Universitat Internacional de Catalunya
Facultat de Ciències Econòmiques i Socials

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Assessing the Impact of Organisational Capacity, Organizational Structure and Leadership on Project Management Success for Project Oriented Organisations in Developing Countries – A Study of Ghana.

Armstrong Amoah

uLc
barcelona

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By

Armstrong Amoah

Supervised by

Frederic Marimon Viadiu, PhD

Jasmina Berbegal Mirabent, PhD

**Faculty of Economics and Social Sciences
Universitat Internacional de Catalunya (UIC) – Barcelona, Spain**

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DECLARATION

I, Armstrong Amoah, do hereby declare that this thesis, except where due acknowledgement has been made, is my original work and has not been submitted previously, in whole or in part, to qualify for any other academic award in any university.

Signed by: _____

Armstrong Amoah
November, 2021.

ACKNOWLEDGEMENTS

DEDICATION

I dedicate this work to all those who helped me in one way or the other to complete my program.

ABSTRACT

Most developmental projects in developing countries have been found to be of necessity to human life, whiles their effective management by project oriented organizations have also been recognised as a crucial force for economic growth and poverty reduction for these countries. However, studies show that the management of projects in most developing countries tend to experience high levels of failure. Most developmental projects when started are not completed as projected in many developing countries. A review of the extant relevant literature on project management provided organizational capacity, organizational structure and leadership as some of the major factors that significantly impact on PMS, but these factors have not studied in the context of DCs.

This thesis therefore intends to fill this gap by investigating how the major factors commonly signalled in the project management literature (and their combination) actually affect project management success in developing countries; with the empirical application considering the case of Ghana. The thesis also investigates competencies/skills and best practice principles for an effective project management in developing countries.

Using three dimensions (namely, organizational capacity, organizational structure and leadership) with a total of 16 items, a survey was prepared and filled out by 215 certified project management practitioners. Data obtained were validated using exploratory factor analyses. New dimensions were obtained and using structural equation modelling, this thesis analysed how the different latent factors predict project management success in developing countries. To complement the findings already obtained, a qualitative comparative analysis was also carried out to help discover the configurational effects of the antecedent conditions on the outcome. Qualitative information obtained from the survey was also refined to obtain meaningful interpretations.

Findings from the analysis show that leadership is the most significant factor affecting project management success in developing countries. The capacity and the structure of project oriented organizations (in terms of span of control) were also found to be significant predictors of project management success. Different

combination of the antecedent conditions were also found to impact on project management success, although in all configurations, the presence of leadership was paramount.

The findings obtained implied that citizens of developing countries need to vote competent political leaders who are system thinkers, negotiators and have a general business perspective, to lay the foundation for achieving project management success in their countries. Elected political leaders of various developing countries need to provide the kind of leadership that will propel project management success. To guarantee successful management of projects in developing countries, project oriented organizations need to employ only qualified project managers to lead their projects. Likewise, they need to further polish the leadership skills of their project managers by offering them periodic training and refresher courses and track their performance using information systems for enforce corrective actions.

The thesis concludes recommending a set of competencies/skills and best practice principles for effective project management in developing countries.

Keywords: Project management, project management success, organizational capacity, organizational structure, leadership, project oriented organizations, structural equation modelling, qualitative comparative analyses.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Project Management	PM
Project Management Success	PMS
Organizational Capacity	OC
Organizational Structure	OS
Leadership	LEAD
Project Oriented Organizations	POO
Structural Equation Modelling	SEM
Qualitative Comparative Analyses	QCA
Developing Countries	DCs
Developing Country	DC
Project Management Institute	PMI
Australasian College For Emergency Medicine	ACEM
United Nations Statistics Division	UNSD
Gross Domestic Product	GDP
Per Capita, Its Gross National Income	GNI
Human Development Index	HDI
Millennium Development Goals	MDGs
Sustainable Development Goal	SDG
African Development Bank	AfDB
Research And Development	R&D
International Monetary Fund	IMF
United Nations Department Of Economic And Social Affairs	UN/DESA
Presidential Special Initiatives	PSI
Ghana Investment Promotion Centre	GIPC
Ghana Poverty Reduction Strategy Papers	GPRS
National Development Planning Commission	NDPC
Project Management Body Of Knowledge	PMBOK
International Project Management Association	IPMA
Project Management Processes	PMP
Association Of Project Management	APM
Leadership Gap Indicator	LGI

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This thesis is quantitative in nature. It investigates the drivers of Project Management Success (PMS) in Developing Countries (DCs). Specifically, the thesis focuses on three main factors that, according to literature, impact on PMS in DCs, namely: Organizational Capacity, Organizational Structure and Leadership. Ghana will be used as the country under study. Determinants of PMS will be understood in terms of Time, Cost, Quality, Human Resource, Communication, Procurement and Customer's Satisfaction.

This introductory chapter provides an overview of the thesis. First, it describes the background of the research, paying special emphasis on how Project Management (PM) has developed as a discipline in both Developed and DCs and provides fact file on DCs. Specifically, it discusses that management of most projects in DCs are unsuccessful due to politics and leadership. Next, the relevance of choosing Ghana for the study is justified. Later, the conceptual model which portrays how projects can be managed successfully in DCs is presented. The chapter ends with the definition of the main conceptual and operational terms that will be used, a highlight on the methodology and an outline for the rest of the chapters.

1.2 Background of the Study

In the 1930s, the idea of PM started in the chemical industry but later became popular and well defined in the 1950s (Williams, 2002). From then, PM has become a renowned separate management concept that is used not only by businesses to achieve their

objectives, but also by governments of various DCs to boost their developmental agenda of DCs (Ofori, 2013). It is an undeniable fact that PM as a discipline has been growing steadily in DCs such as Ghana. A successfully managed project has been proven to be a significant predictor of organizational development, product development and a nations' development (Amponsah, 2010). Most of the policies introduced by various governments, and by extension, the government of Ghana are usually converted to programs and projects. Therefore, these projects are recognised as the channel through which the policies of governments can be implemented. The impact of government interventions are thus felt by successfully managing, implementing and completing these projects (Goodman & Love, 1980). The need for an efficient PM in DCs has become more relevant in dealing with the enormous task of managing the level of poverty in those countries.

Success in the management of a project implies that the requirements of stakeholder of the project have been met. Although these requirements may differ among the stakeholders (Sanvido et al., 1990). The study of PMS is often considered as one of the important ways of improving the effectiveness of project delivery to be able to meet project stakeholder requirements (Chan et al., 2004). Currently, most PM practices of many project oriented organizations in DCs do not always leads to project success. Project management success in most cases depends on the methods used to manage and control the project. The major challenge with PM practices in DCs include planning, project implementation, cost and time overruns and quality non-achievement (Forcada et al., 2008). As a result, a critical assessment and evaluation of the perceptions of stakeholders on the effective ways of managing projects at the operational stage deserves further attention in order to provide guidelines for a successful PM (Osei-Kyei & Chan, 2017).

Abbasi and Al-Mharmah (2000) mentioned that communication gaps among professionals is the origin of the challenges faced in the PM practice. Iman and Siew (2008) mentioned that even if the requirement for a project such as time and budget are met, but fail to meet the expectation of clients, a project is said to have failed. These authors also went a step further and identified the absence of customer participation as a major cause of project failure. Project Management Institute (PMI) (2008) proposed an open and effective communication system as a tool in obtaining good team performance among project team stakeholders.

In the words of Abbasi and Al-Mharmah (2000:1) "*in most DCs, the implementation of PM tools and techniques is still in its early phases of development*". In June 14, 2017 the president of the Republic of Ghana stated in a meeting with business leaders and top German politicians that "*Across our country, as a result of all these changes in governments, we have a whole lot of uncompleted infrastructural developments – whether it is roads or buildings – so we want first of all to put them altogether to see what it would cost in terms of completing them ...so that going forward infrastructural development that is begun is taken to its conclusion*". Figure 1 depicts one of the abandoned projects that was being addressed by the president at the meeting.

Figure 1: Abandoned train project in Ghana.
Source: President Nana Akufo-Addo (2017) on "revamping abandoned projects in Ghana".

The management of projects in DCs is a comparatively new practice trying to achieve stated project goal in a stipulated time and cost limits, through efficient utilization of resources and an integrated planning and control system (Abbasi & Al-Mharmah, 2000). In the words of Schlichter (1999), PM has helped some DCs to effectively and efficiently produce and deliver their products and services, have more accuracy in budgeting and scheduling and improved productivity. The development and the adoption of efficient PM practices needs to continue to increase in DCs, especially in this era where resources such as capital are scarce.

1.2.1 Developing Countries (DCs)

According to the Australasian College for Emergency Medicine (ACEM), there are no worldwide, agreed-upon standard for what makes a country 'developing' and which countries fit into this classification. Most of the classifications used by United Nations organizations are primarily intended for statistical purposes (United Nations Statistics Division – Standard Country and Area Codes Classifications, 2010). However, there are general reference points, such as a country's gross domestic product (GDP) per capita, its gross national income (GNI), the state of development of its industrial base compared to that of other countries and its Human Development Index (HDI). A DC is a country with a less developed industrial base and a low HDI relative to other countries (O'Sullivan & Sheffrin, 2003). However, this definition is not universally agreed upon. The GDP per capita of a country relative to others can also be a benchmark. The designation "developing" refers to a currently perceived situation and not a changing dynamic or anticipated direction of progression. From the later part of the 1990s, DCs seemed to show better growth rates than developed nations (Korotayev & Zinkina, 2014). DCs involves, in ascending order of economic growth: newly industrialized

countries, emerging markets, frontier markets, least developed countries. Thus, the poorest of the DCs are the least developed countries.

DCs seem to have some common features. For instance, when it comes to health risks, most DCs have: inadequate access to safe drinking water, sanitation challenges and pollution (including air, indoor air, and water pollution); electric power insufficiency; relatively higher number of citizens with tropical and infectious diseases (neglected tropical diseases); and a higher rate of motor and other road accidents. In most cases, there is also higher poverty levels, low education levels, lack of access to family planning services, higher levels of corruptions and a lack of so-called good leadership and governance (Althor et al., 2016). An alternative definition is the one provided by Kofi Annan, former General Secretary of the United Nations. He defined a developed country as "*one that allows all its citizens to enjoy a free and healthy life in a safe environment*"; otherwise, it is a DC (United Nations Press Release, 2000).

When measuring the level of development of a country, either economic or human factors can be used. DCs are generally countries that have chalked little success in industrialization relative to their populations, and have, in most situations, an average to low living standard (United Nations Population Fund, 2014). From the World Development Indicators (2016) report, the World Bank decided not to distinguish between "developed" and "developing" when reporting its data because it considers the two-category as out-of-date. However, the World Bank categorized the economies of countries into four, using their Gross National Income per capita, and re-setting it each year on July 1. In 2016, the new classification were presented as: low income countries ($1,025 or less), lower middle income countries ($1,026 to $4,035), upper middle income countries ($4,036 to $12,236), and high income countries ($12,237 and above).

DCs are widely dispersed around the globe; however, majority (15) of them are in Africa, with 12 in Asia, 2 in Latin America and 2 in Central and Eastern Europe. Despite their placements on four different continents, all 31 DCs share a similar challenge of geographical remoteness and reliance on trade and transport systems in neighboring and coastal countries. Not surprisingly, most DCs are relatively poor. Most of them are far from reaching the Millennium Development Goals (MDGs) related to primary education, infant mortality, access to safe water and the primary goal of poverty eradication (The Millennium Development Goals Report, 2015). In fact, several DCs are even moving further away from reaching these objectives. The international community has focused on the specific development constraints of DCs for many decades. The United Nations Millennium Declaration urged their development partners to increase financial and technical assistance to DCs to help them solve their developmental problems. This call was echoed at major United Nations conferences in Brussels, Monterrey, Johannesburg and especially in Almaty, which was solely dedicated to the problems of DCs. There is an expectation that most DCs will grow by 5.2% in 2017 and 5.5% in 2018. But this is still not up to the Sustainable Development Goal (SDG) target of "at least 7% GDP growth" (SDG Tracker, 2010), creating a risk to both sufficient private financing and critical public expenditure on healthcare, education, social protection and climate change adaptation. Using the current growth rate, if no drastic changes in income inequality occur, about 35% of the citizens of DCs may continue to live extreme poverty by 2030.

