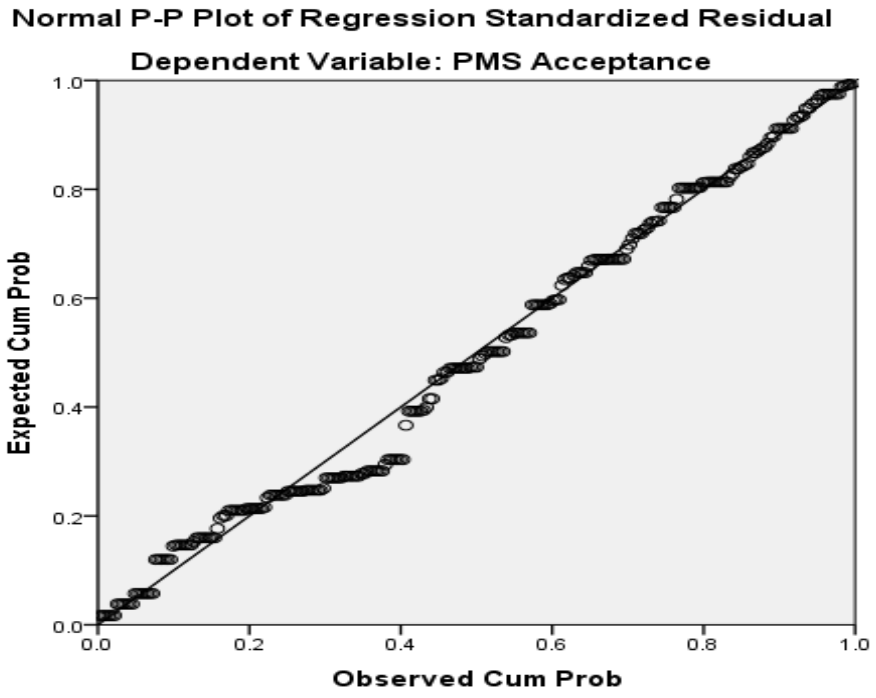
a. Dependent Variable: PMS acceptance

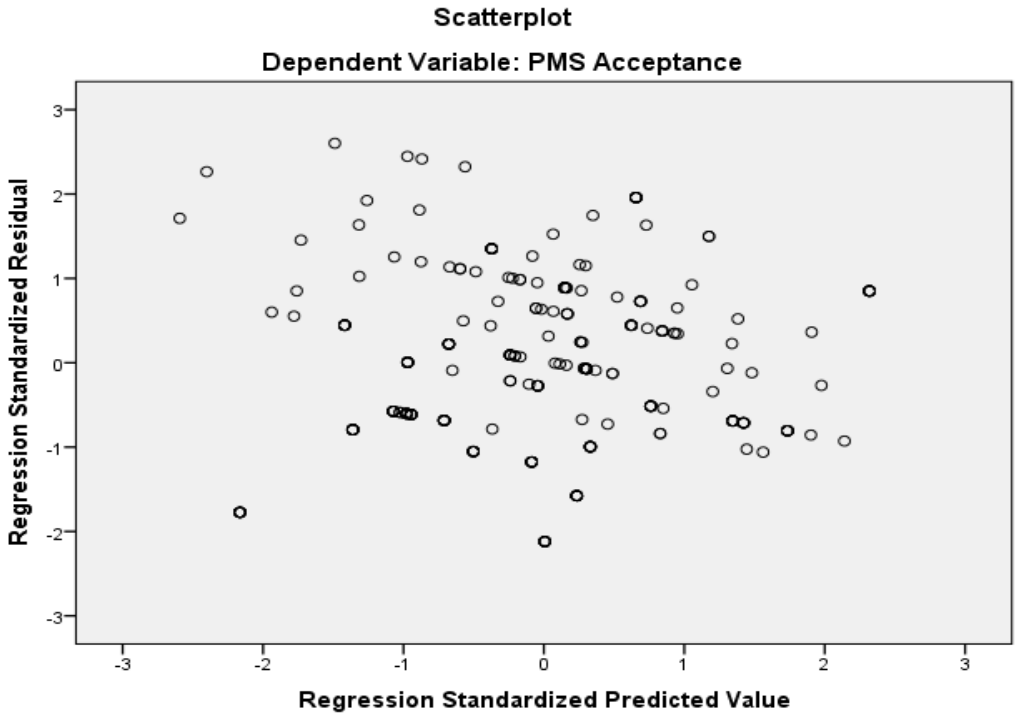
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.08	4.04	3.59	.196	257
Residual	-1.389	1.705	.000	.650	257
Std. Predicted Value	-2.594	2.318	.000	1.000	257
Std. Residual	-2.119	2.601	.000	.992	257

a. Dependent Variable: PMS acceptance

Charts





Descriptive Statistics

	Mean	Std. Deviation	N
PMS acceptance	3.59	.679	257
Market culture	19.67	5.513	257
Clan culture	29.05	9.446	257
Adhocracy culture	21.53	5.022	257

Correlations

		PMS acceptance	Market culture	Clan culture	Adhocracy culture
Pearson Correlation	PMS acceptance	1.000	-.041	-.213	.222
	Market culture	-.041	1.000	-.251	.146
	Clan culture	-.213	-.251	1.000	-.322
	Adhocracy culture	.222	.146	-.322	1.000

Sig. (1-tailed)	PMS acceptance	.	.259	.000	.000
	Market culture	.259	.	.000	.009
	Clan culture	.000	.000	.	.000
	Adhocracy culture	.000	.009	.000	.
N	PMS acceptance	257	257	257	257
	Market culture	257	257	257	257
	Clan culture	257	257	257	257
	Adhocracy culture	257	257	257	257

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Adhocracy culture, Market culture, Clan culture[b]	.	Enter

a. Dependent Variable: PMS acceptance

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.289[a]	.084	.073	.654	1.556

a. Predictors: (Constant), Adhocracy culture, Market culture, Clan culture

b. Dependent Variable: PMS acceptance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.878	3	3.293	7.696	.000[b]
	Residual	108.242	253	.428		
	Total	118.120	256			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Adhocracy culture, Market culture, Clan culture

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	3.720	.312		11.921	.000	3.105	4.334					
Clan culture	-.013	.005	-.183	-2.815	.005	-.022	-.004	-.213	-.174	-.169	.854	1.171
Adhocracy culture	.024	.009	.180	2.825	.005	.007	.041	.222	.175	.170	.892	1.121
Market culture	-.014	.008	-.113	-1.811	.071	-.029	.001	-.041	-.113	-.109	.932	1.073

a. Dependent Variable: PMS acceptance

Collinearity Diagnostics[a]

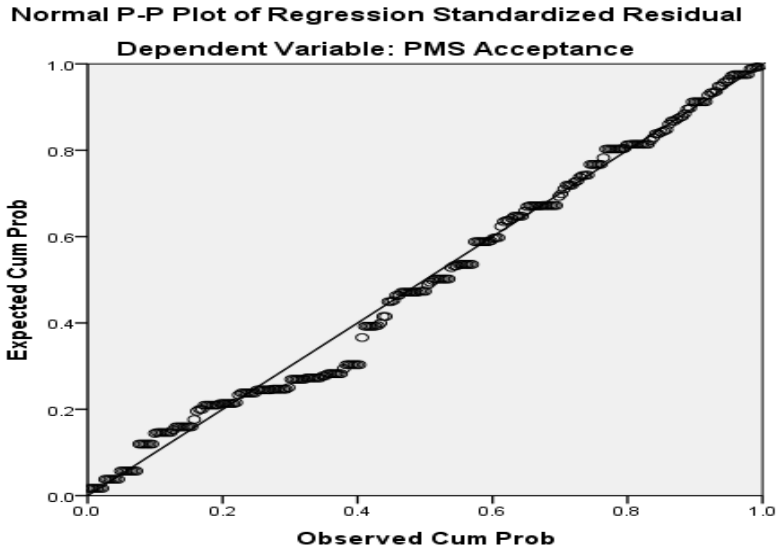
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Market culture	Clan culture	Adhocracy culture
1	1	3.818	1.000	.00	.00	.01	.00
	2	.117	5.724	.00	.12	.47	.05
	3	.053	8.463	.00	.63	.02	.42
	4	.013	17.449	1.00	.24	.51	.53

a. Dependent Variable: PMS acceptance

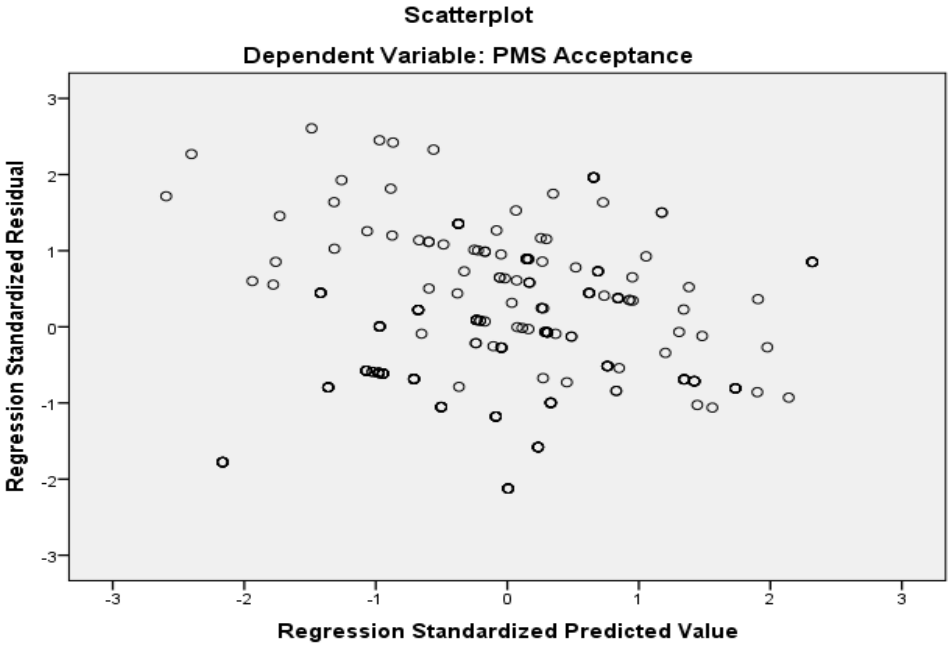
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.08	4.04	3.59	.196	257
Residual	-1.389	1.705	.000	.650	257
Std. Predicted Value	-2.594	2.319	.000	1.000	257
Std. Residual	-2.123	2.606	.000	.994	257

a. Dependent Variable: PMS acceptance



Charts



Descriptive Statistics

	Mean	Std. Deviation	N
PMS acceptance	3.59	.679	257
Market culture	19.67	5.513	257
Adhocracy culture	21.53	5.022	257
Hierarchy culture	29.66	9.650	257

Correlations

		PMS acceptance	Market culture	Adhocracy culture	Hierarchy culture
Pearson Correlation	PMS acceptance	1.000	-.041	.222	.115
	Market culture	-.041	1.000	.146	-.404
	Adhocracy culture	.222	.146	1.000	-.274
	Hierarchy culture	.115	-.404	-.274	1.000
Sig. (1-tailed)	PMS acceptance	.	.259	.000	.032
	Market culture	.259	.	.009	.000
	Adhocracy culture	.000	.009	.	.000
	Hierarchy culture	.032	.000	.000	.
N	PMS acceptance	257	257	257	257
	Market culture	257	257	257	257
	Adhocracy culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS acceptance

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.288[a]	.083	.072	.654	1.559

