

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND  
TECHNOLOGY, KUMASI, GHANA**

**Organizational Culture in the Ghanaian Construction Industry**

by

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**A thesis submitted to the Department of Building Technology,  
College of Art and Built Environment in partial fulfilment of the  
requirements for the degree of**

**MASTER OF PHILOSOPHY**

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## DECLARATION

I hereby declare that this submission is my own work towards the MPhil Construction Management and that, to the best of my knowledge, it contains no material previously published by another person, nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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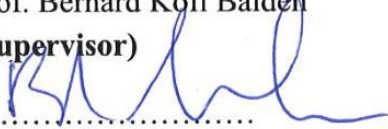
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## ABSTRACT

The personality of an individual is important as well as the culture of an organization. Understanding the culture of an organization is a first step to selfdiscovery by acknowledging its weakness and strength. Studies have suggested that, awareness of culture is an opportunity towards improving the effectiveness of the organization. The study aimed at exploring organizational culture and developing a culture typology for construction organizations in Ghana. An extensive literature review was conducted through desk survey. The study was grounded in the positivism perspective of epistemology philosophy which assisted in employing quantitative approach and questionnaire survey as the data collection instrument. The study achieved a response rate of 83.96%. The data was subjected to descriptive analysis, reliability analysis, mean score ranking, relative importance index and factor analysis. The findings of the study revealed that the Ghanaian construction industry is dominated by the hierarchical trait of culture developed from the Competing Value Framework (CVF). Besides, significant factors for organizational culture were identified which became precursor to the construction of the culture typology for construction organizations in Ghana. The developed typology consisted of four main traits including workplace culture, business culture, system and group culture. It was recommended that, future research should focus on confirmatory factor analysis to affirm the traits and its defining factors as well as its relationship to partnership, innovation and productivity improvement. To construction organizations, it is recommended that studies should be conducted into management rethinking and observation of culture typologies to improve efficiency.

# TABLE OF CONTENT

DECLARATION .....	ii
ABSTRACT .....	iii
TABLE OF CONTENT .....	iv
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
ACKNOWLEDGEMENT .....	xi
DEDICATION .....	xii
CHAPTER ONE .....	1
INTRODUCTION .....	1
1.1 Background to study .....	1
1.2 Statement of Problem .....	2
1.3 Research Questions .....	4
1.4 Aim and Objectives .....	4
1.4.1 Aim .....	4
1.4.2 Objectives .....	5
1.5 Significance of Study .....	5
1.6 Scope of Study .....	6
1.7 Research Methodology .....	6
1.7.1 Objective 1 .....	7
1.7.2 Objective 2 .....	7
1.7.3 Objective 3 .....	7

1.7.4 Objective 4 .....	7
1.8 Organization of study .....	7
CHAPTER TWO .....	9
THE GHANAIAN CONSTRUCTION INDUSTRY AND THE CONCEPTS OF CULTURE .....	9
2.1 Introduction .....	9
2.2 The Global Construction Industry .....	9
2.3 The Ghanaian Construction Industry.....	11
2.3.1 Importance of the Ghanaian Construction Industry .....	12
2.3.1.1 Infrastructure development .....	12
2.3.1.2 Employment opportunities .....	13
2.3.1.3 Gross Domestic Product (GDP) contribution .....	13
2.3.1.4 Inter-connection with other sectors of the economy .....	14
2.4 Classifications of Business Organizations .....	14
2.4.1 Business classifications in the Ghanaian Construction Industry .....	16
2.5 Definition of culture .....	17
2.6 Position of Construction Organizational Culture Studies in Cultural Theories	23
CHAPTER THREE .....	27
ORGANIZATIONAL AND ORGANIZATIONAL CULTURE MODELS .....	27
3.1 Organization defined .....	27
3.2 Organizational Culture .....	28
3.2.1 Determinants of Organizational Culture .....	30
3.2.2 Importance of culture to the organization .....	32
3.3 Culture models .....	32
3.3.1 Hofstede’s National Cultures .....	33
3.3.1.1 Power Distance (PD) .....	33
3.3.1.2 Uncertainty Avoidance (UV) .....	34
3.3.1.3 Individualism – Collectivism (IC) .....	35

3.3.1.4 Masculine – feminine (MF) .....	36
3.3.2 Hofstede’s Organization Culture Model .....	36
3.3.2.1 Process-oriented versus results-oriented .....	37
3.3.2.2 Job-oriented versus employee-oriented .....	37
3.3.2.3 Professional and parochial .....	37
3.3.2.4 Open systems versus closed systems .....	38
3.3.2.5 Tight versus loose control .....	38
3.3.2.6 Pragmatic versus normative .....	38
3.3.3 Organizational Culture Profile (OCP) Model .....	39
3.3.3.1 Innovation .....	39
3.3.3.2 Stability .....	40
3.3.3.3 Respect for people .....	40
3.3.3.4 Outcome orientation .....	41
3.3.3.5 Attention .....	41
3.3.3.6 Team .....	41
3.3.3.7 Aggressive .....	42
3.3.4 Revised Organizational Culture Profile (ROCP) Model .....	42
3.3.4.1 People culture .....	42
3.3.4.2 Business culture .....	42
3.3.4.3 Environment culture .....	43
3.3.5 Denison Culture Model .....	43
3.3.5.1 Mission .....	44
3.3.5.2 Involvement.....	44
3.3.5.3 Adaptability .....	44
3.3.5.4 Consistency .....	45

3.3.6 Organizational Culture Assessment Instrument (OCAI) .....	45
3.3.6.1 Clan .....	46
3.3.6.2 Hierarchy .....	48
3.3.6.3 Adhocracy .....	48
3.3.6.4 Market .....	49
3.4 Adapted Culture Model for the Study .....	49
CHAPTER FOUR .....	52
RESEARCH METHODOLOGY .....	52
4.1 Introduction .....	52
4.2 Philosophical concept: Epistemological view .....	52
4.3 Research Methods .....	53
4.3.1 Quantitative method .....	54
4.3.2 Qualitative method .....	54
4.3.3 Mixed methods or Triangulation .....	54
4.3.4 Adapted research method.....	55
4.4 Research Style .....	55
4.4 Research Population .....	56
4.4.1 Sampling .....	57
4.4.1.1 Sample size.....	57
4.5 Data Collection .....	58
4.5.1 Sources of data collection .....	59
4.5.2 Questionnaire survey .....	60

4.5.2.1 Format of Questionnaire .....	61
4.6. Data Analysis .....	62
4.6.1 Reliability and Validity Test .....	62
4.6.2 Relative Importance Index (RII) and Mean Score Ranking (MSR) .....	62
CHAPTER FIVE .....	64
DATA ANALYSIS AND DISCUSSION .....	64
5.1 Introduction .....	64
5.2 Demographic information .....	64
5.3 Typologies Organization Culture of the GCI based OCAI .....	68
5.3.1 Culture typologies based on the CVF dimensions .....	68
5.3.2 Culture typologies of Ghanaian contractors based on Organizational size .....	73
5.3.3 Culture typology of Ghanaian Contractors based on OCAI .....	75
5.4 Critical factors for construction organizational culture typologies .....	77
5.5 Cultural typologies for the Ghanaian Construction Industry .....	80
5.5.1 Presentation and discussion of factor analysis results .....	82
5.5.1.1 Description of Extracted Component .....	90
5.5.1.1.1 Component 1: Workplace Orientation .....	90
5.5.1.1.2 Component 2: Business Orientation .....	91
5.5.1.1.3 Component 3: System Orientation (SO) .....	92
5.5.1.1.4 Component 4: Group Orientation .....	94
5.5.1.2 Summary of developed typologies .....	95
CHAPTER SIX .....	96
SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION .....	96
6.1 Introduction .....	96
6.2 Summary of findings .....	96
6.2.1 Objective 1: To identify the position of construction organizational culture studies in cultural theories from past research. ....	96
6.2.2 Objective 2: To determine the culture of the Ghanaian Construction Industry with respect to the Competing Value Framework. ....	97
6.2.3 Objective 3: To identify the critical factors for constructing organizational	

culture typologies .....	98
6.2.4 Objective 4: To develop organizational culture typologies for the Ghanaian Construction Industry .....	99
6.3 Limitations of the study .....	99
6.4 Conclusion .....	100
6.5 Contribution to Knowledge .....	101
6.6 Recommendations .....	102
6.6.1 Recommendation for construction organizations .....	102
6.6.2 Recommendation for further studies.....	104
REFERENCE .....	105
APPENDIX 1 QUESTIONNAIRE SURVEY .....	116
APPENDIX 2 RESULTS FOR ORGANIZATIONAL CULTURE ASSESSMENT INSTRUMENT .....	121
APPENDIX 3 RESULTS FOR SIX DIMENSION SHOWING THE OCAI CULTURE TYPOLOGIES .....	122
APPENDIX 4 RESULTS FOR COMMUNALITIES FOR FORTY-SEVEN CONSTRUCTS .....	123
APPENDIX 5 RESULTS FOR COMMUNALITIES FOR FORTY-ONE CONSTRUCTS .....	124
APPENDIX 6 COMPONENT MATRIX FOR THE FORTY CONSTRUCTS .....	125

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The logo of KNUST (Kenyatta National University) is centered in the background. It features a yellow eagle with its wings spread, perched on a globe. Above the eagle is a black mortar and pestle with a red flame rising from it. A yellow banner at the bottom of the emblem contains the Swahili motto 'KISAMA NO KADHYEMA'.

Table 5.1 Experience with organization .....	64
Table 5.2 Legal structure of organization .....	65
Table 5.3 Owners as workers of the organization .....	65
Table 5.4 Dominant gender in organization .....	66
Table 5.5 Employee holdings of organization .....	66
Table 5.6 Profession of owners of organization .....	67
Table 5.7 MWRWH classification of organization .....	67
Table 5.8 Results of OCAI Dimensions .....	68
Table 5.9 Constructs for Organizational Culture .....	78
Table 5.10 Reliability, RII and Mean results for forty constructs .....	81
Table 5.11 KMO and Bartlett's Test .....	84
Table 5.12 Communalities for forty constructs .....	84
Table 5.13 Total Variance explained .....	86
Table 5.14 Rotated Component Matrix .....	90
Table 5.15 Component and Variable extraction .....	91

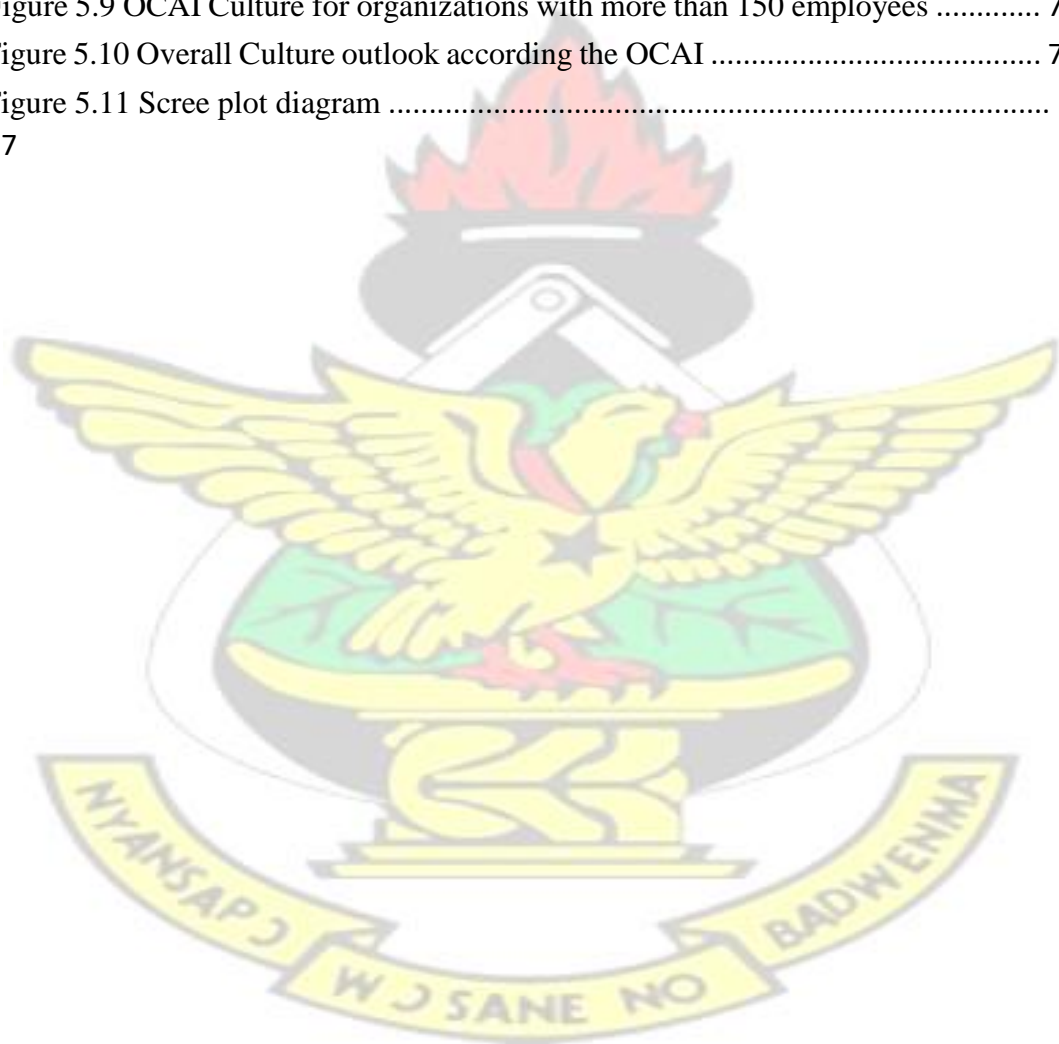
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## LIST OF FIGURES

Figure 2.1 The Competing Values Framework .....	47
Figure 5.1 Results of Dominant Characteristics showing the OCAI culture typologies .....	69
Figure 5.2 Results of Organizational Leadership showing the OCAI culture typologies .....	70
Figure 5.3 Results of Management of Employees dimension showing the OCAI culture typologies .....	70

Figure 5.4 Results of Organization Glue Showing the OCAI culture typologies .....	71
Figure 5.5 Results of Strategic Emphases dimension showing the OCAI culture typologies .....	72
Figure 5.6 Results of Criteria for Success dimension showing the OCAI culture typologies .....	72
Figure 5.7 OCAI Culture for Organizations with less than 50 employees .....	73
Figure 5.8 OCAI Culture for Organizations with 50 - 100 employees .....	74
Figure 5.9 OCAI Culture for organizations with more than 150 employees .....	75
Figure 5.10 Overall Culture outlook according the OCAI .....	76
Figure 5.11 Scree plot diagram .....	87



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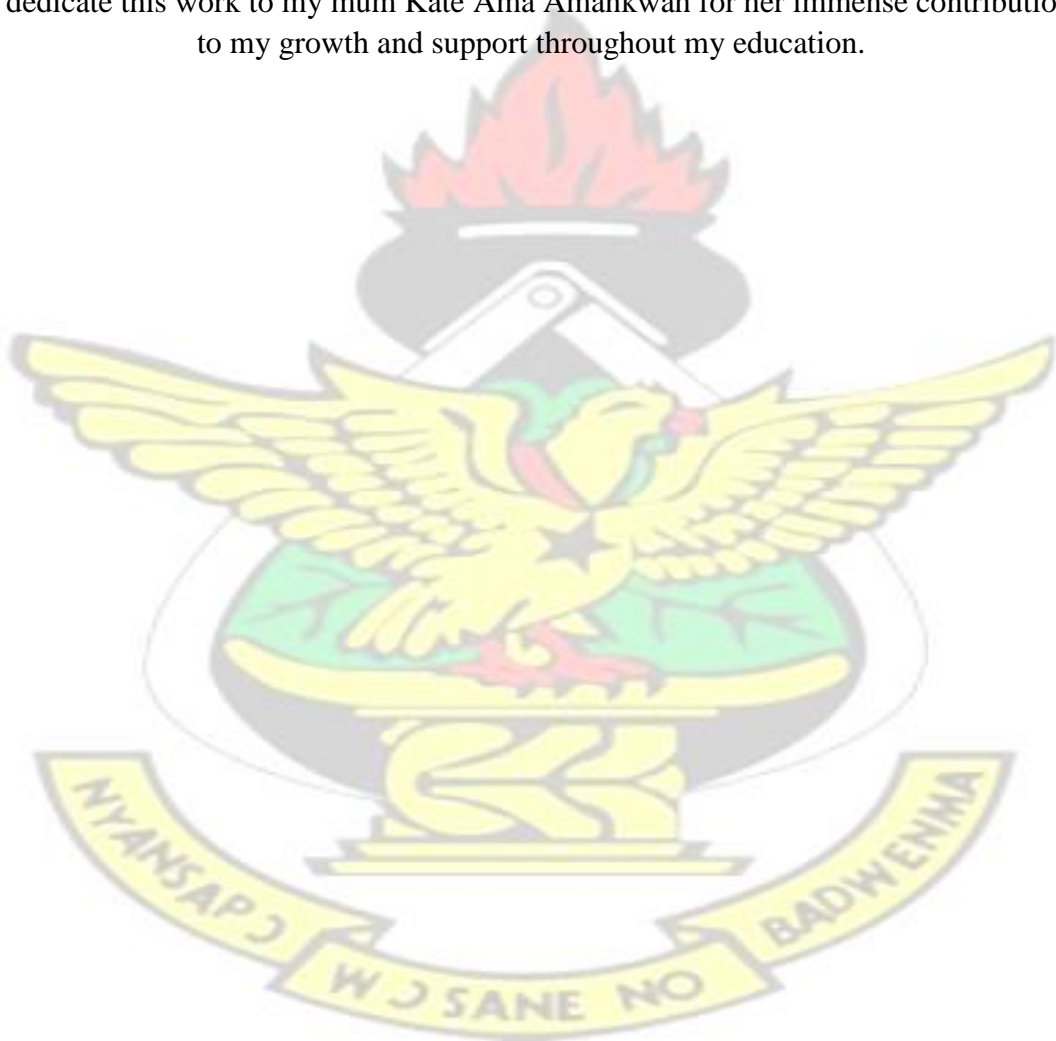
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## DEDICATION

I dedicate this work to my mum Kate Ama Amankwah for her immense contribution to my growth and support throughout my education.



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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to study

The Construction Industry (CI) is very complicated and employs the services of many stakeholders both within and without the industry (Enshassi *et al.*, 2009; Abdul Nifa and Ahmed, 2010; Alinaitwe *et al.*, 2009). Telecommunications, Urban planning, transportation system, electrical installations and housing are areas of specialization in the Construction Industry (Khan, 2008). Governments across the globe mainly depend on the Construction Industry as a regulator and control mechanism to stabilize its economy (Ashworth, 2010). Arti *et al.* (2013) revealed that, the importance or essence of the Construction Industry is felt at any point in time because every now and then, there is the need for construction projects to address the need of other sectors through infrastructure development and satisfy the ever increasing population of a Nation. According to Ghana Statistical Service (2012), 3% of the entire Ghanaian working population are employed in the Construction Industry.

It is suggested that, the performance of every construction projects sprout from the organizations involved. Sambasivan and Soon (2007) indicated that improper planning, improper site management, inadequate contractor experience and subcontractors which cause delays are organizational related. In a similar study by Olawale and Sun (2010), their result revealed that low skilled manpower, lack of proper training, inexperience of Project Manager (PM) and conflict between project parties are the control inhibiting factors facing the Construction Industry. Garbharran *et al.* (2012) also identified critical success factors in Durban, which comprises top

management support, commitment to project and competent project team. Moreover, strategic project planning was also projected by Pakseresht and Asgari (2012). Edum-Fotwe and McCaffer (2000) also asserted that, as there is a gradual shift from the roles of a Project Manager, it is necessary and demanding for PM's to learn other competencies to their already acquired knowledge. These are leading, communicating, negotiating and problem solving which are all functions of an organizational culture. Mbugua *et al.* (1999) also postulated Critical Success Factors (CSFs) for business within the construction sector which includes human resource factors and result factors which are functions of organizational culture.

## **1.2 Statement of Problem**

Organizational Culture can be simplified as the orientation of an organization. Cultures differ from one nation to the other, one industry to the other as well as one organization to the other because the basis for the development or creation of culture in an organization can be from different perspective as asserted by Schein (2004), McKenna and Beech (2002), Rameezdeen and Gunarathna (2003), Abu-Jarad *et al.* (2010) and Abdul Nifa and Ahmed (2010).

The desire of Government and private institutions to boost the infrastructure development have brought intense competition between foreign construction organizations and some few indigenous companies, notwithstanding that some foreign construction organization aims at penetrating the industry by partnering local organizations in order to oblige with the local content law of Ghana and such decisions

will be based on the cultural profile of Ghanaian Construction organizations because suitors find their suites based on common experience.

Many researchers have indicated that, there is a correlation between organizational culture and construction performance or effectiveness in other jurisdictions conversely, all the performance related studies conducted over the past years in the GCI have not considered the culture of the organizations (Fugar and AgyakwahBaah, 2010) . Different classification of organizations exist within the Ghanaian Construction Industry with firm size ranging from small, medium to large. Studies in organizational cultures have not been conducted to establish the differences in culture among such firms, notwithstanding that Tsui *et al.* (2006) came close but considered the entire private domestic and foreign-invested firms in China. In addition, organizational studies in the Ghanaian construction industry is yet to be explored since most studies focus on the project environment rather than the organization in entirety (Ankrah 2007; Ankrah *et al.*, 2007; Kheni *et al.*, 2007).

Moreover, there are documented profile of organizational culture in the construction industry of United Kingdom (Ankrah and Langford, 2005; Ankrah *et al.*, 2007; Ankrah, 2007; Worrall, 2012), Turkey (Oney-Yazici *et al.*, 2007; Albayrak and Albayrak, 2014), Australia (Igo and Skitmore, 2006), Indonesia (Coffey *et al.*, 2011), Nigeria (Olanipekun and Abiola-Falemu, 2013; Olanipekun *et al.*, 2014), South Africa (Harinarain *et al.*, 2013), China (Zhang and Liu, 2003) and the United States of America. However, such cannot be accredited to the Ghanaian Construction

Industry. Conversely, such studies have been done in other sectors of Ghana such as the Banking (Dwirantwi, 2012), Insurance (Bawua, 2011) and manufacturing (Twumasi-Ankrah, 2012).

Finally, there is an on-going cross-cultural research on “Cultures in Construction” across the globe which seeks to enlighten the International Construction Industry about the position of construction on cultures. It is based on these issues that these study is proposed with the following questions.

### **1.3 Research Questions**

1. Where is construction organizational culture studies positioned in cultural theories?
2. What is the state of the Ghanaian Construction Industry on Organizational Culture?
3. Are there differences in organizational culture between SMEs construction organizations in Ghana?
4. What are the factors crucial for construction organizational culture?
5. What organizational culture(s) is prevalent in the Ghanaian Construction Industry?

### **1.4 Aim and Objectives**

#### **1.4.1 Aim**

To develop organizational culture typologies for the Ghanaian construction industry (GCI).

### 1.4.2 Objectives

1. To identify the position of construction organizational culture studies in cultural theories from past research.
2. To determine the culture of the Ghanaian Construction Industry with respect to the Competing Value Framework.
3. To identify the critical factors for constructing organizational culture typologies.
4. To develop organizational typologies for the Ghanaian Construction Industry.

### 1.5 Significance of Study

Earlier Oney-Yazici *et al.* (2007) and Harinarain *et al.* (2013) researched on the organizational culture in the Construction Industry in Turkey and South Africa respectively to identify the cultural profile in that jurisdiction and recommended further study to generalise their finding. This study will be a test to the work conducted in organizational culture as well as contribute to the cross-cultural research on “Culture in Construction”. The study will make way for culture studies and become the basis for further culture studies in the Ghanaian Construction Industry and even other sectors in Ghana. Understanding the cultures of construction organizations in the GCI will enable organizations to fine-tune their operations to compete in the global construction market. O'Donnell and Boyle (2008) also posited that, knowledge about cultures help managers to know the influential culture typologies and inform them about the way forward in adopting new practices of business and its likely effect on the organization’s environment. And form the basis of partnering between Foreign organizations and Indigenous firms. This study will contribute to the study on the cross-cultural studies in culture in construction.