For the purposes of this study, countries that have HDI less than 0.6, Gross National Income per capita less than $4,035, low levels of access to safe drinking water, sanitation and hygiene; energy poverty; high levels of pollution, high number of road

traffic accidents, widespread poverty, low education levels, inadequate access to family planning services and corruption at all government levels are considered DCs.

1.2.2 The Selection of Ghana for this Study

The empirical application of this research considers the case of Ghana because like other DCs, Ghana is one of the countries in the sub-Saharan Africa with a young democratic dispensation. The country is a clear example of an emerging nation whose current situation could be compared with other DCs (Amponsah, 2010). From 1957, the year Ghana gained its independence, till now the country has had it fair share of incomplete private and public projects. Recognizing how bad the situation is in Ghana, the former Deputy Minister of Finance and Economic Planning, Professor Gyan-Baffour, in his opening statement at an inauguration of project managers, organized by the African Development Bank (AfDB, 2006), in Accra, Ghana highlighted that the level of project implementation Ghana has fallen in all sectors of the economy, resulting in the country incurring significant costs. Thus, it is not far from right to choose Ghana for this study. In addition, the author of this thesis is a Ghanaian, having access to information for the study.

Ghana is can be found on West Africa's Gulf of Guinea, a few degrees north of the Equator and is bordered on the north by Burkina Faso, on the west by Côte d'Ivoire, and on the east by Togo. The country lies on top of the equator and is on the Greenwich meridian line that crosses the seaport of Tema, about 24 km to the east of Accra, the capital. Its southernmost coast at Cape Three Points is 4° 30' north of the equator. From here, the country extends inland for some 670 kilometers. The distance across the widest part measures about 560 kilometers. Half of the country lies less than 152 meters (500 ft.) above sea level, and the highest point is 883 meters (2,900 ft.). The GDP of the

country as at 2008 is $16.124 billion, real GDP growth rate is 7.2% whiles per capita GDP is $716. Ghana has natural resources such as Gold, oil, timber, diamonds, bauxite, manganese, and fish (CIA Factbook, 2019). A physical map of Ghana is provided in Appendix 7.

1.3 Problem Statement

The rate of PM failures in DCs and its consequences such as costs overrun etc. has become a matter of concern recently. (African Development Bank (AfDB), 2006). Factors accounting for this has mostly been found to include unreliable or inadequate empirical evidence. In general, literature suggest some factors explaining PM failures but most often these studies were done outside the context of DCs' and Ghana's conditions (Amponsah, 2010).

Research shows that most PM practices, skills and competency levels in most DCs are relatively low (Rehman, 2007; Farooqui et al., 2008; Ali, 2010; Othman, 2013). The management of most projects in DCs and as such Ghana become unsuccessful due to factors such as poor planning, politics and other management related issues (Rehman, 2007; Sambasivan & Soon, 2007; Mubin et al., 2011; Pasha et al., 2012; Choudhary et al., 2012; Ejaz et al., 2013). In the words of Othman (2013), lack of competencies hinders the management of mega projects in DCs.

Management of most governmental projects started in Ghana faced many problems of execution and governance which restricted the successful completion of these projects. Most government projects in DCs have to deal with problems such as large number of participants, poor procurement systems, bureaucratic processes, lack of skills and resources, and complex procedures (Ahsan & Gunawan, 2010). These occurrences have

resulted in cost and time overruns in various projects in DCs and by extension Ghana (Othman, 2013).

In the AfDB report in 2006, it was observed that most PM failures in DCs and in Ghana have been blamed on factors such as socio-political, economic, technological, macro and micro-global reasons without any empirical evidence. The Daily Graphic (2006) stated that the cost Ghana incurs a result of the high level of PM failure rate is excessive (Among other reasons, the rise in PM failures in DCs have resulted in a general decline in donor support to these countries due to donor apathy (World Bank report, 2007). Over the years, substantial amounts have been received by DCs from its donor partners for developmental projects and yet the impacts were not evident due to poor PM practices.

Ayee (2000) argued in his study that there hasn't been any known empirical studies on project management success or failure in the context of DCs, especially in Ghana. Research into the history of PM and the root causes of PM failures in DCs are frequently neglected for projects with a long development cycle (Juran, 1992). Gathering empirical data on well-tested factors accounting for PM failure or success in DCs will help to understand the problem. Similarly, the call for empirical studies on the causes of PM failure in DCs and in Ghana, cannot be overemphasized.

For some time now, there has been the quest to find out reasons for the failure of projects in DCs like Ghana (Ayee, 2000; Ofori, 2006). PM failures are predominant in DCs, and this is arguably accounting for the underdevelopment of these countries and Ghana has not been an exception.

In his address to the chiefs of the Volta Region of Ghana, Nana Akufo-Addo, the President of Ghana (2016) stated that the long list of abandoned projects in the country

has become a "disgraceful and scandalous phenomenon" that need to be resolved. In their article, "a model for reactivating abandoned public housing projects in Ghana", Twumasi-Ampofo et al. (2014) recognized that the root causes of the abandonment of most public housing projects in Ghana are as a result of improper planning and incoherent political activities and mismanagement. They went further to state that even some projects started before Ghana gained its independence have still not been completed and that most projects started in the country were for mere selfish politics, (face-saving purpose) only to be abandoned along the way. Worse still, they stated, other projects were started by politicians to please voters so as to avert threats and disloyalty from them; knowing very well that the government's finances cannot complete those projects. Figure 2 is an example of an uncompleted housing that has been abandoned in Ghana.

Figure 2: Cape Coast housing project abandoned.
Source: Twumasi-Ampofo et al. (2014).

At a press conference in Accra on Wednesday, 24 April 2019, The Minister of Works and Housing, Mr Samuel Atta Akyea, accused previous administration of short-changing Ghanaians by a little over 300 housing units in relation to the uncompleted Saglemi housing project near Tsopoli in the Ningo-Prampram District in the Greater Accra Region. The housing deficit in the country (Ghana) is estimated to be more than

1.5 million units and growing by the day but the business portion of the Daily Graphic (2018) was utterly surprised that *"we sit back and look at millions of Ghana Cedis (Ghanaian currency) go waste, while the people for whom the project was executed wallow in their present state, leaving them at the mercy of landlords who are simply being exploitative".*

Almost 50% of the population in DCs live on less than $1 a day. Only 58 % of the population in DCs have access to improved water (United Nations Conference on Trade and Development, 2017). The average Gross National Income per capita of most DCs was re-set in July 1, 2016, to be around $1,025 or less (World Bank, 2016).

Borkor (2011:1) states that "*some development projects in Ghana are initiated for the sake of mere political jingoism or just for face-saving; some are initiated as a smokescreen behind which some unscrupulous people hide to fleece the economy; others are initiated to meet genuine needs of the people; some are begun upon pressure from powerful figures in the various communities whiles others are initiated to ward off blackmail or threats from the electorate (and are done on impulse because they are not supportable with funds from the national coffers or any other source) - usually the outcome of wild electioneering campaign promises which the disgruntled communities latch on to hold the government to ransom*". This creates a situation where usually a lot of projects are uncompleted, most of them are left to the mercy of the weather to rot whiles others become white elephants, especially when there is a change of government. So, the question is why would a country with a relatively low per capita income refuse to manage the little it has but rather 'waste it' by starting a project and refusing to complete it?

From the review of relevant literature, Organizational Capacity, Organizational Structure and Leadership are identified as some of the major factors that significantly impact on PMS (Hyväri, 2006; Blaskovics, 2014; Aniagyei, 2011). However, these were not studied in the context of DCs. Again, to the best of the author's knowledge, there are no studies conducted in the context of DCs and specifically in Ghana. This study thus seeks to assess the impact of the aforementioned factors (organisational capacity, organisational structure and leadership) on PMS in project oriented organisations in DCs, using Ghana as the country of study.

1.4 Research Objectives

The *main* objective of this thesis is to assess the impact of Organisational Capacity, Organisational Structure and Leadership on PMS in Project Oriented Organisations in DCs. By doing so, the following *specific* objectives are addressed:

1. To examine the level of PMS rate in Ghana.
2. To determine whether the level of PMS rate differ significantly among project oriented organisations in Ghana.
3. To assess the impact of Organisational Capacity, Organisational Structure and Leadership on PMS in Ghana.
4. To examine the configurational effects of Organisational Capacity, Organisational Structure and Leadership on PMS in Ghana.
5. To identify key competences and their relationship for an effective PM.
6. To provide best practices principles for PM in Ghana.

1.5   Research Questions

To achieve the objectives stated above, the following questions will be posed for the purpose of this study.

1. What is the level of PMS rate in Ghana?

2. Does the level of PMS rate differ significantly among project oriented organisations in Ghana?

3. What is the impact of Organisational Capacity, Organisational Structure and Leadership on PMS in Ghana?

4. What are the configurational effects of Organisational Capacity, Organisational Structure and Leadership on PMS?

5. What are the key competences and their relationship for an effective PM in Ghana?

6. What are the best practices principles for PM in Ghana?

1.6   Research Hypotheses

Hypotheses are suppositions or proposed explanations made on the basis of limited evidence as a starting point for further investigations. They involve statements that are taken to be true for the purpose of argument or investigation (Burns & Bush, 2010).

From the six research questions of this study, two were used to formulate four hypotheses for this study. Research question two generated one hypothesis whiles research question four was used to deduce three hypotheses for the study. The full list of the hypotheses for this research are stated in Section 4.2.1 of Chapter Four. The linkage between the hypothesis, the research objectives, the research questions and the analysis plan for this study is also shown in section 4.7 of chapter Four.

1.7 Expected Results

This thesis is expected to provide recommendation that will help improve PMS rates in Ghana and DCs with similar characteristics as Ghana. Knowing the causes of PM failure will help both policy makers and managers of project oriented organizations in these countries to know how to deal with this problem. By identifying the drivers of PM success or failure, the study again expects to help by developing framework that will support efficient project management in DCs, leading to appropriate approaches to PM in these countries.

The study will provide various definitions for projects, PM and PMS. This will provide an additional understanding to opinion leaders who make decision concerning projects and PM. The study expects to provide various information to donors who finance most projects in DCs and the international community to help understand why most projects are not completed in DCs.

The study expects to build a competency profile for a good and effective project manager through the recommendations that will be given at the end of the study. The study will make it clear the kind of competencies and capabilities that a project manager needs in this contemporary and challenging environment to successfully complete an assigned project. The study is also expected to contribute to society and academia by advancing knowledge in the PM discipline.

1.8 Conceptual Framework

The conceptual framework of this study focuses on the drivers of PMS in DCs. It exhibits the impact of these drivers on PMS in DCs. Organisational Capacity, Organisational Structure and Leadership were selected as the drivers of PMS due to

their dominance in most literature reviewed by the author on the drivers of PMS and that the study is carried out on the premise that an understanding of these drivers can help to understand and reduce PM failures in DCs.