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: PMS acceptance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.814	3	3.271	7.642	.000[b]
	Residual	108.306	253	.428		
	Total	118.120	256			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	2.404	.328		7.330	.000	1.758	3.050					
Market culture	-.001	.008	-.005	-.069	.945	-.017	.015	-.041	-.004	-.004	.836	1.197
Adhocracy culture	.037	.008	.275	4.387	.000	.020	.054	.222	.266	.264	.923	1.083
Hierarchy culture	.013	.005	.189	2.787	.006	.004	.023	.115	.173	.168	.790	1.266

a. Dependent Variable: PMS acceptance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Market culture	Adhocracy culture	Hierarchy culture
1	1	3.813	1.000	.00	.00	.00	.00
	2	.125	5.517	.00	.14	.03	.39
	3	.050	8.711	.00	.47	.55	.04
	4	.011	18.240	1.00	.38	.43	.56

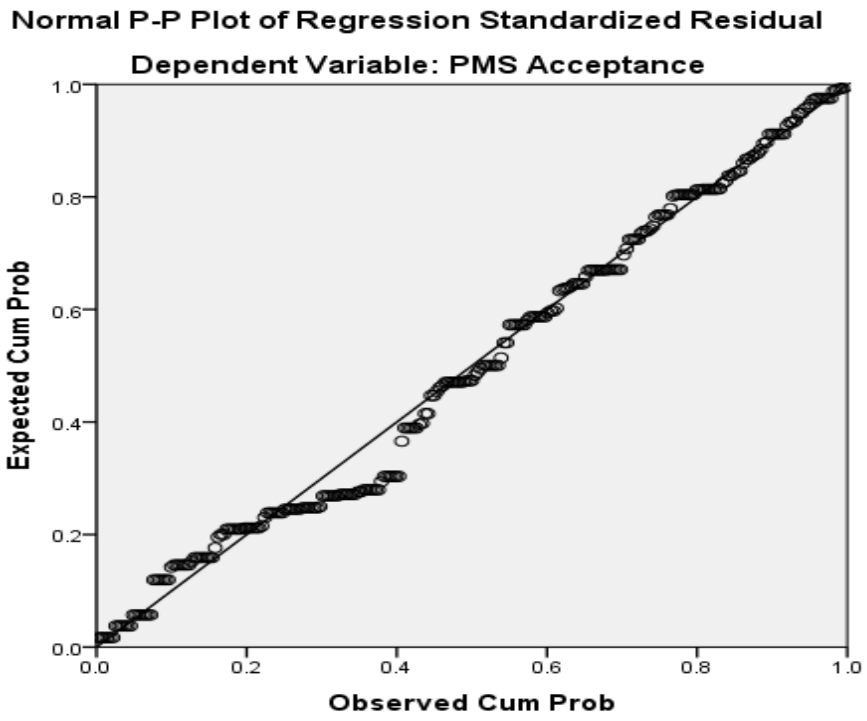
a. Dependent Variable: PMS acceptance

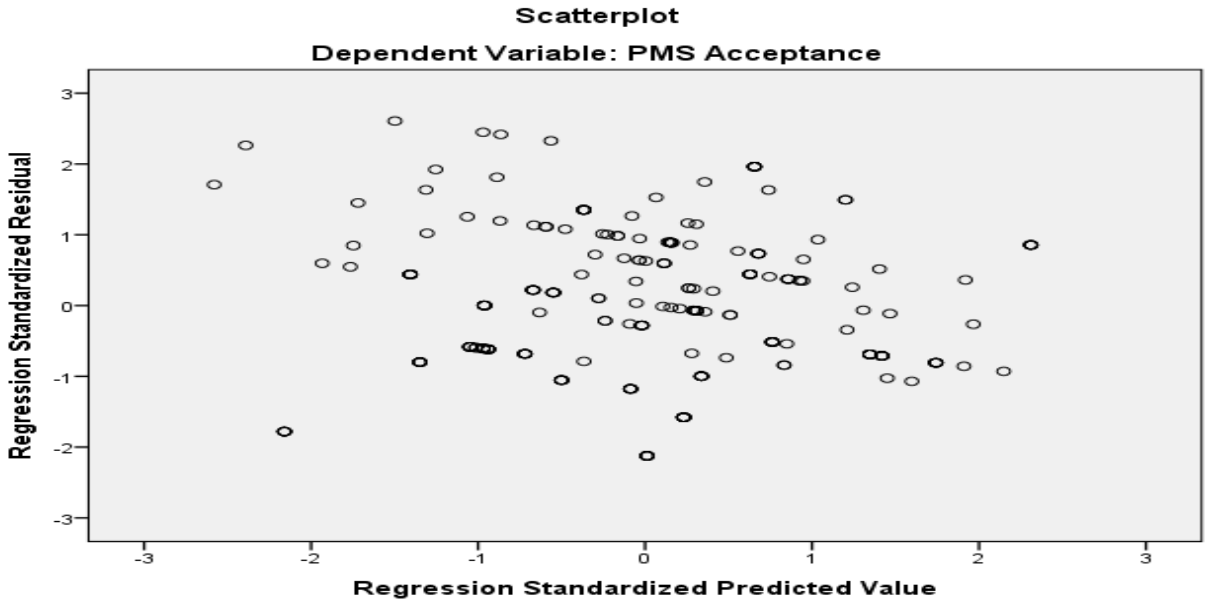
Residuals Statistics[a]

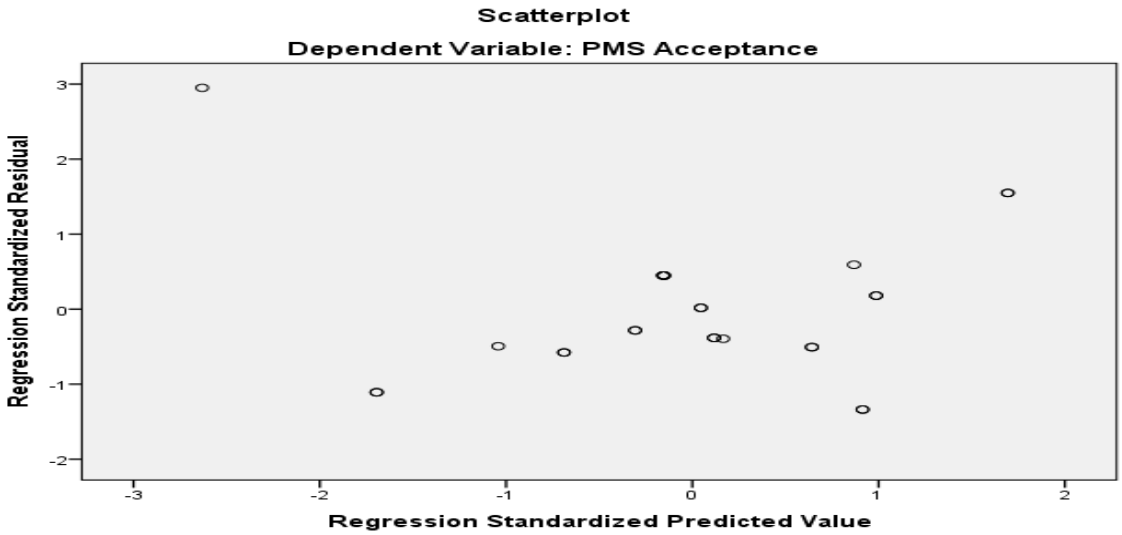
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.08	4.04	3.59	.196	257
Residual	-1.390	1.706	.000	.650	257
Std. Predicted Value	-2.580	2.310	.000	1.000	257
Std. Residual	-2.124	2.607	.000	.994	257

a. Dependent Variable: PMS acceptance

Charts


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PMS Acceptance
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: PMS Acceptance
Regression Standardized Residual
Regression Standardized Predicted Value
-3
-2
-1
0
1
2
3



Regression

Descriptive Statistics

	Mean	Std. Deviation	N
PMS acceptance	3.79	.505	27
Adhocracy culture	20.90	4.792	27
Market culture	21.30	6.394	27
Clan culture	23.92	11.125	27

Correlations

		PMS acceptance	Adhocracy culture	Market culture	Clan culture
Pearson Correlation	PMS acceptance	1.000	.072	.024	-.171
	Adhocracy culture	.072	1.000	.297	.228
	Market culture	.024	.297	1.000	-.464
	Clan culture	-.171	.228	-.464	1.000
Sig. (1-tailed)	PMS acceptance	.	.361	.453	.197
	Adhocracy culture	.361	.	.066	.126
	Market culture	.453	.066	.	.007

	Clan culture	.197	.126	.007	.
	PMS acceptance	27	27	27	27
N	Adhocracy culture	27	27	27	27
	Market culture	27	27	27	27
	Clan culture	27	27	27	27

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Clan culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS acceptance

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.243[a]	.059	-.064	.521

a. Predictors: (Constant), Clan culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS acceptance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.392	3	.131	.482	.698[b]
	Residual	6.242	23	.271		
	Total	6.634	26			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Clan culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% C
		B	Std. Error	Beta			Lower E
1	(Constant)	3.968	.588		6.749	.000	2.75
	Adhocracy culture	.020	.025	.188	.799	.432	-.03
	Market culture	-.013	.020	-.167	-.646	.525	-.05
	Clan culture	-.013	.011	-.291	-1.148	.263	-.03

a. Dependent Variable: PMS acc

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Clan cu
1	1	3.765	1.000	.00	.00	.00	.01
	2	.188	4.471	.00	.00	.09	.37
	3	.026	11.975	.10	1.00	.25	.19
	4	.021	13.474	.90	.00	.65	.43

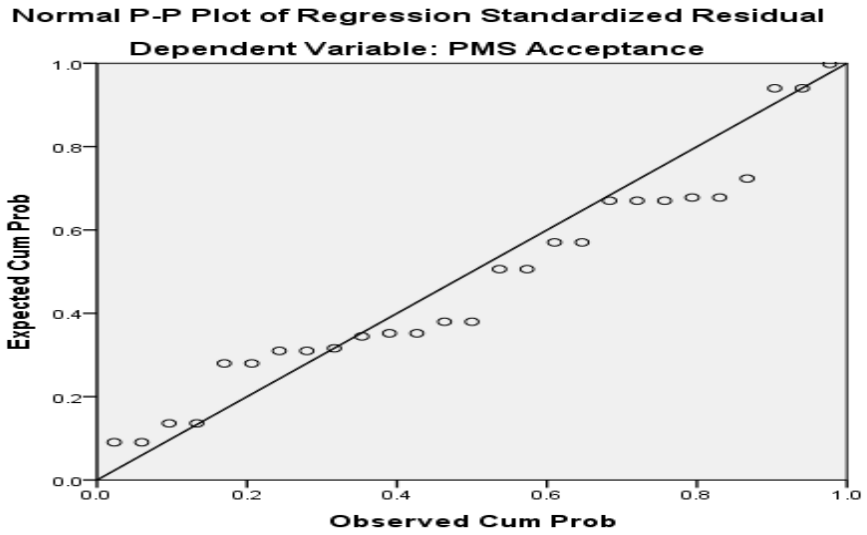
a. Dependent Variable: PMS acceptance

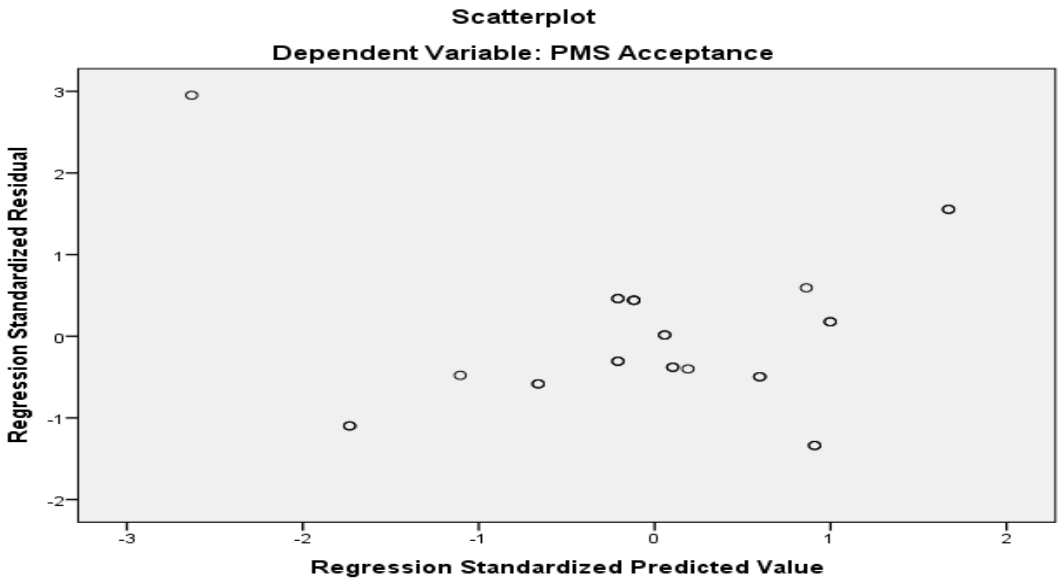
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.46	3.99	3.79	.123	27
Residual	-.697	1.538	.000	.490	27
Std. Predicted Value	-2.632	1.671	.000	1.000	27
Std. Residual	-1.338	2.952	.000	.941	27