## **1.6 Scope of Study**

Construction organizations undertake the various functions of designing as well as constructing. The study focused on locally owned construction organizations in Ghana. All the classification according to the Ministry of Water Resource Works and Housing (MWRWH) was considered for the studies. Notwithstanding that, members of the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) form the study scope. ABCECG is a recognized professional body of construction contractors for local contractors and each member has registered with the MWRWH. Geographically, members of the Greater-Accra and Ashanti Region chapter were considered because of the activeness of the organization in these regions and highly populated.

## **1.7 Research Methodology**

Oney-Yazici *et al.* (2007) conducted a similar study in the Turkish Construction Industry (TCI). Their study employed a questionnaire based survey using the judgemental sampling technique to identify the respondents based on the nationality of the owners of the firm, number of employees within the firms. As asserted by Denison (1996), ideally culture research adopts the ethnographical approach; however, this study employed the survey strategy which aimed at quantitative data because other researchers also used the survey and quantitative route (Ankrah, 2007; Ankrah and Langford, 2005; O'Reilly *et al.*, 1991; Oney-Yazici *et al.* 2007; Igo and Skitmore, 2006). The objectives were achieved using;

### **1.7.1 Objective 1**

Review of literature on theories of culture was conducted and the theories expounded by Allaire and Firsirotu (1984) were used. Existing studies done on construction

organizational culture was then compared to the theories based on the methodological and the variables examined.

### **1.7.2 Objective 2**

Due to the on-going culture in construction studies and as a contribution to the study, the Organizational Culture Assessment Instrument (OCAI) questionnaire based on the CVF developed by Cameron and Quinn (2006) was used to collect data in order to test the model in the Ghanaian Construction Industry.

### **1.7.3 Objective 3**

All major cultural dimensions identified from literature were subjected to the Ghanaian Construction Industry perspective through a questionnaire design. The mean score ranking and the Relative Importance Index were used for the analysis.

### **1.7.4 Objective 4**

The structured questionnaire for objective three was further analysed using Factor Analysis to establish the cultural typologies present in the Ghanaian Construction Industry.

## **1.8 Organization of study**

This section outlines the content of the proposed study. The study was classified under six (6) chapters. These are:

Chapter one (1): this chapter comprises of the introduction to study, problem statement, research questions, aim and objectives of study, significance of study, scope of study and research methodology.

Chapter two (2): this chapter reviewed literature on the Construction Industry and concepts of culture.

Chapter three (3): this chapter reviewed literature on the organization, organizational culture and existing culture models.

Chapter four (4): this chapter elaborated on the research philosophy, strategy and approach for the study, the data collection approach to be employed, determination of sample size, sampling technique, source of information as well as analytical tool for the study.

Chapter five (5): this chapter presented the results and discussed the analysed data for the study where major findings of the study were established.

Chapter six (6): this chapter summarised the overall study, stating the overall objectives with the results achieved for the respective objectives, general conclusion to the study and proposed recommendations to the Ghanaian Construction Industry and further research.

## **CHAPTER TWO THE GHANAIAN CONSTRUCTION INDUSTRY AND THE CONCEPTS OF**

## CULTURE

### 2.1 Introduction

This chapter reviews literature on the global construction industry, the Ghanaian Construction Industry, international classification of firms, classification of Ghanaian construction firms, activities of the construction industry, importance of the Ghanaian construction industry and concepts of culture.

### 2.2 The Global Construction Industry

The Construction Industry has been in existence for such a long time from ancient civilization such as the construction of Pyramid, Forts and Castles across the globe (Ritz, 1994). Globally, every country aims at boosting infrastructure development (Khan, 2008; Mawdesley and Qambar, 2000), most importantly in the developing countries whilst the developed countries continually undertakes renovation and refurbishment works to meet the needs of its ever-growing population due to migration and high birth rate.

Arti *et al.* (2013) and Mohammad *et al.* (2010) revealed that, the importance or essence of the Construction Industry is felt at any point in time because every now and then, there is the need for construction projects to address the need of other sectors through infrastructure development and satisfy the ever-increasing population of a Nation. Badu and Owusu-Manu (2011) posited that, the construction industry in the developed countries sustains the economic strength through providing one-third of the countries physical infrastructure. Based on these characteristics, the Construction Industry can be termed as the mother of all other sectors of National economies. Transportation

systems, residential, commercial buildings, warehouse, electrical installations and urban developments are elements within the Construction Industry (Khan, 2008; Choudhury, 2008). Socially, the Construction Industry addresses the shelter needs of mankind which is crucial in the psychological state of man.

Alinaitwe *et al.* (2009) and Hartley and Cheyne (2009) asserted that, the construction industry is not a static industry because there are diverse and different ways of undertaking a specific activities of a project. In a different vein, the Industry is known to be complicated, fragmented (Ankrah, 2007), involves many stakeholders such as clients, the design team, construction team among others (Enshassi *et al.*, 2009), one-off, assembling of project is done on site (Alinaitwe *et al.*, 2009), it operates with the pull system of production and difficult to manage or regulate, the latter could be attributed to developing countries.

Notwithstanding these features of the industry, it could be realised that its importance outweighs its flaws; a perfect example is the contribution to the Gross Domestic Product (GDP) and infrastructure deficit of a country. Even though, the Industry contributes to GDP, the quota of contribution varies from country to country and even the economic classification or status of nations that is either developed or developing countries. Potts (2008) added that, the construction industry continues to boost the GDP of developed countries by a quota of 8%. Conversely, Levy (2007) indicated that, the construction industry in America which is within a developed country contributed to about 7% to GDP. Probably, develop countries do not undertake massive infrastructure developmental projects other than renovations and refurbishments.

### **2.3 The Ghanaian Construction Industry**

The Ghanaian Construction Industry is so much fragmented and segregated like the UK Construction Industry as described by Ankrah (2007) because it is instituted after the order of the UK Construction Industry. Construction activities are done in all sectors of the government as well as the private sector; Government is the main buyer or client of most construction activities which makes it the responsibility of government to regulate the technical parties within the industry (Tuuli *et al.*, 2007). Two main sectors of government oversee the construction of infrastructure in Ghana; these are the Ministry of Water Resources, Works and Housing (MWRWH) and the Ministry of Roads and Highways (MRH). These two ministries have gone through metamorphosis under successive administrations since a constitutional government occupied the national seat in January 1993. These Ministries have different responsibilities in the Ghanaian Construction Industry.

#### *Ministry of Water Resources, Works and Housing (MWRWH) Classification*

All water systems, buildings and other civil engineering works are regulated by the MWRWH. All building and civil engineering contractors with specialization as indicated earlier and want to undertake government funded or government supervised projects register with the MWRWH.

#### *Ministry of Roads and Highways (MRT)*

There are three categories of department under the MRT, the department of feeder roads (DFR), the department of urban roads (DUR) and the department of highways

(DH). They have their distinct and specified assigned duties such that there is not criss-crossing during their operations. The government administrative structure has three main groupings that is the regional level, Metropolitan and Municipal and the District level. The Highways are mostly functional in the regional level; it is involved in intercity or inter-region road construction. The Urban roads deal with roads in the various Metropolitan and Municipal towns while the Feeder roads construct roads in the Hinterland lands and the District Assembly level. With the exception of the feeder which mostly constructs un-tarred roads, the other roads are always tarred with bituminous materials.

### **2.3.1 Importance of the Ghanaian Construction Industry**

#### **2.3.1.1 Infrastructure development**

The Ghanaian Construction Industry operates within the field of housing, water systems and transportation. KPMG International (2013) stated that, the Construction Industry operates mostly through state funded projects. This assertion in the Ghanaian context is virtually more than true because extensive infrastructure development such as dams, bridges, mass housing, roads, and irrigation systems is executed by the government through the Construction Industry (Ofori, 2012) and chiefly done to address the infrastructural deficit of Ghana and in other developing countries. The ability of the government to fulfil such projects becomes advantageous in scoring political points. The industry reveals the abstract ideologies of individuals and the government as a whole into physical edifices. Ofori (2012) believes that, these physical edifices and the activities of the Construction Industry possess the ability to lure investors to contribute their quota to the social-economic development of a country. Khan (2008) and Sambasivan and Soon (2007) indicated that, the Construction Industry is a hard-core base for human civilization.

### **2.3.1.2 Employment opportunities**

The 2010 Population Census revealed that, 86% of the Ghanaian working class that is 15 years and above is employed by the private sector of the economy. Moreover, it was documented that 317, 525 people representing 3.1% of the working class were employees of the Construction Industry (Ghana Statistical Service, 2012). The Construction Industry in Tanzania employed about 9% of the working class (Sectoral Activities Programme, 2005) whilst the US recorded 8% of employment (The Modular Building Institute, 2010). Moreover, Worrall (2012) added that, the industry is the number one employment avenue in the United Kingdom. These figures suggest that, players in the private sector are making great impact into the economy of Ghana. Ofori (2012) posited that, the industry is “*relatively labour-intensive*”, although further explanation was not given by the author but the statistics available expresses that the relativity of the labour force is dependent on the working population of the said nation in context, the technological advancement, the quantum of construction works executed annually and the financial category of the country.

### **2.3.1.3 Gross Domestic Product (GDP) contribution**

The Ghanaian Construction Industry like its contemporaries in other jurisdictions annually contributes to GDP, the Industry recorded GDP contribution of 5.7% in 2006 and 13.7% in 2014 (Ghana Statistical Service, 2015) revealing 240% quantum leap almost within a decade. In terms of Economic activities, Construction is trailing behind Crops as the second significant contributor of GDP. Earlier, Lopes (2012) postulated that, the contribution of the industry to GDP across the globe ranges from 5 – 10%, however, the GCI has exceeded the maximum limit probably of the high infrastructure deficit of Ghana. Besides Lopes (2012), figures were motivated by the contribution

in developed countries because of the low infrastructure deficit recorded in those jurisdictions as against the high infrastructure deficit recorded in developing countries. Interestingly, the industry is growing to become an inevitable force to cushion the economic aspirations of the country.

#### **2.3.1.4 Inter-connection with other sectors of the economy**

The GDP contribution and the employment rate of workers in the Construction Industry excludes the role the manufacturing industry and the other sectors of the economy benefits from it. The Construction Industry relies on the Manufacturing Industry for the required materials for effective construction works. Moreover, the Mining and other sectors rely on the products of the Construction Industry in achieving their aim and objectives.

#### **2.4 Classifications of Business Organizations**

Issues have been raised with regard to definitions of organizations in terms of small, medium and large scale. These classifications are based on the size of employees, annual turnover and assets of the organization (Gibson and van der Vaart, 2008; Ayyagari *et al.*, 2005) however; a classification by the European Commission (2003) was based on size of employees, annual balance sheet and annual turnover. Whichever criteria used for the classifications of enterprises, the most important things about Small, Medium and Large firms are their ability to create employment to the working class, contributions to GDP of nations and creating investment opportunities for people.

Gibson and van der Vaart (2008) reviewed some governments classifications of SMEs, Vietnam (300 employees); Belarus, Moldova, Switzerland (250 employees);

Australia, Morocco, Peru, Thailand (200 employees); Bangladesh, Brazil, Ghana, Nicaragua, Norway (100) ; Egypt, Malawi, Pakistan (50 employees) and Tanzania (20 employees). Notwithstanding that, recognized world institutions such as World Bank, MIF-IADB, African Development Bank and UNDP have also purged SMEs employees' size at 300, 100, 50 and 200 respectively. The European Commission (2003) also classified SMEs in their jurisdictions to have maximum employee size of 250, the commission further classified enterprises into micro, small and medium with an employee size of less than 10, 10 – 49 and 50 – 249 respectively, although the study said nothing about large firms it can be said that such firms have a minimum employee size of 250. Studies have shown that, differing views have been made into the employee size criterion for SMEs classification, classical cases are Ayyagari *et al.* (2005) assertion that, Turkey has a SME employee size of 200 conversely, Oney Yazici *et al.* (2007) in their study used a classification of less than 50 employees for small enterprise, 51 – 150 for medium and more than 150 employee size for large scale enterprise.

Moreover, Ayyagari *et al.* (2005) also revealed different sizes of employees according to some sources for instance Ghana has an official SME size of 200 employees which contradicts to the 100 employees as raised by Gibson and van der Vaart (2008). As to which classification is the best for a country the researcher believes such decision depends on the institution or people involved. The idea of regional integration within the Africa continent should have created way for a common SMEs classification but such do not exist. And even differ from the maximum employee size endorsed by the Africa Development Bank AfDB. In the context of this study a maximum employee

size of 150 is tipped to be for SMEs (less than 50 for small scale and 50 to 150 employees for medium) and above 150 will represent large scale organizations

#### **2.4.1 Business classifications in the Ghanaian Construction Industry**

Unlike the classification of business enterprises (Small, medium and large enterprises) which uses employee size, annual turnover and assets, the MWRWH classification is based on two major factors, financial and technical capabilities. Technical capabilities comprise of labour and equipment holdings. However, there is no stipulated employee size of such organizations but such is dependents on the complexity of the project. Building contractors are assigned with the alphabet D and Civil contractors assigned with the alphabet K, although the main import of the assigned letters are not known to the researcher but it is believed that it is only an identification strategy adopted by the ministry to help regulate or execute its fiduciary duties. Moreover, numbers ranging from 1 – 4 are assigned to know the strength of the contractor in terms of technical and financial abilities. The classifications comprises of D1K1, D2K2, D3K3 and D4K4 contractors.

Although there are distinct departments within the Ministry, there are standard classification systems also adapted by the MRH as done in the MWRWH. It also operates on the confines of financial standing and technical competences. Because road construction executed in Ghana are mostly done at the expense of government, all road contractors have subscribed to the various classification unlike the MWRWH which contractors can undertake private client contracts.

Upon giving a general overview of the Construction Industry, the study is emphasizing on building and civil contractors those registered with the MWRWH. Whenever the Construction Industry is stated in the write-up it represents the building and civil contractors. In addition, the classification of business used for the study is the employee size determination criteria thus small organizations (less than 50 employees), medium (50 – 150 employees) and large (minimum of 150 employees).

### **2.5 Definition of culture**

Culture studies have surfaced in the business arena because Mahadi and Jafari (2012) suggest that studies of such calibre is needed in any human society, whilst Cooper and Denner (1998) also opined that, the beauty of culture in the social setting helps to comprehend the diversities in human beings. Allaire and Firsirotu (1984) reviewed the works of Goodenough, Levi-Strauss, Wallace, Geertz, Schneider, Malinowski, Radcliffe-Brown, Boas, Benedict, Kluckhohn, Kroeber, White, Service, Rappoport, Vaysa and Harris who conducted research on culture and postulated that, culture is developed from two main concepts, sociocultural and ideational.

From the sociocultural perspective, culture is encapsulated or integrated into the social system from two main areas either synchronic or diachronic. This perspective might have informed Mahadi and Jafari (2012) assertion that mankind is no other creature than a social being because mankind relates to its society without difficulty.

Whiles synchronic emphasize on a point in time and space, diachronic is more interested in the development of a particular culture.

The synchronic concept is further broken down into the functionalist and the functionalist-structuralist which is also led by Radcliffe-Brown. It suggests that the life of people is determined by the system in which a person finds himself, an instance is the life of students. The concept of functionalist was proposed by Malinowski, who believes that culture is realised when people are appointed to salvage or cope with specific problems within an organization by satisfying their need at a particular point in time. Gajendran *et al.* (2012) added that, the functionalist concept is geared towards improving the efficiency of an organization. In other words, the satisfaction of an individual needs and the process of achieving the aim of an organization or society is culture.

Historical-diffusionist according to Allaire and Firsirotu (1984) is championed by Boas, Benedict, Kluckhohn and Kroeber. This school of thought attaches evolution of culture to the historical circumstances of a society and such becomes a trait which is diffused from one society to the other. Strategies developed by organizations to solve problems are characteristics of the Historical concept. Mahadi and Jafari (2012) held the view that, sociologist believes that culture has got to do with myth, characters, beliefs, knowledge and traits inherited from the society which is welcomed or rationalised among a group of people.

The ecological-adaptationist also limited culture to the socio-political environment. According to Ankrah *et al.* (2007) ecological-adaptationist describes the different ways life is lived in different environment based on the ability to adapt to different environment not historical trait. Keesing (1974) earlier opined that, assessment and

detailed study of cultural theories endorse ecological-adaptationist as the major area of development of culture in every society.

The ideational perspective is built on two main concepts, the notion that culture is registered in the mind of people and culture as a manifestation of ones thought. The latter represents culture as the interpretation of symbols shared by a group of people but not the rationale behind the thought (Allaire and Firsirotu, 1984; Keesing, 1974). Tacitly, the things shared by a group of people is culture, for instance the food patronized by a group of people is their culture. The former is built on three foundational stones cognitive, structuralist and mutual equivalence. Mutual equivalence believe that culture is stressed on goals and objectives but not the believe of an individual.

Cognitive as proposed by Goodenough (1957) is also limited to the knowledge and learned standards in a society; Keesing (1974) added that, the cognitive concept presents culture as a collection of knowledge. Culture is not limited to idea of an individual actor but a group of people in a society. Implying that, it is inappropriate and suicidal to limit the cognitive theory of culture to an individual actor because it is created by collective behaviours of people. Nevertheless, culture should be easy to learn.

A perfect definition of culture is the knowledge acquired from being a member of a social group. According to Mahadi and Jafari (2012), science being a collection of knowledge can also be termed or related to culture. Keesing (1974) was of the opinion that, there is a link between the adaptationist and the cognitive concept because the

latter relies on the former for instilling the values of societies into people and also a great tool for culture change in societies.

Whilst Levi-Strauss' "concept of structuralist" suggest that culture lies in the subconscious which directly opposes the "concept of symbolic". No wonder Mahadi and Jafari (2012) opined that, there exist a complex and simple culture. *Simple* can be ascribed within the context of this study as the symbolic things known to be the culture of a society whilst the complex is the unknown part which actually triggers the known. This is actually in support of the "concept of structuralist" because it is not worth knowing only what you see but knowing the hidden agenda of the unseen.

However, Yeganeh *et al.* (2004) opined that culture is an abstract concept whilst Keesing (1974) also declared that due to the diversity witnessed in the study of culture it is difficult to limit culture to just the things a group of people share together. Mahadi and Jafari (2012) indicated that a special kind of believe and values are ascribed to every living creature therefore the culture tool serve as a boundary between mankind and other living creatures.

The study of the concept of culture also led Cooper and Denner (1998) to ascertain its linkage to psychology. Culture in terms of societal values was reviewed; it was shown that ethnicity has a role in establishing shared values for groups which help in shaping the cognitive abilities, emotions and social functioning of members in a group. The second school of thought was culture in the context of ecological systems theories, in simple terms culture is embedded in the environment and the meanings implied from our immediate surroundings. Moreover, Cooper and Denner (1998) also suggested that, culture is also seated in the historical background of people. For instance, the

challenges faced by an individual in growing-up informs one about what life is and not.

Culture can further be broken into two main divergent views, either visible or invisible (Abiola-Falemu *et al.*, 2010). The structures, goals, objectives, bureaucratic procedures and policies of an organization represent the visible whilst the invisible culture relates to the beliefs of the employees which is registered in their unconscious mind. Implicitly, it can be understood that culture can be tangible or intangible or visible and invisible irrespective of the cultural theories discussed by Allaire and Firsirotu (1984) and Keesing (1974). Worrall (2012) posited that, the initial meaning of culture means managing and preserving land from the agriculture perspective. Which suggests that, culture is a representation of values or objects that can be felt and should be protected.

The underlining similarity in the definition of culture is the presence of the cognitive theory proposed by Goodenough (1957). Instance is the definition of culture by Hofstede (2011), *“the collective programming of the mind that distinguishes the members of one group or category from others”*. Hofstede definition directs readers to perceive culture from the ecological theory due to the fact that; every group possesses a peculiar culture which can be as a result of different environmental pressures. Moreover, Hofstede (2011) definition of culture solely relies on learning or acquiring knowledge, which is a key feature of the cognitive theory of culture. “Culture is defined as the set of values, attitudes and beliefs that members come to share” (Maloney, 2003), it can be expressed as the “shared products of a society”

(Brennan *et al.*, 2014; Mahadi and Jafari (2012) and can be described as the vigorous understandings of the society that prevails among a group (Hudelson, 2004).

Abdul Nifa and Ahmed (2010) described Culture as the ability to adapt oneself in an environment and the things a particular group of people come to share. Culture depends on the orientation of the social environment (Brennan *et al.*, 2014) rather than an inherent trait of man (Maloney, 2003). UNESCO (2010) expressed that culture “ is rooted in a place at a moment in history and is always local”. The behaviour of a society is grounded in beliefs, ideas (Brennan *et al.*, 2014) and understanding in relation to situations. From the perspective of many authors, culture can be limited to an environment, core principles, behaviours of a society, the understanding of a society and end products of a society because these viewpoints express the intent of the society. Moreover, these viewpoints can be classified into tangible and intangible or direct and indirect culture.

The culture of society emanates from needs of people (Brennan *et al.*, 2014), however, Whiten *et al.* (2011) posited that culture is copied by an individual from others which evolve from customs and traditions to define the ideologies of an individual. Yeganeh *et al.* (2004) revealed that, Culture substantially affects the activities undertaken in a community. Culture is diverse (Lee and Parrott, 2004) and its interpretation is a great challenge for people everywhere because it varies from location (ICOMS, 1999; Pheng and Yuquan, 2002). Quagliarini *et al.* (2010) divulged that culture is believed to be a way for development and identification of a society. The comfort of society is dependent on the impact of norms and beliefs on the environment (Pavan and Polu, 2012). Culture has a great influence on the activities of a society or an organization

(Pheng and Yuquan, 2002) as well as affecting the sociological, political and economic activities within the social environment (Hofstede and Bond, 1984), because it defines the attributes of people (Heatwole, 2006).

## **2.6 Position of Construction Organizational Culture Studies in Cultural Theories**

Series of culture studies have been conducted in construction ranging from construction innovation (Abdul Nifa & Ahmed, 2010; Abiola-Falemu *et al.*, 2010), construction projects (Ankrah, 2007; Gajendran *et al.*, 2012), quantity surveyors (Olanipekun and Abiola-Falemu, 2013) (Olanipekun *et al.*, 2014) construction organizations (Ankrah *et al.*, 2007; Coffey *et al.*, 2011; Harinarain *et al.*, 2013; Oney-Yazici *et al.*, 2007; Rameezdeen and Gunarathna, 2003; Zhang and Liu, 2003). A perfect culture study in the construction industry revolves around the process, the environment and what is been done (Ankrah *et al.*, 2007).