The framework recognises the role of control variables (Cultural, Political, Social, Economic, Governmental, Operational Environment and Technical) on the successful management of projects in DCs. Figure 3 shows the Conceptual framework for this study.
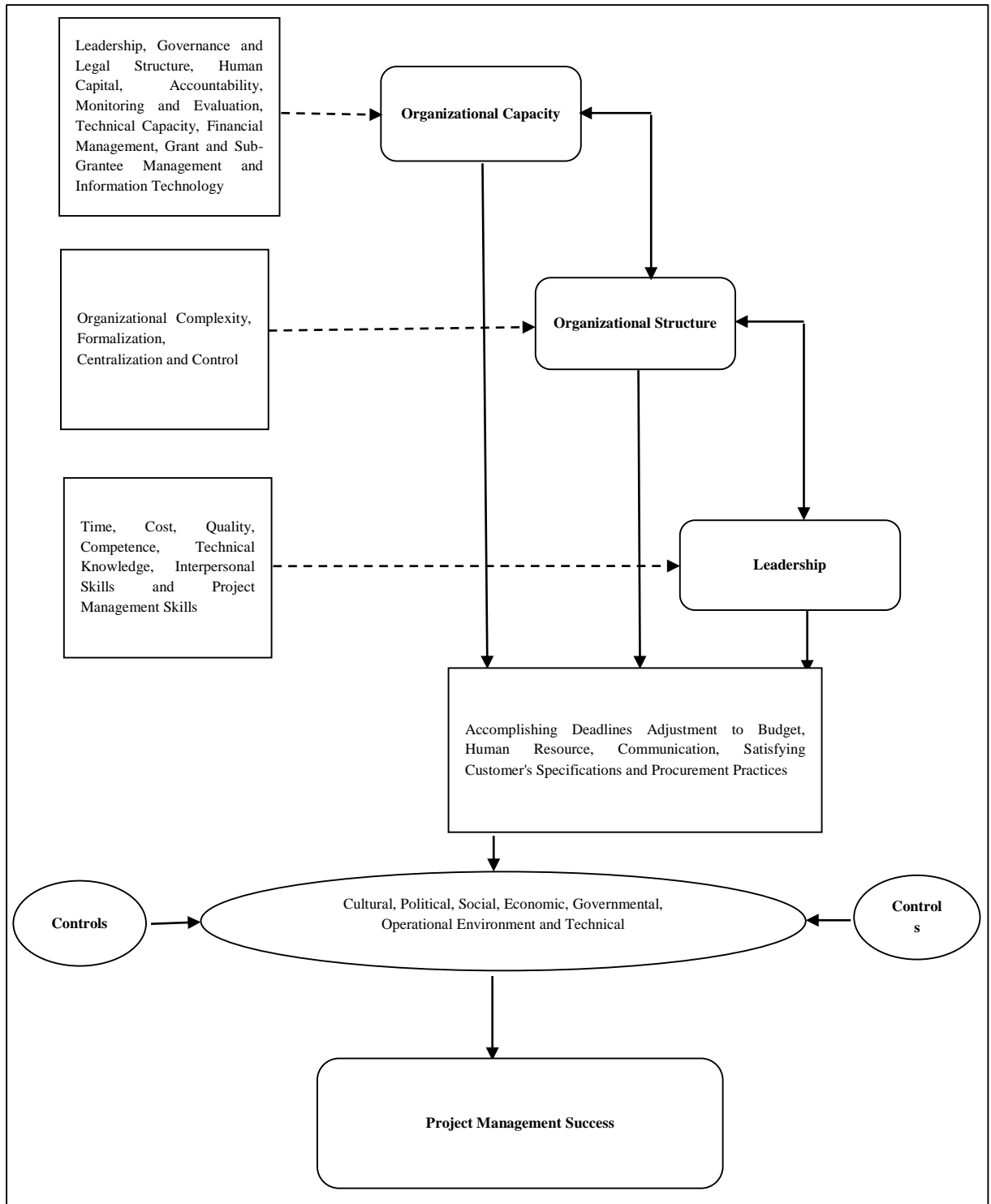
Figure 3: Conceptual framework.

Source: Self-devised.

1.9 Operational and Conceptual Definitions

Project

Pinto and Slevin (1989) defined a project as an organisation of people dedicated to a specific objective. Turner (1993:35) provides a more detailed definition which is suitable for this study. He defined a project as "*an endeavor in which human, material and financial resources are organized in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives*".

Project Management (PM)

The PMI defines PM as the application of tools, techniques, knowledge and skills to achieve project objectives (PMI, 2008). This definition implies that project managers need to do whatever it takes to make a project successfully completed to meet the expectations of stakeholders (Burke, 2003). Turner (1999:8) again simplifies the definition of PM by referring to it as "*the process by which projects are successfully delivered, and their objectives successfully achieved*".

Organisational Capacity

Organizational Capacity of a project oriented organization means the potential of an organization to successfully apply its skills and resources to accomplish its goals and satisfy its stakeholders' expectations (Hanisch et al., 2009). It includes the experience of staff or senior manager's ability to provide proper project governance, dispute resolution procedures to engender trust behaviors etc.

Organisational Structure

For the purpose of this study, Organizational Structure refers to the management model used to supervise the various activities of a project or other activities of an organization. A good organizational structure helps the PM team to attain high performance in the project through gains in efficiency and effectiveness (Ubani, 2012).

Leadership

Daft (2007) defines leadership as a relationship of influence among superiors and subordinates who intend real changes and outcomes that reflect their shared purposes. This study adopts Adair's definition of leadership. According Adair (2005) leadership is defined as the ability to make decisions, having energy, sense of duty; confidence; and pride in command.

Project Management Success (PMS)

In the words of Tesfaye (2017) a successfully managed project is the one that is accomplished on schedule, with the cost of the project being within budget and meets the planned performance based on the initial plan. Munns and Bjeirmi (1996) defined PMS to include the clear predictors of being within budget, being within stipulated schedule, meeting clients quality requirements, and meeting the general project objective.

Project Oriented Organisations

Project Oriented Organizations are organization in which a considerable part of their processes and activities take place in the form of projects. Their organizational structure has elements of matrix organizational structure. In the project-oriented organization, the

project manager has full authority to set priorities and manage the work of the people assigned to the project. In the project-oriented organization, projects are a natural part of its operation (Tesfaye et al., 2017).

1.10 Overview of the Methodology for the Study

This thesis mainly uses quantitative approaches to test hypotheses and provide empirical evidence to the research objectives; even though some qualitative information were collected to help address some objectives of this study. To do so, a self-administered questionnaire is used to collect primary data from a sample of individuals who have experience in managing projects or who are in the position of giving a contract for the construction of a project.

A population of 442 certified PM practitioners in Ghana (Project Management Institute – Ghana, 2019) is estimated for this study. A probability sampling technique is used to select a sample of 220 from the population of 442 for the purposes of data collection and analysis.

The primary data that was collected has been analysed using EQS 6.4, fsQCA 3.0, Statistical Package for Social Sciences (SPSS) v25 Excel and Nvivo v8 software for Windows.

Descriptive statistics and the analysis of variance (ANOVA) have been carried out. Test for the reliability of the scale used in the measurement instrument have been done by the use of the Cronbach Alpha and composite reliability. Discriminant validity analysis among constructs has been conducted using standardized covariances between latent factors.

A Confirmatory Factors Analysis, Structural Equation Modelling (SEM) followed by a Qualitative Comparative Analysis (QCA) have been performed to help test directly and indirectly the effects and relationships between the latent factors in the study and PMS. Results from the SEM was used to conduct hypothesis testing to help establish the significance of each of the independent variables at 5% significant level. The content of the qualitative data that was obtained from the open ended portions of the questionnaire were reduced, rearranged and categorized to help deduce appropriate recommendations from them.

1.11 Assumptions and Scope

This thesis is conducted with the assumption that primary data is obtainable from Government Officials, Heads of Public and Private Institutions and Civil Servants who give project contracts; Contractors, Employees of Project Oriented Organizations and Managers of Non-Governmental Organizations. In addition, it is assumed that respondents have enough knowledge about the subject matter of this study; and that they can provide accurate answers and other relevant information and submit same after completion.

There are other factors accounting for the level of PMS or failure in DCs, however, for the purpose of this study, only the impact of organizational capacity, organizational structure and leadership on PMS will be assessed. Also, for the purpose of this study only, responses from Government Officials, Heads of Public and Private Institutions and Civil Servants who give project contracts; Contractors, and Employees of Project Oriented Organizations and Managers of Non-Governmental Organizations in Ghana are considered in this study.

1.12 Organization of the Thesis

Chapter One of this thesis provides a brief introduction to the underlying concepts of this thesis. It introduces the problem statement and the objectives of the study, leading to the development of research questions and subsequently, the hypotheses of the thesis. The motivation and justification for this research project is explained, and an overview into the applied chapter explains the expectations of this study and highlights the methodology used in the thesis.

The second chapter, *Chapter Two* covers the first part of the literature review. The chapter is devoted to studying PM in DCs. The chapter compares PM between developed and DCs, study the economy of DCs and outline the challenges associated with the management of projects in DCs. The latter part of this chapter is devoted to putting the research in the Ghanaian context.

Chapter Three of this thesis addresses the second part of the literature review. The chapter reviews the determinants of PMS. It provides information about the selection of the constructs in this thesis, and the model to test. The latter part of this chapter provides information on the available PM theories. It provides information on PM tools and techniques, PMS criteria, PM competencies, applicable PM knowledge areas and the PM process groups.

Chapter Four contains the methodology and the research methods used in the study. It addresses issues such as the research design, statement of hypothesis, the research model, research methods, population and sample, research instrument, data collection and analysis plan for the study.

Chapter Five presents the analysis of the data collected and the results thereafter. It provides information on the analysis, inferences, synthesis and the presentation of the output after analyzing the data obtained from the respondents

Chapter Six provides a discussion on the results obtained in Chapter Five. Information on the characteristics of the data collected is discussed in the chapter. It provides answers to the questions in the study and discusses the fulfilment of the research objectives and finally addresses the hypothesis in the research.

The final chapter, *Chapter Seven* contains the concluding remarks for the thesis and makes recommendations for future research. It presents the implications of the findings. It again emphasizes the essence, relevance and the contributions of this study, provides a model for the management of projects by project oriented organizations in DCs and explains the limitations of this thesis. Figure 4 below presents a graphical representation of the structure of this thesis and the relation of the Seven Chapters.

Chapter One: Introduction
Introduction to the underlying concepts of this thesis. Problem statement, objectives of the study, expectations of this study, overview of methodology used.

Chapter Two: PM in DCs
PM in Developed vs. DCs, the economy of DCs, challenges of PM in DCs. The research in the Ghanaian context.

Chapter Three: Literature Review
Review of determinants of PMS. The selection of construct and the model to test. PM theories, tools, competence, knowledge and process.

Chapter Four: Methodology
Methodology and the research methods used in the study. Research design, hypothesis, population and sample, research instrument, data collection and analysis plan.

Chapter Five: Data Analysis and Results
Analysis of the data collected, inferences, synthesis and the presentation of results.

Chapter Six: Discussions
Discussion on the results obtained. Characteristics of the data collected. Answers research questions. Hypothesis testing.

Chapter Seven: Concluding Remarks
Essence of the study and it relevance, model for PM in DCs, Provides implications of findings, limitations and recommendations for future research.

Figure 4: Structure of the study.

Source: Self-devised.

PROJECT MANAGEMENT IN DEVELOPING COUNTRIES

2.1 Introduction

This chapter discusses issues relating to PM in DCs. The chapter looks at how projects are managed in developed countries relative to that of DCs. The general economic outlook of DCs is discussed in this chapter. It again looks at the PM challenges in DCs and tries to put the study in the Ghanaian context.

2.2 Project Management in Developed versus Developing Countries

A comparative review of the management of projects in various countries is important since it will help to understand how the projects affects future development of the country; in fact, this should be clearly communicated and comprehended within the business case (Yanwen, 2012).