a. Dependent Variable: PMS acceptance

Charts





Descriptive Statistics

	Mean	Std. Deviation	N
PMS acceptance	3.79	.505	27
Adhocracy culture	20.90	4.792	27
Market culture	21.30	6.394	27
Hierarchy culture	33.67	12.727	27

Correlations

		PMS acceptance	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS acceptance	1.000	.072	.024	.110
	Adhocracy culture	.072	1.000	.297	-.715
	Market culture	.024	.297	1.000	-.227
	Hierarchy culture	.110	-.715	-.227	1.000
Sig. (1-tailed)	PMS acceptance	.	.361	.453	.292
	Adhocracy culture	.361	.	.066	.000
	Market culture	.453	.066	.	.128
	Hierarchy culture	.292	.000	.128	.
N	PMS acceptance	27	27	27	27
	Adhocracy culture	27	27	27	27
	Market culture	27	27	27	27
	Hierarchy culture	27	27	27	27

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS acceptance

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.243[a]	.059	-.064	.521

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS acceptance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.390	3	.130	.479	.700[b]
	Residual	6.244	23	.271		
	Total	6.634	26			

a. Dependent Variable: PMS acceptance

b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.654	.987		2.689	.013	.612	4.695					
	Adhocracy culture	.032	.031	.307	1.038	.310	-.032	.097	.072	.212	.210	.469	2.130
	Market culture	.001	.017	.008	.038	.970	-.034	.035	.024	.008	.008	.911	1.097
	Hierarchy culture	.013	.011	.331	1.145	.264	-.011	.037	.110	.232	.232	.489	2.047

a. Dependent Variable: PMS acceptance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.783	1.000	.00	.00	.00	.00
	2	.160	4.860	.00	.03	.05	.25
	3	.050	8.731	.02	.13	.93	.00
	4	.007	23.425	.98	.84	.01	.75

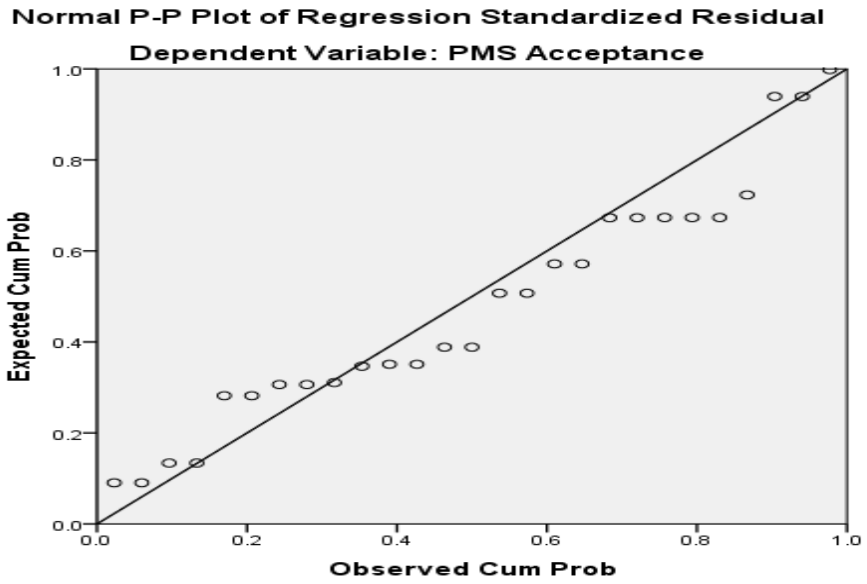
a. Dependent Variable: PMS acceptance

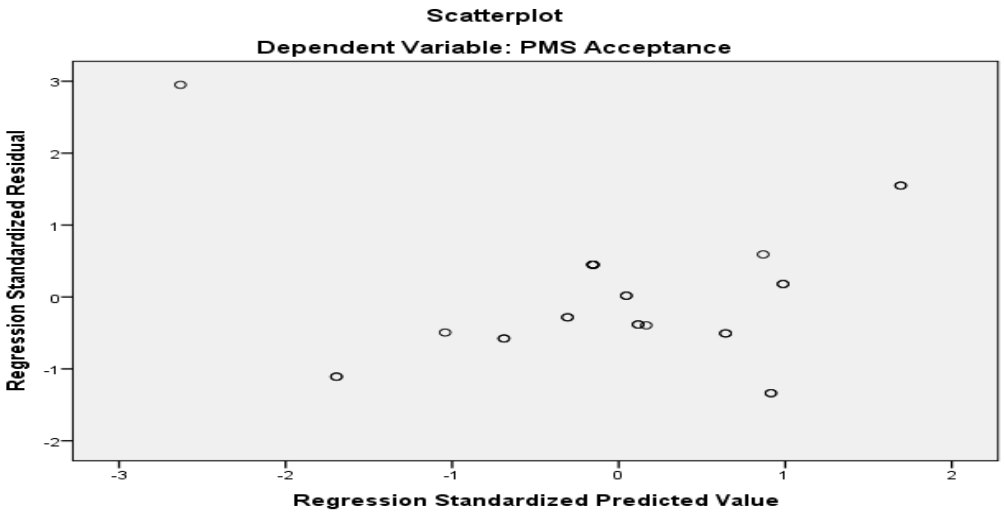
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.46	3.99	3.79	.123	27
Residual	-.697	1.537	.000	.490	27
Std. Predicted Value	-2.631	1.693	.000	1.000	27
Std. Residual	-1.338	2.950	.000	.941	27

a. Dependent Variable: PMS acceptance

Charts





E.B: Regression For Performance Measurement System Importance

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Importance	3.97	.599	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		PMS Importance	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Importance	1.000	.086	.012	-.036
	Adhocracy culture	.086	1.000	.146	-.274
	Market culture	.012	.146	1.000	-.404
	Hierarchy culture	-.036	-.274	-.404	1.000
Sig. (1-tailed)	PMS Importance	.	.084	.426	.283
	Adhocracy culture	.084	.	.009	.000
	Market culture	.426	.009	.	.000
	Hierarchy culture	.283	.000	.000	.
N	PMS Importance	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method

1	Hierarchy culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS Importance
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.087[a]	.008	-.004	.600

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: PMS Importance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.699	3	.233	.647	.586[b]
	Residual	91.147	253	.360		
	Total	91.846	256			

a. Dependent Variable: PMS Importance
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.806	.301		12.648	.000	3.213	4.398					
	Adhocracy culture	.010	.008	.083	1.268	.206	-.005	.025	.086	.079	.079	.923	1.083

	Market culture	-.001	.007	-.007	-.100	.921	-.015	.014	.012	-.006	-.006	.836	1.197
	Hierarchy culture	-.001	.004	-.016	-.229	.819	-.010	.008	-.036	-.014	-.014	.790	1.266

a. Dependent Variable: PMS Importance

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.813	1.000	.00	.00	.00	.00
	2	.125	5.517	.00	.03	.14	.39
	3	.050	8.711	.00	.55	.47	.04
	4	.011	18.240	1.00	.43	.38	.56

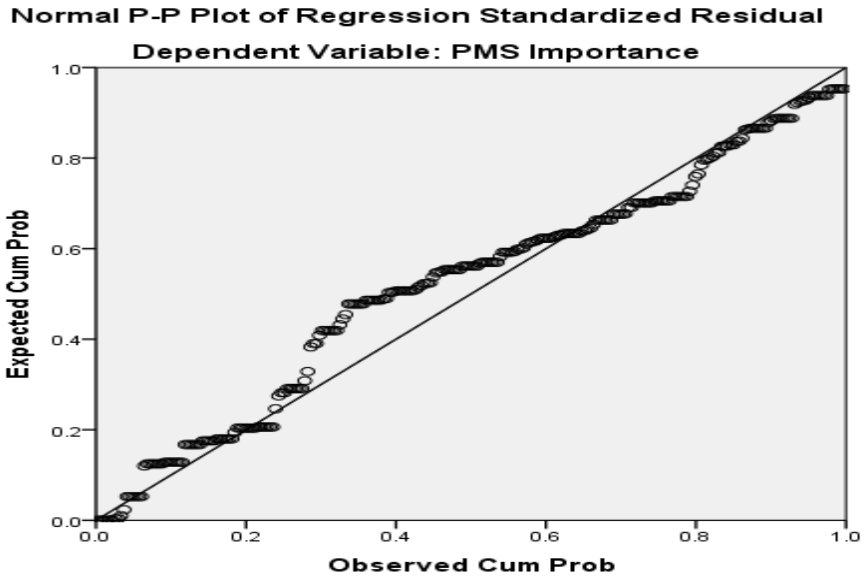
a. Dependent Variable: PMS Importance

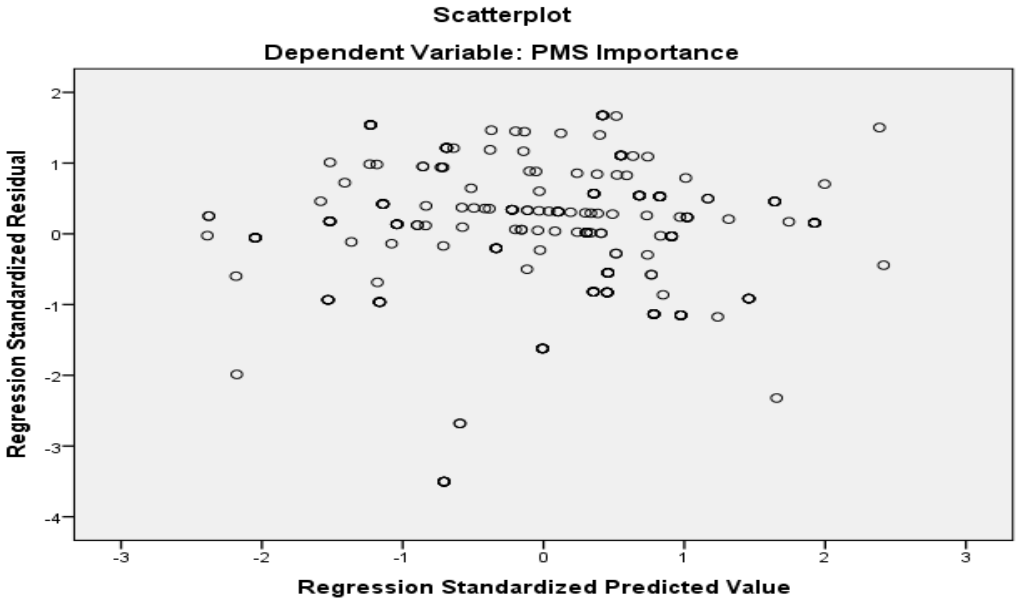
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.85	4.10	3.97	.052	257
Residual	-2.103	1.005	.000	.597	257
Std. Predicted Value	-2.387	2.415	.000	1.000	257
Std. Residual	-3.504	1.674	.000	.994	257

a. Dependent Variable: PMS Importance

Charts





E.C: Regression for Libyan Higher Education Use

Regression For Performance Measurement System Use In Libyan Higher Education

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	2.8437	.86847	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Hierarchy culture	29.66	9.650	257