Ankrah (2007) concluded that, understanding the culture of an organization is a recipe for organizational ineffectiveness. Again, a major source of competitive advantage over others can be traced to the culture of an organization. Culture is considered to be a soft factor in the organizational setting (Schein, 2004), however comprehending the influence of culture on the organization makes it an important management tool. Harris and Ogbonna (2002) asserted that, culture as a concept has dominated organizational studies due to its value to the business environment. Campbell *et al.* (2002) concluded that motivation of employees, the ability of the organization to keep a clean sheet on employee turnover, efficiency and productivity

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**Table 2.1 Construction organizational culture and culture theories (Author's construct, 2016)**

	Ankrah and Langford 2005	Igo and Skitmore 2006	Coffey et al 2011	Olanipekun et al 2014	Harinarian et al 2013	Zhang 2003	AbiolaFalemu et al 2010	Gajendran et al 2012	Olanipekun and Abiola-Falemu 2013
Ideational culture	<i>Symbolic Culture</i> should be defined by the outward things expressed by a group of people	×	×	×	×	×			
	<i>Cognitive Culture</i> is defined by the knowledge and learned standards in a society	×	×	×	×	×	×	×	×
	<i>Structuralist Culture</i> is defined by what is registered in our subconscious		×	×	×	×	×		
	<i>Mutual equivalence Culture</i> is defined by a set of standardized processes	×	×	×	×	×	×		×
Socialcultural	<i>Functionalist Culture</i> is defined when we work towards improving organizational efficiency		×	×	×	×	×	×	×

**Structural functionalist** The systems we find ourselves in defines culture

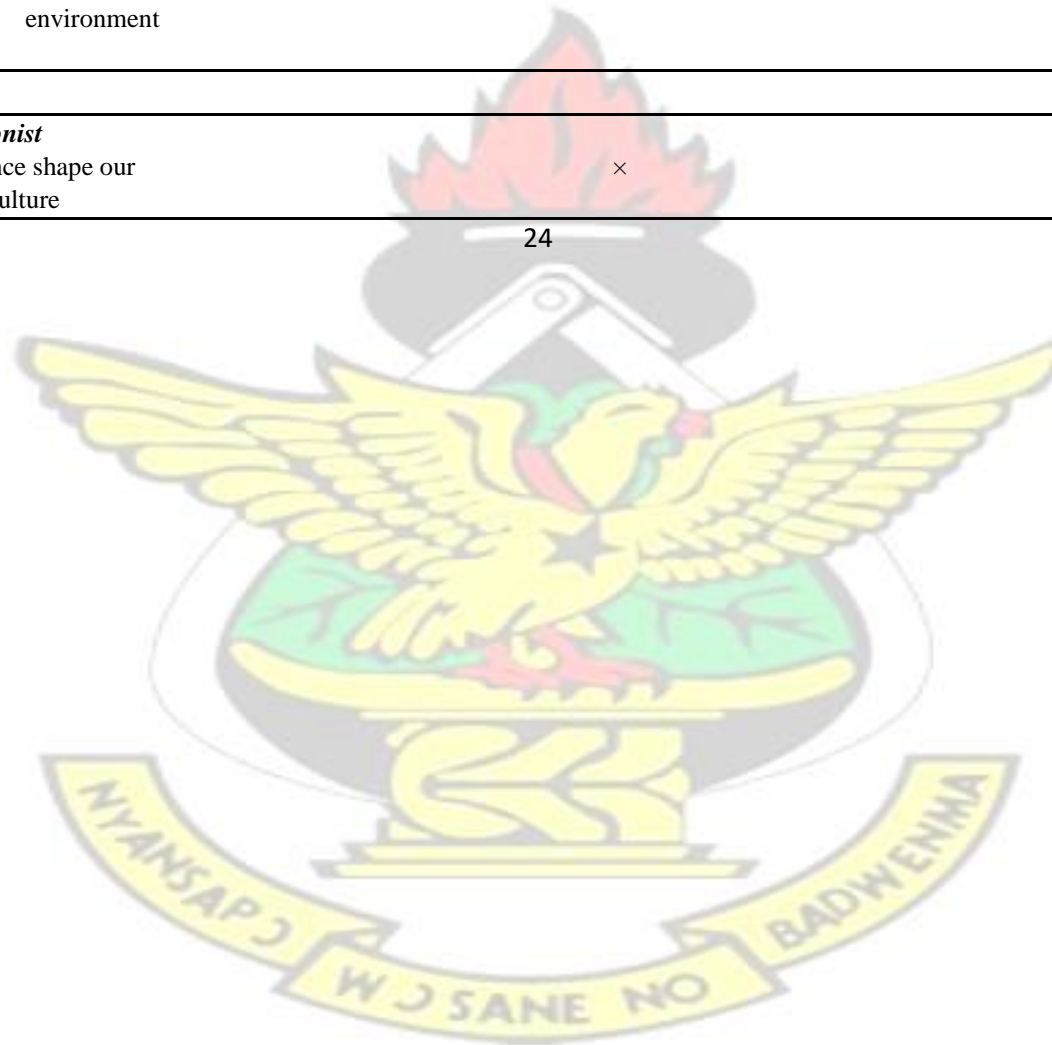
× × × × × × × ×

**Ecological** Sociopolitical defines culture  
**Adaptationist** environment

×

**Historical-diffusionist** Historical experience shape our understanding of culture

×



organization, quality status of work produced, organizational creativity and innovation are all influenced by the organizations culture. The Table 2.1 relates construction organizational culture studies to the identified culture theories in section 2.5.

From Table 2.1, the sampled organizational culture studies conducted in the construction industry, indicates that culture is defined and realized in the organization through the knowledge acquired by its members. Though, the culture of organizations differs but in a technical intense profession like the construction industry, it is expected that the formal training and knowledge acquired contribute to culture ideology of the organization. All the sampled studies attest to the idea of cognitive theory dominating.

Also the purpose of the organization in itself can never be overlooked because without fulfilling its core mandate, it fails to exist. No wonder almost all the sampled studies considered the need to improve organization performance (functionalist culture). Allaire and Firsirotu (1984) earlier said the organization is nothing different than a unit in a specified system. It can be perceived from the idea of the professional connections of the organizations. Professional ethics compel member organizations to conduct themselves which conform to the accepted norms. Professionalism in the context of this discussion is limited to the system that perfectly defines the construction organization (structural functionalist).

The challenge with the mutual equivalence perspective, which highlight on culture originating from a set of standardized processes and procedures place the construction industry in a robotic state. Obviously, it is sceptical in the thinking of an expert in the

construction industry to accept this fact for the reason that it is absolutely impossible to follow structured on a construction project but all the studies in context considered the organization as a business entity distinct from actual projects.

Based on the findings from the sampled earlier studies, culture for the purpose of the study is contextualise in terms of the cognitive, mutual equivalence, functionalist and structural functionalist.

The logo of Kenyatta University of Science and Technology (KNUST) is centered in the background. It features a yellow eagle with its wings spread, perched on a green shield. Above the eagle is a black mortar and pestle with a red flame rising from it. The entire emblem is set against a white background with the letters 'KNUST' in a large, light grey font behind it.

## **CHAPTER THREE**

### **ORGANIZATIONAL AND ORGANIZATIONAL CULTURE MODELS**

#### **3.1 Organization defined**

According to Allaire and Firsirotu (1984), organizations can be classified around three differing views, which are biological, anthropological or sociological. Biological implies that, an organization can be related to every living organism which has a life cycle. The anthropological views organizations as human beings with distinct character and the sociology concept considers an organization as a society. Organizations are established to operate with an ideology which defines their mandate in the society. Besides, organisations are regarded as a micro unit of the society (Allaire

and Firsirotu, 1984), in other words is a smaller society in the larger community. Since the structures within the organizations are designed after the larger community.

Though, Hofstede *et al.* (1991) held the view that, organizations' nature differ from nation to nation. It could be concluded that, the difference might be in the governance of nations as opposed to organizations. Moreover, the context of their study informed the description of an organization. According to McAuley *et al.* (2007), organizations exist as a stepping stone to help people combine their resources and most at times it arises as a result of a necessity because it creates the avenue for team work. An organization is formed when there is an integration of human and other resources with the aim of attaining a set mission (Abiola-Falemu *et al.*, 2010). Organizational studies are focused on the holistic activities which are executed in the organization.

### **3.2 Organizational Culture**

Xiaoming and Junchen (2012) and O'Donnell and Boyle (2008) have emphatically stated that, there is no agreement on universally accepted definition as far as organizational culture is concerned. Which according to Keesing (1974), over 1000 definitions of culture exist in literature. Many definitions have emerged over time, which the researcher thinks relate to the context in which the various authors referred as culture, because definitions in cultural studies relate to the perspective adapted. Allaire and Firsirotu (1984) pronounced that, adopting a specific definition for culture streamlines the work to fit a specific culture concept. Abu-Jarad *et al.* (2010) in their paper emphasized that, managers acknowledge and understand the presence of culture in their organizations. For instance Gajendran *et al.* (2012) argues that, the organization itself stands for culture, because Olanipekun *et al.* (2014) believe it has expressions and defines the life of the people within. These facts might have directed Albayrak and

Albayrak (2014) to assert that, organizations are socio – cultural institutions, since culture is knitted in the social system.

Ankrah and Langford (2005) posited that, in any organization there is an established bond among employees and their organization in totality and patterns which dictates the behaviours of them, understanding the WHYs and HOWs exposes one to the culture of the organization. O'Donnell and Boyle (2008) opined that, Organizational Culture exists as a result of the background meaning the organization experiences in the past sprouting from the accepted norms of doing business. Organizational Culture according to Rameezdeen and Gunarathna (2003), is also influenced by the external environment to fine-tune its belief as well as internal structures of the organization. Implying that, the external factors result in the ability of the company to adapt to the beliefs of the external environment. Schein (2004) also advised that the genesis of Organization Culture is embedded in leaders, because they transfer their believe in the execution of their duties.

Oney-Yazici *et al.* (2007) defined organizational culture as the “shared assumptions, beliefs and normal behaviours (norms) present in an organization”. Organizational Culture was described by Chilla *et al.* (2014) as the corporate belief of the individuals within an institution as well as their understanding on their belief. According to McKenna and Beech (2002), Organizational Culture is revealed in the ideas and thoughts of individuals in an organization because it is a pre-requisite criteria set by an organization in determining the selection of preferred job applicants. Schein (2004) defined Organizational Culture as “*a pattern of shared basic assumptions that was learned by a group 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 as the correct way to perceive, think, and feel in relation to those problems”.*

Abiola-Falemu *et al.* (2010) simplified the definition of Organizational Culture as the push and pull factors that are acknowledged to be influential and essential in an organization. Schein (2004) definitions reinforces McKenna and Beech (2002) assertion that, Organizational Culture is a learning or continual process which can be learnt by new members of a group and emanates from the history or traditions of an organization. In simple terms, Hofstede *et al.* (1991) declared that, culture is a soft concept in organizations however, had casual link to strong consequences. Though, the consequences might have a positive or negative connotation nevertheless, it is accepted in the context of this study based on reasons ascribed to contribute to achievement of organizational goals.

### **3.2.1 Determinants of Organizational Culture**

Rameezdeen and Gunarathna (2003) and Fellows and Liu (2013) believe that the foundation of Organizational Culture emanates from National Culture and notwithstanding that, discovered problem solving techniques contribute to the realization of the Culture of an Organization. Conversely, Abu-Jarad *et al.* (2010) opined that, the individual beliefs of the employees in an organization defined the Organizational Culture. Rameezdeen and Gunarathna (2003) asserted that, Organizational Culture is synonymous to the real self of an individual, which underpins the reason why Culture defers from one organization to the other because every individual is unique. O'Donnell and Boyle, (2008) recommended that, the

success story achieved by the organization in solving its problems and what the organization is capable should be used to define the culture of the organization. Campbell *et al.* (2002) concluded that, the following factors contribute to the determination of culture in organizations:

1. The philosophy of the organizational founder
2. The business activities undertaken by the organization
3. The relationships established in the work environment
4. The management and control systems used in the organization.
5. The influence of National culture
6. The organizational structure, and
7. Technological advancement of the organization

Schein (2004) avowed that, the founders belief and a workable philosophy form the basis of culture. Abdul Nifa and Ahmed (2010) also related Organizational Culture as the elements that inform the decision of a leader of an organization. Adewale and Anthonia (2013) posited that, it is the need of every individual to be recognized with a particular social identity and such is realized as a result of the culture of an organization. The well-being, performance, effectiveness and efficiency of an organization are recognized based on the integral role of organizational culture.

Abu-Jarad *et al.* (2010) posited that, the performance of an organization can never be separated from its culture. Schein (2004) asserted that, the stability and effectiveness of an organization is entirely linked to its culture. Gagliardi (1986) indicated that, the basic utmost thing that keeps an organization to function efficiently and effectively is Organizational Culture. Alinaitwe *et al.* (2009) asserted that, the measure of an organizational performance is dependent on the fulfilment of its beliefs and values.

Oney-Yazici *et al.* (2007) added that, though there is ambiguity on the definition of culture but it is accepted among researchers that, culture is an indication of the beliefs and shared assumptions of a group. Likewise Harris and Ogbonna (2002) attested that, culture is also formed through the systems in the society.

Drawing from earlier researchers, the formation of culture in an organization does not occur instantaneously but developed with time. Organizations are product of the society; thereby culture of the organization is a prototype of the national culture of the organizational founders. Furthermore, the formulated visions become the core belief of the organization which is the first level of culture according to Schein (2004).

### **3.2.2 Importance of culture to the organization**

Culture has penetrated through the organizational studies. Culture studies have gained root within the last three decades and continues to make strides in management studies. The remarkable idea about the concept of culture is its indelible contribution to the well-being of organizations. From a lay person point of view culture is said to give a group of people an identity which is not technically different from O'Donnell and Boyle (2008) view with regard to the importance of culture to the organization. Besides, realization of culture and its typologies informs management to be circumspect since every style adapted in the day-to-day running of the organization corresponds to different expectations.

Adewale and Anthonia (2013) in a study on Private Universities in Nigeria established that, there is a significant relationship between the culture of an organization and its human resource because it is the people in the organization who portray the beliefs,

values and ideas to the external environment of the firm. OneyYazici *et al.* (2007) added that, culture is not only instrumental to the effectiveness of the organization in the short-term but the long-term as well. Abdul Nifa and Ahmed (2010) proposed that, even partnership between organizations yields good outcome provided the entities involve have similar Organizational Culture.

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### **3.3 Culture models**

An important role of Organizational Culture study is its relationship with the performance of organization. Due to that, researchers select typologies that are closely related to organization performance and the activities of the organizations at large (Gajendran *et al.*, 2012). Schein (2004) added that, culture is diverse and the possibility of having positive and negative culture exists. Hofstede (2011) added that, although there are dissenting views of modelling culture but most culture models or typologies or profiles concentrate on activities which have the potential on contributing to the economic and technological status of a society or organization.

#### **3.3.1 Hofstede's National Cultures**

Hofstede developed a four dimensional culture which have generated into a hot debate among researchers in cultural studies, as to whether the dimensions are for National cultures or organizational cultures. Notwithstanding the object of such argument, it is believed that the dimensions are useful for describing an organization since the former is an aggregated number of people from different subcultures. Moreover, researchers have indicated that the cultures of organizations in a country are mostly influenced by national culture (Rodriguez *et al.*, 2014). The dimensions are power distance, uncertainty avoidance, masculine and feminine, individualism and collectivism.

### 3.3.1.1 Power Distance (PD)

According to Hanna (2014), people in authority have influence on their subordinates.

Authority in the context of PD represents the boss-servant relationship in the workplace and relationship between an adult and child. In every society, there is an established fact that, the social settings create levels depicting the differences in authority amongst its inhabitants. This dimension is appropriate to organizations which have vertical means of reporting other than the horizontal means of reporting. Rodriguez *et al.* (2014) emphasized that, high PD enhances autocratic leadership.

Therefore, organizations experiencing high PD disregard innovations and increase inferiority complex of employees. Furthermore, employees are not challenged to explore their potentials.

Basabe and Ros (2005) asserted that, countries which emphasize on high Power Distance have low human development indices and Gross National Product (GNP). This suggests that, the challenges faced in most developing countries with regard to the unwillingness of management to support subordinates' training and developing is attributed to the high power distance. Based on the revelation of Basabe and Ros (2005) and Hanna (2014), it could be deduced that, organizations that observed strong bureaucracies are a manifestation of high Power Distance. There is no national culture study for Ghana however; observation in the Ghanaian society suggests that Ghana has a high Power Distance culture because of the social classes as well as the extreme regard to hierarchical systems.

### **3.3.1.2 Uncertainty Avoidance (UV)**

This dimension articulates a national or an organizational willingness to reduce uncertainty to a minimum (Rodriguez *et al.*, 2014) or totally eradicate uncertainty in their operations or better still the uncertainty an organization is ready to contain. Agreeing to Rodriguez *et al.* (2014), uncertainty can cripple an organization and it will take long time for such organizations to be revived and in order to avoid such structures, measures should be put in place to militate against uncertainty. Hanna (2014) opined that the UV dimension has led many organizations to develop rules and policies which make it practically possible to regulate the operation of an organization. The process oriented dimension by Hofstede (2011), is an upgraded version of the UV dimension because of its position of following due process.

Gouveia and Ros (2000) publicized that the UV dimensions endorse conformity and consistency in organization.

### **3.3.1.3 Individualism – Collectivism (IC)**

Hanna (2014) opined that, the IC dimension basically dwells on the confines of how individual relates to each other. This dimension actually measures two extreme positions of how people behave in the society which is attributed to the upbringing of the individual or probably the temperament of an individual. Basabe and Ros (2005), Gouveia and Ros (2000) and Wu (2006) expounded on the individualism view by asserting that, individual achievement, autonomy, the desire for individual competition and how people value themselves are the striking factor. Collectivism emphasize on the integration of a group's aspirations.

Rodriguez (2014) added that, collective societies prioritize social belonging and relationship than their assigned task. These views suggest that, for an organization to achieve their set objectives there should be a blend of individualism and collectivism because, emphasizing on one perspective will have an effect on the performance of the organization. For example, individualism perspective will motivate an individual to give out his best in order to achieve the set aim however; there would not be the opportunity to establish good relationship with others. Collectivism emphasize on relationship building than the set objectives for the organization. Although, it can be argued that relationship should be the most important construct for achieving an organizations" stated goal. Besides, relationship building in a group instigates members to offer their maximum best in achieving organizational goals.

#### **3.3.1.4 Masculine – feminine (MF)**

The MF dimension actually elaborates on behaviour of organizations with respect to gender. At first glance the dimension informs its readers about the sex qualities of organization (Hanna, 2014). In actual fact, this dimension emphasizes on the perceptions attached to duties, portfolios, behaviour and just to mention few activities witnessed within an organization. Rodriguez *et al.* (2014) abridged this dimension by asserting that, naturally there are qualities that distinguish males from females. And these qualities help in differentiating one industry from the other. Example is the concern for people as known the health sector which is a reflection of female, and the aggressiveness in military organization which also depict a male character. For instance, the construction industry is labour intensive which requires a chunk of physically capable people. This creates the impression that, the construction industry is masculine in nature.

### **3.3.2 Hofstede's Organization Culture Model**

Hofstede has been instrumental with regard to culture studies in the national and organization level. Hanna (2014) opined that if it had not been Hofstede, culture studies would have been relegated to anthropological studies. But now, culture studies in organizations have transcended through many recognised fields such as the financial, construction, health and others. Hofstede (2011) in his study, pointed out six (6) dimensions of culture relevant to organizations, these are: process-oriented versus-oriented, job-oriented versus employee-oriented, professional versus parochial, open systems versus closed systems, tight versus loose control and pragmatic versus normative. These dimensions are defined to show the dichotomy between each of the dimensions, since each dimension has contrasting traits.

#### **3.3.2.1 Process-oriented versus results-oriented**

Hofstede (2011) indicated that, organizations which emphasize on the technical know-how and regard for laid down procedures are process-oriented. Results-oriented is skewed toward the outcome of the processes. Construction is associated with cost overrun, time overrun and quality related issues. In mitigating these issues, construction organizations integrate the strength of this dimension to achieve an acceptable result. It is appreciated that, an organization might place much emphasis on a preferred dimension. However, the researcher thinks that, in the bid to achieve quality product and services to customers, due diligence must be observed in the processes involved. Therefore, it would have been appropriate to redefine this dimension to encapsulate its meaning and a review of the dimension's name.

#### **3.3.2.2 Job-oriented versus employee-oriented**

Employees are important asset for organization, without them it will be difficult for organizations to achieve its goals. Hofstede (2011) explained that, some organizations

are more interested in the performance of the employee rather than the wellbeing of the employee and vice versa. Such decisions are mostly based on the ideologies of the leader or founder of the organization. Job – oriented can be related to the scientific management theories whilst employee – oriented can be associated with the behavioural theories. The purpose of this dimension is to improve the performance of the organization.

### **3.3.2.3 Professional and parochial**

This dimension is a way of classifying members of an organization. The professional perspective is associated with members who prefer to be identified with a recognized professional body whilst the parochial suggests that, members prefer to be identified with their work. According to Hofstede (2011), the level of education breeds this dimension since most educated people are identified with their profession and vice versa. The need of association is very important to every rational being. Tacitly, this dimension is related to the social needs of employees as proposed in Maslow’s theory of needs.

### **3.3.2.4 Open systems versus closed systems**

Communication is a major feature for the survival of organizations. This imprints the environment within the organization in the minds of employees and customers as well (Hofstede, 2011). The open system allows free flow of information within the organization whilst information is very secretive in the closed system. Whilst information is shared among top management in the latter, information is shared to all employees and customers as well as in the former.

### **3.3.2.5 Tight versus loose control**

The difference between the former and the latter is the formalities that ought to be observed (Hofstede, 2011). For instance, every profession has a set down of rules in achieving the organizations objective example is observing due process during scientific research, the application of Standard Method of Measurement (SMM) for preparing Bills of Quantities for building works. Whilst the loose control, allows people to employ the procedure they deem fit in achieving a stated aim.

### **3.3.2.6 Pragmatic versus normative**

In order words, when the relationship between a customer and supplier is flexible enough that, no strict laws are applied such is said to pragmatic. But where providing services to a customer requires the application of rules and laws as is known to normative. These dimensions as termed by Hofstede (2011), is experienced in all organizations. An in-depth analysis of those dimensions reveals that communication, bureaucracy, expertise of workers, performance, innovation, humane and adherence to laws and rules are constructs which defines the culture of an organization.

### **3.3.3 Organizational Culture Profile (OCP) Model**

Geertz Hofstede has been credited as a great contributor in the culture research, besides, Charles O'Reilly, Jennifer Chatman and David Caldwell also should be acknowledged due to their immense contribution in organizational behaviour and organizational culture studies. The OCP is accredited to the trio, who made significant move to understand correlation between personal preferences and organizational preferences. O'Reilly *et al.* (1991) earlier identified fifty-four (54) constructs which are best-fit for describing the characteristics of organizations however a factor analysis test revealed only thirty-three (33) to have a loadings greater than 0.4 based on

individual preference which were classified under eight (8) profiles. In order to validate the results, another sorting was done by based on organizational preference but the constructs were reduced to twenty-six (26) and seven (7) profiles as such. Most importantly, five of the profiles were not altered after the validation including team, detail, outcome orientation, aggressiveness and innovation. The seven (7) profiles include innovation, stability, respect for people, outcome orientation, attention, team and aggressive;

### **3.3.3.1 Innovation**

The innovation profile concentrates on an organization's ability to explore emerging trend in their field of specialization. Such profile is underpinned by taking risk, making good use of the available opportunities, being innovative, careful, rule oriented and undertaking experiments to provide the viability of a concept (O'Reilly *et al.*, 1991). Nevertheless, Sarros *et al.* (2005) revisited the OCP and revised the factor loadings arbitrarily by replacing experimenting factor with employees' readiness to take responsibilities.

According to Sarros *et al.* (2005), the omission of being careful, rule oriented were attributed to negative factor loading but the reason for the experiment factor cannot be identified. Notwithstanding the two studies, it can be established that the innovation profile is geared toward external functioning of the firm.

### **3.3.3.2 Stability**

O'Reilly *et al.* (1991) further revealed that, organizations that are stable in its operations, provides job security for its employees, easy to predict, stable and also have

no emphatic rules. Sarros *et al.* (2005) used “calm and low conflict” to replace “easy to predict” and “no emphatic rules” in their revised OCP. According to them, the revision was done because some factor loadings were not a true reflection of their profile. Nevertheless, it is not a strong point to replace “easy to predict” since it best declares the direction of the organization. Moreover, because “no emphatic rules” have a negative factor loading the researcher agrees with its omission and also the fact that, it is a contrasting construct as against stability, job security and easy to predict.