PM practices differ among various organizations in various industrial sectors in different developed countries. With Oil companies for instance creating sites for exploration, IT systems being installed by investment bankers, and an IT firm creating and deploying a new gadget for marketing firms to assist them with the introduction of a new marketing campaign; the single most important feature about all these projects is that they are all time bound and are allocated to them, a budget (Olawale & Sun, 2015).

Generally, the problem of delayed projects are well managed by developed economies. The 21st Century' report (CIOB 2008) clearly mentioned that most projects are properly managed in developed countries like the UK. However, the report recognized that the way time is managed on some construction projects even in some developed countries

need more room for improvement. The reason why some projects that are successfully implemented in countries but fail when they are replicated in DCs is not because of the fact that the projects are deficient or are not conducive for DCs, but it is because these projects are not properly assessed and managed with respect to the internal work culture of the project oriented organization (Ramaprasad & Prakash, 2003).

PM practices deployed to implement projects in many developed countries have, in most cases been recommended to be used to manage and implement projects in DCs to help increase their level of PMS. Following these recommendations, several complex PM techniques and process have been used to implement projects in DCs (Rondinelli, 1993), however, other factors such as politics, culture and traditions, norms and social structure etc. impede the deployment of these developed-country-based PM techniques. The scenario does not change even when the multinational project oriented organization involved in the management and implementation of the project in the DC is efficient. The smooth implementation of the project is still impeded by the same factors in DCs.

As a feature of most projects in DCs, they are relatively complex, have many participants and usually have an unstructured outline; requiring very tactical and competent project managers to be able to successfully manage. Due to politics, social reasons and other unfavourable terms, most DCs are coming to the realization that reducing their reliance on foreign aid for their project is the way to go. (Cannon, 1994). Again, most DCs are striving to improve on their capacity to manage their own project and reduce their reliance on the west to fund and manage their projects, especially those that are of strategic importance to them (Jugdev & Muller, 2005). However, this desire to be self-reliant in the management of projects in DCs have faced several challenges in the successful management of project (Lock, 1996). The real challenge in the

immediate need to increase the capacity and skills of project managers in these countries. The competence and skills of project managers in this case is very critical since the project management in DCs are complex and have various challenges that need to be addressed.

But, an effort to improve the competence and skills of project managers in DCs demands a committed support from governments and other opinion in these countries (Munns & Bjeirmi, 1996). Many DCs have do not have adequate experience in managing project oriented organisations. Consequently, they have mostly been relying on advanced countries for their expertise, although their management approaches and techniques have almost always been difficult to implement due to the failure to recognize the existence of cultural differences.

The inability to manage and administer their own project is a prevalent challenge in almost all DCs. Murithi and Crawford (2001) discovered in their study that it is in order to accept the fact that the cultures of the people in the DCs have not yet reached the degree of sophistication existing in the west. Thus, not all DCs are at the level where they can accept the use structures l and forma management approaches in their work processes. In his discussion on the management of project in DCs − Bangladesh, Rahman and Ayer, (2017) stated that although the Advanced nations in today's world are experienced in the management of projects, for DCs, the implementation and the associated organizational work with PM activities are still in the infant stage. Gradually however, most DCs are increasing their capacity to use current PM practices aimed at helping project oriented organizations to achieve the project goals.

2.3   The Economy of Developing Countries

Bond-Barnarda and Steyna (2017) stated that DCs have attracted the attention of many multinational organizations, as these countries are showing prospects in terms of economic growth. Emerging economies are predicted to experience in few years, economic growth that will be twice or thrice that of other developed countries such as the United States, according to International Monetary Fund (2011) estimates; accounting for about 65% of the world's economic growth through 2020 (Boumphrey & Bevis, 2013).

Five decades after their independence from colonial rule, many countries in Africa have been overtaken by other countries who were worse in terms of economic management in the 1960s. Ghana and other African countries had similar GDPs in the 1950s. But currently almost every African country rely on aids. Over US$1 trillion has been sent to the continent as grants to support its economy (Moyo, 2009).

The economic growth of most DCs in Africa according to United Nations report on World Economic Situation and Prospects (2019) is expected to improve marginally from 3.2% in 2018 to 3.4% in 2019 and 3.7% in 2020 (Figure 5). This marginal improvement is projected based of factors such as worldwide increase in the demand for Africa's products, increased private consumption, increased investments in infrastructure, and rising oil production, particularly due to new field development. Inflation declined from 12.7 % in 2017 to 11.3% in 2018 and is expected to reduce further in 2019 as a result of increased in agricultural and food production and a relatively favorable exchange rate in most countries in Sub-Saharan Africa (IMF DataMapper, 2019). Notwithstanding the improved investment-to-GDP ratio of about 25%, most Africa countries have GDP growths that are still below the benchmark

27

needed to achieve the Stainable Development Goals (SDGs) targets and to match the rapid population growth in the continent. In 2016, the growth in per capita income for most African countries marginally increased, but, at only 0.6% in 2018 and 0.9% in 2019, which is not enough to actually impact the standard of living of a larger proportion of the population. In totality, DCs in Africa have to attain at a minimum of twice their current growth rate to be able to make remarkable strives towards achieving the SDGs.

Figure 5: GDP growth and inflation in Africa, 2010–2020.
Source: UN/DESA.
Note: e=estimate, f=forecast

In addition, the United Nations report emphasizes that the level of income disparities in most African countries are relatively high while their improvement have been slow. From the years 2000–2004 and 2012–2016 barely a small number of African countries have chalked remarkable success in income distribution among its population. From 25 countries for which data was available, only 4 of them (mostly in West Africa) have been able to increase by 2% or more, the income level of those in the bottom 20% of income distribution (Figure 6a). However, the income level of those above the 20% income distribution has increased by 2% or more in about 7 countries (Figure 6b) in the

same period. In Zambia for instance, this percentage jumped by almost 9% points, indicating that the income for most countries in Africa are likely to be unequally distributed. As the total fiscal position continued to increase, the fiscal deficit reduced marginally in 2018. This is largely due to the fiscal consolidation attempts going on in many countries.

The financial standings of most DCs are projected to be relatively stable in 2019 due to the rising export revenues, particularly from natural resources from these countries. The total deficit of Africa reduced in 2018. This achievement id due to factors such as the increase in commodity prices and production, although this is offset by, among others, the capital and food imports (United Nations report on World Economic Situation and Prospects, 2019)
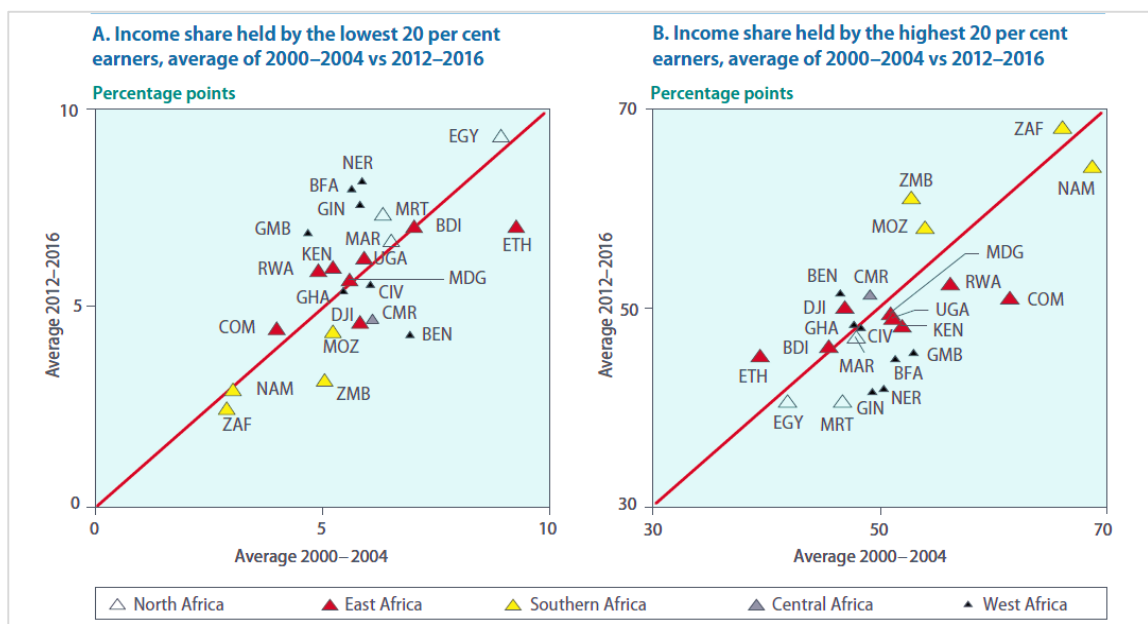
Figure 6: Income distribution by population quintiles, Africa.
Source: UN/DESA, based on data from World Bank's World Development Indicators database.

2.4   Project Management Challenges in Developing Countries

The general idea about the use of PM practices having a positive impact on project success (Milosevic & Iewwongcharoen, 2004), and providing strategic and valuable benefits for an organization – using internationally recognized PM tools and techniques (Besner & Hobbs, 2006) have led to various organizations in many countries; even those in the developing economies adopting the principles of PM. But the implementation of PM practices by DCs aren't without setbacks (Ika, 2012).

Various challenges impedes the management of projects in DCs. These challenges are described as "the notorious and critical implementation problems," some easy to deal with whiles others are almost uncontrollable (Gow & Morss, 1988; Kwak et al., 2002; European Commission, 2007; Ika & Hodgson, 2010). Factors assigned to this phenomenon by scholars include geography, resource curse, bad governance and conflict (Collier, 2007, 2008). Other factors such as inadequate PM capacity and improper design are also mentioned (Williams, 2011). Again, "dirty" politics that hurts development projects are also blamed (Bokor, 2011). In their article on construction delays, Fong et al. (2006) observed that many projects in DCs encounter considerable time and cost overruns, fail to meet their intended benefit or even fully aborted and rejected before or after their completion. Generally, the construction industry in DCs for example, fail to meet expectations of governments, clients and society as a whole (Ofori, 2013; Jekale, 2004).

There is no doubt that most DCs rely on developed nations and other international bodies such as the United Nations and the World Bank to realize their PM goals (Yanwen, 2012). But due to improper management of the funds obtained from these agencies, most DCs are often lacking the necessary resources that are needed to help in

the management and implementation of their projects, especially those that are of strategic importance to them. (Jugdev & Muller, 2005). Munns and Bjeirmi (1996) found that DCs have been relying on developed countries for expertise to manage their projects, but this approach has come its own challenges. This is because in most cases, other relevant factors such as cultural differences that exist in these two different countries are ignored. Christensen (1995) also identified deficiencies associated with the way projects are managed in DCs. He stated that in many instances, governments of DCs have attempted to embark on too many projects, which intends leads to incomplete projects because of factors such as lack of finance, non-existent counterpart funds, and insufficient local implementation capacities. He concluded that these inadequacies are shown in the high rate of failed projects prevalent in most DCs. Many DCs have complex projects with many participants, thus requiring competent management team and leadership to be able to manage.

Olateju et al. (2011) highlighted various challenges facing PM and its implementation in DCs such as Nigeria as inadequate PM knowledge, regime change, inadequate leadership commitment, bribery and corruption, low level of professional training in PM, and inflexible organizational structure. These authors stated that in Nigeria, the implementation of modern PM techniques and procedures are not widely accepted and this has affected many public institutions and their contractors in terms of accomplishing their duties with respect to working within budget, meeting specifications and deadlines of projects.