Correlations

		PMS Use	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Use	1.000	.364	.262	-.057
	Adhocracy culture	.364	1.000	.146	-.274
	Market culture	.262	.146	1.000	-.404
	Hierarchy culture	-.057	-.274	-.404	1.000
Sig. (1-tailed)	PMS Use	.	.000	.000	.180
	Adhocracy culture	.000	.	.009	.000
	Market culture	.000	.009	.	.000
	Hierarchy culture	.180	.000	.000	.
N	PMS Use	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Hierarchy culture	257	257	257	257

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS Use

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.442[a]	.195	.186	.78358

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.742	3	12.581	20.490	.000[b]
	Residual	155.342	253	.614		
	Total	193.083	256			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.238	.393		.606	.545	-.536	1.011					
	Adhocracy culture	.063	.010	.366	6.243	.000	.043	.083	.364	.365	.352	.923	1.083
	Market culture	.043	.010	.270	4.375	.000	.023	.062	.262	.265	.247	.836	1.197
	Hierarchy culture	.014	.006	.152	2.395	.017	.002	.025	-.057	.149	.135	.790	1.266

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.813	1.000	.00	.00	.00	.00
	2	.125	5.517	.00	.03	.14	.39
	3	.050	8.711	.00	.55	.47	.04
	4	.011	18.240	1.00	.43	.38	.56

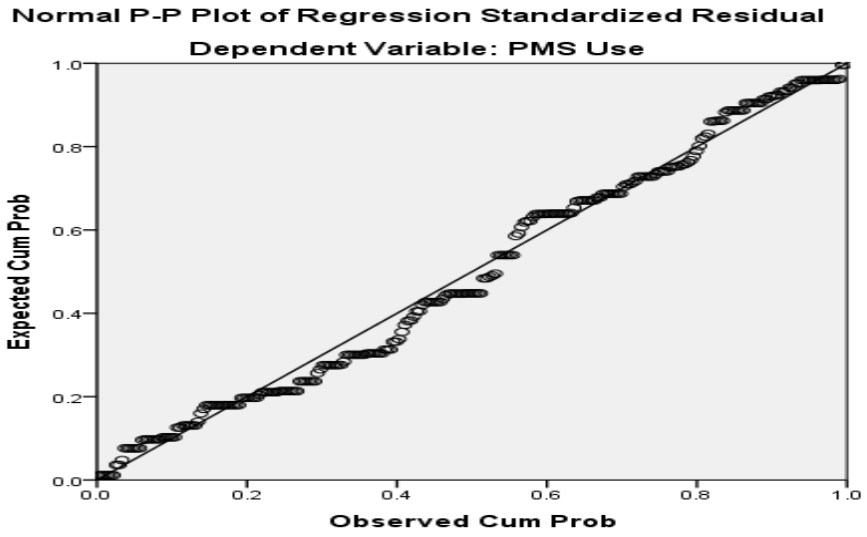
a. Dependent Variable: PMS Use

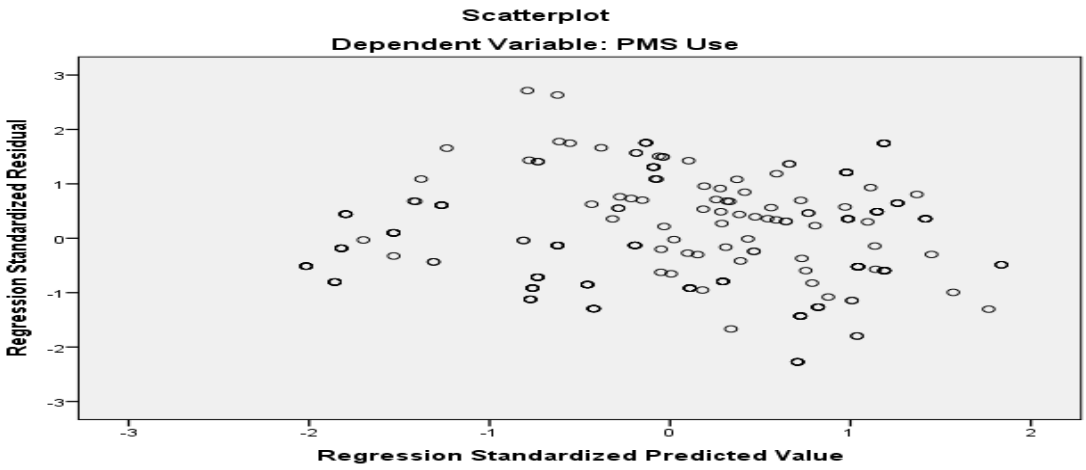
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0693	3.5487	2.8437	.38396	257
Residual	-1.78146	2.12643	.00000	.77898	257
Std. Predicted Value	-2.017	1.836	.000	1.000	257
Std. Residual	-2.273	2.714	.000	.994	257

a. Dependent Variable: PMS Use

Charts





Regression

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	2.8437	.86847	257
Adhocracy culture	21.53	5.022	257
Market culture	19.67	5.513	257
Clan culture	28.99	9.466	257

Correlations

		PMS Use	Adhocracy culture	Market culture	Clan culture
Pearson Correlation	PMS Use	1.000	.364	.262	-.282
	Adhocracy culture	.364	1.000	.146	-.319
	Market culture	.262	.146	1.000	-.253
	Clan culture	-.282	-.319	-.253	1.000
Sig. (1-tailed)	PMS Use	.	.000	.000	.000
	Adhocracy culture	.000	.	.009	.000
	Market culture	.000	.009	.	.000
	Clan culture	.000	.000	.000	.
N	PMS Use	257	257	257	257
	Adhocracy culture	257	257	257	257
	Market culture	257	257	257	257
	Clan culture	257	257	257	257

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Clan culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441[a]	.195	.185	.78400

a. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.576	3	12.525	20.378	.000[b]
	Residual	155.508	253	.615		
	Total	193.083	256			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.568	.373		4.200	.000	.833	2.303					
	Adhocracy culture	.050	.010	.292	4.890	.000	.030	.071	.364	.294	.276	.894	1.119
	Market culture	.029	.009	.183	3.138	.002	.011	.047	.262	.194	.177	.931	1.074
	Clan culture	-.013	.006	-.143	-2.336	.020	-.024	-.002	-.282	-.145	-.132	.855	1.170

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Clan culture
1	1	3.817	1.000	.00	.00	.00	.01
	2	.117	5.709	.00	.05	.12	.47

3	.053	8.466	.00	.42	.63	.02
4	.013	17.411	1.00	.53	.25	.51

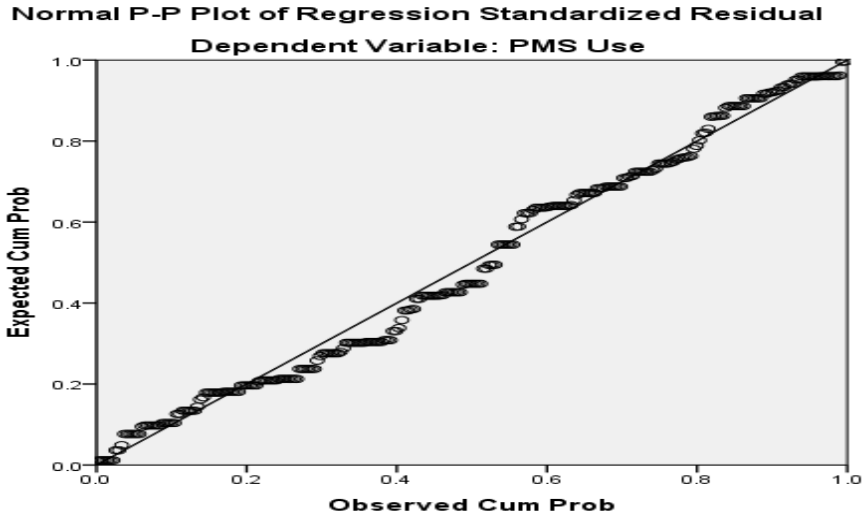
a. Dependent Variable: PMS Use

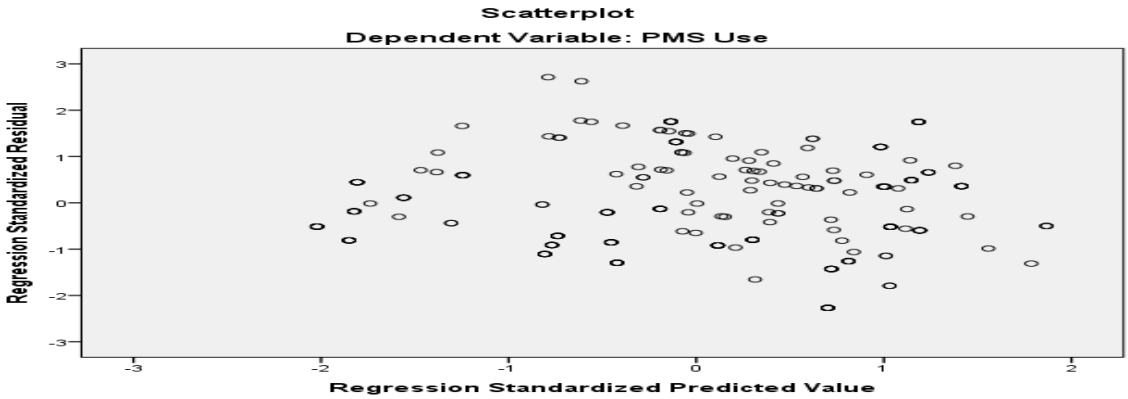
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.0691	3.5589	2.8437	.38312	257
Residual	-1.77896	2.12561	.00000	.77939	257
Std. Predicted Value	-2.022	1.867	.000	1.000	257
Std. Residual	-2.269	2.711	.000	.994	257

a. Dependent Variable: PMS Use

Charts





Regression For Performance Measurement System Use in Libyan Public Universities

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	3.0230	.58879	29
Adhocracy culture	22.50	5.446	29
Market culture	19.20	4.281	29
Clan culture	19.66	7.195	29

Correlations

		PMS Use	Adhocracy culture	Market culture	Clan culture
Pearson Correlation	PMS Use	1.000	.119	.057	.215
	Adhocracy culture	.119	1.000	.147	.279
	Market culture	.057	.147	1.000	.023
	Clan culture	.215	.279	.023	1.000
Sig. (1-tailed)	PMS Use	.	.269	.385	.131
	Adhocracy culture	.269	.	.224	.071
	Market culture	.385	.224	.	.453
	Clan culture	.131	.071	.453	.
N	PMS Use	29	29	29	29
	Adhocracy culture	29	29	29	29
	Market culture	29	29	29	29
	Clan culture	29	29	29	29