### **3.3.3.3 Respect for people**

The running of the organization is solely based on the contribution of its workers. As a matter of fact, when people in authority give reverence to their subordinate, it encourages them to give their best. This profile speaks volumes about an organization’s ability to respect their employees, fair and its ability to tolerate their workers (O’Reilly *et al.*, 1991) irrespective of how disgusting their behaviour seems.

### **3.3.3.4 Outcome orientation**

The emphasis is on organization’s desire for achieving their goals, high expectation, action oriented and results oriented (O’Reilly *et al.*, 1991). Upon comparing with the revised OCP, the entire outcome profile was collapsed with its factors classified under competitiveness and performance whilst high expectation and action were entirely removed.

### **3.3.3.5 Attention**

This is a description of an organization which members are analytically conscious, admire and stressed on the need for precision and accuracy and the organizations vision of paying attention to details (O’Reilly *et al.*, 1991). This profile relates to the process

orientation proposed by Hofstede (2011). The researcher believes that, this profile is geared towards perfection in the organization's operation, thus leaving room to no or little errors.

### **3.3.3.6 Team**

The study was conducted using accounting institution, accountants and MBA students. The factor loadings for team orientation include collaboration, people orientation and team (O'Reilly *et al.*, 1991). This profile intends to strengthen the internal structures of an organization and build a stronger bond between members of an organization.

### **3.3.3.7 Aggressive**

Organizations are positioned in society to help solve the needs of the people through employment and offering other responsibilities to the society (McAuley *et al.*, 2007). Aggressive profile describes the external conditions in which the business organization is situated. Aggressive, competition and social responsibilities are the hallmark of this profile.

### **3.3.4 Revised Organizational Culture Profile (ROCP) Model**

Sarros *et al.* (2005) revisited and revised the OCP developed by O'Reilly *et al.*, (1991). A total of twenty-eight (28) constructs were tested and classified under seven (7) themes which are a quite distinct from the original seven (7) thematic areas. Moreover, a further classification was done which streamlined the thematic areas under Environment, Business and People. The revised OCP was purposely done to validate the original OCP.

#### **3.3.4.1 People culture**

In as much as the organization is instituted with the agenda of making profit, the needs of the workers are also important. An organization which strengthens their internal structures by providing their workers with the needed training and development, reward systems, acknowledge their roles and ensure a cordial environment among the management and the workers are people oriented (Sarros *et al.*, 2005).

#### **3.3.4.2 Business culture**

Competition has become the hallmark of business oriented organization. It would be weird for an organization to be out of competition. Competition sets the organization in motion to articulate its characteristics. Organizations which are effective in their specialization always become the benchmark for others. Moreover, modern technologies and concept have positioned the organizations to be multidiscipline, although organizations are birth with a specific agenda. Organizations possessing the aforementioned qualities are labelled to have business culture (Sarros *et al.*, 2005).

#### **3.3.4.3 Environment culture**

According to McAuley *et al.* (2007), organizations are placed in the society to help the society achieve its mandate. Social responsibility has become the focal point of some organization with the sole aim of contributing their quota to the society. However; indication shows that it is an effective marketing strategy adapted by business organization. In addition, organizations are placed in environment which is faced with all things of pressure such as legal, political, regulatory and just to mention few. However, the organizations willingness to address these pressures safely defines the organization as environmental oriented.

### **3.3.5 Denison Culture Model**

Denison and Mishra (1995) propounded culture traits to measure the effectiveness of organization by many researchers. The traits consist of four (4) main cultures which consist of twelve (12) variables. Each culture contains three (3) variables which measures the overarching culture. These cultures are mission, involvement, adaptability and consistency. The culture traits are further explained below;

#### **3.3.5.1 Mission**

Organizations are established to fulfil a specific purpose. The ideal purpose of construction organizations is to provide infrastructural developments to societies and countries at large. This trait focuses on the vision and the goals of the organization (Mobley *et al.*, 2005). According to Amah (2012), the mission trait is the genesis of identifying the culture of an organization. During orientation and socialization, management reveals the organizations' purpose to the new employees. Through that the goals are indoctrinated into their conscious and sub-conscious mind.

#### **3.3.5.2 Involvement**

The involvement culture of organization was described by Ehtesham *et al.*, (2011), as when employees in an organization perceive or act on the premise that, they have a stake and their contributions and decisions are crucial for the well-being of the organization. Furthermore, Mobley *et al.* (2005) opined that the responsibilities assigned to employees and harnessing their capabilities makes them integral part of the organization.

#### **3.3.5.3 Adaptability**

The business environment, in which organizations are situated, influences the culture of the latter (Mobley *et al.*, 2005). For instance, the concept of sustainability has taken

form in the construction sector. As a result of that, architectural firms are designing to conform to energy efficient buildings whilst contracting organizations are using sustainable materials for construction. Mobley *et al.* (2005) and Amah (2012) further asserted that, business organizations are currently oriented to seek or attract the contribution of customers. Getting loyal customers are chiefly the aim of every successful or growing organization because without the customers patronizing the services or products of the organization, the latter will lose its purpose.

In addition, Amah (2012) added that the adaptability trait also considers studying the capabilities of competitors and contextualizing them in the organization. This is the situation where organizations have a closer look at its capability and its weakness and capitalize on the opportunities and minimize its threat.

Moreover, change in leadership style and the approach in solving internal problems with regard to the operations of the organization is also important to this trait. It could be understood that, internal and external orientation of the organizations matters. In an era of technological advancement, it has become imperative for organizations to tune their focus to what is required in the business environment. Succinctly, an organization will cease to live up to expectation if it limits itself to the conventional approach of doing business.

#### **3.3.5.4 Consistency**

This trait emphasizes on the internal arrangement made to strengthen the core beliefs of the organization, for instance how the organization arrive at a consensus and the commonalities between the units within the organization (Mobley *et al.*, 2005). But

this trait has the tenacity of preventing innovations within the organization since the core belief identifies the organization from others thereby making it difficult to accept changes to it.

### **3.3.6 Organizational Culture Assessment Instrument (OCAI)**

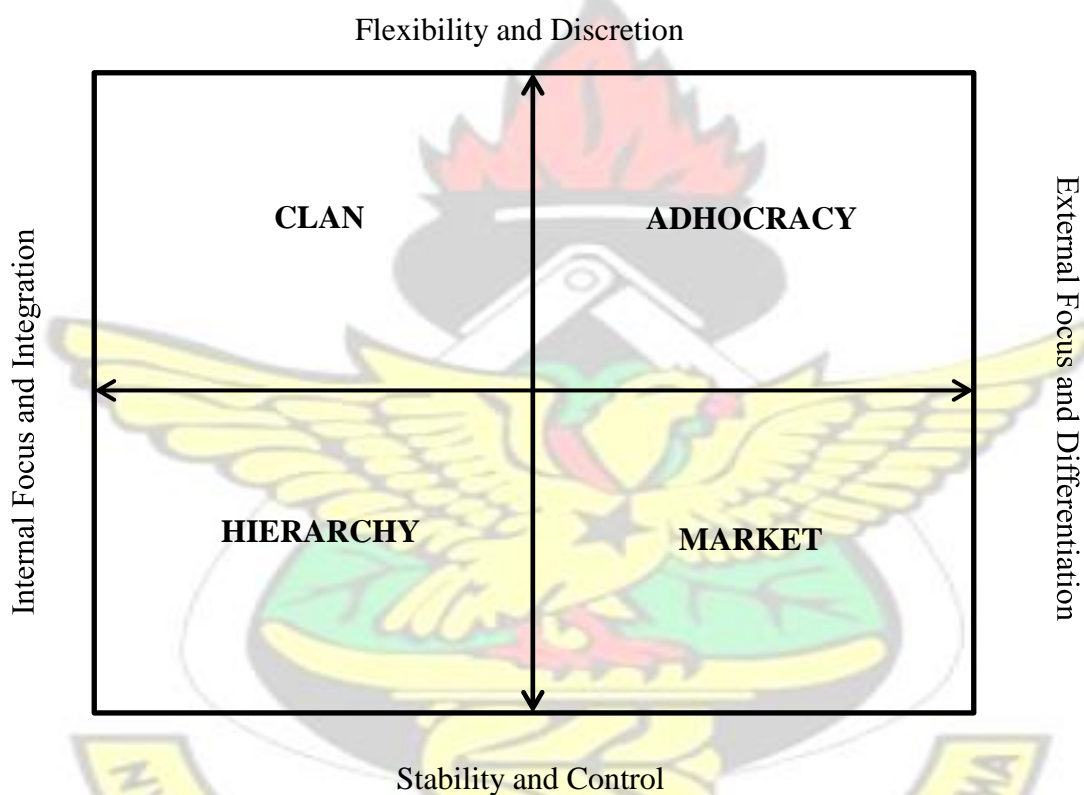
Four culture typologies exist within the Organizational Culture Assessment

Instrument. There is the clan, market, adhocracy and the hierarchy typologies as far as the OCAI is concerned. The OCAI has its basis from the Competing Value Framework (CVF) developed by Cameron and Quinn (2006). Apparently, the framework measures culture from external - internal dimension and more - less flexibility focus. The external – internal dimension classifies the culture of the organization based on its response to the business or professional environment and addressing internal arrangement of the organization respectively. The more – less flexibility connotes the measure of organizations’ ability to adjust to new development in the organizations’ environment (Cameron *et al.*, 2006).

#### **3.3.6.1 Clan**

According to Cameron and Quinn (2006), the enabling and friendly environment of organizations creates the niche for the clan culture. Expounding on that, every organization has structures which enforces the cohesion between employees, employees and management, employees and the organization and finally the organization and its customers. The clan culture is positioned on the premise of internal and integration paradigm of CVF (Figure 3.1). In addition, working as teams, total participation of employees in the operation of the organization, development of employees’ capability and human environment are the expressions of the clan culture.

Cameron and Quinn (2006) proclaimed that, the clan culture is an avenue of winning the commitment, involvement and trust of employees which positively affect the business performance of an organization. Drawing from the concept of management theories, the clan culture is in alignment to the Elton Mayo's school of thought. Olum (2004) review of management theories indicated that, encouraging informal groupings, good working environment, employees' interest, and team works correlate to increasing productivity.



**Figure 2.1 The Competing Values Framework (Cameron and Quinn, 2006)**

Albayrak and Albayrak (2014) added that, communication plays an important role in this culture. Clan culture is fashioned after the family system where employers are seen as parents and employees as the children. The absence of effective communication in a family breeds the environment for chaos. In relating to organization, effective communication contributes to the satisfaction of both employers and employees because it helps employers to sell their vision to the employees, solving internal

conflicts and addressing employees' challenges. The ideals of the clan and market culture are practically the same but the recipient differs as the clan relationship is geared towards employees, the market culture is towards customers.

### **3.3.6.2 Hierarchy**

Whenever the concept of hierarchy is associated with an organization, the impression of strict structures becomes the focal point. Workers of an organization can be classified under owners, top management, semi-management and mere workers. This classification automatically establishes line of authority in an organization, such that WHAT, WHEN and HOW to do things are documented to help in achieving organizations' aim. Cameron and Quinn (2006) theorized that such structures enhance stability, consistency, efficiency and predictability in an organization. Whenever, well stipulated rules, order of reporting, line of authority exist in an organization, the operation or product might not differ or slightly differ from each production. This enhances internal stability and consistent products or services offered by the organization. Moreover, new entrants easily adapt to the operations of the organization.

### **3.3.6.3 Adhocracy**

In as much as the conventional meaning of adhocracy is flexibility, Cameron and Quinn (2006) opined that, this culture can be interpreted to mean a temporal way of operating an organization because the fundamental word is *ad hoc*. The influence of the business environment calls for making things flexible and informal in organizations. For instance, the construction industry over the decades have transformed from a technical field to a business oriented industry. This can be realised from the curricular of construction universities across the globe. Business related studies, legal studies have found its way into the technical education iwhich used to be. Worrall (2012) opined that, this culture forms the basis of cultural change in

organizations due to its adaptive power to the external environment. This does not suggest that, the organization will compromise on anything but things which aim at providing it with competitive edge or advantage over others. Cameron *et al.* (2006) indicate that, the effectiveness of adhocracy is seen in the organizations' craving for innovation. This actually should be identified with the construction organization since business management concepts and other sustainable concepts are infiltrating the industry.

#### **3.3.6.4 Market**

The market used for this culture is very figurative not necessary the registered definition of market in our thought. Maximizing profit and optimizing the cost of production is the theory guiding organization. In other words, organization is established to perform effectively in well in business. In this era of aggressive business environment, the cutting-edge of organizations' is its ability to compete sustainably in business. Cameron and Quinn (2006) posited that, market is oriented towards the external environment as depicted in Figure 3.1. Albayrak and Albayrak, (2014) reiterated that, as the organization is focused on its competitive bid, customers should be the central focus. Without customers, organizations will fail in achieving their organizational agenda and competition between organizations.

Organisation's loyalty to its customers is the hallmark of the market culture and the aggressiveness of the organization in the industry.

#### **3.4 Adapted Culture Model for the Study**

The Hofstede's National and Organizational culture model, Organizational Culture Profile, the revised Organizational Culture Profile, Denison model and the Competing

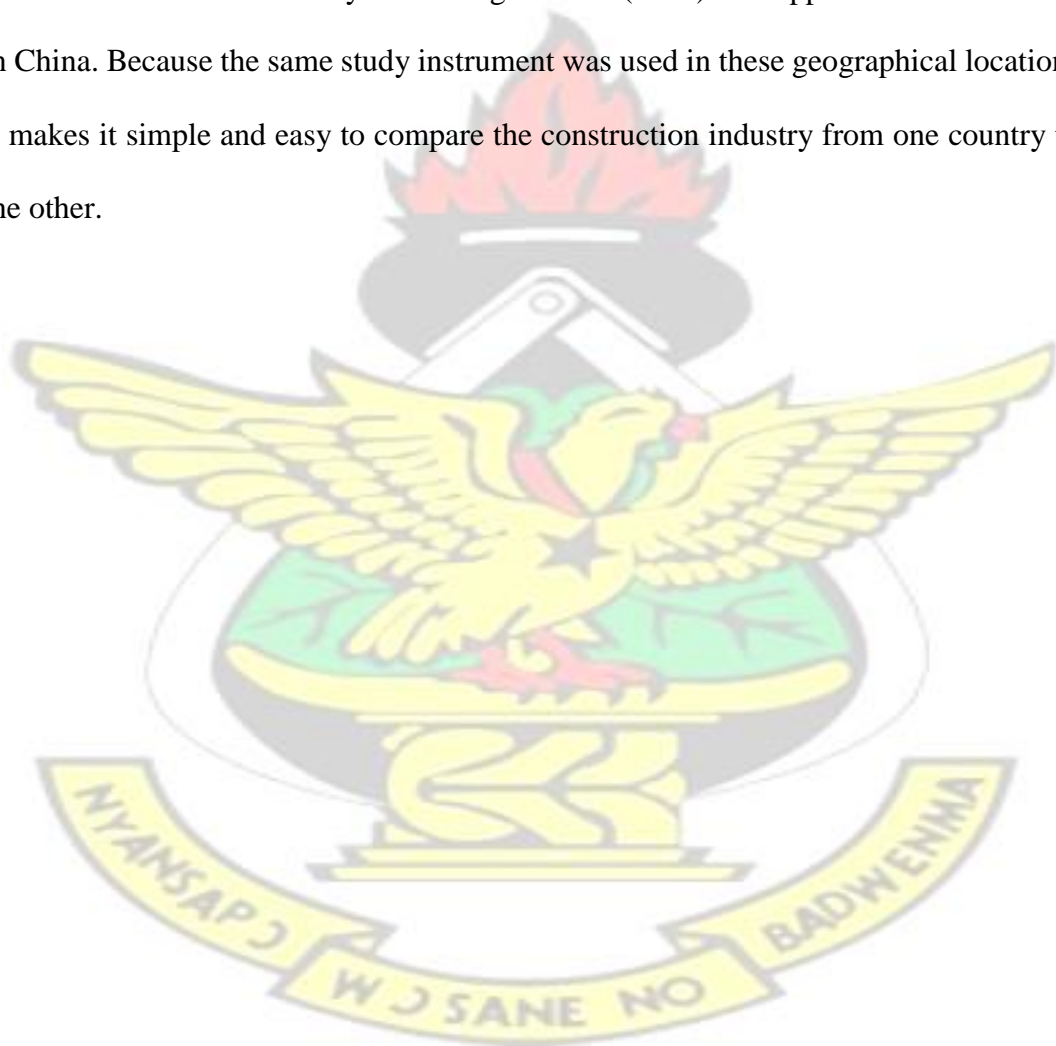
Value Framework have been discussed in the previous section. The researcher purposively adapts the Competing Value Framework as a testing model in the Ghanaian construction industry. The reasons compelling the researcher to conclude on the Competing Value Framework developed by Cameron and Quinn (2006) are as follows:

All the organizational culture models which exist in literature is formulated towards organization effectiveness, albeit the Competing Value Framework is the one which is firmly grounded in a validated framework (Maloney *et al.*, 2010).

Moreover, like all the other culture models, CVF is an indicator for organizational effectiveness which assesses the demands on the organization from its internal and external environment (Cameron and Quinn, 2006; O'Donnell and Boyle, 2008; Maloney *et al.*, 2010). However, the CVF further elaborated on indicators of organizational effectiveness these includes the business strategy of an organization, the leadership, how employees are managed, what brings members of the organization, what constitute success in an organization and what characterize an organization.

Furthermore, all organizational culture models do not provide the avenue for assessing the would-be culture in the immediate future except the CVF developed by Cameron and Quinn (2006). This makes it possible to diagnose the preferred culture status of the organization in the future and this forms the basis for change in the organization's culture. It is also known for contributing to the success of a leader and assists in the value creation of organizational (Cameron *et al.*, 2006).

Finally, the issue of which culture model is ideal depends on the context, industry and understanding of the researcher. CVF has been instrumental in profiling the business organization and also the construction industry in different jurisdictions. Coffey (2011) applied the CVF to the construction industry in Indonesia, Harinarain *et al.* (2013) used it in South Africa, Igo and Skitmore (2006) applied it to engineering consultancy organizations in Australia, Oney-Yazici *et al.* (2007) also adapted for the Turkish construction industry and Zhang and Liu (2003) also applied it to contractors in China. Because the same study instrument was used in these geographical locations it makes it simple and easy to compare the construction industry from one country to the other.



## CHAPTER FOUR

### RESEARCH METHODOLOGY

#### 4.1 Introduction

This chapter introduces and discusses the philosophical stance of the study and the researcher, expound on the research approach adapted for the study, data collection strategies and data analytical tools for the study. This is technically an important aspect because it describes into detail the procedure for the study and as a guide for future researchers and conformance to earlier methodologies.

#### 4.2 Philosophical concept: Epistemological view

Guba (1990) and Guba and Lincoln (1994) earlier described philosophical paradigm as the belief of which an action is based. An assertion made by Guba and Lincoln (1994) indicated that, philosophical paradigm concepts are applicable to both quantitative and qualitative research strategies. Moreover, opined that ontology, epistemology and methodology are the basic principles in the study of paradigms which is accepted on the premise of faith because no further revelation can be deduced. However, Hart (2010) added axiology as another principle in the study of philosophical paradigms. Fellows and Liu (2013) declared the usefulness of choosing a philosophical position for a study due to its influence to the final outcome. Thereby, helping readers in the interpretation of the findings of the study.

The intriguing idea of choosing a specific stance is its influencing effects on the methodological tool and methods to consider for the study. Therefore the methodological stance postulated by Guba (1990) and Mack (2010) cannot act as an

independent philosophical concept but dependent on the others. Mack (2010) affirmed Guba and Lincoln (1994) assertion but dissented to the basic paradigm principle. Furthermore positivism, post positivism, critical theory and constructivism were identified as the main trending paradigms. Meanwhile, Kumar (2005) opined that, it will be a mistake to arbitrarily choose a paradigm without considering the problems which arose from the research.

Epistemology, according to Guba and Lincoln (1994) answers the question relating to the relationship between the object of enquiry and the researcher. Gray (2013) asserted that, epistemology measures the reality and adequacy of a concept and is predominant in social science studies. Culture studies aim at establishing relationship between major and sub cultures, which according to Gray (2013) is directed to the objectivism view of epistemology. In ascertaining an objective truth, it becomes necessary to subject the object of study (reality) to an arduous scientific process. Perhaps this underpins the reason of linking objectivism to the positivism perspective. Creswell (2003) added that, studies positioned in the positivism perspective acquired knowledge through measurement of reality which exist in the world but external to the researcher. It is against the issues raised that, the researcher adapted the positivism-objectivism-epistemological view.

#### **4.3 Research Methods**

Creswell (2003) indicated that quantitative, qualitative and mixed are the available research methods. Moreover, the suitability and choice of a specific method is contingent on the problem of the study, researchers experience and the audience of the study.

#### **4.3.1 Quantitative method**

According to Creswell (2003), quantitative method is adapted with the aim of arriving at a scientific theory or knowledge using post positivist route. It is of utmost benefits when there is the need to reduce constructs to simple forms. Culture has been related to the anthropological view, because it requires observing and physical experience on the part of the researcher. Quantitative research allows collection of data from many organizations and enhances inter-organization analysis (Ankrah, 2007). Likewise, due to the contribution of many organizations, it facilitates and strengthens the basis of generalizing the results of the study. Though, it may disadvantage the study from getting in-depth understanding of the study area but helps in empirical determination.

#### **4.3.2 Qualitative method**

Qualitative is basically adapted to inquire about phenomenon based on meanings and experience of the individuals (Kumar, 2005). Fellows and Liu (2008) opined that, qualitative method is an antecedent to quantitative, because it is employed in areas where there is scanty information. Originally, culture was related to anthropology which required a qualitative method in measuring or diagnosing the culture of a group of people (Ankrah, 2007). This might be as a result of the soft label given to culture.

#### **4.3.3 Mixed methods or Triangulation**

It is required when information based on text and numeric is needed to fortify the results of the study. The wealth and impact of the mixed method is assessed by the advantages of the two methods (Fellows and Liu, 2008). Besides, the disadvantages of the two methods are reduced drastically.

#### **4.3.4 Adapted research method**

The study is positioned in the quantitative method. The construction industry is made up of many individual institutions and in order to provide a better overview on culture it becomes imperative to reach as many as possible an acceptable sample to study on. Ankrah (2007) asserted that, quantitative enables the researcher to engage as many respondents as possible. In addition, it also helps in arriving at empirical results through the numeric measurement of a concept (Kothari, 2004). Kothari (2004) opined that, it is easy to make inference to the population of the study. In other words, generalization of results can be made since the sampled respondents possess the qualities of the entire population. Moreover, Creswell (2003) affirmed that quantitative research employs the positivism idea of acquiring knowledge and provide an objective truth.

#### **4.4 Research Style**

Surveys, case studies, experimental, action and ethnographic are all forms of research strategy (Fellows and Liu, 2008; Denscombe, 2007). Each strategy has its own pros and cons and perfectly suit specific topic and field of study. Action research involves the researcher as an active part of the processes been studied. Unlike action research, the participation of the researcher is less in terms of activeness in the process been studied. Studies which seek to get extensive information about a specific issue require the case study strategy. Survey and experiment style according to Creswell (2003) are mostly employed on quantitative studies.

In reality, the experiment and survey share some communality. However, Gray (2013) pointed that, surveys emphasize on drawing respondents (sample size) from a population and the main purpose of the study is to generalize the findings of the study. The researcher adapted the survey style based on the reasons given by Gray (2013) and its conformance to the positivism stand of the study.