Some of the constraints facing PM implementation in DCs includes ineffective communication, unclear project mission, inadequate management support, improper project scheduled plan, non-involvement of customers, poor human resource selection,

insufficient technical competence, poor monitoring and feedback system and poor conflict management. In most DCs the setbacks are peculiar to each society in terms of its economic, political and administrative system. But, Abbasi et al. (2000) and Sukhoo et al. (2004) highlighted that PM practices in most DCs, especially those in Africa, are at its early stage. This to some extent is due to factors such as lack of competent staff, unfavorable economic and social conditions, weak political institutions, and overreliance on cultural and religious beliefs.

Various concerns have been raised about various developmental projects that have been abandoned in Nigeria, especially after huge public funds have been invested in them. In most cases, these abandoned projects are construction in nature and are sometimes sponsored by foreign donors. According to Windapo and Rotimi (2012) the building industry in Nigeria has been maligned by issues such as building collapse, incessant delays, abandonment and cost overrun. Various factors have been found as responsible for this unhealthy scenario, the most notable being poor project analysis and management (Okwandu & Mba, 2010). Other studies such as those of David (2003) and Ibenta (2012) found social and political systems, cultural blocks and lack of financial support as barriers to successful project planning and execution in Nigeria. Nwachukwu and Emoh (2011) asserted that the key to all these woes lies in efficient PM.

Other studies have identified lack of knowledge of PM techniques and tools, and insufficient time spent on reporting and controlling in certain context as major setbacks to successful PM in DCs (Abbasi & Al-Mharmah, 2000). Factors such as inadequate personnel qualifications, low level of PM competence, and identification of a lack of appropriate organization structure were reported following the assessment of the nature of PM practices in an infrastructure department in South Africa. The conclusion being

that most public organizations in non-industrialized countries will experience challenges in PM practices (Rwelamila, 2007).

In his quest to discover why projects fail in DCs, Ika (2012) categorized PM challenges of DCs into three: structural/contextual challenges, institutional/sustainability challenges, and managerial/organizational challenges.

Structural/Contextual Challenges: Most projects in DCs have many participants, as a result, they are normally confronted with challenges that includes unhealthy politics, unfavorable economic environment due to bad policies, other unfavorable physical or geographic factors, other cultural and social environmental factors and the impact of the external environment (Collier, 2008; Gow & Morss, 1988; Kwak, 2002; and Moyo, 2009). But, being aware of the problems discussed above is an important step towards its understanding and solution.

Institutional/Sustainability Challenges: Institutional and sustainability issues include endemic corruption, capacity building setbacks, recurrent costs of projects, lack of political support and institutional capacity to deliver sustainable outcomes. Thus, most of the failures that many projects experiences in DCs are mostly institutional than technical (Eneh, 2009; European Commission, 2007; Gauthier, 2005; Ika & Hodgson, 2010). The situation is more alarming for cases where the projects involves are autonomous in nature. These projects normally do not pass through the appropriate local institutions, thus, usually wasting a lot of resources, and breaking organizational, and managerial structures in countries that depend heavily on grants (European Commission, 2007; Ika & Hodgson, 2010). Although PM problems in DCs emanates from the structure or the context of the project and also the institutions or the

sustainability of the projects, other problems emanates from the management or the organizational point of view.

Managerial/Organizational Problems: The inability of many projects in DCs meeting their targets is as a result of various challenges that are of managerial or organizational in nature (Ika & Hodgson, 2010; Ika et al., 2012; Kwak, 2002). The insufficient time allocated to the planning of projects that are supposed to be for societal good is the major reason for the poor implementation record obtained by many DCs. The deficiencies in the identification, formulation and the execution of projects in DCs has been a major stampede to equitable distribution of wealth in these countries. Even though for the past 25 years, there has been a massive investment in project, international donor agencies and benevolent organization still report serious problems in project execution in DCs. Reasons assigned to this situation includes improper planning and management (Rondinelli, 1983). The surprising aspect of the findings of Rondinelli is the fact that 40 years after his findings, the challenges he highlighted are still prevalent and are negatively affecting the management of projects in most DCs. A typical example is the case of Nigerian where projects fails normally due to managerial and organizational inefficiencies (Williams, 2011). Consequently, the problems facing a lot of projects in DCs can be attributed to factors such as bad project design, unclear project objectives, improper understanding of the requirement of clients, low user involvement, disagreement on the project goals, contradictory interest of project stakeholders, unhealthy politicking, lack of competent PM staff, inadequate engagement of project stakeholders, delays in project conception and starting, delays in project execution and implementation, budget deficits, improper risk analysis, low literacy rates and its associated challenges, ineffective communication, integration, monitoring, evaluation and control (Ahsan & Gunawan, 2010; Bokor, 2011; Ika, 2012).

In summary, PM techniques are relevant for improving management capabilities and facilitating the successful completion of projects in DCs. However, various studies conducted on PM in DCs seem to fall short in providing the expected insight needed to manage projects successfully. Olateju et al. (2011) found insufficient understanding of PM methodologies in public organizations amongst other factors affecting PM practice. Other studies have found poor managerial capability of contractors as one of the major problems of PM DCs. It has therefore been recommended that factors such as top management involvement and competency PM staff and coordination among the project team be taken seriously to be able to improve the quality of PM in DCs. Therefore, increasing the managerial capacity of contractors should be the backbone in the quest to improve the general capability of contractors in these countries. Previous research work have also strongly highlighted the relevance of improving the management skills of contractors (Chiocchio et al., 2011; Long, et al., 2008: Dlungwana & Rwelamila, 2004). Othman (2013) further stated that there has been a general agreement that communication, trust and collaboration among the project team and between stakeholders are three very important issues in the management of projects in DCs.

2.5   The Ghanaian Context

The concept of PM has been used as a management tool by organizations across industries to achieve a broad spectrum of objectives. In the development economics discipline, PM has been recognized as a driver of economic development in DCs like Ghana. PM has not only been recognized as a driver of business objectives, but also the economic development agenda of DCs including Ghana. Several programs in Ghana, such as real estate development, event planning, product development, infrastructure development, especially those tied to foreign aid from development partners, and

Ghana's own development policy programs like the Presidential Special Initiatives (PSI) (Ghana Investment Promotion Centre [GIPC], 2001) and the Ghana Poverty Reduction Strategy Papers (GPRS I & II) (National Development Planning Commission [NDPC], 2009), all lay heavy emphasis on the use of projects and PM as a tool to optimize the rate of success.

Ghana, as a DC is faced with a myriad of PM challenges both technical and non-technical. Empirical studies on the success or otherwise of PM in Ghana have concluded that even though the challenges that confronts the management, implementation and the success of projects are general, those of developmental projects, especially in Ghana are unique.

PM is useful for the development of both the private and the public sector in the Ghanaian economy. In many DCs such as Ghana, the idea of PM has gained enough attention and popularity as a useful means for achieving project success. As a result, the country has specifically mentioned and recognized for the first time the title of project manager in the procurement Act (Act 663 of 2003). Nonetheless, almost a decade after, it is still not quite clear how this significant recognition has helped in the successful management of projects in the country (Venter, 2005). Venter (2005) again discovered that previous reports on PM in Ghana has been unsatisfactory, and that many projects started in the country has not yielded the required benefits for the ordinary citizens of the country. Their completion has not materialized. Therefore, these incomplete projects have rather increased the very developmental problems that they were meant solve.

The World Bank Report in 2007 showed that Ghana's performance in terms of its developmental programs and projects has been very unsatisfactory. This the report attributed to the insufficient number of competent and professional project managers.

This further implies that the World Bank and other international bodies have been appreciating the relevant role of competence and professionalism in the successful management of projects.

The way and manner projects are funded in Ghana actually creates problems for the responsible public institutions and the sponsors as well. The percentage of funding that comes from grants and aids from donor agencies for projects in Ghana is relatively high, to the extent that these donors are now referred to as development partners; showing the extent to which the country's developmental agenda has relied on donor supports (Ofori, 2013). But in most cases, these grants are nor without conditions (sometimes not favorable), thus, impacting on the developmental project right from the conception, planning, execution and the implementation stages. The problem is that by embarking on projects based on donors recommendations rather than what the citizens actually need, donor interests actually becomes an impeding force towards the scope definition, starting, execution and implementation of projects that will have significant impact on the life of the Ghanaian. In some instances some projects would have to be cancelled due to unfavorable conditions from donors that conflict with the culture and traditions, the starting dates, hierarchy, taboos and other important issues that often impact on PMS in Ghana (Awuah, 2009).

Amponsah (2010) therefore recommended that to achieve effective communication and stronger coordination among project team members which will result in PMS, PM professionals in every country including Ghana need to consider cultural, values, morals and the orientation of the clients and the users. Again, problems associated with the high power-distance in most DCs for instance need to be addressed by flattening the structure of the project oriented organization. Ofori (2013) discovered in his study of PM in west Africa that public organizations in Ghana and PM practices in this context seems to fall

short in providing the expected benefits. He identified lack of in-depth knowledge of PM in public organizations and corruption as some of the main factors affecting PM practices in Ghana. He therefore argued that issues relating to top management involvement, competency of project managers, and strong synergy among project team members should be focused on, to achieve quality PM in the country.

The introduction of the Public Procurement Act, 2003 (Act 663) in Ghana, and the implementation of the relations in it has, to a large extent impacted positively on the planning, execution and implementation of projects in the country (Public Procurement Authority, 2010). It has been established that effective monitoring and evaluation can influence the successful closure of a project. Again, the quality and the success of a project is assessed not only by fulfilling the stakeholder requirement of the project and even by accomplishing the project with the stipulated time, but also by the impressions the stakeholders have for the project. Therefore, after a project is completed by a project oriented organization, the managers of the organization need to make sure that the project conform to the requirements of the stakeholders with respect to the scope, time, cost and quality of the project, before handing over to the sponsors. These actions are particularly relevant for grant based projects, since the standards for such projects are normally; and these actions are also relevant for government and private sector projects as well (Ofori, 2013).

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

From the findings and recommendations of previous studies, this chapter compiles the basic knowledge under various topics in PM. The chapter discusses the concept of PM, Project Oriented Organizations and reviews the determinants of PMS. PM theories, tools, competence, knowledge and process are also discussed in this chapter. Constructs and variables used in the study are operationalized. The chapter finally provides an overview of different perspective regarding PM, identifies key competences and their relationship for an effective PM and the best practices principles for a successful PM.

3.2 The Concept of Projects and Project Management

Projects are used in all economic and non-economic fields as means of organizing activities aimed at achieving a desired objective. Projects, as the main way of creating and dealing with change (Cleland & Gareis, 2006), are used to implement strategies. Most projects embarked on by Governments and other project oriented organizations are for the purposes of creating new service or improving the functional efficiency of the existing ones. All these projects demands the application of the required competence and techniques that go beyond technical expertise only, but includes the ability to manage scarce resources and monitor time overruns and other ad hoc situations, while dealing with employees and other organizational issues at the same time (Abbasi & Al-Mharmah, 2000). According to PMI (2017), positioning projects with their strategic goals adds value to the project oriented organization. Successful implementation of projects have a positive effect on

the organization, influencing not just its short and medium, but also long term development.

Meskendahl (2010) defined a project as a central building block used in implementing strategies, therefore business success is determined by the success of the projects. In his first article on key success factors for projects, Turner and Downey (1993) defines a project as an endeavor in which human, material and financial resources are organized in a novel way to undertake a unique scope of work comprising of given specification within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives. However, in the second edition of his article Turner (1999) defined a project as an undertaking to deliver beneficial change with three essential characteristics:

- It is unique: no project before or after will be exactly the same.
- It is undertaken using novel processes: no project before or after will use exactly the same approach.
- It is transient: it has a beginning and an end.