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Clan culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.228[a]	.052	-.062	.60673

a. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.504	3	.168	.456	.715[b]
	Residual	9.203	25	.368		
	Total	9.707	28			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	2.449	.691		3.543	.002	1.025	3.873					
	Adhocracy culture	.006	.022	.057	.280	.782	-.039	.052	.119	.056	.055	.902	1.108
	Market culture	.006	.027	.044	.223	.826	-.050	.062	.057	.044	.043	.978	1.022
	Clan culture	.016	.017	.198	.976	.338	-.018	.050	.215	.192	.190	.922	1.085

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Clan culture
1	1	3.853	1.000	.00	.00	.00	.01

	2	.088	6.633	.02	.01	.11	.86
	3	.040	9.783	.00	.78	.34	.10
	4	.019	14.374	.98	.21	.54	.04

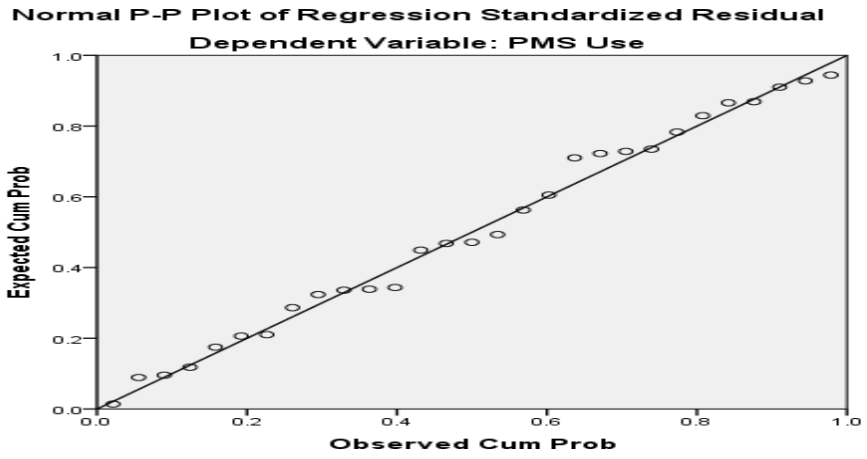
a. Dependent Variable: PMS Use

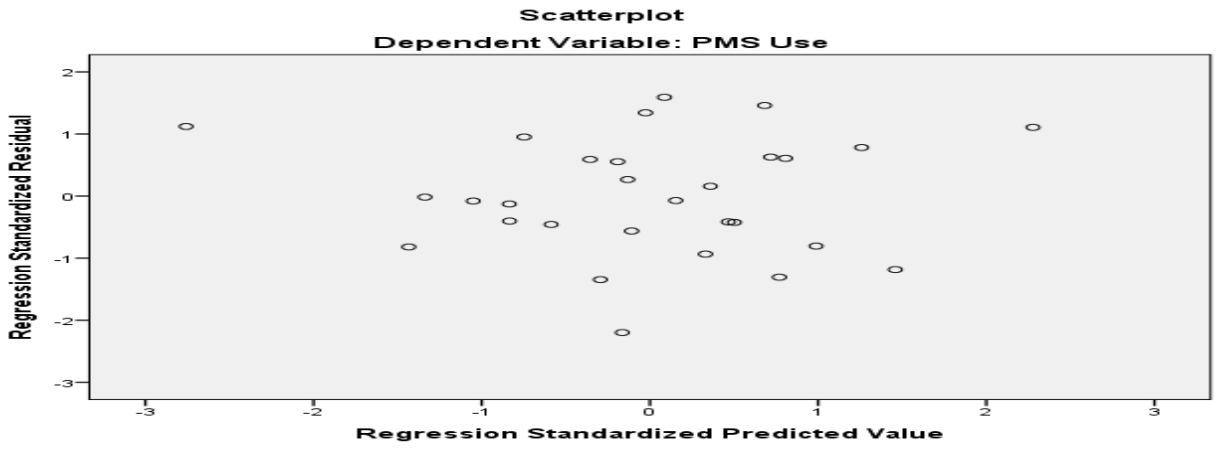
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.6530	3.3285	3.0230	.13415	29
Residual	-1.33429	.96541	.00000	.57330	29
Std. Predicted Value	-2.758	2.278	.000	1.000	29
Std. Residual	-2.199	1.591	.000	.945	29

a. Dependent Variable: PMS Use

Charts





Regression

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	3.0230	.58879	29
Adhocracy culture	22.50	5.446	29
Market culture	19.20	4.281	29
Hierarchy culture	38.53	11.215	29

Correlations

		PMS Use	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Use	1.000	.119	.057	-.199
	Adhocracy culture	.119	1.000	.147	-.707
	Market culture	.057	.147	1.000	-.469
	Hierarchy culture	-.199	-.707	-.469	1.000
Sig. (1-tailed)	PMS Use	.	.269	.385	.150
	Adhocracy culture	.269	.	.224	.000
	Market culture	.385	.224	.	.005
	Hierarchy culture	.150	.000	.005	.
N	PMS Use	29	29	29	29
	Adhocracy culture	29	29	29	29
	Market culture	29	29	29	29
	Hierarchy culture	29	29	29	29

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.208[a]	.043	-.071	.60947

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.421	3	.140	.377	.770[b]
	Residual	9.286	25	.371		
	Total	9.707	28			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.905	1.631		2.394	.024	.546	7.265					
	Adhocracy culture	-.007	.031	-.066	-.229	.821	-.072	.057	.119	-.046	-.045	.457	2.190
	Market culture	-.009	.032	-.062	-.269	.790	-.074	.057	.057	-.054	-.053	.712	1.404
	Hierarchy culture	-.014	.017	-.275	-.849	.404	-.049	.021	-.199	-.167	-.166	.364	2.746

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.836	1.000	.00	.00	.00	.00
	2	.120	5.660	.00	.06	.02	.15

	3	.041	9.717	.00	.23	.49	.01
	4	.004	32.911	1.00	.72	.49	.84

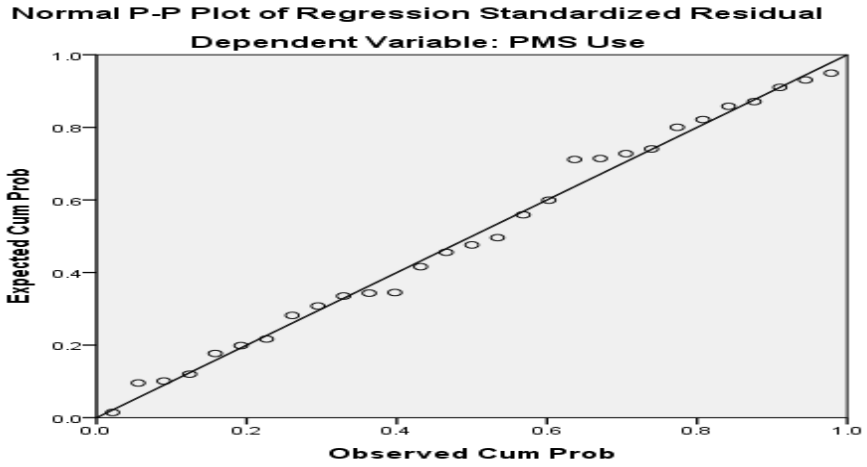
a. Dependent Variable: PMS Use

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.6802	3.3107	3.0230	.12255	29
Residual	-1.33184	.99933	.00000	.57590	29
Std. Predicted Value	-2.797	2.348	.000	1.000	29
Std. Residual	-2.185	1.640	.000	.945	29

a. Dependent Variable: PMS Use

Charts



Regression For Performance Measurement System Use

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	3.5541	.50774	37
Adhocracy culture	21.37	3.978	37
Market culture	22.70	4.359	37
Hierarchy culture	21.53	5.484	37

Correlations

		PMS Use	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Use	1.000	-.149	-.218	.470
	Adhocracy culture	-.149	1.000	-.403	.002
	Market culture	-.218	-.403	1.000	-.581
	Hierarchy culture	.470	.002	-.581	1.000
Sig. (1-tailed)	PMS Use	.	.190	.098	.002
	Adhocracy culture	.190	.	.007	.496
	Market culture	.098	.007	.	.000
	Hierarchy culture	.002	.496	.000	.
N	PMS Use	37	37	37	37
	Adhocracy culture	37	37	37	37
	Market culture	37	37	37	37
	Hierarchy culture	37	37	37	37

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS Use
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.493[a]	.243	.174	.46143

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.254	3	.751	3.529	.025[b]
	Residual	7.026	33	.213		
	Total	9.281	36			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	3.074	1.168		2.632	.013	.698	5.450					
	Adhocracy culture	-.020	.022	-.153	-.881	.385	-.065	.026	-.149	-.152	-.133	.757	1.322
	Market culture	-.001	.025	-.010	-.047	.963	-.052	.050	-.218	-.008	-.007	.502	1.994
	Hierarchy culture	.043	.018	.464	2.370	.024	.006	.080	.470	.381	.359	.599	1.671

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.885	1.000	.00	.00	.00	.00

	2	.074	7.230	.00	.00	.11	.25
	3	.038	10.165	.00	.44	.07	.17
	4	.003	35.423	1.00	.55	.82	.58

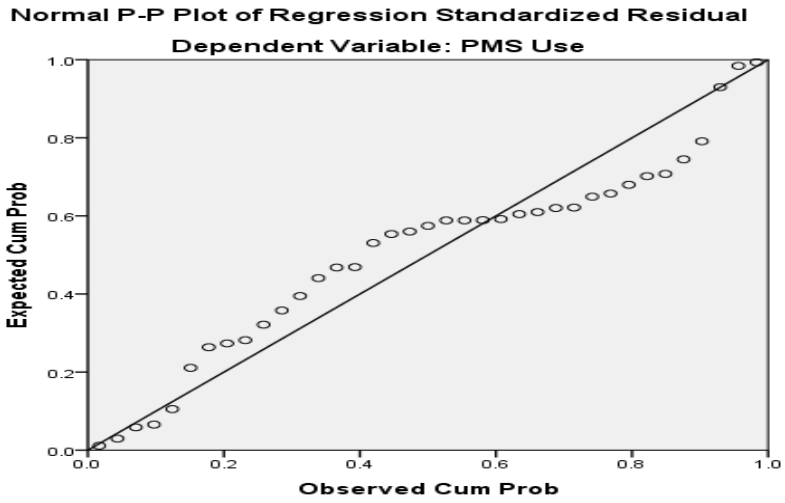
a. Dependent Variable: PMS Use

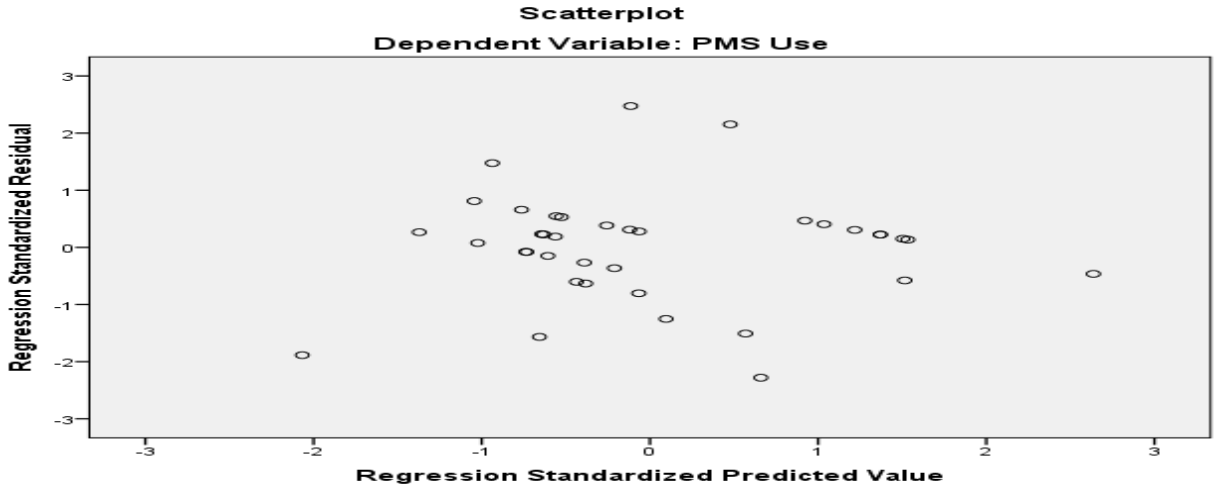
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0368	4.2139	3.5541	.25025	37
Residual	-1.05236	1.14128	.00000	.44179	37
Std. Predicted Value	-2.067	2.637	.000	1.000	37
Std. Residual	-2.281	2.473	.000	.957	37

a. Dependent Variable: PMS Use

Charts





Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	3.5541	.50774	37
Adhocracy culture	21.37	3.978	37
Market culture	22.70	4.359	37
Clan culture	34.39	4.822	37