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#### **4.4 Research Population**

Population can be described as the totality of an object, people or society under study (Fellows and Liu, 2008; Kothari, 2004). In mathematical terms, the population can be interchanged with universal set as understood from the theory of sets. Using the theory of sets description, members of a population must share some communality though there might be classes within the population. The population for a country might comprise of people with different class of economic status as well as gender status. In addition, the total population size for a specified group can be finite or infinite. It is finite when the overall size is known and infinite when the overall size of its member is unknown.

The constituent members making up the population for the Ghanaian construction industry includes the clients, contractors, consultants and other stakeholders. For purpose of the study, contractors registered with the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) are the focus of the study and the population as well. Contractors were chosen for the study because they are implementers of the abstract ideas of the client. ABCECG is a recognized body with a finite population size and its members are indigenous contractors as well.

According to the ABCECG secretariat, the total number of Ashanti and GreaterAccra region members registered with the association is 450.

#### **4.4.1 Sampling**

The research method adapted for study determines the suitability of undertaking a rigorous sample size exercise. For instance Kumar (2005) posit that, qualitative research does not necessarily travel this path. Sampling is a representative of the actual population which forms the basis of forecasting or making inference for the population under study (Fellows and Liu, 2008; Kumar, 2005). Better still, sample is a subset of the universal set (Cohen *et al.*, 2013) in mathematical terms.

##### **4.4.1.1 Sample size**

The sample size encapsulates the focused group or individuals where information are sourced from. The responses of these selected people are further on used for analysis to arrive at key findings. Intuitively, another important facet of sample size determination is the strategy used. Using the entire population, using a determined size from previous study which is related, using published tables and sample size determination using well established and endorsed formulas are recommended by literature (Israel, 1992). In reference to Israel (1992), precision level, confidence level and degree of variability determine a reliable and suitable sample size. Any lapse attributed to these will result in a sample size which is not a perfect reflection of the population in question. This study adapted the sample size estimation using the Yamane formula. The mathematical expression for Yamane (1967) formula as cited in Israel (1992):

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size N = Population size e = level of precision (for the purpose of the study, a confidence level of 95% and 5% precision level was used)

Therefore;

$$n = \frac{450}{1 + 450(.05)^2} = 211.76$$

An approximate number of 212 contractors formed the sample size for the study. No further adjustment was made to the estimated sample size.

#### **4.5 Data Collection**

Data is an inseparable part of the research process since result or conclusion arrived from the study emanate from it. Actually, the actual work of the researcher is based on how data is collected. Most at times, the selection of the data collection tool is based on the research approach adapted. Kothari (2004) added that the nature of enquiry, funds availability, time and precision contributes to the determination of the appropriate method.

##### **4.5.1 Sources of data collection**

There are two main sources of collecting data (Kumar, 2005; Kothari, 2004). These are the primary and secondary data. Primary data are collected directly by the researcher since it does not exist and secondary data are information that exists in public domain.

In achieving the research objectives, both the primary and secondary methods were used.

The secondary data which can also be called the desk survey was initially done to help in the formulation of the research problems. Qualitative approach is always ideal for collecting secondary source of data (Kothari, 2004). Data was obtained from published academic journals, conference proceedings, academic books and other works of interest. One of the objectives was achieved by reviewing early works conducted in construction organizational culture. Moreover, the reviewed information from the secondary source formed the basis for the questionnaire design.

The primary data was collected through field survey. According to Kumar (2005), interviews, observations and questionnaire are forms of collecting primary data. The study exploited the questionnaire forms of data collection since quantitative data was required for empirical analysis. Moreover, Fellows and Liu (2008) and Denscombe (2007) opined that the survey approach mostly employ data collected through questionnaire.

#### **4.5.2 Questionnaire survey**

Questionnaire is a structured documents comprising of well laid-out questions specially made to solicit for information from people (Kumar, 2005; Denscombe, 2007). Hofstede *et al.* (1991) opined that, questionnaire survey has been used to solicit for information on culture studies and still remains essential and useful because it provides respondents the luxury of space to show their preference on a construct. The

researcher chose the questionnaire based on the reasons postulated by Denscombe (2007) and Kumar (2005):

1. The number of respondents for the study: approximately 212 respondents participated in the study and the questionnaire serves the purpose of reaching them within the time frame of the study.
2. The different geographical location of the respondents: members of ABCECG of predominantly distributed in the Greater Accra and Ashanti region.
3. Ability of the respondents to read and understand the contents of the questions: the language of communication was purely English and the responding organizations accept the language as the official form of transacting business. *And*
4. When the required data are standardized: the information solicited from the respondents were closed ended which did not require the presence of the researcher in answering the questions.

Questionnaires were administered to 212 contractors however the researcher was able to retrieve 178. The questionnaires were delivered by the researcher personally to the contractors. Moreover, follow up calls were done as a reminder to the contractors. This might have contributed to the high response rate of 84.3% recorded by the study.

#### **4.5.2.1 Format of Questionnaire**

The study adapted the quantitative method indicating that the data for analysis should measure the individual variables. A five A4 page questionnaire was designed for the study (Appendix 1) which was below the maximum of eight accepted to be the optimum for questionnaire (Naoum, 1998).

The questionnaire was divided into three sections A, B, and C. The section A requested for the demographic information of the respondents and the substantive organization. Section B solicited information on the Competing Value Framework instrument developed by Cameron and Quinn (2006). Apparently, the only difference between the original OCAI and the designed one for the study was how culture was measured. The study used the Likert scale approach which was simpler and easier than the allocation of values to the various dimensions. And the final section captioned the critical factors for the construction of culture typologies in the Ghanaian construction industry. Besides the questionnaire was accompanied with a cover letter which introduces the research topic, the impact of the results, the purpose of the study and the names of the researcher and the supervisor.

Actually, the questions were simple to read and understand which conforms to the requirement of an appropriate questionnaire opined by Fellows and Liu (2008). Culture studies which adapted the quantitative route used Likert scale questionnaire to solicit for information. Nevertheless, the disagreement has been on the scale calibration to use. For instance, Hofstede *et al.* (1991) used a seven (7) point Likert scale to solicit information from respondents whilst Ankrah (2007) employed a five (5) point scale for construction project culture. Fellows and Liu (2013) declared that, using a small point scale like the five (5) is adequate and suitable for culture studies. As a result of that, a 5 Likert scale calibration was used to measure the variables in section B and C. Section B had the labels ranging from “highly not similar in our firm” to “highly similar in our firm” for 1 to 5 scale calibration. And “highly disagree” to “highly agree” for the section C.

#### **4.6. Data Analysis**

An essential component of the research process is what to do with the results. Actually, the purpose of research is to arrive at a finding which solves the problem(s) raised earlier. In arriving at a firm and credible findings the analytical tool adapted for the study should be thorough and robust.

##### **4.6.1 Reliability and Validity Test**

Wells and Wollack (2003) opined that, reliability test can be interchanged with consistency. In addition, reliability test is said to be conducted before validity test is performed. Kumar (2005) showed that, when similar results are obtained using the same set of questions for the same study conducted on two or more occasions then the results can be considered to be reliable.

##### **4.6.2 Relative Importance Index (RII) and Mean Score Ranking (MSR)**

Many factors are identified for testing concepts of study (Ankrah, 2007). These factors are captured from differing sources such as academic wittings and professional experience. The factors are subjected to initial checks to assess its significance and suitability for the study before further robust and rigorous analysis can proceed. Relative Importance Index and Mean Score Ranking offer the opportunity to test the significance and suitability of factors for concepts. Ankrah, (2007), Fugar and Agyakwah-Baah (2010) and Ayarkwa *et al.* (2012) have applied the Relative Importance Index and Mean Score ranking to streamline factors in the measurement of a concept.

A major challenge in the application of using the RII and the MSR to check the significance of factors is the determination of the test value. Though, literature is silent on the acceptable test value to determine the RII and MSR, however using a common convention the researcher agreed on using 3.5 and 70 as the test value for MSR and RII respectively. As asserted in section 4.5.2.1, the five point Likert scale had the following labels “1=highly disagree, 2=disagree, 3=neutral, 4= agree and 5=highly agree”. A balance was struck between points three (neutral) and four (agree) because 3.5 is closer to accepting or agreeing to the concept under study.



## **CHAPTER FIVE**

### **DATA ANALYSIS AND DISCUSSION**

#### **5.1 Introduction**

The chapter is committed to displaying the data analyzed from the questionnaire and discussion of the results with other scholarly articles. Four sections can be witnessed within this chapter. The first section displayed and discussed results on the demographic information of the respondents; the second section discussed one of the existing culture profiles thus Organizational Culture Assessment Instrument (OCAI) proposed by Cameron and Quinn (2006); the third section discussed the factors for constructing an organizational culture typologies for the Ghanaian Construction

Industry and the final section delved into the substantive typologies for the Ghanaian Construction Industry.

Because the study is positioned in the quantitative research method, descriptive statistics, mean score ranking, Pearson Correlation, factor analysis and the reliability and validity test was conducted using the Cronbach Alpha.

## 5.2 Demographic information

178 out of the 212 sampled contractors responded to the administered questionnaire, representing 83.96% response rate. The study revealed that more than half of the respondents have worked with their substantive organizations within the last decade. Though, the academic qualifications of the respondents were not asked, however, the fact that construction organizations have employed people within the last decade, brings hope to construction graduates in terms of employment. Irrespective of the ban on employment into public institutions which came into effect from the last six (6) years, construction organizations still employs graduate. This is an indication that, the private sector should be well - visited and government policies should be made to preserved the private the sector.

**Table 5.1 Experience with organization**

	<b>Options</b>	<b>Frequencies</b>	<b>Percentage</b>
Working experience in organization	Less than 5years	58	32.58
	5 - 10years	56	31.46
	11 - 15years	48	26.97
	More than 15years	16	8.99
<b>Total</b>		<b>178</b>	<b>100</b>

The study also revealed that, a majority of the respondents are working with registered Limited Liability Companies as shown in Table 5.2. Meanwhile, the employee holdings of the respondents (Table 5.5) indicate that most of the firms represent Small and Medium Enterprises (SMEs) according to the SMEs classification of Oney-Yazici *et al.* (2007) and Gibson and van der Vaart (2008).

**Table 5.2 Legal structure of organization**

	<b>Options</b>	<b>Frequencies</b>	<b>Percentage</b>
Legal structure of organization	Sole proprietorship	34	19.1
	Partnership	24	13.48
	Limited Liability Company	116	65.17
	Joint venture	4	2.25
<b>Total</b>		<b>178</b>	<b>100</b>

But considering the classification of European Commission (2003), which position SMEs to have an employee size of 250, all the organizations involved in the study would have qualified to be SMEs. Drawing from the stance of the study, 148 respondents (83.15%) are working in SMEs.

**Table 5.3 Owners as workers of the organization**

	<b>Options</b>	<b>Frequencies</b>	<b>Percentage</b>
Owners are workers of the organization	Yes	126	70.79
	No	52	29.21
<b>Total</b>		<b>178</b>	<b>100</b>

Table 5.3 reveals that, owners of construction organizations are also substantive workers as well. It is not surprising that, the owners are the managers who see to the day to day running of the organization. According to Table 5.6, most of the owners are construction professionals, which suggest that these professionals are capable of

employing themselves and others as well. Moreover, the idea of entrepreneurship is gaining grounds in the construction industry.

**Table 5.4 Dominant gender in organization**

	Options	Frequencies	Percentage
Dominant gender in organization	Male	168	97.67
	Female	10	2.33
	<b>Total</b>	<b>172</b>	<b>100</b>

The idea of the construction industry as a male dominated sector is still a reality eventhough, the developed countries which have gender equality legislation (Aulin and Jingmond, 2011; Sang and Powell, 2012) still have the same challenge how much more the developing countries as shown the Table 5.4. It is better to accept the fact that, construction is masculine in nature and a small percentage of its workforce and professionals will be women. Table 5.4 attest that the construction industry is a male dominated sector. This result is no different from Ginige *et al.* (2007) study which posited that, women in managerial level in the construction sector is less than a percentage of the construction workforce in UK. According to Martin and Barnard (2013), organizational structures impede the successful integration of women into male-dominated industries such as the construction sector. This study accepts reasons as seen in Ghana and concurs with Ayarkwa *et al.* (2012) that the Ghanaian construction industry male dominated.

**Table 5.5 Employee holdings of organization**

	Options	Frequencies	Percentage
Size of employees	Less than 50 employees	106	59.55
	50 - 150 employees	42	23.6
	More than 150 employees	30	16.85

<b>Total</b>	<b>178</b>	<b>100</b>
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Table 5.6 reveals that, professionals from other sectors outside the construction industry are also key stakeholders. For instance, 13.48% of the respondents indicated that, the owners of their firms are businessmen, journalist and the like. Whilst 3.37% are also politicians and 7.87% are a combination of construction professionals and politicians. The infiltration of politicians in the construction industry might pave way to corruption in the construction sector since most construction projects are executed by the government, who is a major client (Tuuli *et al.*,2007).

**Table 5.6 Profession of owners of organization**

	<b>Options</b>	<b>Frequencies</b>	<b>Percentage</b>
Profession of owners	Construction	134	75.28
	Politician	6	3.37
	Both	14	7.87
	Others	24	13.48
<b>Total</b>		<b>178</b>	<b>100</b>

Table 5.7 also shows the financial and technical classifications of building and civil engineering contractors according to the Ministry of Water Resource Works and Housing. Averagely, D2K2 and D3K3 are the dominant classes registered with the Association of Building and Civil Engineering Contractors of Ghana.

**Table 5.7 MWRWH classification of organization**

	<b>Options</b>	<b>Frequencies</b>	<b>Percentage</b>
Classification of organization	D1K1	46	25.84
	D2K2	50	28.09
	D3K3	70	39.33

D4K4	12	6.74
<b>Total</b>	<b>178</b>	<b>100</b>

### 5.3 Typologies Organization Culture of the GCI based OCAI

The basis of the Organizational Culture Assessment Instrument (OCAI) stems from the Competing Value Framework (CVF) which was developed by Cameron and Quinn (2006). OCAI contains twenty-four (24) items which are classified under six dimensions. Considering a mean score test value of 3.5, four out of the twenty-four items of the OCAI is rendered insignificant (Appendix 2). However, since OCAI has been adapted and used for similar studies in other jurisdictions as shown in section 3.4, the researcher ignored the test values to provide a fair ground in comparing the results of the study to earlier works.

#### 5.3.1 Culture typologies based on the CVF dimensions

Actually, the CVF assesses the performance of organizations based on the six dimensions which were mentioned earlier. This dimension reveals the identity, the management and the role of the organization. The study revealed that all the six dimensions are highly recognized in the Ghanaian Construction Industry with Organizational glue (*mean = 3.7809, std = 0.9510*) as the highly ranked dimension whilst Strategic Emphases (*mean = 3.618, std = 1.0168*).

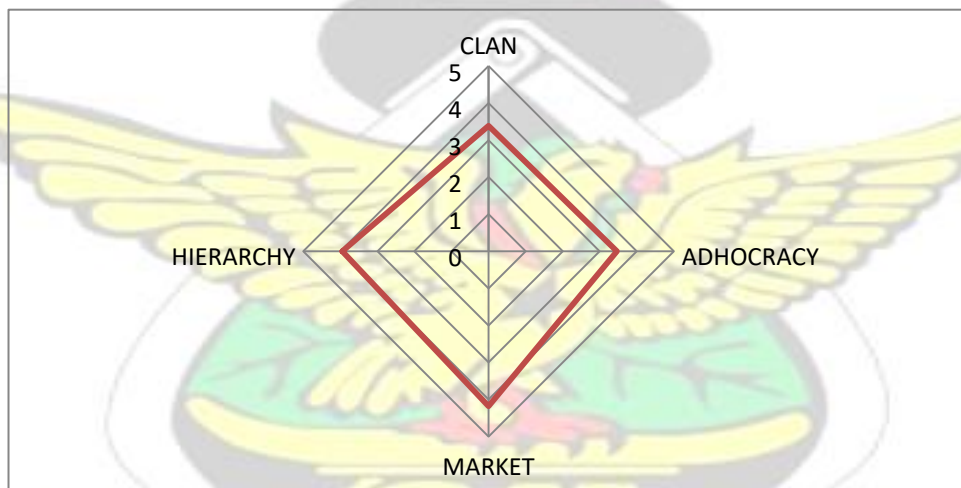
**Table 5.8 Results of OCAI Dimensions**

One-Sample Statistics				
	N	*Mean	*Std. Deviation	Ranking

Dominant Characteristics (DC)	178	3.7416	0.9490	4
Organizational Leadership (OL)	178	3.7023	1.0364	5
Management of Employees (ME)	178	3.7668	0.965295	3
Organizational Glue (OG)	178	3.7809	0.9510	1
Strategic Emphases (SE)	178	3.618	1.0168	6
Criteria of Success (CE)	178	3.7725	0.9448	2

\* Average mean and Std Deviation= Average of mean and standard deviation under each dimension

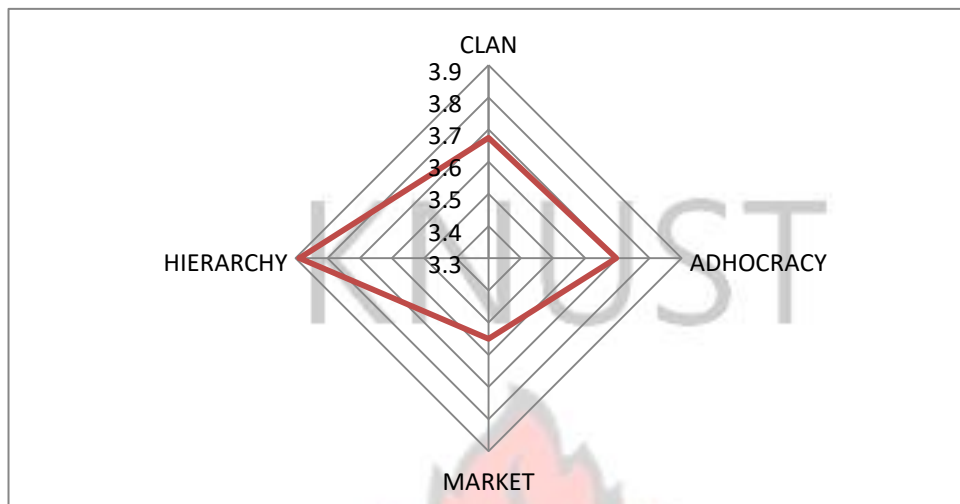
Oney-Yazici (2007) earlier used the OCAI to study the culture typologies and further identified the standings of the typologies with regard to the six dimensions in the Turkish Construction Industry.



**Figure 5.1 Results of Dominant Characteristics showing the OCAI culture typologies**

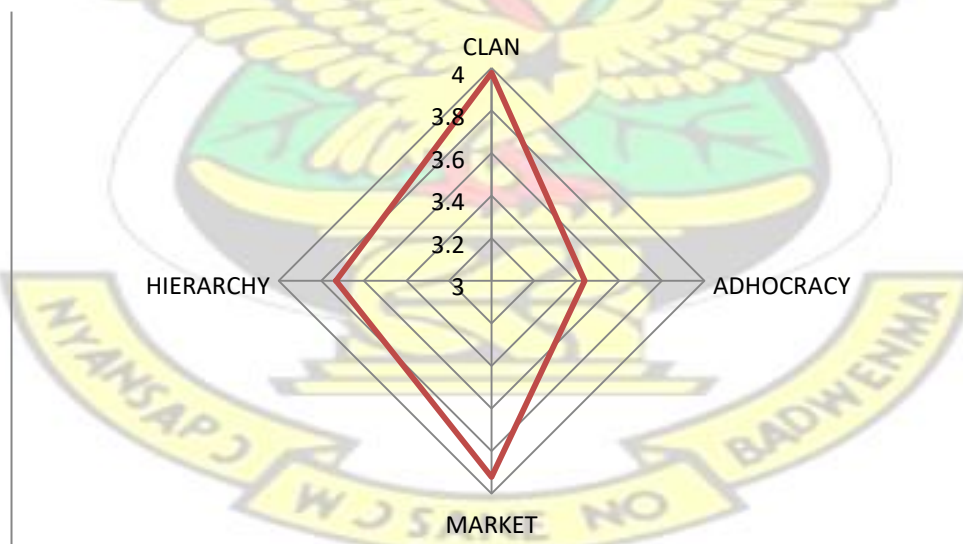
Their study revealed that the clan is the dominant culture whilst adhocracy is the weakest culture typology with an insignificant average mean. Meanwhile, the study has shown that (Appendix 3 and Figure 5.1), the dominant culture is the market as against the clan culture. Earlier Cameron and Quinn (2006) conducted a study among over eight thousand managers, the results for the DE dimension indicated in order from

the strong to weak culture; market, hierarchy, clan adhocracy. Though the first two strong cultures is the same for the study but the others differ.



**Figure 5.2 Results of Organizational Leadership showing the OCAI culture typologies**

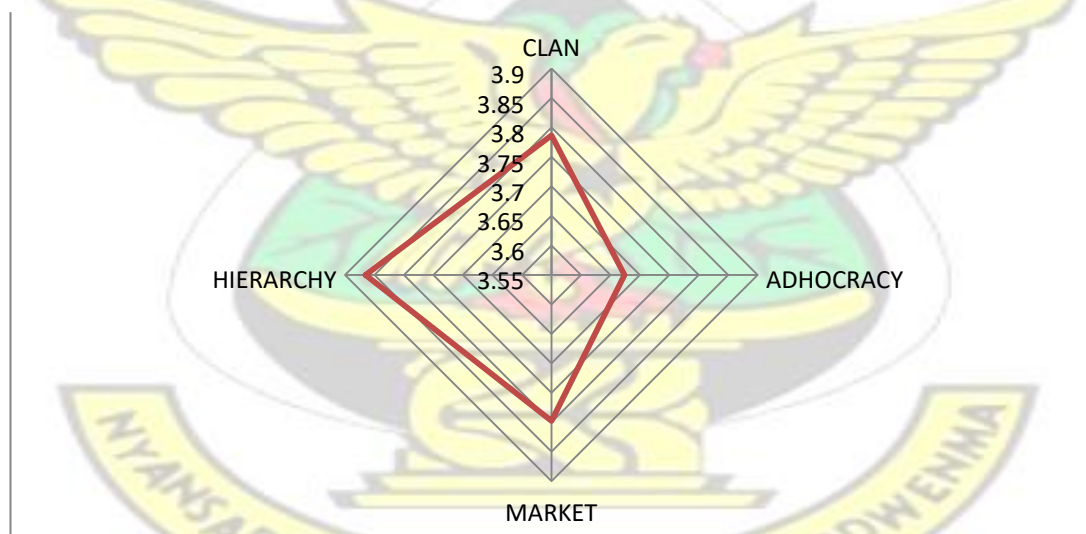
Figure 5.2 and Appendix 3 also revealed that, under the OL dimension the hierarchy culture is the dominant. The dominant culture is in unison with Oney-Yazici (2007) study in Turkey.