From their perspective Wysocki et al. (2000) a project defined as a series of special, complex, and interrelated activities having one objective or purpose that need to be accomplished by a stipulated time, within budget, and according to requirement. This is different from a repetitive set of actions or day to day operations that are structured to be a perpetual process without a planned end. Projects are also classified by established characteristics such as the objective, duration, distinctiveness, interdependencies and conflict (Meredith & Mantel Jr., 2000). Merna and Al-Thani (2008) also defined a project as a special investment of resources to achieve particular objectives, which includes goods or services production, profit maximization or the provision of

community service. It involves a change that cannot be reversed but has a time frame and a stipulated start and end dates.

A project can be perceived as a business exposition that shows the benefits and risks of the venture, showing a special group of results, with a defied life-span, by using identified resources with identified responsibilities (Bradley, 2012). The key points in Bradley's definition is that projects are special in their output, they have start and end dates and are non-permanent in nature and are carried out to exhibit the strategic objectives of the project oriented organization. These non-permanent structures are play a vital role in today's modern organizations and an appreciable interest is recorded in the relevance of these temporary structures in organizations (Pūlmanis, 2013).

From the International Project Management Association (2006) a project is a time and cost constrained operation to realize a set of defined deliverables up to quality standards and requirements. The Association for Project Management defines a project as a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits. A project is thus usually seen as a temporary endeavor undertaken to create a unique product, service, or result (PMI, 2013). According to the PMI, the purpose of a project is to attain its objective and then terminate. The Project Management Body of Knowledge (PMBOK) further elaborated that projects, in most cases serve as the avenues through which the strategic plans and objectives are achieved by members of the project team in the project oriented organization. Normally, projects are established outcomes from the strategic decisions such as market demand whereby extra production capacity is expected to be added to the existing ones in order to cater for an increased market demand; organizational needs where an information system is expected to be installed in the organization or customer

request where a new design of the current product is expected to satisfy customers orders (Frefer et al., 2018).

From the definitions above, one can deduce a few elements characterizing a project. To begin with, a project has a well-defined goal that need to be achieved and that need to be defined with respect to product, service, outcome or output. A project again has interlinked activities that are time and budget bound, large number of non-identical activities, have some elements of risks, is a special non-permanent task and has a definite start and end dates. Munns and Bjeirmi (1996) observed that when you monitor and control the attainment of the project objectives, using the existing organizational composition and resources and managing the project by the application of the required tools and techniques, the breaks in the day to day operations of the organization can be avoided. Clarke (1999) however highlighted that effective management of projects will help to deal issues that arise from organizational change and can help to address challenges that are relevant to the organization.

PM as a discipline has become very popular as a unique management concept that helps not only businesses to achieve their goals, but also serve as the backbone of the quest to achieve economic development by DCs including Ghana. Several programs in DCs lay heavy emphasis on the use of PM as a tool to optimize the rate of success. PM plays a major role in the planning and organization of resources in order to achieve a pre-determined goal (Varajão et al., 2014). According to LaBrosse (2010), PM as a specialty is a driver of effective management of resources, with the purpose of helping a project to be implemented and deployed in a stipulated time frame and at a reasonable cost (Sirvannaboon 2006). PM help the project oriented organization to acquire the relevant tools that will support planning, execution and the controlling of activities,

people and other resources (Meredith, 2005). To finish (or even exceed) stakeholders' specification and expectation, PM uses knowledge, skills, tools and techniques manage project activities (Duncan, 1996). Several authors have tried to define the concept of PM in their own way.

According to PMBOK (2013:5), *"PM is the use of knowledge, skills, tools and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. Meeting or exceeding stakeholder needs and expectations invariably involves balancing competing demands among: Scope, time, cost and quality; Stakeholders with differing needs and expectations; Identified requirement (needs) and unidentified requirements (expectations)"*.

Chatfield (2007) in his study of PMS defines PM as a discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives. Tesfaye et al. (2017) stated that a successfully managed project is the one that is completed within time, with the cost of the project being within budget and meets the planned performance based on the initial plan. PM is planning, organization, monitoring and control of all aspects of project, with motivation of all included to achieve project goals on safe manner, within agreed schedule, budget and performance criteria (International Project Management Association, 2006). From the definition provided by the International Project Management Association, one can deduce that the definition is focused on the performance of the project with respect to short-term dimensions of project success – meeting the time, cost and quality ("Iron Triangle") criteria.

To ensure the success of projects, the project manager must have the appropriate knowledge of PM, which is defined as the deployment of knowledge, skills, tools, and

techniques to perform the activities of a project and to meet project requirements. A successful PM is accomplished through the application and integration of the PM processes of initiation, planning, executing, monitoring and controlling and closing (PMI, 2013). From Pinkerton's (2003) point of view, PM harnesses the competencies of various individuals, grouping them together and enabling them to achieve the objectives of the project and ensure the success of the project. PM involves the establishment of favorable environment and circumstance that will support the achievement of well thought out or desired objective in a conducive manner by the project team. PM is articulated as a professional's capability to deliver, with due diligence, a project product that fulfills a given mission, by organizing a dedicated project team, effectively combining the most appropriate technical and managerial methods and techniques and devising the most efficient and effective breakdown and implementation routes (Ohara, 2005).

In most cases, the term PM is used to describe the procedure used by an organization to manage a project or an ongoing operations. When an organization uses its procedure in this direction, it classifies its activities as projects. To attain the aspiring goal of a project successfully, an organization would have to concentrate on the use and coordination of PM processes i.e., initiating, planning, executing, monitoring, controlling and closing. Many articles and books call this process a Project Life Cycle. The project manager is expected to integrate and manage all these processes in the life cycle of the project (Kandelousi et al., 2011).

3.2.1 Project Dimensions

The capacity of an organization to recall past successes and learn from past challenges has a direct impact on its capacity to manage new projects effectively. To achieve this, a

logical, organized classification process for both new projects and new programs is required. A classification system should take into consideration both the type of project (usually based on some form of classification) and its inherent degree of difficulty measured along four dimensions (PMBOK, 2013).

- Its inherent size usually measured in terms of value

- The degree of technical difficulty in creating the output

- The degree of uncertainty involved in the project

- The complexity of the relationships (politics) both within the project team and surrounding the project.

3.2.2 Project Categories

Most studies in PM dwell more on critical success factor for projects or PM, however, only a few studies makes an effort to classify them. According to Crawford et al. (2004), every organization that has a relatively large numbers of projects needs to put them into categories, even though the categories are not immediately clear in all cases. Although some authors have tried to categorize projects, there has not been a consensus on the categorization system that exist. This is because of the complex nature and the increasing sophistication of projects (Crawford et al, 2006; Fricke & Shenhar, 2000).

Zheng (2017) stated that projects can be classified as either national or international. International projects can then be categorized according to the geographic region in which it will be executed, whiles national projects can classified by sector of activity. For the purpose of this thesis we will focus on national projects and follow the work of Crawford et al. (2004) recommended a categorization system of projects basing primarily on sectors of activity as described in Table 1.

Table 1. Project classification based on sectors of activity

No.	Industry Sector
1.	Arts/Entertainment/Broadcasting
2.	Automotive
3.	Business Services
4.	Constructing
5.	Consulting
6.	Defense and Aerospace
7.	E-commerce
8.	Educational/Training
9.	Electronics
10.	Environment/Waste/Sewerage
11.	Financial Services
12.	Health/Human/Social Services
13.	Information Systems (including software)
14.	Information Technology
15.	Insurance
16.	International Development
17.	Manufacturing
18.	Petrochemical
19.	Pharmaceutical
20.	Recreation
21.	Resources
22.	Telecommunication
23.	Transportation
24.	Urban Development
25.	Utilities
26.	Other

Source: Crawford et al. (2004).

3.3 Project Management Processes (PMP)

Every project has a beginning, a middle period during which activities move the project toward completion, and an ending - either successful or unsuccessful (Watt, 2014). Thus, when assessing and comparing projects it is important to taken into account the

stage of development Following the PMBOK (2013), there is a sequence of five processes or phases to be completed in a project:

- Initiating or Commencement;

- Planning or Design;

- Executing or Production;

- Monitoring or Controlling;

- Closing or Completing.

It is worth noting that not all projects passes through all the stages when managing them, since some projects can be aborted even before they are completed. Likewise, some projects also do not follow a structured planning and/or monitoring stages as provided in the Figure 7 below.
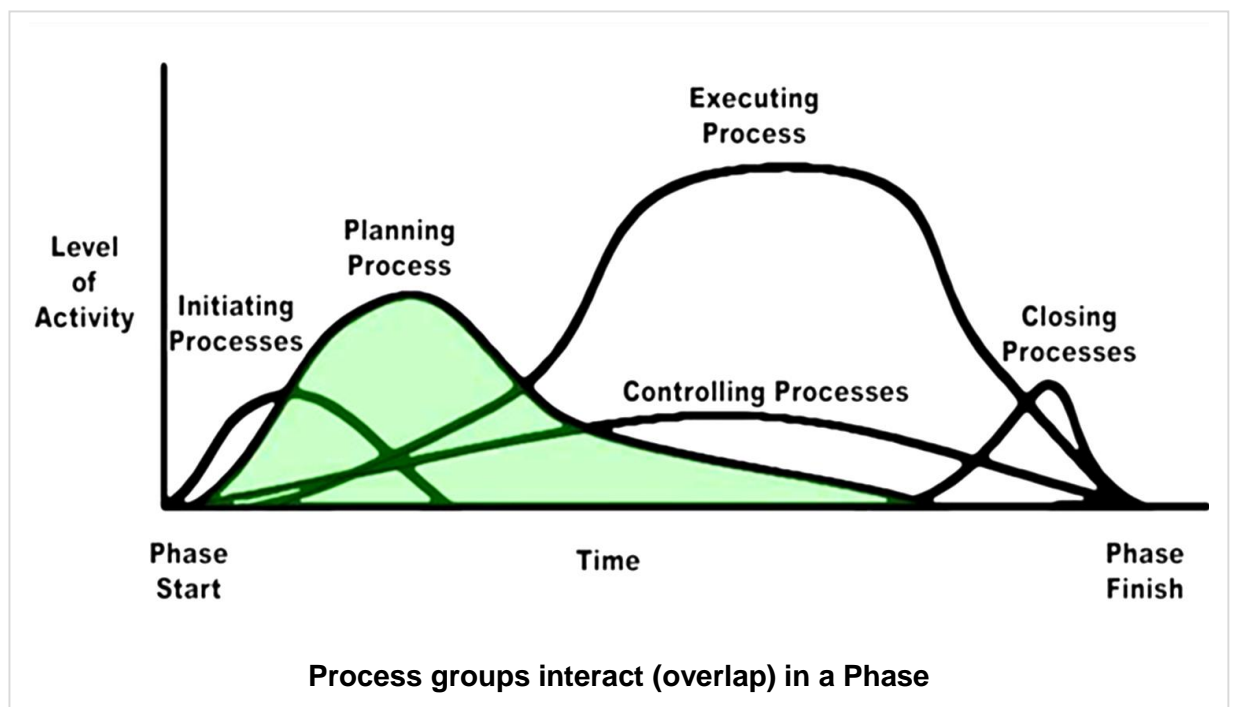
Figure 7: PM process groups.
Source: PMBOK (2013).

3.4 Project Management Success (PMS)

PM has increasingly been a strategy used by organizations to develop their plans in order to meet their targets. From the earliest parts of the 19th Century, PM and its issues have become very topical in a more unique way, to the extent that they have been adopted as organizational model (Carvalho & Rabechini, 2011). This situation is happening because most projects in this century usually involve huge, exorbitant, special or high risk undertakings that are time bound, need to be within budget and need to meet the expectation of stakeholders such as clients (Munns & Bjeirmi, 1996), therefore it needs to be properly managed to achieve these expected targets.