Correlations

		PMS Use	Adhocracy culture	Market culture	Clan culture
Pearson Correlation	PMS Use	1.000	-.149	-.218	-.215
	Adhocracy culture	-.149	1.000	-.403	-.463
	Market culture	-.218	-.403	1.000	.089
	Clan culture	-.215	-.463	.089	1.000
Sig. (1-tailed)	PMS Use	.	.190	.098	.101
	Adhocracy culture	.190	.	.007	.002
	Market culture	.098	.007	.	.301
	Clan culture	.101	.002	.301	.
N	PMS Use	37	37	37	37
	Adhocracy culture	37	37	37	37
	Market culture	37	37	37	37
	Clan culture	37	37	37	37

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Clan culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.493[a]	.243	.174	.46143

a. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture
b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.254	3	.751	3.529	.025[b]
	Residual	7.026	33	.213		
	Total	9.281	36			

a. Dependent Variable: PMS Use
b. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	7.370	1.183		6.231	.000	4.964	9.777					
	Adhocracy culture	-.063	.024	-.490	-2.616	.013	-.111	-.014	-.149	-.414	-.396	.654	1.529

Market culture	-.044	.019	-.379	-2.273	.030	-.084	-.005	-.218	-.368	-.344	.826	1.211
Clan culture	-.043	.018	-.408	-2.370	.024	-.080	-.006	-.215	-.381	-.359	.774	1.292

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Clan culture
1	1	3.924	1.000	.00	.00	.00	.00
	2	.050	8.901	.00	.26	.19	.02
	3	.023	12.955	.00	.05	.47	.34
	4	.003	36.020	1.00	.69	.34	.64

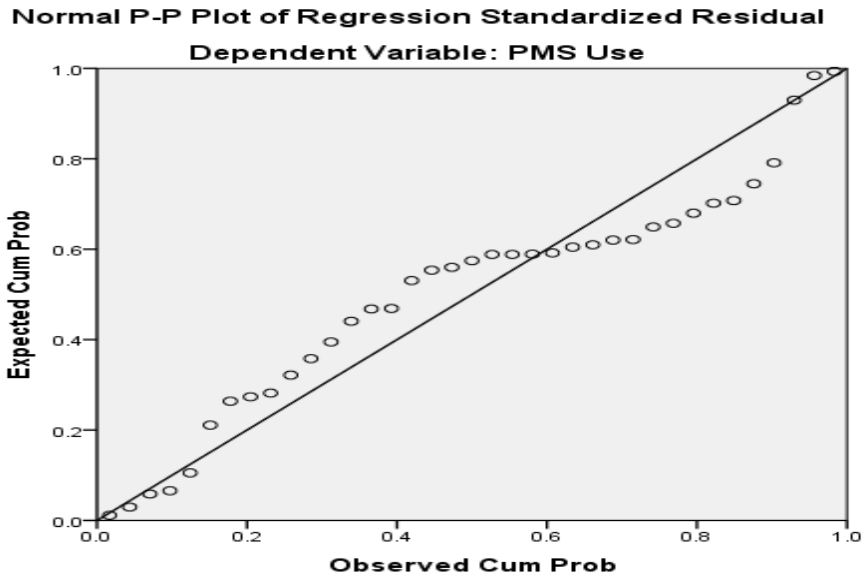
a. Dependent Variable: PMS Use

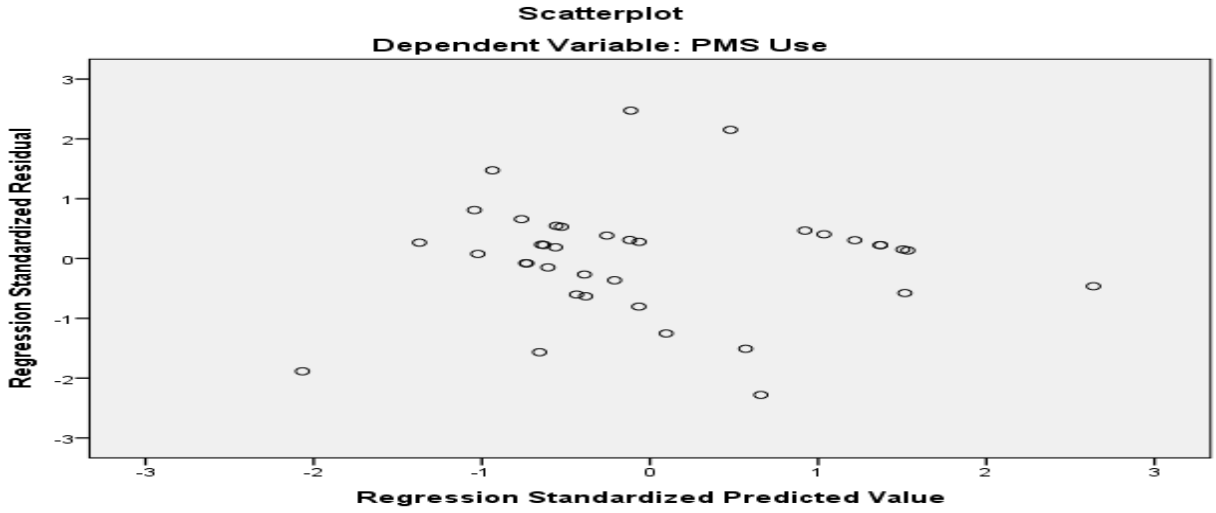
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.0368	4.2139	3.5541	.25025	37
Residual	-1.05236	1.14128	.00000	.44179	37
Std. Predicted Value	-2.067	2.637	.000	1.000	37
Std. Residual	-2.281	2.473	.000	.957	37

a. Dependent Variable: PMS Use

Charts


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PMS Use
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: PMS Use
Regression Standardized Residual
Regression Standardized Predicted Value
-3
-2
-1
0
1
2
3

Regression For Performance Measurement System Use

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	2.6382	.90999	164
Adhocracy culture	21.49	5.207	164
Market culture	18.80	5.526	164
Clan culture	30.26	8.886	164

Correlations

		PMS Use	Adhocracy culture	Market culture	Clan culture
Pearson Correlation	PMS Use	1.000	.524	.239	-.432
	Adhocracy culture	.524	1.000	.215	-.527
	Market culture	.239	.215	1.000	-.367
	Clan culture	-.432	-.527	-.367	1.000
Sig. (1-tailed)	PMS Use	.	.000	.001	.000
	Adhocracy culture	.000	.	.003	.000
	Market culture	.001	.003	.	.000
	Clan culture	.000	.000	.000	.
N	PMS Use	164	164	164	164
	Adhocracy culture	164	164	164	164
	Market culture	164	164	164	164
	Clan culture	164	164	164	164

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Clan culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.561[a]	.315	.302	.76034

a. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.479	3	14.160	24.492	.000[b]
	Residual	92.500	160	.578		
	Total	134.978	163			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Clan culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.428	.546		2.613	.010	.349	2.507					
	Adhocracy culture	.071	.013	.408	5.300	.000	.045	.098	.524	.386	.347	.722	1.385
	Market culture	.014	.012	.083	1.177	.241	-.009	.037	.239	.093	.077	.865	1.156
	Clan culture	-.019	.008	-.187	-2.313	.022	-.035	-.003	-.432	-.180	-.151	.655	1.526

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Clan culture
1	1	3.815	1.000	.00	.00	.00	.00

	2	.123	5.571	.00	.05	.12	.27
	3	.054	8.441	.00	.35	.65	.01
	4	.009	21.100	1.00	.60	.23	.72

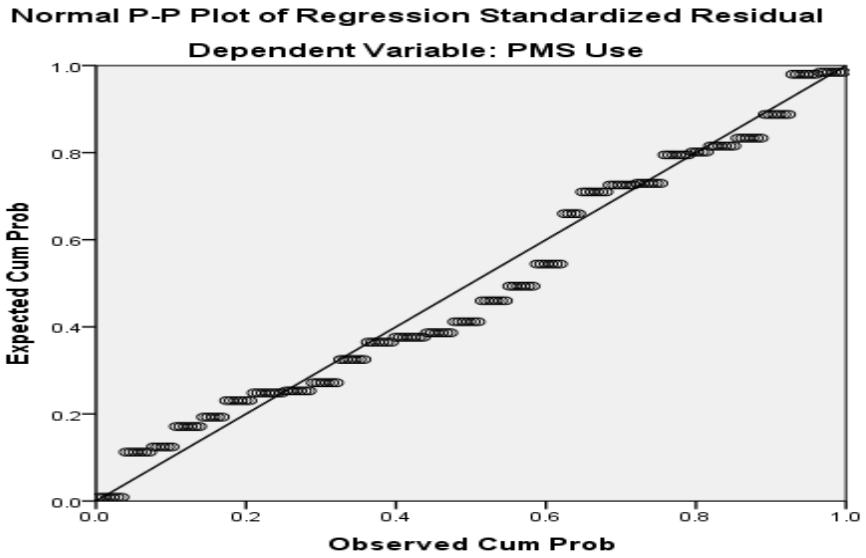
a. Dependent Variable: PMS Use

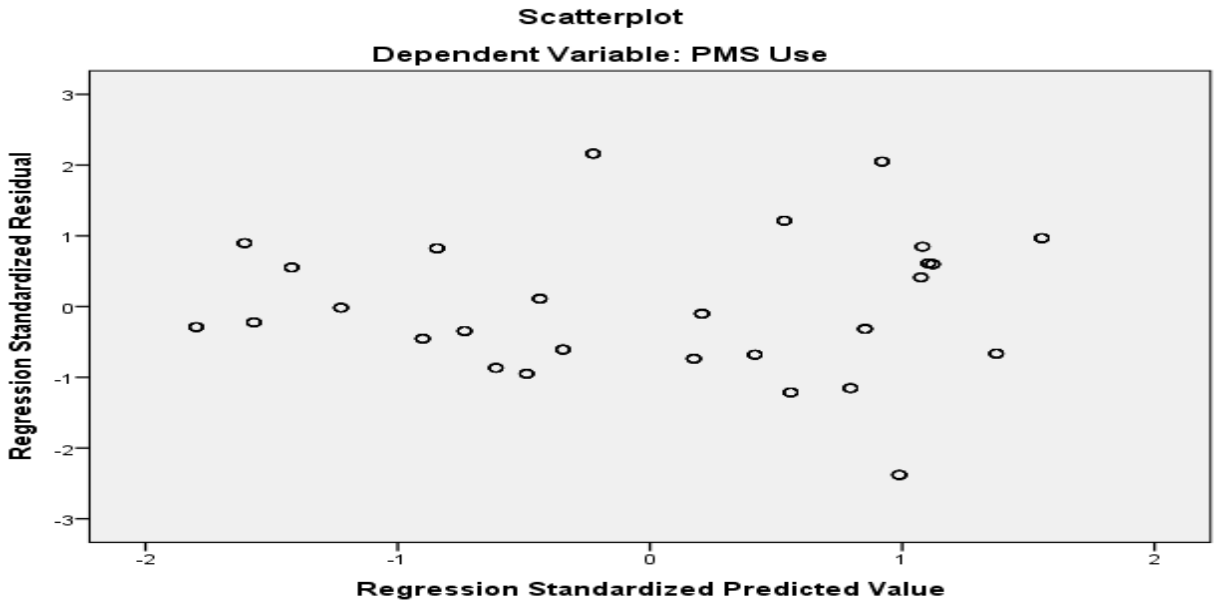
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7198	3.4312	2.6382	.51049	164
Residual	-1.80938	1.64336	.00000	.75331	164
Std. Predicted Value	-1.799	1.553	.000	1.000	164
Std. Residual	-2.380	2.161	.000	.991	164