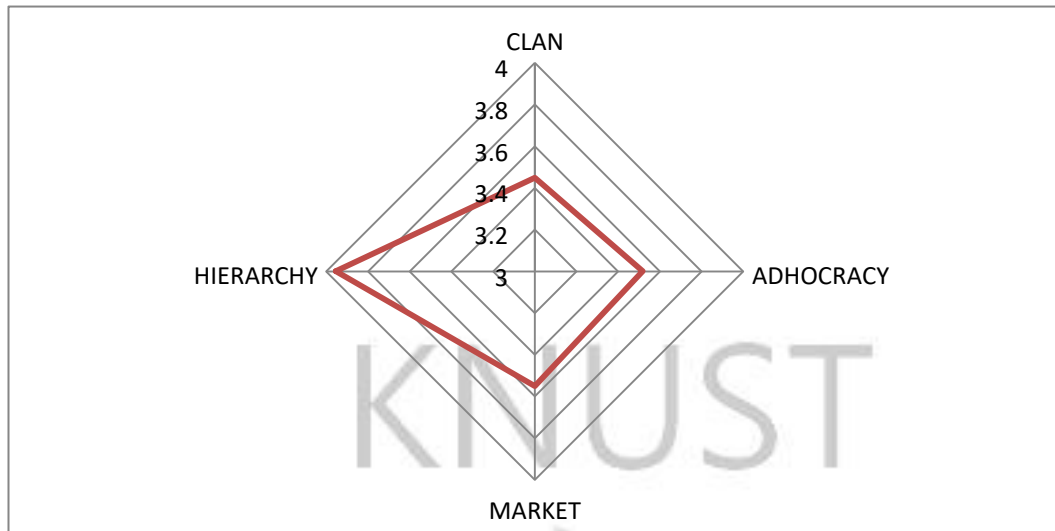
**Figure 5.3 Results of Management of Employees dimension showing the OCAI culture typologies**

Unfortunately, there is a disagreement on the weak culture as the study revealed that market is the weakest, the Turkish study revealed that adhocracy is the weakest followed by market. In comparison with Cameron and Quinn (2006) the findings also differ totally.

According to the ME dimension, Clan as the strongest and adhocracy as the weakest cultures (Figure 5.3 and Appendix 3) concur with the Turkish study (Oney-Yazici, *et al.*, 2007). Though, the intermediate cultures differ from the two studies. The study revealed clan, market, hierarchy and adhocracy in descending order according to dominance whilst the Turkish study also revealed Clan, hierarchy, market and adhocracy. However, the findings of the study with regard to the ME perfectly match the profile of the surveyed managers by Cameron and Quinn (2006).

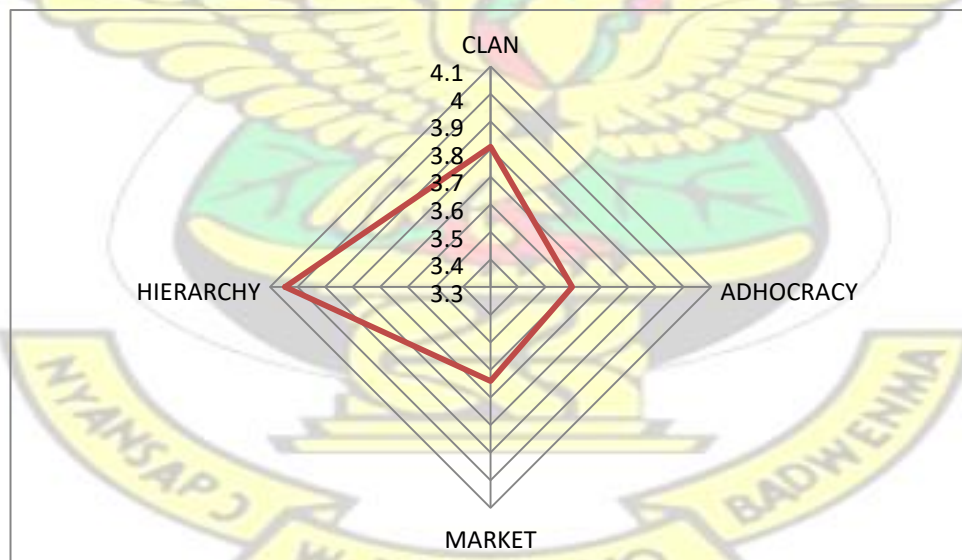


**Figure 5.4 Results of Organization Glue Showing the OCAI culture typologies** Figure 5.4 indicate that, the hierarchy culture dominants with adhocracy as the weakest culture. This also contradicts Oney-Yazici *et al.* (2007) study in the Turkish Construction Industry. There is no similarity between this study and Cameron and Quinn (2006) study as far as the OG dimension is concerned.



**Figure 5.5 Results of Strategic Emphases dimension showing the OCAI culture typologies**

Meanwhile the dominating and weakest cultures in the Strategic emphases culture for this study concur with the study by Oney-Yazici *et al.*, (2007). However the intermediate cultures differ for each jurisdiction.



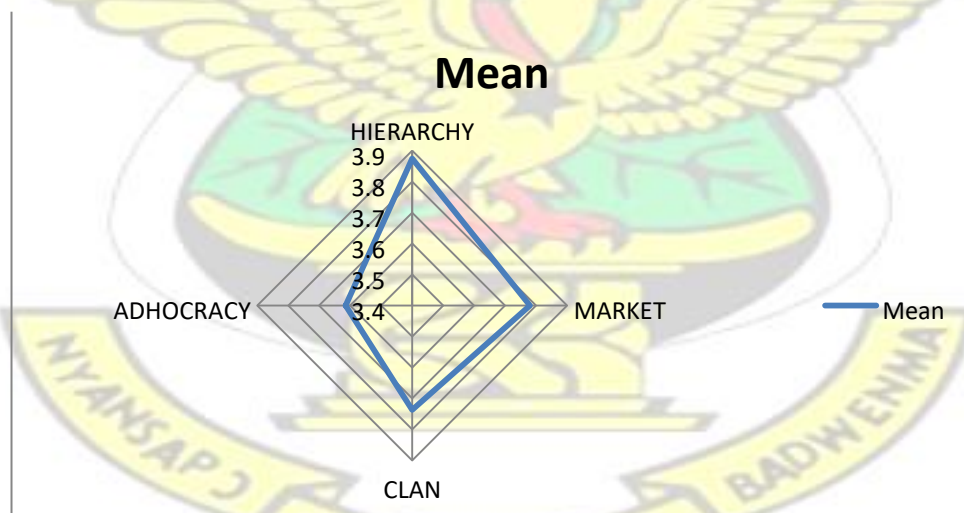
**Figure 5.6 Results of Criteria for Success dimension showing the OCAI culture typologies**

Meanwhile, the adhocracy and clan culture perfectly match (Cameron and Quinn, 2006) as the two weakest cultures as far as the SE dimension is concerned.

Interestingly, the Criteria of success dimension have the two dominating cultures to be same for the two studies but have a contradicting results for the least cultures thus market and adhocracy. Whilst adhocracy is the weakest culture for the SE dimension in this study, market culture was identified as the weakest in Turkey. However, the position of Hierarchy and adhocracy as the dominating and less culture from Figure 5.6 matches the study conducted by Cameron and Quinn (2006).

### 5.3.2 Culture typologies of Ghanaian contractors based on Organizational size

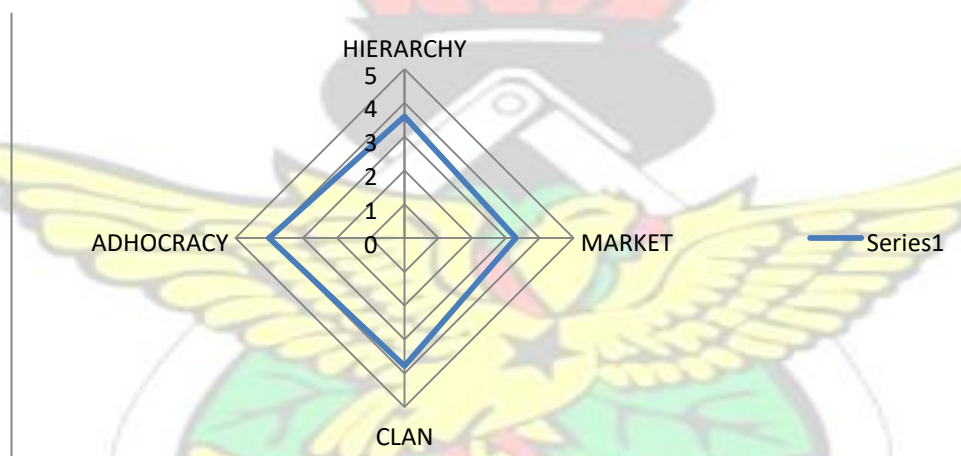
The study also revealed that, organizational culture differs based on the number of employees in an organization (Figure 5.7 – 5.9). This is a confirmation to OneyYazici *et al.* (2007) study which revealed the correlation between organizational size and the OCAI culture traits.



**Figure 5.7 OCAI Culture for Organizations with less than 50 employees**

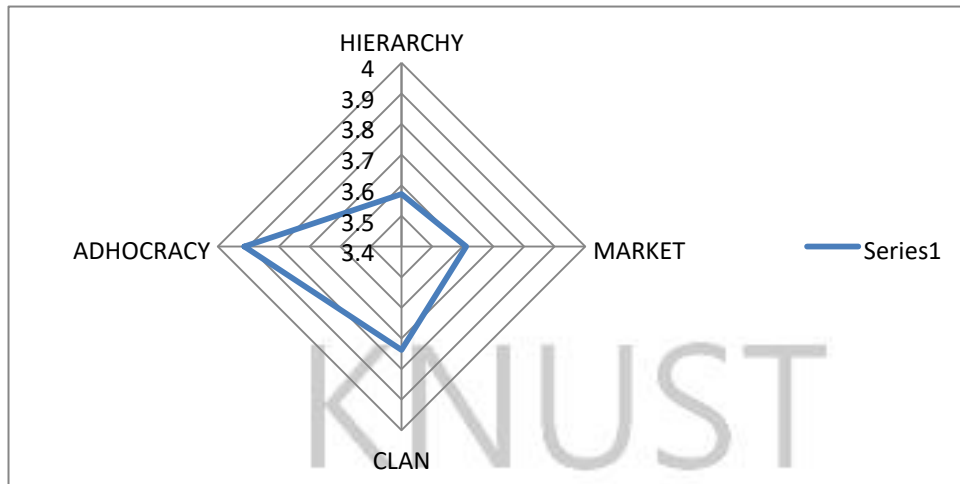
Moreover, construction organizations with less than 50 employees emphasize on internal integration as compared to the medium and large scale organizations which emphasize on external adaption.

In as much as differences exist, the medium (Figure 5.8) and large (Figure 5.9) size organizations have Adhocracy as their strong culture which is different from the Turkish Construction Industry. However, no other similarities exist between the two studies. Figure 5.7 revealed hierarchy as the dominating culture in small organization probably organizations with such employee numbers are new entrants in the industry and do not have an identifiable feature about its existence. The hierarchy culture better defines the organization based on the methodological approach in addressing its challenges. The others support the predominating culture in projecting the identity of the organization.



**Figure 5.8 OCAI Culture for Organizations with 50 - 100 employees**

The adhocracy predominating culture for both medium (Figure 5-8) and large (Figure 5-9) suggest that, such organizations are poised to exploring new methods of improving organizational effectiveness and rebranding.



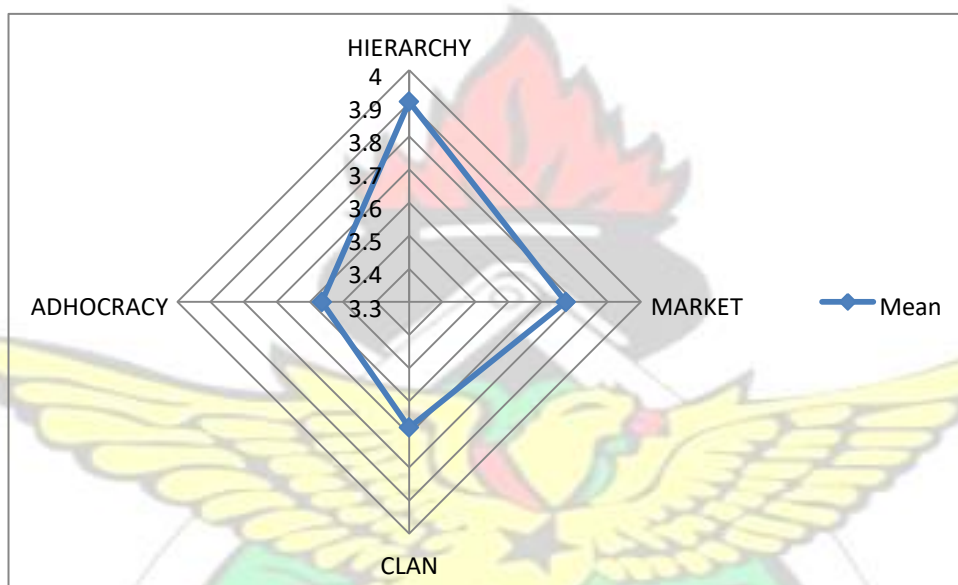
**Figure 5.9 OCAI Culture for organizations with more than 150 employees**

Harinarain *et al.*, (2013) study in the South African Construction Industry revealed that small organizations (less than 50 employees) have a dominating Market culture followed by Hierarchy, Clan and Adhocracy. Clan, Hierarch, Market and Adhocracy also represents the culture profile of medium construction organizations. Furthermore, the large organizations (more than 150 employees) have a dominating market culture followed by Clan, Hierarchy and Adhocracy.

### **5.3.3 Culture typology of Ghanaian Contractors based on OCAI**

A study conducted earlier by the originators on OCAI in the United States of America revealed that, the average culture profile of the Construction Industry is dominated by the Market, followed by Hierarchy, Clan and Adhocracy. However, Oney-Yazici *et al.* (2007) also revealed Clan, Hierarchy, Adhocracy and Market in descending order of dominance in the Turkish Construction Industry. Zhang and Liu, 2003) used the same instrument to conduct a study among Chinese contractors and the study also revealed in order of dominance Hierarchy, Clan, Market and Adhocracy. The results for the South African Construction Industry also indicated a dominating Market Culture

followed by Clan, Hierarchy and Adhocracy. Considering the results of the aggregated culture shown in Figure 5.10, the culture typologies of Ghanaian Contractors is fashioned close to the American Construction Industry in terms of the less dominating cultures thus Clan and Adhocracy. And the other closest Construction Industry is the South Africa which has the same less dominant culture (Adhocracy) as Ghana (Figure 5.10).



**Figure 5.10 Overall Culture outlook according the OCAI**

From inference, the contractors have a dominant hierarchy culture focused on the internal structures. This suggests that, communication is very essential because it acts the tool for achieving control and stability in the organization. However, the hierarchy dominant traits might contribute to the abysmal performance of the Ghanaian construction industry. Fugar and Agyakwah-Baah (2010) identified factors contributing to delay in construction and the outstanding factor which was agreed upon by the client, consultant and contractor is delay in releasing honour certificates.

This process affects the contribution of the contractor's organization to the project because of lock-up capital which is as a result of bureaucratic in construction.

#### **5.4 Critical factors for construction organizational culture typologies**

A better and appreciative way of understanding an individual or an organization is identifying key features or attributes that describes the object in question well.

According to researchers in the organizational behaviour and culture (Ankrah, 2007; Cameron and Quinn, 2006; Denison and Mishra, 1995; Olanipekun and AbiolaFalemu, 2013; O'Reilly *et al.*, 1991), attributes which aims at achieving organizational effectiveness, well structure and organized environment, good organizational ethics, employee motivation, good working environment and systems and innovations as well are used to construct culture for an organization. In view of that, the study identified forty-eight (48) constructs from previous studies which best suit the description of the earlier researchers. These constructs were ranked on 1 – 5 Likert scale with labels ranging from „strongly disagree“ to „strongly agree“.

The forty-eight (48) factors as shown in Table 5.9 were subjected to the mean score and Relative Importance Index analysis. The mean score test value was set at 3.5 implying that all constructs with mean scores less than 3.5 are insignificant as far as the study is concerned and those which are equal to 3.5 and above were deemed to be significant. Moreover the RII test value was set at 70 with constructs less than 70 is deemed to be less important and those same above or equal to the test value as highly important.

**Table 5.9 Constructs for Organizational Culture**

Variables	$\alpha$	RII	Mean	Std Deviat.		Std. Error Mean	Rank
Teamwork	0.959	84.49	4.225				1
Emphasis on quality	0.959	84.27	4.214				2
Result oriented	0.959	82.47	4.124	0.701	0.053		3
Having good reputation	0.96	81.12	4.056	0.843	0.063		4
				0.764	0.057		
				0.742	0.056		
				0.766	0.057		
				0.766	0.057		
				0.808	0.061		
			0.950	0.071			
High expectation for performance	0.96	80.45	4.023				5
Achievement oriented	0.96	79.55	3.978				6
Management respect for subordinate	0.96	79.10	3.955				7
Opportunity for professional growth	0.959	79.10	3.955				8
Being distinctive	0.96	79.10	3.955	0.765	0.057		9
Being competitive	0.96	79.10	3.955	0.780	0.058		10
				0.702	0.053		
				0.709	0.053		
Utilize available opportunity	0.96	78.65	3.933				11
Coordination	0.96	78.43	3.921				12
Clear lines of responsibility and authority	0.959	78.43	3.92				13
Accuracy	0.959	78.20	3.910				14
Systematic	0.959	77.98	3.899	0.929	0.070		15
Innovative	0.96	77.75	3.888	0.832	0.062		16
				0.810	0.061		
				0.787	0.059		
				0.718	0.054		
				0.789	0.059		
Enthusiasm for the job	0.96	77.53	3.876				17
Fairness	0.96	77.33	3.854				18
Collaboration	0.959	77.08	3.854				19
Enabling working environment	0.959	76.85	3.843				20
Working long hours	0.96	76.85	3.843	0.831	0.062		21
Tolerance	0.959	76.63	3.832	0.780	0.058		22
				0.901	0.068		
				0.785	0.059		
				0.909	0.068		
				0.803	0.060		
				0.789	0.059		
				0.798	0.060		
Highly organized	0.96	76.40	3.820				23

People oriented	0.959	76.40				24
			3.820			
Mutual responsibility	0.96	76.40	3.820			25
Praise for good performance	0.96	75.96				26
			3.798			
Organized	0.959	75.96	3.798	0.892	0.067	27
Action oriented	0.959	75.73		0.788	0.059	28
			3.787	0.773	0.058	
				0.816	0.061	
Meticulous	0.96	75.73	3.787			29
Being socially responsible	0.961	75.73				30
			3.787			
Taking individual responsibility	0.96	75.51	3.775	0.960	0.072	31
Analytically minded	0.959	75.51		0.792	0.059	32
			3.775	0.834	0.062	
				0.748	0.056	
Sharing information freely	0.96	75.51	3.775			33
Having a clear guiding philosophy	0.96	75.51				34
			3.775			
Research and Development	0.96	75.28	3.764	0.951	0.071	35
Hierarchical	0.96	75.06		0.841	0.063	36
			3.753			
High pay for good performance	0.96	74.61	3.730			37
Calm	0.959	74.38				38
			3.719			
Rule oriented	0.96	74.16	3.708	1.006	0.075	39
Job security	0.96	73.93		0.751	0.056	40
			3.697	0.826	0.062	
				0.727	0.055	
				0.856	0.064	
				0.924	0.069	
Precision	0.959	73.93	3.697			41
Compartmental	0.96	73.48				42
			3.674			
Taking risk	0.959	73.03	3.652	0.903	0.068	43
Stable in operation	0.96	72.81		0.740	0.055	44
			3.640	0.954	0.071	
				0.791	0.059	
Low conflict	0.961	72.81	3.640			45
Being reflective	0.96	71.91				46
			3.596			
Aggressive	0.96	70.79	3.539	0.851	0.064	47
Predictable	0.96	69.89	3.494	0.878	0.066	48

Earlier Gliem and Gliem (2003) advised that, Likert scale questions should be subjected to a reliability test to ascertain its Cronbach alpha coefficient for the purpose of testing its reliability. Moreover, an internal consistency between 0.959 and 0.961 was observed (Table 5.9). Earlier O'Reilly *et al.* (1991) developed the Organizational

Culture Profile (OCP) using 54 constructs, their reliability value between 0.84 and 0.9 which was regarded as a substantial and indication of strong agreement between respondents. Moreover, Marmenout (2007) added that series of research have endorsed the reliability and the internal consistency of the OCP alpha results.

Baird *et al.* (2011) also used an abridged version of the OCP and recorded a minimum Cronbach value of 0.7 which according to Nunnally *et al.* (1967) is highly significant for internal consistency. Wells and Wollack (2003) added that, studies which require a one-off responds and the results is for drawing conclusions should have a minimum Cronbach of 0.9. Gliem and Gliem (2003) indicated that, a Cronbach alpha of 0.8 is reasonably acceptable. The understanding of all these minimum values suggest that, the closer the Cronbach alpha ( $\alpha$ ) approaches 1, the acceptable the constructs and suitable for the study.

Considering the views of the above researchers and relating it to Table 5.9, the internal consistency of the constructs is stable, highly agreed by the respondents of the study and acceptable for further decisions since the study recorded a minimum Cronbach value of 0.959 which is above the minimum value suggested by Wells and Wollack (2003). The highly recorded Cronbach values indicate that, the number of constructs was adequate and the quality of the constructs in reference to the study is also highly appropriate based on the reasons ascribe by Wells and Wollack (2003), Spiliotopoulou (2009), Garu (2003) and Drost (2011).

Table 5.9 reveals the constructs and their significance as far as the set values are concerned. Only one (1) out of the forty-eight constructs was insignificant to the study according to the RII and mean score ranking criteria. However, using the reliability results, all the forty-eight constructs should have been considered. The researcher considers the RII and mean score ranking analysis as determination criteria for the study; hence only forty-seven constructs are deemed to be significant.

### 5.5 Cultural typologies for the Ghanaian Construction Industry

A total of forty-seven significant constructs were identified for further analysis using the Relative Important Index (RII) and the Mean Score Ranking (MSR) as discussed in section 5.4. The factor analysis was further used to reduce the significant fortyseven constructs into simplified components. According to Ankrah (2007), Factor Analysis is adapted for the purpose of reducing the constructs size and for convergent validity purposes.

Upon subjecting the forty-seven constructs through Factor Analysis, six of the fortyseven construct had communalities ranging from .253 to .368. Costello and Osborne (2005) earlier opined that, communalities are rendered too high when the constructs under consideration have atleast .80 communalities but was quick to indicate that such incidents rarely happens. However, perfect reflections of real life data possess a communalities ranging from .40 to .70. Implying that, communalities less than .40 are not acceptable for further analysis and should be dropped.

**Table 5.10 Reliability, RII and Mean results for forty constructs**

Variables	$\alpha$	RII	Mean	Std Deviat.	Std. Error Mean	Rank
			4.225			

Teamwork	0.955	84.49				1
Emphasis on quality	0.955	84.27	4.214			2
Result oriented	0.955	82.47	4.124	0.701	0.053	3
Having good reputation	0.955	81.12		0.843	0.063	4
			4.056	0.764	0.057	
				0.742	0.056	
				0.808	0.061	
				0.950	0.071	
Management respect for subordinate	0.955	79.10	3.955			5
Opportunity for professional growth	0.955	79.10				6
			3.955			
Being distinctive	0.955	79.10	3.955	0.765	0.057	7
Being competitive	0.955	79.10		0.780	0.058	8
			3.955	0.702	0.053	
				0.709	0.053	
Utilize available opportunity	0.956	78.65	3.933			9
Coordination	0.955	78.43				10
			3.921			
Clear lines of responsibility and authority	0.955	78.43	3.921	0.929	0.070	11
Accuracy	0.954	78.20		0.832	0.062	12
			3.910	0.810	0.061	
				0.787	0.059	
Systematic	0.955	77.98	3.899			13
Innovative	.9555	77.75				14
			3.888			
Enthusiasm for the job	0.955	77.53	3.876	0.718	0.054	15
Fairness	0.955	77.33		0.789	0.059	16
			3.854	0.831	0.062	
				0.780	0.058	
Collaboration	0.955	77.08	3.854			17
Enabling working environment	0.955	76.85				18
			3.843			
Working long hours	0.955	76.85	3.843	0.901	0.068	19
Tolerance	0.955	76.63		0.785	0.059	20
			3.832			
Highly organized	0.955	76.40	3.820	0.909	0.068	21
People oriented	0.955	76.40		0.803	0.060	22
			3.820	0.789	0.059	
				0.798	0.060	
Mutual responsibility	0.956	76.40	3.820			23
Praise for good performance	0.955	75.96				24
			3.798			
Organized	0.955	75.96	3.798	0.892	0.067	25
Action oriented	0.955	75.73		0.788	0.059	26
			3.787	0.773	0.058	
				0.816	0.061	
Meticulous	0.955	75.73	3.78			27
Being socially responsible	.957	75.73				28
			3.787			
Taking individual responsibility	0.956	75.51	3.775			29

Analytically minded	0.954	75.51				30
			3.775			
Having a clear guiding philosophy	0.956	75.51	3.775	0.960	0.072	31
Research and Development	0.955	75.28		0.792	0.059	32
			3.764	0.748	0.056	
				0.951	0.071	
				0.841	0.063	
				0.751	0.056	
Hierarchical	0.956	75.06	3.753			33
Calm	0.955	74.38				34
			3.719			
Precision	0.955	73.93	3.697			35
Compartmental	0.955	73.48				36
			3.674			
Taking risk	.9555	73.03	3.652	0.856	0.064	37
Stable in operation	0.955	72.81		0.924	0.069	38
			3.640	0.903	0.068	
				0.740	0.055	
				0.791	0.059	
				0.851	0.064	
Being reflective	0.955	71.91	3.596			39
Aggressive	0.955	70.79				40
			3.539			

Communalities within .60 to .88 was revealed in an organizational culture study by Ankrah (2007). This is within the interval opined by Costello and Osborne (2005) but exceeded into the high acceptable range of .80 to .90. As a result of Costello and Osborne (2005) assertion, six factors were dropped because they recorded communality values less than .40 (Appendix 4) and later another construct because it also recorded an extracted communality less than .40 (Appendix 5) leaving out forty constructs for further analysis. Table 5.12 shows the communality values for the forty constructs. The values range from .40 to .752 which is acceptable for the study.