It is hard to answer the question of PMS evaluation precisely because PM creates both tangible and intangible benefits (Thomas & Mullaly, 2008). There is a significant positive relationship between PM practices and project success (Serrador & Turner, 2015; Papke-Shields et al., 2010 and Mir, 2014). PMS is one of the elements of project success, because the latter is hardly achievable without it (Mir & Pinnington, 2014).

Different models for measuring PMS have been developed by various researchers with different underlying assumptions (Dvir et al., 2003; Zwikael, 2009). But, researchers in the field of PMS agree that measuring this variable depends on the dimensions considered for the measurement (Koops et al., 2015). Various publications have come out with various critical success factors, creating a lack of consensus of opinion among scholars on the criteria for judging PMS and the factors that influence that success (Fortune & White, 2006).

One of the most traditional measures of PMS is the "Iron Triangle" approach propagated by De Wit, (1988). It affirms that three main aspects that must be managed together characterize projects: Scope, Cost and Time. PMI (2013) explained the scope

as the work performed to deliver a product, service, or result with the specified features and functions. In addition, the Institute explained PM cost as the cost of resources needed to complete project activities. Finally, the institute defined time management in the iron triangle to include the processes required to manage the timely completion of the project. After projects are planned, these three aspects propagated by De Wit would have to be checked when they are being developed through time. The elements can highlight to the project manager and his project team the level at which the project has sticked to its iron triangle. This is shown in Figure 8 below.
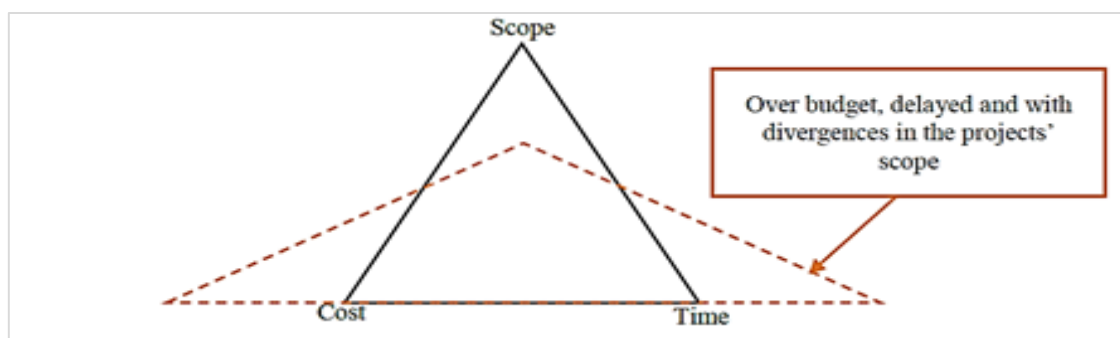
Figure 8: The Iron Triangle.
Source: Carvalho and Rabechini (2011).

De Wit later introduced six success criteria that are usually used to assess construction PMS; budget performance, schedule performance, client satisfaction, functionality, contractor satisfaction, project manager/team satisfaction. Abdullah et al. (2006) and Tesfaye et al. (2017) supported De Wit (1988) findings by observing that PMS depends on the triple objectives of Time, Cost and Quality. In line with that, contemporary PM guides, such as PMBOK (2013) still highlights delivery of projects within the constraint of time, cost and scope.

Besides the "Iron Triangle", it is possible to find many different approaches (Machado and Martes, 2015). A project manager is not responsible only for time, cost and quality management, but also integration, scope, human resource, communication, risk and

procurement management (PMI, 2013), so he or she is the most responsible person for PMS. With this in mind, it is possible to broaden the "Iron Triangle" model to anticipate management of stakeholders' satisfaction (Ribeiro et al., 2013; Maylor, 2001), benefits to organization that owns the project (Machado & Martes, 2015; Ribeiro et al., 2013) and long-term impacts on project environment (Radujković, 2014). In his 2017 edition of his article, Radujković provided the determinants for measuring PMS in Table 2 below.

Table 2. PMS factors

PMS Factor	Author, Year
Project manager competencies	Ika (2009) and Radujković (2014)
Project managers' emotional intelligence, soft project manager elements	Nahod et al. (2013) and Yang (2011)
Stuff in project team	Mir (2014)
Application of PM knowledge and skills from project manager and project team, as well as their coordination	Ferger et al (2014)
Organizational structure	Radujković (2014)
Organizational culture	Westerveld (2003)
PM tools and techniques	Chou et al. (2014) and Besner (2006)
PM standards	Nahod et al. (2013) and Chou et al. (2013)

Source: Radujković and Sjekavica (2017).

In the concluding part of his study, Avninder, observed that these different success factors help to manage projects successfully. However, he emphasized leadership of project manager and top management involvement. He added that for a successful management of a project, project managers need to first understand the specifications and the purpose of the project right from the beginning of the project and plan accordingly. The plan should be able to direct the project manager and his team to be able to undertake the project accordingly (Avninder, 2008).

When trying to determine critical success factors of PM practice in Malaysia, Alias et al. (2014) determined that PM action, project procedures, human factors, external issues and project related factors account for the successful management of a project. A further review of empirical literature by Alias revealed other determinants such as project managers' competencies, project managers' emotional intelligence, staff in project team, application of PM knowledge and skills from project manager and project team, as well as their coordination, organizational structure, organizational culture, PM tools and techniques and PM standards as having influence on the successful completion of a project.

In their article 'Project Management Success: A Bibliometric Analysis', Machado and Martens (2015) modified the "Iron Triangle" to include scope, cost, quality and time and used it as determinants of PMS. After conducting a comparative study using South Africa and Malaysia on the criteria for a successful management of a project, Els et al. (2012) used factors such as stakeholders' appreciation, completing within time, meeting the required quality and completing within cost as determinants of PMS. When comparing the perception various stakeholders on PMS, Davis (2014) summarized that time, cost, quality and stakeholder satisfaction were the most relevant factors for project managers.

Gunduz and Yahya (2018) conducted an analysis of PMS in the construction industry in Doha – Qatar and identified 25 Critical Success Factors after extensive review of literature. These factors include scope and work definition, company's technical capacities, control system, effective site management, project manager capabilities and commitment, company's financial strength, planning efforts, effective scheduling, commitment to the project, adequate PM techniques, adequacy of plans and

specifications, procurement and tendering methods, client consultation and support, communication between stakeholders, top management support, adequate risk analysis, clarity of project mission, effective technical review, personnel selection and training, completion of design at the construction start, effective project briefing, team motivation, harsh climate conditions and environment, political conflicts and corruption, and unforeseen conditions. Other researchers have come out with factors such as project size and value, clear objectives and scope, sub-contractors' competency, contracting method, proper planning and control, and project organization as some of the determinants of PMS (Chan et al., 2004; Khang & Moe, 2008).

Chan et al. (2004) observed after a careful study of various literature that the critical success factors for PMS can be grouped into five. These include project-related factors, project procedures, PM actions, human-related factors and external environment as illustrated in Figure 9 below.
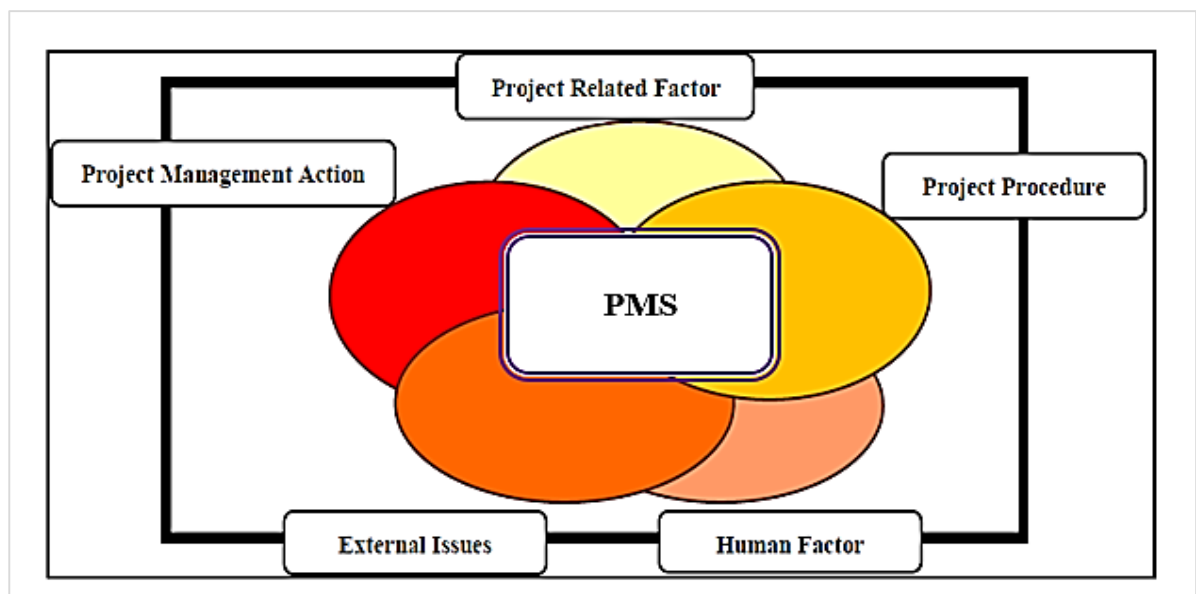
Figure 9: Determinants of PMS.
Source: Chan et al. (2004).

In their quest to discover some generic factors that predict PMS, Shokri-Ghasabeh and Kavousi-Chabok (2009) discovered factors such as time, project change, stakeholders' satisfaction, cost, quality, project control, project team, project scope, top management involvement, availability of resources, project contracts and project risk management as major determinants of PMS. Kandelousi et al. (2011) stated in their article - 'Key Success Factors for Managing Projects' that they recognize the fact that different authors have come up with different criteria for measuring PMS however, they emphasized two factors: project manager's leadership and top management support.

In a research report prepared by the Association of Project Management (APM) in November, 2014 on factors accounting for PMS, effective governance, goals and objectives, competent project teams, project planning and review, commitment to project success, proven methods and tools, capable sponsors, secure funding, end users and operators, aligned supply chain, supportive organization, and appropriate standards were identified as the major determinants of PMS. Other factors identified include project goals and objectives, planning and review processes, leadership and communications.

Table 3 below shows a summary of various determinants used by various researchers to measure PMS.

Table 3. Determinants of PMS

Determinants	Authors
PM action, project procedures, human factors, external issues and project related factors.	Alias et al. (2014)
Quality, time, cost, health, safety and environment, scope, customer' satisfaction, efficiency of use resource, effectiveness productivity, profitability, shareholder satisfaction, experience gain from the project, achievement of project's objectives, sustainability, reliability	Omer and Haleema (2017)
Budget performance, schedule performance, client satisfaction, functionality, contractor satisfaction, project manager/team satisfaction	De Wit (1988)
Cost, time, meeting the technical specification, customers' satisfaction, stakeholders, satisfaction.	Bryde and Robinson (2005)
The iron triangle (i.e. time, cost and quality)	Tesfaye et al. (2017)
Client's satisfaction, project completed on time, project completed to specified quality standard, absence of disputes, safety, completion within budget.	Mukhtar and Amirudin (2016)
Scope, cost and time	Machado and Martens (2015)
Cost, time, performance, satisfaction, use, effectiveness	Pinto and Slevin (1988)
Stakeholders' appreciation, completing within time, meeting the required quality and completing within cost	Els et al. (2012)
Cost, time, quality, scope, customer satisfaction, safety, team satisfaction, shareholder satisfaction.	Bahia and Filho (2010)
Project-related factors, project procedures, PM actions, human-related factors and external environment	Chan et al. (2004)
Time performance, cost performance, quality performance, health, safety and environment, client satisfaction.	Khosravi and Afshari (2011)
Time, project change, stakeholders' satisfaction, cost, quality, project control, project team, project scope, top management support, resources availability, project contracts and project risk management	Shokri-Ghasabeh and Kavousi-Chabok, (2009)
Cost, time, technical requirements, customer satisfaction, objectives achievement.	Gomesa and Romao (2016)
Time, cost, quality and stakeholder satisfaction	Davis (2014)
Cost, quality, time, customer satisfaction, technical specifications, and functional requirements, revenue and profits, competitive advantage, market share, reputation.	Al-Tmeemy et al. (2010)
Leadership of project manager and top management involvement.	Kandelousi et al. (2011)
Technical performance, efficiency of project execution, managerial and organizational implications, personal growth, project termination, technical innovativeness, manufacturability and business performance.	Freeman and Beale (1992)

Source: Self-devised.