a. Dependent Variable: PMS Use

Charts





Regression For Performance Measurement System Use

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	2.6382	.90999	164
Adhocracy culture	21.49	5.207	164
Market culture	18.80	5.526	164
Hierarchy culture	29.27	7.768	164

Correlations

		PMS Use	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Use	1.000	.524	.239	-.024
	Adhocracy culture	.524	1.000	.215	-.195
	Market culture	.239	.215	1.000	-.441
	Hierarchy culture	-.024	-.195	-.441	1.000
Sig. (1-tailed)	PMS Use	.	.000	.001	.382
	Adhocracy culture	.000	.	.003	.006
	Market culture	.001	.003	.	.000
	Hierarchy culture	.382	.006	.000	.
N	PMS Use	164	164	164	164
	Adhocracy culture	164	164	164	164

Market culture	164	164	164	164
Hierarchy culture	164	164	164	164

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Adhocracy culture, Market culture[b]	.	Enter

a. Dependent Variable: PMS Use
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.560[a]	.314	.301	.76095

a. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture
b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	42.332	3	14.111	24.369	.000[b]
	Residual	92.647	160	.579		
	Total	134.978	163			

a. Dependent Variable: PMS Use
b. Predictors: (Constant), Hierarchy culture, Adhocracy culture, Market culture

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF

1	(Constant)	-.484	.479		-1.010	.314	-1.429	.462				
	Adhocracy culture	.090	.012	.513	7.604	.000	.066	.113	.524	.515	.498	.941	1.062
	Market culture	.033	.012	.202	2.736	.007	.009	.057	.239	.211	.179	.788	1.269
	Hierarchy culture	.019	.009	.166	2.256	.025	.002	.036	-.024	.176	.148	.795	1.258

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.835	1.000	.00	.00	.00	.00
	2	.107	5.988	.00	.02	.24	.27
	3	.047	9.075	.00	.74	.37	.07
	4	.011	18.409	1.00	.24	.39	.66

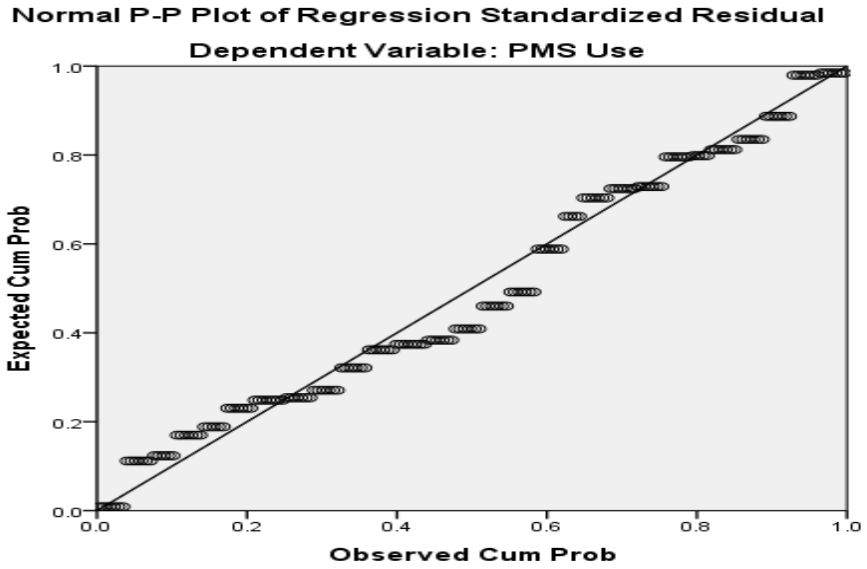
a. Dependent Variable: PMS Use

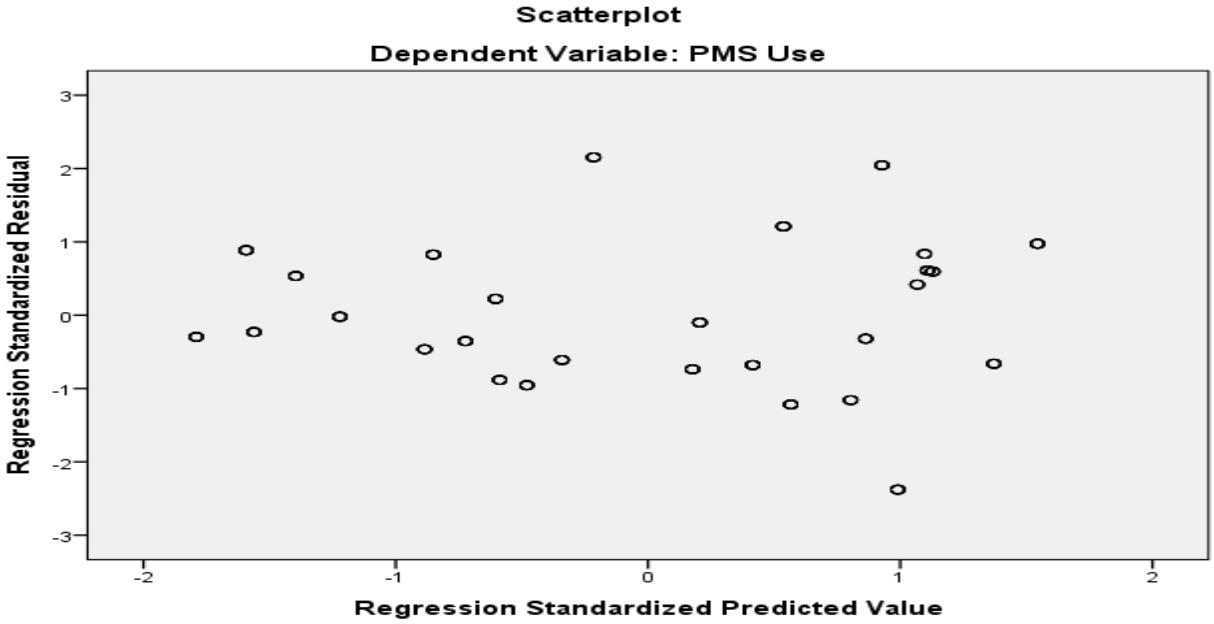
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.7254	3.4252	2.6382	.50961	164
Residual	-1.80949	1.63837	.00000	.75391	164
Std. Predicted Value	-1.791	1.544	.000	1.000	164
Std. Residual	-2.378	2.153	.000	.991	164

a. Dependent Variable: PMS Use

Charts


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: PMS Use
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: PMS Use
Regression Standardized Residual
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-3

Descriptive Statistics

	Mean	Std. Deviation	N
PMS Use	2.9259	.69080	27
Adhocracy culture	20.90	4.792	27
Market culture	21.30	6.394	27
Hierarchy culture	33.67	12.727	27

Correlations

		PMS Use	Adhocracy culture	Market culture	Hierarchy culture
Pearson Correlation	PMS Use	1.000	.011	.246	.171
	Adhocracy culture	.011	1.000	.297	-.715
	Market culture	.246	.297	1.000	-.227
	Hierarchy culture	.171	-.715	-.227	1.000
Sig. (1-tailed)	PMS Use	.	.478	.108	.197
	Adhocracy culture	.478	.	.066	.000
	Market culture	.108	.066	.	.128
	Hierarchy culture	.197	.000	.128	.
N	PMS Use	27	27	27	27
	Adhocracy culture	27	27	27	27
	Market culture	27	27	27	27
	Hierarchy culture	27	27	27	27

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Hierarchy culture, Market culture, Adhocracy culture[b]	.	Enter

a. Dependent Variable: PMS Use
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.365[a]	.133	.020	.68372

a. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

b. Dependent Variable: PMS Use

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.655	3	.552	1.180	.339[b]
	Residual	10.752	23	.467		
	Total	12.407	26			

a. Dependent Variable: PMS Use

b. Predictors: (Constant), Hierarchy culture, Market culture, Adhocracy culture

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	1.018	1.295		.787	.440	-1.660	3.697					
	Adhocracy culture	.029	.041	.198	.699	.492	-.056	.113	.011	.144	.136	.469	2.130
	Market culture	.029	.022	.272	1.339	.194	-.016	.075	.246	.269	.260	.911	1.097
	Hierarchy culture	.020	.015	.375	1.349	.191	-.011	.052	.171	.271	.262	.489	2.047

a. Dependent Variable: PMS Use

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	Adhocracy culture	Market culture	Hierarchy culture
1	1	3.783	1.000	.00	.00	.00	.00
	2	.160	4.860	.00	.03	.05	.25