A further internal consistency test was conducted using the Cronbach Alpha to test the remaining forty constructs. It was revealed that the Cronbach values ranges from .954 to .957 (Table 5.10). Comparing the Cronbach values for the forty-eight constructs

(Table 5.9) and the forty constructs (Table 5.10) reveals that lower number of constructs results to lower Cronbach values and vice versa.

### 5.5.1 Presentation and discussion of factor analysis results

**Table 5.11 KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of	Approx. Chi-Square	5.544E3
Sphericity	Df	780
	Sig.	.000

The Kaiser-Meyer-Oklin and the Bartlett's test were conducted to ascertain the suitability of the constructs for the analysis. The study recorded a KMO value of .832 (Table 5.11) which makes the constructs highly suitable for the study.

**Table 5.12 Communalities for forty constructs**

	Initial	Extraction
Taking risk	1	0.497
Innovative	1	0.707
research and development	1	0.462
Utilize available opportunity	1	0.435
Taking individual responsibility	1	0.432
Stable in operation	1	0.468
Calm	1	0.519
Management respect for subordinates	1	0.436
Fairness	1	0.453
Tolerance	1	0.58
Opportunities for professional growth	1	0.521
Praise for good performance	1	0.579
Action oriented	1	0.541
Results oriented	1	0.583
Enthusiasm for the job	1	0.514
Highly organized	1	0.499
Analytically minded	1	0.594
Precision	1	0.522
Accuracy	1	0.597
Meticulous	1	0.427
Collaboration	1	0.533

Teamwork	1	0.526
people oriented	1	0.631
Coordination	1	0.557
enabling working environment	1	0.536
Mutual responsibility	1	0.584
Aggressive	1	0.631
An emphasis on quality	1	0.657
Being distinctive	1	0.54
Being competitive	1	0.574
Working long hours	1	0.414
Being reflective	1	0.534
Having a good reputation	1	0.523
Being socially responsible	1	0.548
Having a clear guiding philosophy	1	0.658
Hierarchical	1	0.554
Compartmentalized	1	0.535
Organized	1	0.679
Systematic	1	0.752
clear lines of responsibility and authority	1	0.657

Extraction Method: Principal Component Analysis.

Table 5.13 also revealed that, four components were extracted with a cumulative variance of 54.972% for the extraction and rotation loadings. Component 1 recorded a total variance of 37.904%, component 2 recorded a variance of 7.024% and the third component had 5.327% whilst the fourth component for 4.717%.

Figure 5.11 illustrate the scree plot extraction, it could be seen that fourth component lands on the elbow point of the plot. Costello and Osborne (2005) asserted that, the scree plot assist in ascertaining the eigenvalues and the break-off point. Which is an indication that the four initial extracted components are acceptable, suitable and credible as far as the study is concerned.

# KNUST

**Table 5.13 Total Variance explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.161	37.904	37.904	15.161	37.904	37.904	6.624	16.561	16.561
2	2.81	7.024	44.928	2.81	7.024	44.928	5.75	14.374	30.935
3	2.131	5.327	50.255	2.131	5.327	50.255	5	12.5	43.435
4	1.887	4.717	54.972	1.887	4.717	54.972	4.615	11.537	54.972
5	1.543	3.859	58.83						
6	1.44	3.601	62.432						
7	1.292	3.229	65.661						
8	1.117	2.792	68.453						
9	1.087	2.717	71.169						
10	1.022	2.554	73.724						
11	0.895	2.238	75.961						
12	0.84	2.1	78.061						
13	0.745	1.863	79.925						
14	0.721	1.804	81.728						
15	0.688	1.72	83.448						
16	0.601	1.502	84.95						
17	0.579	1.448	86.398						
18	0.553	1.381	87.779						
19	0.499	1.248	89.027						
20	0.445	1.112	90.138						
21	0.413	1.034	91.172						

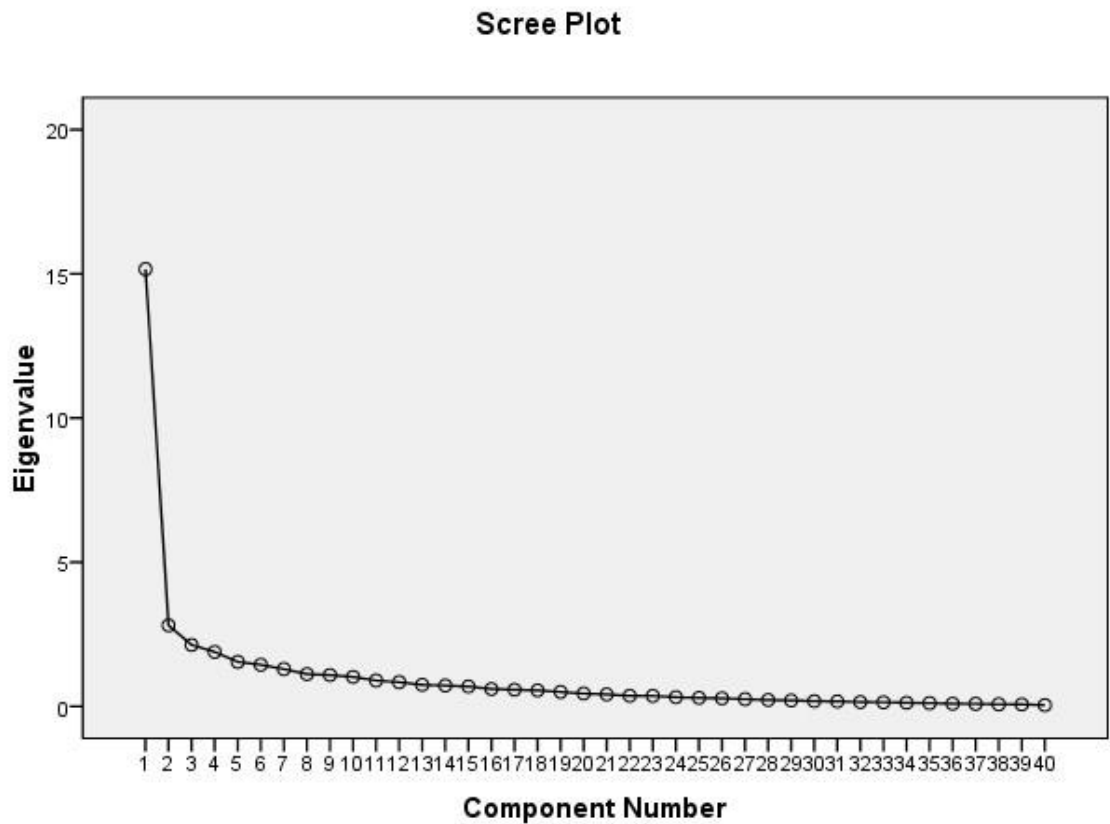
22	0.365	0.911	92.084					
23	0.362	0.904	92.988					
24	0.319	0.797	93.785					
25	0.294	0.736	94.521					

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
26	0.279	0.697	95.219						
27	0.25	0.626	95.845						
28	0.222	0.556	96.401						
29	0.203	0.509	96.909						
30	0.181	0.453	97.362						
31	0.172	0.429	97.792						
32	0.151	0.376	98.168						
33	0.143	0.357	98.525						
34	0.122	0.305	98.83						
35	0.112	0.279	99.109						
36	0.091	0.228	99.337						
37	0.087	0.217	99.554						
38	0.072	0.179	99.733						
39	0.065	0.163	99.896						
40	0.042	0.104	100						

Extraction Method: Principal Component Analysis.

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**Figure 5.11 Scree plot diagram**

Costello and Osborne (2005) further recommended that, a rotation is said to be suitable and has the best fit for the data provided the constructs loading for a component is greater than 0.30, with no construct crisscrossing components and finally no component should have a minimum of three constructs. In order to ensure that the criteria set by Costello and Osborne (2005) are duly observed, the construct loadings were raised to 0.5 for the study. Moreover, any constructs did not crisscross more than one component and a minimum of four constructs was recorded against one of the component. This revelation suggests that the rotation highly fits the constructs.

**Table 5.14 Rotated Component Matrix**

	Component			
	1	2	3	4
Taking risk		0.521		
Innovative		0.67		
research and development	0.542			
Utilize available opportunity	0.6			
Taking individual responsibility			0.535	
Stable in operation		0.605		
Calm				
Management respect for subordinates				
Fairness	0.613			
Tolerance	0.652			
Opportunities for professional growth	0.58			
Praise for good performance	0.675			
Action oriented		0.626		
Results oriented		0.526		
Enthusiasm for the job	0.598			
Highly organized	0.504			
Analytically minded	0.564			
Precision	0.555			
Accuracy				
Meticulous				
Collaboration				
Teamwork		0.504		
people oriented				0.672
Coordination				0.679
enabling working environment				
Mutual responsibility				0.724
Aggressive				0.747
An emphasis on quality		0.726		
Being distinctive		0.642		
Being competitive		0.664		
Working long hours				
Being reflective		0.504		
Having a good reputation			0.519	
Being socially responsible			0.65	
Having a clear guiding philosophy			0.713	
Hierarchical			0.552	
Compartmentalized			0.585	
Organized			0.691	
Systematic			0.724	

clear lines of responsibility and authority			0.716	
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Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. a.

Rotation converged in 19 iterations.

Each of the four components recorded a minimum of at least four factors and a minimum factor loading of .504 as shown in Table 5.15. In addition, thirty-two factors were extracted into the four components.

**Table 5.15 Component and Variable extraction**

<b>Component and Variables</b>	<b>Factor Loading</b>	<b>Variance Explained</b>
<b>Component 1: Workplace Orientation</b>	0.542	
Research and development		37.904
Utilize available opportunity	0.6	
Fairness	0.613	
Tolerance	0.652	
Opportunities for professional growth	0.58	
Praise for good performance	0.675	
Enthusiasm for the job	0.598	
Highly organized	0.504	
Analytically minded	0.555	
<b>Component 2: Business Orientation</b>		
Taking risk	0.521	7.024
Innovative	0.67	
Stable in operation	0.605	
Action oriented	0.626	
Results oriented	0.526	
Teamwork	0.504	
An emphasis on quality	0.664	
Being distinctive	0.642	
Being competitive	0.664	
Being reflective	0.504	
<b>Component 3: System orientation</b>		
Taking individual responsibility	0.535	5.327
Having a good reputation	0.519	
Being socially responsible	0.65	
Having a clear guiding philosophy	0.713	
Hierarchical	0.552	

Compartmentalized	0.585	
Organized	0.691	
Systematic	0.724	
Clear lines of responsibility and authority	0.716	
<b><i>Component 4: Group Orientation</i></b>		
People oriented	0.672	4.717
Coordination	0.679	
Mutual responsibility	0.724	
Aggressive	0.747	

### **5.5.1.1 Description of Extracted Component**

Oney-Yazici *et al.* (2007) opined that, subcultures or typologies make it simple to assess the culture of an organization. The explanations of the extracted components are discussed further under this section. The components are workplace orientation (component 1), business orientation (component 2), system orientation (component 3) and group orientation (component 4). Though four components were extracted through the factor analysis but the review of literature and further understanding acquired from business studies can categorize these components into internal environment (workplace orientation, system orientation and group orientation) and external environment (business orientation).

#### **5.5.1.1.1 Component 1: Workplace Orientation**

The first component is described by nine factors, these includes research and development (.542), utilize available opportunity (.60), fairness (.613), tolerance (.652), opportunities for professional growth (.58), praise for good performance (.675), enthusiasm for the job (.598), highly organized (.504) and analytically minded (.555). Moreover, it has a total variance of 37.904%. Khan (2012) posited that, one of the most influencing factors of organizational effectiveness is motivation. From first principle, organizations are made-up of individual contributors whose source of

motivation differs from one to the other. A common motivating factor for members of the organization is a conducive environment. Herzberg's theory vividly described the factors which contribute to workplace motivation examples include job advancement, recognition for sterling performance, well organized work environment. This culture orientation emphasize on ways of motivating members of the organization to give-off their best. It is kind of related to the clan culture developed by Cameron and Quinn (2006) and employee – oriented by Hofstede (2011). Due to the influence of organizations on members' behaviour, it could be realized that it is imperative to be flexible though the industry is known to be one of the aggressive sectors. This can further be extended to realizing the goal of the organization in entirety because the work environment should provide the atmosphere of benefiting from its stakeholders.

#### **5.5.1.1.2 Component 2: Business Orientation**

Taking risk (.521), innovative (.670), Stable in operation (.605), action oriented (.626), results oriented (.526), teamwork (.504), an emphasis on quality (.664), being distinctive (.642), being competitive (.664) and reflective are the retaining factors describing the Business Orientation component. Construction organizations are established specifically for projects which are run on a short term basis (Albayrak and Albayrak, 2014), as a result of that the competition among contracting organizations is very high. Unfortunately, unlike the manufacturing sector where commercials and adverts are made to attract customers the construction industry is otherwise. Therefore the opportunity to advertise the services of the construction industry is through the final product. As a matter of fact, the quality of work, innovative construction and distinctiveness of the projects serve the purpose of marketing.

The BO culture breeds efficiency among construction organization because of the reasons stated earlier. The qualities of the BO culture merge the market and adhocracy culture propounded by Cameron and Quinn (2006). Therefore, it focuses on innovation, aggressive competition and customer orientation. This culture concentrates on the strengthening of internal and external environment of the organization with the ultimate goals of improving productivity and having competitive advantage over others. Alinaitwe *et al.* (2009) and Hartley and Cheyne (2009) indicated that, the construction industry is an ever changing one because there are new and emerging technologies and techniques every now and then. As matter of fact, the construction organization is left with no choice than to adequately psyche and acclimatize with these innovations in construction. Interestingly, projects undertaken by construction organizations require a fairly distinct strategy.

#### **5.5.1.1.3 Component 3: System Orientation (SO)**

Component 3 also accounted for 5.327% of the variance explained. It is described by nine underlining factors which consist of taking individual responsibility (.535), having good reputation (.519), socially responsible (.65), having a clear guiding philosophy (.713), hierarchical (.552), compartmentalized (.585), organized (.691), systematic (.724), clear lines of responsibility and authority (.716).

The System Orientation operates by reason of the internal structures available to the organization in question. Hofstede (2011) classification of National Cultures revealed the Power Distance and Uncertainty Avoidance which in the context of an organization relates to bureaucracy and internal policies. Hofstede (1993) studied the role of culture dimensions on management practices, the West Africa region which Ghana is a

member recorded Power Distance index of 77 which is deemed to be very high and 54 for Uncertainty Avoidance which is also labelled as medium. Furthermore, Hofstede (2011) also dimensioned organizations and the closest culture is the Process Oriented. Organizations are formed with set down rules and guiding principles which makes the systems very important to the realization of the organizations' success.

The SO culture encourages respect for authority within the organization and most importantly the principles on which the organization was established. Recognizing internal structures of organization according to Cameron and Quinn (2006) is an avenue for strengthening organizational stability, efficiency and consistency in an organization. This culture can also relate to the hierarchy culture developed by Cameron and Quinn (2006). The SO culture is positioned in the bureaucratic theory of management propounded by Max Webber in the 1940s. Olum (2004) opined that, bureaucracy in organizations is activated by controlling systems instituted in an organization. In considering the features ascribed to a bureaucratic organization (Down, 1967), averagely individual construction companies would fail because majority of employees are casual due to inconsistent flow of projects as opposed to majority being full-time indicated by Down (1967). Furthermore, most of construction company owners in Ghana are actively involved in the day-to-day running of the company (Figure 5.3) and have small number of employees (Figure 5.5) which also fails when compared to the large size of employees proposed by Down (1967).

In organizations which produce uniform and consistent products should highly regard the SO culture trait identified by the study. The realization of this culture in the construction industry is trivia and a bit sceptical due to the nature of the construction industry. Construction industry is not the same as experienced in the manufacturing

sector, this makes it difficult to concur with this culture however SO culture can be appropriately used for the emerging Off-Site Construction industry in the construction industry such as the roofing sheet production companies. Olum (2004) also indicated that, technical skills are necessary and expedient when control is of utmost importance in the organization. Tacitly, the importance of the system orientation in the construction organization aims at ensuring law and order. According to Allaire and Firsirotu (1984) the actual difference between human and other creatures is order, for instance if order is not observed in the organization, organizations will underperform, fold-up, and even experience unwelcoming work ethics. Notwithstanding that, the SO culture of this study relies on the visions of the organization, policies and the strategic operations such as social responsibility.

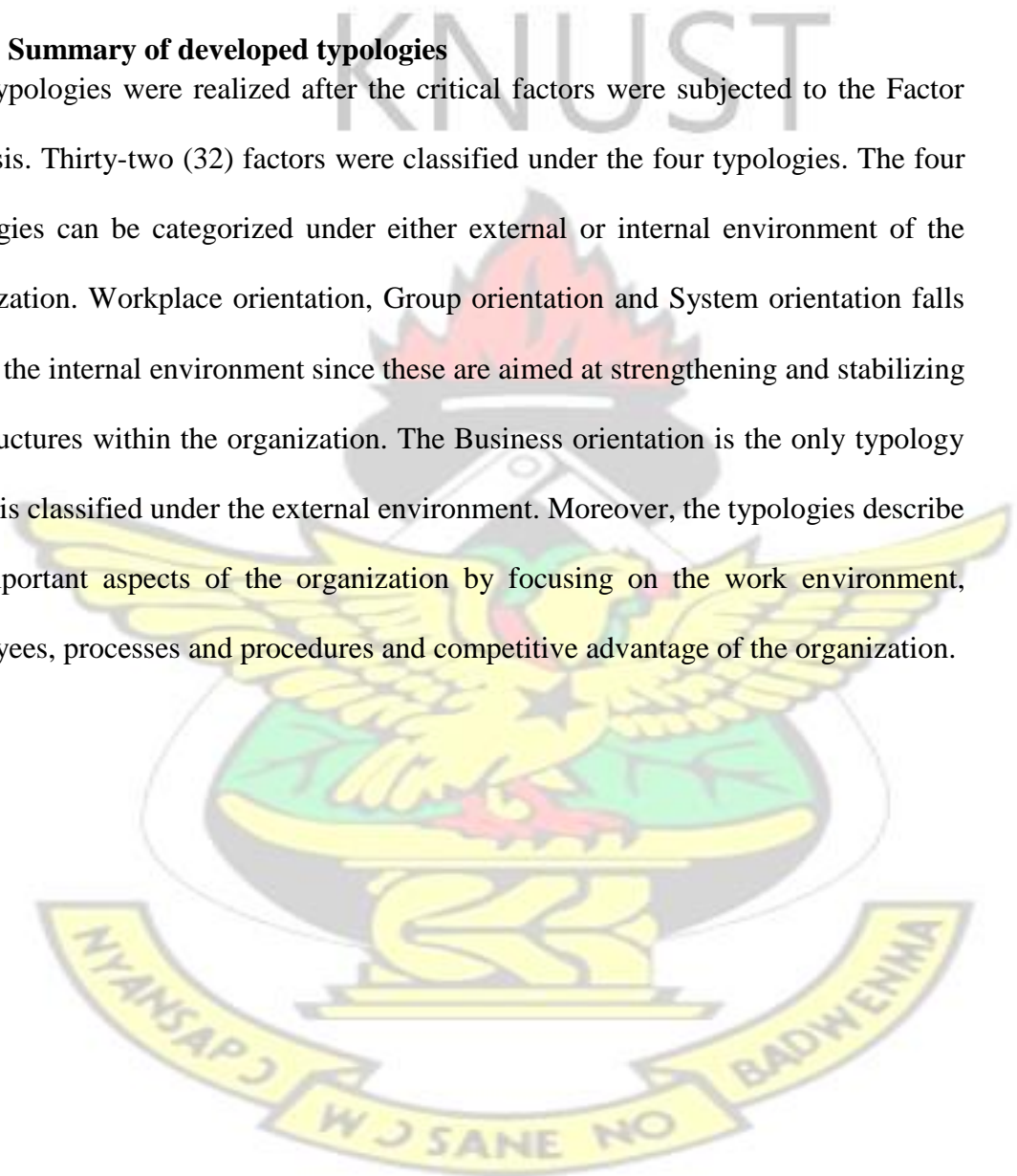
#### **5.5.1.1.4 Component 4: Group Orientation**

The fourth component is made up of four factors which includes people oriented (.672), coordination (.679), mutual responsibility (.724) and aggressive (.747). Organizations in every industry are set in motion through the immense contribution of its workforce. McAuley *et al.* (2007), description of organization emphasized on the role of group rather than individualism. Explicitly and implicitly, organizations mostly sacrifice the individual will for the common good of the group. Group orientation makes parsimonious use of information because it is the blood that energizes and revives the activities of the group. Though the group orientation recorded only four loadings however had higher factor loadings. With reference to Ankrah (2007), team orientation which is similar to the group orientation possess a better bearing on project performance. Team work on project according to Baiden *et al.* (2006) enhances free flow of information among individual members and trust. Therefore, the Group

Orientation in the organization as identified by the study will require barrier free communication to work effectively and efficiently. Furthermore, it is classified in the category of clan culture by Cameron and Quinn (2006), teamwork orientation by Ankrah (2007) and O'Reilly *et al.* (1991)

#### **5.5.1.2 Summary of developed typologies**

Four typologies were realized after the critical factors were subjected to the Factor Analysis. Thirty-two (32) factors were classified under the four typologies. The four typologies can be categorized under either external or internal environment of the organization. Workplace orientation, Group orientation and System orientation falls within the internal environment since these are aimed at strengthening and stabilizing the structures within the organization. The Business orientation is the only typology which is classified under the external environment. Moreover, the typologies describe the important aspects of the organization by focusing on the work environment, employees, processes and procedures and competitive advantage of the organization.



## **CHAPTER SIX**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION**

#### **6.1 Introduction**

The study explored the cultural typologies among contracting organizations in the Ghanaian construction industry. The study comprised of six chapters where each chapter depends on the other. Chapter one introduces the study by raising the problem statement, and research questions for the study. An extant and extensive literature review on cultural concepts and culture models was captured in Chapter two and three. Chapter four documents the philosophical stance, methodological approach and data collection instruments adapted for the study. Chapter five was committed to data analysis and discussion of results. This chapter summarizes the findings of the study based on the set objectives, concludes the study and makes recommendations for construction organizations and for further studies.

#### **6.2 Summary of findings**

The study was conducted on the premise of understanding and developing organizational culture typologies in the Ghanaian construction industry. In order to achieve the overall aim of the study, four objectives were formulated these include:

##### **6.2.1 Objective 1: To identify the position of construction organizational culture studies in cultural theories from past research.**

This objective was achieved using a literature survey. Upon review of extant literature, ideational and the social-cultural theories were the recognized theories.

Furthermore, eight (8) subcultures also exist with each theory comprising of four (4) subcultures.

Studies have indicated that, culture which is described as a soft factor in an organization has variety

of definitions. The study revealed that, the variety in defining culture is attributed to the theory adapted for those studies. Nine culture studies conducted in the construction industry was examined using the eight (8) subcultures as the assessment tool, cognitive culture was the only theory that was considered in all the nine studies. This culture originates from the formal training construction professionals gain through vocational/ tertiary education and professional institutions. Eight out of the nine studies adapted both the functionalist and structural functionalist. Mutual equivalence which defines culture based on standard processes was also adapted for seven studies.

Culture research in construction is positioned in the cognitive, mutual equivalence, functionalist and structural functionalist concept of cultures. The implication of the findings suggest that, though many culture theories avail in literature but no culture study especially in the construction industry is restricted to a specific theory but blends the different theories. Unequivocally, technical based knowledge gained through formal training and experiences on the job substantially contribute to the development of culture for construction industry.

#### **6.2.2 Objective 2: To determine the culture of the Ghanaian Construction Industry with respect to the Competing Value Framework.**

The Competing Value Framework identified six dimensions that perfectly describe the effectiveness of an organization. Using the mean score ranking, organizational glue was the highly ranked dimension followed by criteria of success, management of success, management of employees, dominant characteristics, organizational leadership and strategic emphases. It is implied that most construction organizations emphasize on teamwork and the craving to succeed in business but does not concentrate on strategic issues.

Small, medium and large organizations were assessed based on the four typologies and the study revealed that, the dominant culture for the small, medium and large organizations are hierarchy, adhocracy and adhocracy respectively. Notwithstanding that, the medium and large organizations were separated by the third dominating culture. implying that, culture differs in different organizational sizes.

The culture typologies identified with respect to the CVF in the Ghanaian Construction Industry in order for predominance includes hierarchy, market, clan and adhocracy. Moreover, the findings differ from earlier studies.

### **6.2.3 Objective 3: To identify the critical factors for constructing organizational culture typologies**

Forty-eight factors were identified from existing typologies, organizational theories, business management and construction management studies through critical review of extant literature. The factors were captured from different concepts which contribute to the wellbeing of an organization.

Further analysis was done using the mean score ranking with a test mean value of 3.50. All factors with mean score of 3.50 were significant to the study and those below were deemed insignificant. One out of the forty-eight factors was insignificant to the study and the Relative Important Index analysis with a test RII of 70 also confirmed the results of the mean score ranking. Predictable which was insignificant was not considered for further rigorous analysis. Furthermore, the study identified teamwork, emphasis on quality, result oriented and having good reputation as the most significant

factors for the study. The results further inform that, factors that tend to positively contribute to the organizations should be used for defining the culture of an organization.

#### **6.2.4 Objective 4: To develop organizational culture typologies for the Ghanaian Construction Industry**

The stated objective was achieved by using factor analysis to further reduce the forty-seven factors into simpler forms. Forty out of the forty-seven factors identified in section 6.2.3 were exposed to factor analysis because seven factors had communality values less than .40. Four components were finally extracted using the Principal Component Analysis and these components were explained by thirty-two factors. Four typologies were extracted about the Ghanaian Construction industry. These include Workplace Orientation, Business Orientation, System Orientation and Group Orientation. These four typologies are connected to the internal (Workplace orientation, System orientation and Group orientation) and external environment (Business orientation) of the construction organizations.

#### **6.3 Limitations of the study**

According to Ankrah (2007), the limitations encountered should inform the researcher or reader in making inference from a specific study. It is based on this fact which the limitations of this study are documented. Due diligent was considered in achieving the stated objectives of the study. However, the major limitations are the scope and the methodological approach adopted for the study. As a matter of fact, the limitations encountered in the study have opened the opportunity for further research. These limitations include:

1. The effects of the sample size determination might affect the research strategy, data collection and the analytical tools adapted for the study.
2. The factors considered in the study might not guarantee an exhaustive or comprehensive list because concepts have varying degrees of the factors which can measure it adequately. Moreover, factors used have in-built challenges. Therefore, the factors used for the study were sourced from other concepts and have empirically been adduced to be suitable for the study.
3. A crucial difficulty is the due diligence observed by the respondents, candour and the state of mind of the respondents during the answering of the structured questions.
4. Confirmatory factor analysis was not applied to affirm the typologies developed from the study.

#### **6.4 Conclusion**

Every individual is well concerned about their personality. The metaphor used for the organization is culture which can be simplified as the image of the organization. The problems raised by the study led to the development of the overall aim of the study which was to explore the organizational culture typologies in the Ghanaian construction industry. An existing culture model was assessed in the context of construction contractors in Ghana and the dominant cultures were identified in fulfilling the overall aim. Explicitly, organizational culture typologies is developed to understand the critical areas to consider, for would be construction organization and even re-structuring of existing organizations to improve its productivity and efficiency.

Prior, to the finalization of the existing culture and the identification of the critical factors for the development of the culture typology developed, a literature survey was thoroughly conducted. The literature survey helped in identifying the theories of culture available and the culture models for organization. The methodology employed in the study strengthens the idea of generalizing the findings of the study. Robust and rigorous analysis was also conducted to test the reliability and suitability of the results. The stated aim of the study has been achieved through the formulated objectives.

The uniqueness of the study is not re-inventing the wheel by strictly using the organizational culture model developed for the business environment but developing a distinct typologies for construction organizations. Moreover the setting of the study is grounded based in a setting, where the idea of construction is progressively realized as an actual business activity not as the showing of intellectual and technical prowess.

### **6.5 Contribution to Knowledge**

The study developed culture typologies to suit the construction industry, though it was sourced from all the existing culture models in literature however; the typologies are strictly related to the management of construction organizations. Formation of construction organizations, structure and control system and the management should focus on the identified typologies in realizing the organizational goals. In addition, all the identified cultures should be considered simultaneously if the organization aims at improving its productivity.

The study creates the atmosphere for construction organization to assess their dominant cultures which will inform management decisions to re-orient their strategy to achieve better results (in terms of improving performance, partnership, innovation) in the existence of the organization.

The study also form the basis of organizational culture studies in the Ghanaian construction industry since most construction related studies focused on the projects environment rather than the organizations involved.

## **6.6 Recommendations**

In view of the associated limitations, the following recommendations are provided in the realization of culture in construction organizations to enhance the performance of the organizations in the industry and for the purpose of further research.

### **6.6.1 Recommendation for construction organizations**

The study developed culture typologies and tested the position of an existing culture typology for the construction industry. Based on the findings of the study, the following recommendations are;

1. The predominant culture trait of hierarchy in the Ghanaian construction industry though is good for organizational practices but construction organizations are encouraged to restructure their mode of operation to suit the aggressive competition confronted in the industry. Implying that, due diligence should be considered in developing a stronger market culture and adhocracy cultures which is geared towards the external environment.

2. The typology developed for the construction industry requires a deliberate attempt by management of firms to strengthen each of the traits identified by the study thus workplace culture, business culture, system and group culture. The main purpose of rethinking and observing these typologies is to improve organizational efficiency. Therefore, managements are to formulate policies which encapsulate the ways and processes of inculcating these typologies in the general accepted procedures of the organization.
3. Moreover, the researcher would entreat managements to employ the developed typology to assess the current dominating cultures in their respective organizations to assess the effectiveness and efficiency of the organization. Based on the outlook of their organization, managements could facilitate a culture change in the organization.
4. Recognized construction association like ABCECG should provide professional training for its members to understand and act towards the need for developing cultures that encourages human resource development as seen the workplace culture. For instance providing the opportunity for professional growth among its members and encouraging them to exercise analytical views on the organizational activities.

#### **6.6.2 Recommendation for further studies**

The following recommendations are made to future researchers in organizational culture studies in the construction industry;

1. The study focused on cultures which were extensively directed to the organization not the construction project. It is recommended that future

researchers could consider applying the developed typology to a construction project.

2. The study was conducted on indigenous contractors; the researcher recommends that, the instrument should be tested on foreign construction organizations. Likewise, foreign and indigenous contractors working or have worked together on a project to know the similarity between their culture and how culture facilitates partnership.
3. It is recommended to future researchers to consider applying the confirmatory factor analysis to affirm and validate the typologies developed, since it was not use in this study.
4. It is recommended that, future research will establish the link between the developed typologies and business management concepts like partnership, innovation and productivity improvement.

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# KNUST

## **APPENDIX 1 QUESTIONNAIRE SURVEY**

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY  
COLLEGE OF ART AND BUILT ENVIRONMENT DEPARTMENT OF  
BUILDING TECHNOLOGY**

Dear Sir/Madam,

### **QUESTIONNAIRE SURVEY: ORGANIZATIONAL CULTURE IN THE GHANAIAN CONSTRUCTION INDUSTRY**

I am currently undertaking a study aim at exploring organization culture in the Ghanaian Construction Industry using existing and proposed constructs.

In addressing the stated aim, I am conducting a questionnaire survey to solicit information from building construction organizations (contractors) in Ghana. This study will help profile cultures that exist in the Ghanaian Construction Industry and offer suggestions on its effect on partnership in the Ghanaian Construction Industry.

This study is solely for academic purposes and your responses will be treated as **STRICTLY CONFIDENTIAL**. Participating organizations will be provided with the findings of the study upon request.

I would like to thank you for accepting to assist and cooperate towards this study.

Yours Sincerely,

Bernard Tuffour Atuahene  
**MPhil Student**  
Mobile: 024 869 0825/ 050 136 8471  
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# KNUST

**SECTION A: DEMOGRAPHIC INFORMATION (Please check the applicable boxes) Each question requires only one response**

**Name of Organization:** .....

**Position of respondent:** .....

1. How long have you been working with your current company?

Less than 5years     5 – 10years     11 – 15 years     More than 15years

2. Please indicate your organizational type?

Sole proprietorship     Partnership     Limited Liability company     Joint venture

3. Are the owner(s) of this firm also workers in the firm?

Yes     No

4. Please indicate the range of employees in your firm?

Less than 50employees     50 – 150employees     more than 150employees

5. In terms of numbers which gender dominate in your organization?  Males   

Females

6. Which category of profession is (are) the owners of the company?

Construction   Politician   Both   If others please specify

.....

7. Which classification does your firm operates?

DIKI   D2K2   D3K3   D4K4

**SECTION B: ORGANIZATIONAL CULTURE ASSESSMENT**

**INSTRUMENT (OCAI).**

The alternatives are practices of firms. Kindly rank the following variables according to how you experience it in your organization, Using:

**1 = Highly not similar to our firm      2 = Not similar to our firm**  
**3 = Neutral                                  4 = Similar to our firm      5 = Highly similar to our firm**

SN	VARIABLES	1	2	3	4	5
<b>1</b>	<b>Dominant Characteristics</b>					
A	This firm is a very personal place. It is like a family. People seem to share a lot of themselves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	This firm is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	This firm is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	This firm is very controlled and structured place. Formal procedures generally govern what people do	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2</b>	<b>Organizational Leadership</b>					
A	The leadership in this firm is generally considered to exemplify mentoring, facilitating, or nurturing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	The leadership in this firm is generally considered to exemplify entrepreneurship, innovation or risk taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	The leadership in this firm is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	The leadership in this firm is generally considered to exemplify coordinating, organizing, or smooth-running efficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>3</b>	<b>Management of Employees</b>					
A	The management style in this firm is characterized by teamwork, consensus, and participation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	The management style in this firm is characterized by individual risk taking, innovation, freedom and uniqueness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	The management style in this firm is characterized by hardworking competitiveness, high demands and achievement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

D	The management style in this firm is characterized by security of employment, conformity, predictability, and stability in relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4</b>	<b>Organizational Glue</b>					
A	The glue that holds this firm together is the loyalty and mutual trust. Commitment to this organization runs high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	The glue that holds this firm together is commitment to innovation and development. There is an emphasis on being on the cutting edge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	The glue that holds this firm together is the emphasis on achievement and goal development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	The glue that holds this firm together is formal rules and policies. Maintaining a smoothrunning organization is important	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>SN</b>	<b>VARIABLES</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>5</b>	<b>Strategic Emphases</b>					
A	This firm emphasizes human development. High trust, openness, and participation persist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	This firm emphasizes acquiring resources and creating new challenges. Trying new things and prospecting for opportunities are valued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	This firm emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	This firm emphasizes permanence and stability. Efficiency, control and smooth operations are important.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6</b>	<b>Criteria of Success</b>					
A	This firm defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B	This firm defines success on the basis of having the most unique or newest products. It is a product leader and innovator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C	This firm defines success on the basis of winning in the marketplace and outpacing the competition. Competition market leadership is key	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D	This firm defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are crucial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### SECTION D: CRITICAL FACTORS FOR ORGANIZATIONAL CULTURE MODEL

On a scale of 1 – 5, kindly rank how the under listed factors relates to the practices of your organization, using;

**1 = strongly disagree    2 = Disagree    3 = Neutral    4 = Agree    5 = strongly agree**

SN	CRITICAL FACTORS	1	2	3	4	5
<b>Innovation</b>						
1	Taking risk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Innovative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3	rule oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	research and development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Utilize available opportunity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Taking individual responsibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Stability</b>						
7	Stable in operation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Job security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Predictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Calm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	Low conflict	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Emphasis on Rewards/Respect for people</b>						
12	Management respect for subordinates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Fairness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Tolerance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Opportunities for professional growth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	High pay for good performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Praise for good performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Outcome orientation/Performance</b>						
18	Action oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Results oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	High expectation for performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Enthusiasm for the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Highly organized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Attention</b>						
23	Analytically minded	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Precision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Accuracy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Meticulous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Team orientation/Supportiveness</b>						
27	Collaboration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	Teamwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	people oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	Sharing information freely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	Coordination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	enabling working environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	Mutual responsibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Aggressive/Competitiveness</b>						
34	Aggressive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	Achievement oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	An emphasis on quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	Being distinctive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	Being competitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	Working long hours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Social responsibility						
40	Being reflective	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	Having a good reputation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	Being socially responsible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	Having a clear guiding philosophy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bureaucratic						
44	Hierarchical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	Compartmentalized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
46	Organized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
47	Systematic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
48	clear lines of responsibility and authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Thank you for your time*

## APPENDIX 2 RESULTS FOR ORGANIZATIONAL CULTURE ASSESSMENT INSTRUMENT

One-Sample Statistics				
	N	Mean	Std. Deviation	Ranking
Dominant Characteristics				
This firm is a very personal place. It is like a family. People seem to share a lot of themselves	178	3.382	0.9685	24
This firm is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks	178	3.4607	1.0950	21
This firm is very results-oriented. A major concern is with getting the job done. People are very competitive and achievement-oriented	178	4.1798	0.7892	1
This firm is very controlled and structured place. Formal procedures generally govern what people do	178	3.9438	0.9431	5
Organizational Leadership				
The leadership in this firm is generally considered to exemplify mentoring, facilitating, or nurturing	178	3.6742	0.9946	14
The leadership in this firm is generally considered to exemplify entrepreneurship, innovation or risk taking	178	3.6966	1.0350	13
The leadership in this firm is generally considered to exemplify a nononsense, aggressive, results-oriented focus	178	3.5506	1.1251	19
The leadership in this firm is generally considered to exemplify coordinating, organizing, or smooth-running efficiency	178	3.8876	0.9908	7

<b>Management of Employees</b>				
The management style in this firm is characterized by teamwork, consensus, and participation	178	3.9775	0.93854	3
The management style in this firm is characterized by individual risk taking, innovation, freedom and uniqueness	178	3.4382	1.09395	23
The management style in this firm is characterized by hardworking competitiveness, high demands and achievement	178	3.9213	0.91719	6
The management style in this firm is characterized by security of employment, conformity, predictability, and stability in relationships	178	3.7303	0.9115	12
<b>Organizational Glue</b>				
The glue that holds this firm together is the loyalty and mutual trust. Commitment to this organization runs high	178	3.7865	0.9079	11
The glue that holds this firm together is commitment to innovation and development. There is an emphasis on being on the cutting edge	178	3.6742	0.9946	15
The glue that holds this firm together is the emphasis on achievement and goal development	178	3.7978	1.0755	10
The glue that holds this firm together is formal rules and policies. Maintaining a smooth-running organization is important	178	3.8652	0.8260	8
<b>Strategic Emphases</b>				
This firm emphasizes human development. High trust, openness, and participation persist	178	3.4494	1.0197	22
This firm emphasizes acquiring resources and creating new challenges. Trying new things and prospecting for opportunities are valued	178	3.5169	1.0318	20
This firm emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant	178	3.5506	1.1150	18
This firm emphasizes permanence and stability. Efficiency, control and smooth operations are important	178	3.9551	0.9009	4
<b>Criteria of Success</b>				
This firm defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people	178	3.809	1.0293	9
This firm defines success on the basis of having the most unique or newest products. It is a product leader and innovator	178	3.5955	0.8729	17
This firm defines success on the basis of winning in the marketplace and outpacing the competition. Competition market leadership is key	178	3.6404	0.9886	16
This firm defines success on the basis of efficiency. Dependable delivery, smooth scheduling, and low-cost production are crucial	178	4.0449	0.8882	2

### **APPENDIX 3 RESULTS FOR SIX DIMENSION SHOWING THE OCAI CULTURE TYPOLOGIES**

<b>One-Sample Statistics</b>			
	<b>Mean</b>	<b>Std. Deviation</b>	<b>Ranking</b>
<b>Dominant Characteristics</b>			

CLAN	3.382	0.9685	24
ADHOCRACY	3.4607	1.0950	21
MARKET	4.1798	0.7892	1
HIERARCHY	3.9438	0.9431	5
<b>Organizational Leadership</b>			
CLAN	3.6742	0.9946	14
ADHOCRACY	3.6966	1.0350	13
MARKET	3.5506	1.1251	19
HIERARCHY	3.8876	0.9908	7
<b>Management of Employees</b>			
CLAN	3.9775	0.93854	3
ADHOCRACY	3.4382	1.09395	23
MARKET	3.9213	0.91719	6
HIERARCHY	3.7303	0.9115	12
<b>Organizational Glue</b>			
CLAN	3.7865	0.9079	11
ADHOCRACY	3.6742	0.9946	15
MARKET	3.7978	1.0755	10
HIERARCHY	3.8652	0.8260	8
<b>Strategic Emphases</b>			
CLAN	3.4494	1.0197	22
ADHOCRACY	3.5169	1.0318	20
MARKET	3.5506	1.1150	18
HIERARCHY	3.9551	0.9009	4
<b>Criteria of Success</b>			
CLAN	3.809	1.0293	9
ADHOCRACY	3.5955	0.8729	17
MARKET	3.6404	0.9886	16
HIERARCHY	4.0449	0.8882	2

**APPENDIX 4 RESULTS FOR COMMUNALITIES FOR  
FORTYSEVEN CONSTRUCTS**

**Communalities**

	<b>Initial</b>	<b>Extraction</b>
Taking risk	1	0.479
Innovative	1	0.616
research and development	1	0.453
Utilize available opportunity	1	0.459
Taking individual responsibility	1	0.415
Stable in operation	1	0.486
Calm	1	0.526
Management respect for subordinates	1	0.44
Fairness	1	0.44
Tolerance	1	0.577
Opportunities for professional growth	1	0.555
Praise for good performance	1	0.587
Action oriented	1	0.562
Results oriented	1	0.592
Enthusiasm for the job	1	0.543
Highly organized	1	0.47
Analytically minded	1	0.583
Precision	1	0.531
Accuracy	1	0.603
Meticulous	1	0.425
Collaboration	1	0.549
Teamwork	1	0.528
people oriented	1	0.56
Coordination	1	0.553
enabling working environment	1	0.528
Individual responsibility	1	0.458
Aggressive	1	0.585
An emphasis on quality	1	0.622
Being distinctive	1	0.578
Being competitive	1	0.543
Working long hours	1	0.424
Being reflective	1	0.52
Having a good reputation	1	0.505
Being socially responsible	1	0.542
Having a clear guiding philosophy	1	0.656
Hierarchical	1	0.58
Compartmentalized	1	0.506

Organized	1	0.667
Systematic	1	0.757
clear lines of responsibility and authority	1	0.64
rule oriented	1	0.362
Job security	1	0.253
Low conflict	1	0.294
High pay for good performance	1	0.408
High expectation for performance	1	0.334
Sharing information freely	1	0.319
Achievement oriented	1	0.368

Extraction Method: Principal Component Analysis.

## APPENDIX 5 RESULTS FOR COMMUNALITIES FOR FORTYONE CONSTRUCTS

### Communalities

	Initial	Extraction
Taking risk	1	0.495
Innovative	1	0.71
research and development	1	0.502
Utilize available opportunity	1	0.406
Taking individual responsibility	1	0.43
Stable in operation	1	0.471
Calm	1	0.516
Management respect for subordinates	1	0.438
Fairness	1	0.466
Tolerance	1	0.567
Opportunities for professional growth	1	0.551
Praise for good performance	1	0.595
Action oriented	1	0.542
Results oriented	1	0.581
Enthusiasm for the job	1	0.525
Highly organized	1	0.485
Analytically minded	1	0.584
Precision	1	0.532
Accuracy	1	0.595
Meticulous	1	0.426
Collaboration	1	0.534
Teamwork	1	0.521
people oriented	1	0.628
Coordination	1	0.561
enabling working environment	1	0.537
Individual responsibility	1	0.584
Aggressive	1	0.631
An emphasis on quality	1	0.651
Being distinctive	1	0.547
Being competitive	1	0.576
Working long hours	1	0.412
Being reflective	1	0.535

Having a good reputation	1	0.521
Being socially responsible	1	0.545
Having a clear guiding philosophy	1	0.658
Hierarchical	1	0.496
Compartmentalized	1	0.525
Organized	1	0.67
Systematic	1	0.751
clear lines of responsibility and authority	1	0.646
High pay for good performance	1	0.399

Extraction Method: Principal Component Analysis.

## APPENDIX 6 COMPONENT MATRIX FOR THE FORTY CONSTRUCTS

**Component Matrix<sup>a</sup>**

	Component			
	1	2	3	4
Taking risk	0.647			
Innovative	0.605			
research and development	0.558			
Utilize available opportunity				
Taking individual responsibility				
Stable in operation	0.591			
Calm	0.717			
Management respect for subordinates	0.632			
Fairness	0.533			
Tolerance	0.644			
Opportunities for professional growth	0.664			
Praise for good performance	0.615			
Action oriented	0.654			
Results oriented	0.716			
Enthusiasm for the job	0.63			
Highly organized	0.622			
Analytically minded	0.751			
Precision	0.694			
Accuracy	0.737			
Meticulous	0.616			
Collaboration	0.688			
Teamwork	0.679			
people oriented	0.679			
Coordination	0.581			
enabling working environment	0.689			
Individual responsibility	0.535			-0.536
Aggressive	0.576			-0.52

An emphasis on quality	0.655			
Being distinctive	0.632			
Being competitive	0.606			
Working long hours	0.518			
Being reflective	0.572			
Having a good reputation	0.581			
Being socially responsible		0.676		
Having a clear guiding philosophy		0.653		
Hierarchical	0.518			
Compartmentalized	0.588			
Organized	0.688			
Systematic	0.66			
clear lines of responsibility and authority	0.624			

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