	3	.050	8.731	.02	.13	.93	.00
	4	.007	23.425	.98	.84	.01	.75

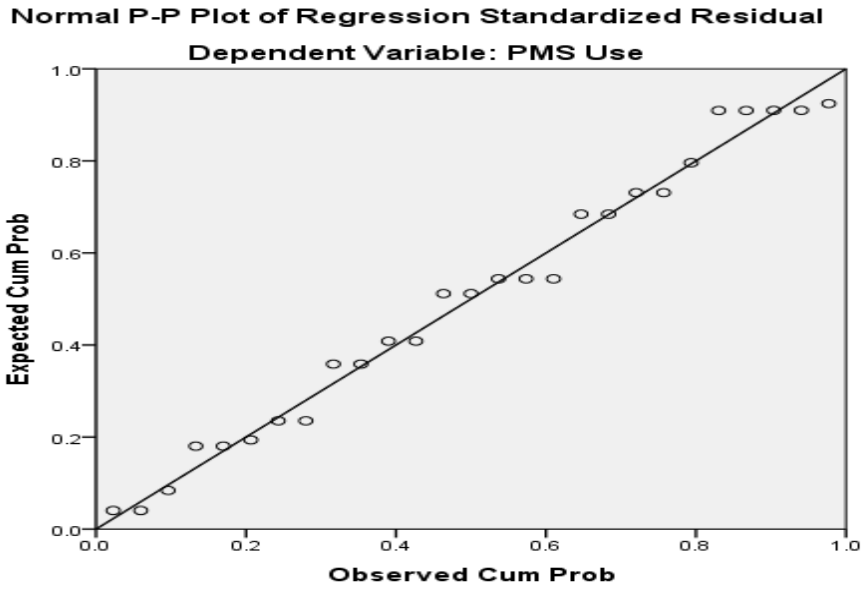
a. Dependent Variable: PMS Use

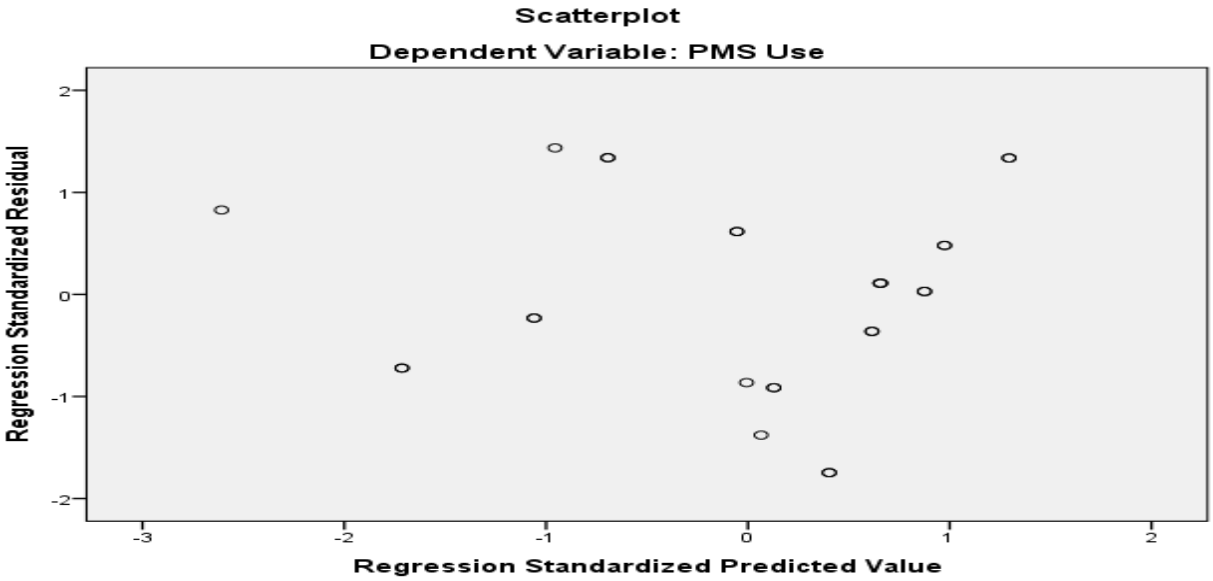
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.2678	3.2526	2.9259	.25233	27
Residual	-1.19429	.98189	.00000	.64307	27
Std. Predicted Value	-2.608	1.294	.000	1.000	27
Std. Residual	-1.747	1.436	.000	.941	27

a. Dependent Variable: PMS Use

Charts




Scatterplot
Dependent Variable: PMS Use
Regression Standardized Residual
Regression Standardized Predicted Value
2
1
0
-1
-2
-3
-2
-1
0
1
2

Appendix H

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS acceptance	PMS Importance	PMS Use
Clan culture	Pearson Correlation	1	-.319**	-.253**	-.654**	-.214**	-.035	-.282**
	Sig. (2-tailed)		.000	.000	.000	.001	.579	.000
	N	257	257	257	257	257	257	257
Adhocracy culture	Pearson Correlation	-.319**	1	.146*	-.274**	.222**	.086	.364**
	Sig. (2-tailed)	.000		.019	.000	.000	.169	.000
	N	257	257	257	257	257	257	257
Market culture	Pearson Correlation	-.253**	.146*	1	-.404**	-.041	.012	.262**
	Sig. (2-tailed)	.000	.019		.000	.517	.851	.000
	N	257	257	257	257	257	257	257
Hierarchy culture	Pearson Correlation	-.654**	-.274**	-.404**	1	.115	-.036	-.057
	Sig. (2-tailed)	.000	.000	.000		.065	.566	.360
	N	257	257	257	257	257	257	257
PMS acceptance	Pearson Correlation	-.214**	.222**	-.041	.115	1	.515**	.529**
	Sig. (2-tailed)	.001	.000	.517	.065		.000	.000
	N	257	257	257	257	257	257	257
PMS Importance	Pearson Correlation	-.035	.086	.012	-.036	.515**	1	.307**
	Sig. (2-tailed)	.579	.169	.851	.566	.000		.000
	N	257	257	257	257	257	257	257
PMS Use	Pearson Correlation	-.282**	.364**	.262**	-.057	.529**	.307**	1
	Sig. (2-tailed)	.000	.000	.000	.360	.000	.000	
	N	257	257	257	257	257	257	257

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS acceptance	PMS Importance	PMS Use	BSC acceptance
Clan culture	Pearson Correlation	1	.233	.061	-.715**	.258	.036	.045	.391*
	Sig. (2-tailed)		.225	.752	.000	.176	.855	.818	.036
	N	29	29	29	29	29	29	29	29
Adhocracy culture	Pearson Correlation	.233	1	.147	-.707**	.059	.308	.119	-.006
	Sig. (2-tailed)	.225		.447	.000	.762	.104	.538	.974
	N	29	29	29	29	29	29	29	29
Market culture	Pearson Correlation	.061	.147	1	-.469*	.053	.258	.057	.099
	Sig. (2-tailed)	.752	.447		.010	.787	.176	.770	.610
	N	29	29	29	29	29	29	29	29
Hierarchy culture	Pearson Correlation	-.715**	-.707**	-.469*	1	-.238	-.254	-.199	-.253
	Sig. (2-tailed)	.000	.000	.010		.214	.183	.301	.185
	N	29	29	29	29	29	29	29	29
PMS acceptance	Pearson Correlation	.258	.059	.053	-.238	1	.433*	.152	.881**
	Sig. (2-tailed)	.176	.762	.787	.214		.019	.433	.000
	N	29	29	29	29	29	29	29	29
PMS Importance	Pearson Correlation	.036	.308	.258	-.254	.433*	1	.160	.306
	Sig. (2-tailed)	.855	.104	.176	.183	.019		.406	.107
	N	29	29	29	29	29	29	29	29
PMS Use	Pearson Correlation	.045	.119	.057	-.199	.152	.160	1	.164
	Sig. (2-tailed)	.818	.538	.770	.301	.433	.406		.396
	N	29	29	29	29	29	29	29	29
BSC acceptance	Pearson Correlation	.391*	-.006	.099	-.253	.881**	.306	.164	1
	Sig. (2-tailed)	.036	.974	.610	.185	.000	.107	.396	

	N	29	29	29	29	29	29	29	29

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS acceptance	PMS Importance	PMS Use
Clan culture	Pearson Correlation	1	-.463**	.089	-.614**	.129	-.254	-.215
	Sig. (2-tailed)		.004	.602	.000	.448	.129	.202
	N	37	37	37	37	37	37	37
Adhocracy culture	Pearson Correlation	-.463**	1	-.403*	.002	-.112	-.152	-.149
	Sig. (2-tailed)	.004		.014	.992	.508	.368	.380
	N	37	37	37	37	37	37	37
Market culture	Pearson Correlation	.089	-.403*	1	-.581**	-.056	.318	-.218
	Sig. (2-tailed)	.602	.014		.000	.742	.055	.195
	N	37	37	37	37	37	37	37
Hierarchy culture	Pearson Correlation	-.614**	.002	-.581**	1	.013	.081	.470**
	Sig. (2-tailed)	.000	.992	.000		.940	.632	.003
	N	37	37	37	37	37	37	37
PMS acceptance	Pearson Correlation	.129	-.112	-.056	.013	1	.108	-.012
	Sig. (2-tailed)	.448	.508	.742	.940		.523	.945
	N	37	37	37	37	37	37	37
PMS Importance	Pearson Correlation	-.254	-.152	.318	.081	.108	1	.462**
	Sig. (2-tailed)	.129	.368	.055	.632	.523		.004
	N	37	37	37	37	37	37	37
PMS Use	Pearson Correlation	-.215	-.149	-.218	.470**	-.012	.462**	1
	Sig. (2-tailed)	.202	.380	.195	.003	.945	.004	
	N	37	37	37	37	37	37	37

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS acceptance	PMS Importance	PMS Use
Clan culture	Pearson Correlation	1	-.527**	-.367**	-.507**	-.347**	-.095	-.432**
	Sig. (2-tailed)		.000	.000	.000	.000	.228	.000
	N	164	164	164	164	164	164	164
Adhocracy culture	Pearson Correlation	-.527**	1	.215**	-.195*	.328**	.085	.524**
	Sig. (2-tailed)	.000		.006	.012	.000	.281	.000
	N	164	164	164	164	164	164	164
Market culture	Pearson Correlation	-.367**	.215**	1	-.441**	-.229**	-.097	.239**
	Sig. (2-tailed)	.000	.006		.000	.003	.216	.002
	N	164	164	164	164	164	164	164
Hierarchy culture	Pearson Correlation	-.507**	-.195*	-.441**	1	.332**	.085	-.024
	Sig. (2-tailed)	.000	.012	.000		.000	.279	.764
	N	164	164	164	164	164	164	164
PMS acceptance	Pearson Correlation	-.347**	.328**	-.229**	.332**	1	.509**	.496**
	Sig. (2-tailed)	.000	.000	.003	.000		.000	.000
	N	164	164	164	164	164	164	164
PMS Importance	Pearson Correlation	-.095	.085	-.097	.085	.509**	1	.258**
	Sig. (2-tailed)	.228	.281	.216	.279	.000		.001
	N	164	164	164	164	164	164	164
PMS Use	Pearson Correlation	-.432**	.524**	.239**	-.024	.496**	.258**	1
	Sig. (2-tailed)	.000	.000	.002	.764	.000	.001	
	N	164	164	164	164	164	164	164

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Correlations

		Clan culture	Adhocracy culture	Market culture	Hierarchy culture	PMS acceptance	PMS Importance	PMS Use
Clan culture	Pearson Correlation	1	.228	-.464*	-.713**	-.171	.274	-.349
	Sig. (2-tailed)		.252	.015	.000	.395	.166	.074
	N	27	27	27	27	27	27	27
Adhocracy culture	Pearson Correlation	.228	1	.297	-.715**	.072	.054	.011
	Sig. (2-tailed)	.252		.132	.000	.722	.788	.956
	N	27	27	27	27	27	27	27
Market culture	Pearson Correlation	-.464*	.297	1	-.227	.024	-.168	.246
	Sig. (2-tailed)	.015	.132		.256	.905	.402	.216
	N	27	27	27	27	27	27	27
Hierarchy culture	Pearson Correlation	-.713**	-.715**	-.227	1	.110	-.178	.171
	Sig. (2-tailed)	.000	.000	.256		.583	.375	.393
	N	27	27	27	27	27	27	27
PMS acceptance	Pearson Correlation	-.171	.072	.024	.110	1	.451*	.463*
	Sig. (2-tailed)	.395	.722	.905	.583		.018	.015
	N	27	27	27	27	27	27	27
PMS Importance	Pearson Correlation	.274	.054	-.168	-.178	.451*	1	.033
	Sig. (2-tailed)	.166	.788	.402	.375	.018		.868
	N	27	27	27	27	27	27	27
PMS Use	Pearson Correlation	-.349	.011	.246	.171	.463*	.033	1
	Sig. (2-tailed)	.074	.956	.216	.393	.015	.868	
	N	27	27	27	27	27	27	27

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).