3.5 Project Oriented Organizations

For an organization to survive the competitive business environment, there is the need for it to reassess its day to day activities with respect to its capacity to achieve its goals and objectives. Therefore, organizations are becoming more project-oriented; i.e., they are budgeting, planning and assessing business success using the success of their projects and processes that support their business. The old structure of command and control are quickly vanishing and in their place are task forces, self-directed work teams and various forms of project-oriented organizations (Smith, 2002).

According to Gemünden et al (2018), a project-oriented organization is as an entrepreneurial, future and stakeholder-oriented innovating organization, which uses projects as temporary, task-focused organizations, to define, develop, and implement its strategies, to transform its structure and to define and develop new products, services, and business models. When the activities of an organization are geared towards projects, they are identified as project-oriented, project-based or project driven organizations (Koskinen & Pihlanto, 2008). According to PMI (2008), project-oriented organizations are those who use their resources for project work, and project managers enjoy some level of autonomy and authority. Anselmo (2009) mentioned that there are two main concepts of this type of organization. The first is that the project-oriented organization is one that is intentionally designed around projects, whether internal or sold to the organization's clients. The second is that the project-oriented organization is one that rely heavily on selling projects: the structure, then, is a business requirement.

An organization is project-oriented if it defines 'management by projects' as an organizational strategy, applies temporary organizations for the performance of complex processes, manages a project portfolio of different project types, has specific

permanent organizations to provide integrative functions, applies a 'new Management Paradigm', has a clear PM culture, and sees itself as project-oriented (Huemann, 2016). Lindkvist (2004) stressed that organizations that deploys the project model to complete a non-permanent task, design its structure, and produce are project-oriented. Gareis in his 1991 article defined project-oriented organization as an organization that executes all its projects concurrently; in order deal with difficult challenges and potentials within a fast changing business environment. Gareis further provided specific values of project-oriented organizations Table 4 below.

Table 4. Specific values of project-oriented organizations

No.	Specific Values
1	Projects are perceive to be of strategic relevance. They allow the strategy of the business to be implemented and influence them.
2	The independence and self-organization of projects is enforced by top executives to support the performing projects.
3	Leadership is seen among other issues as the capacity to develop a visions, missions, and strategies, and to share them to the projects.
4	Continuous organizational development will guard the survival of the firm in the competitive business environment. Projects play vital roles in this development, as they support organizational learning based on new orientations obtained from interactions with different environments.
5	PM is perceived as an overall management qualification rather than a specialist one.

Source: Gareis (1991).

For an organization to be recognized as a project-oriented, which is a requirement needed to have a remarkable experience level in PM, it should have the structure below (Gareis & Huemann, 2000):

- Management by projects must be an organizational strategy;

- It must adopt a temporary organizations for the performance of complex processes;

- It should manage a portfolio of different project types;

- It should have a specific permanent organizations to deliver coordinated functions;

- It should use a 'new management paradigm' (lean management, total quality management, business process re-engineering and learning organization);

- It should have an clear PM culture; and

- It must see itself to be project oriented.

In addition to the development of individual competences, a project oriented organization should be creating systems to manage its project portfolio and address the needs of the project team to be recognized as such. As a result, structures, people, and values are the three parts of the model of the project-oriented organization (Gemünden et al., 2018) shown in Figure 10 below.

Figure 10: Model of the project-oriented organization.
Source: Gemünden et al. (2018).

A significant structure of project-oriented organizations is that all or almost every activity of these organizational are by projects (PMI, 2013). These organizations are still designed in the context of the traditional functional organizations, but, they deploy and allocate non-permanent duties to project teams (Huemann, 2015). As a matter of fact, to be able to deal with issues associated with the high business complexity, project oriented organizations need to use projects as organizations to execute special and complex tasks and as a result, deliver products or services (Gareis, 1991). In every project-oriented organization, projects are carried out by various departments as the basis for integration, so the duties and responsibilities and the measurement of standards must be based on projects goals and objectives. Team building and human resource development are therefore very vital in these organizations (Zhao, 2010).

3.5.1 Project Management Success in Project-Oriented Organizations

Gareis and Huemann (2000) observed that the success associated with the management of projects may differ among project-oriented organizations because PM competence which refers to the ability to carry out the PM process professionally is needed by the project owner, project manager, PM assistant, project team member, and project contributor to manage a project successfully. However, not all individuals in the various project-oriented organizations have the same level of this competence.

Wald et al. (2015) stated that in Germany, 46% of sales in 2013 were generated by organizations that are projects-oriented. However, not all project-oriented organizations benefited from this success. This is because some of the project-oriented organizations are Innovation Leaders whiles others are not. Wald and his co-authors explained further that those organizations that are innovation leaders benefited from the sales because: First, the effective system and procedures they develop to manage their portfolio

provides them with better transparency, helping them to easily discover opportunities and threats. Also, the innovation leaders are more futuristic and pro-active. As a result, they emphasize the front end of their innovation pipeline and deploy different methods to develop better and more ideas, and processes and eventually choose the best ones. These organizations are therefore able to choose various projects that are of good value using a well-developed and tested business plans.

In addition, innovation leaders are mostly people-centered, i.e., on the average, these organizations attains an appreciable level of maturity and professionalization in leadership, teamwork with good human and knowledge management systems, which meets the expectations of the project team. Finally, the project oriented organizations who are innovation leaders are more open to voice behavior by their project managers, they recognize the opportunities for change, and take them as impulses for potential emerging strategic options. They are ever ready to respond to emergencies, risks and opportunities, and they normally do these in consequence. The head of the project management team and his team members are better stimulated and have the necessary competence to execute very innovative projects while dealing with the uncertainties that comes with them. The project team embers accepts the ambiguities as an opportunity and recognize unclear solution paths a challenge in the positive direction, using other methods that befits these innovative projects. Project team member for these organizations prefer higher independence, coordinated leadership and self-management, and a greater variability and transfer of knowledge and skills (Wald et al., 2015; Gemünden et al., 2017).

According to Hyväri (2006) there is a growing need for the management of projects in various business organizations. But surprisingly, it is still somewhat unclear why one

organization is successful in PM than the other as is the case. A number of studies have examined this phenomenon and have attributed it to the influence of human related factors such as project manager's competency as well as project team member's competence (Tabish & Jha, 2012; Ihuah et al., 2014). Other body of research identified other factors such as good leadership of project manager, top management support, commitments of project participants in meeting the project goal, good coordination between project participants and top management and decision making effectiveness (Cserháti & Szabó, 2014; Hyväri, 2006; Ihuah et al., 2014) whiles others explained the phenomenon with project procurement factors such as comprehensive contract documentation, competitive procurement process, transparency in procurement process and appropriate risk allocation and risk sharing (Cserháti & Szabó, 2014; Chan et al., 2004; Gudienė et al., 2013; Ihuah et al., 2014). The hypothesis below is developed following this review.

H_1: *Level of PMS rate differ significantly among project-oriented organisations in Ghana*

3.6 Organisational Capacity and Project Management Success

When it comes to issues relating to the concept of 'capacity' and its measurement, it is obviously of great interest in DCs like Ghana. However, the concept is not relatively easy to define and as a result, measuring it in practice also presents a number of difficulties (Goodman et al, 1998).

According to the World Bank (2019) capacity is the ability of an organization to use its skills, assets and resources to attain its objectives. Connolly and Lukas (2002) agreed to the World Bank definition by describing capacity as a range of capabilities, knowledge and resources that non-profits need in order to be effective. Capacity is defined by

Goodman et al. (1998) as the power to carry out stated objectives. It a process and an outcome. According to Brown (2003), capacity can be defined ability to use resources effectively and preserve benefits in performance with a relatively lower levels of support from the outside. It involves the "stock of resources" available to an organization or system as well as the actions that transform those resources into performance (Moore et al., 2001). The Japan International Cooperation Agency (JICA) deepened the understanding of capacity as the ability to develop and meet targets, and the ability to identify and address challenges of one's own organization or country. In other words, it refers to the ability to handle issues. From all indication, capacity is an outcome of basic organizational processes like managing budgets, recruiting board members, raising funds, serving constituents and so forth. When capacity is created, it is used on activities that are aligned with the mission of the organization and then recreated through those same organizational activities. The reason then for an organization to engage in any capacity building effort is to create more capacity to achieve project impact (Light, 2004).

In a conference organized by Grantmakers for Effective Organizations in 2003, Organizational capacity was defined by Kohler as the ability of an organization to achieve its vision using a combination of sound management, strong governance, and a persistent rededication to assessing and achieving results. Ker (2003) defined the concept more specifically as the ability of an organization to effectively use its skills and resources to achieve its objectives and satisfy its stakeholders' requirements. The skills and resources include staffing, infrastructure, technology, financial resources, strategic leadership, process management, networks and linkages with other organizations and groups. It involves all those components it takes for an organization to achieve its mission, from physical resources to people to ideas. Organizational

capacity usually refers to an organization's ability to execute tasks or the enabling factors that allow an organization to execute its duties and achieve its objectives (Cox et al., 2018) it involves the potential of an organization to perform – and the ability of an organization to successfully apply its skills and resources to achieve its objectives and meets its stakeholders' requirements (Bjorvatn & Wald, 2018).

In their attempt to measure organizational capacity, Brown et al. (2001) discovered that common to all characterizations of organizational capacity is the assumption that it is linked to PMS. But understanding organizational capacity measurement is hindered by factors such as lack of common understanding of the nature of the relationship between organizational capacity and PMS; variation in what constitutes "successful" PM; and the influence of the external environment on organizational capacity and PMS.

In a report prepared by the department of social work and administration in the University of Hong Kong on Organizational Capacity Assessment; governance and leadership, human resource management, financial management, organizational planning, innovation and learning, program management, performance management, partnerships and external relationships and technology were identified as the areas for assessing organizational capacity. In an attempt to assess Organizational Capacity, Engle (2011) used leadership capacity, operational capacity, management capacity and adaptive capacity as it determinants for their measurement.

Connolly and Lukas (2000) mentioned the determinants of organizational capacity which they observed to be critical for PMS: mission, vision and strategy, governance and strategic leadership, finance, internal operations and management and program delivery. In a study conducted by Muriithi et al. (2016), organizational capacity was assessed using factors such as Human Resource which includes personnel, roles and

responsibility; Strategic Leadership which includes vision and mission, mandate, organizational structure, organizational goals and objectives, motivation, incentives and appraisal procedures; Financial Resource which includes budgetary allocations; Infrastructure which includes technology and facilities; Processes Management which includes processes and knowledge sharing and building and finally External Environmental factors which includes Legal and administrative environments, political will, policies and networks and partnerships and other stakeholders. Six other generally used elements of organizational capacity: Leadership, Strategy, Structure/Governance, Skills, Human Capital, and Accountability (Cox et al., 2018).

Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in February, 2012 adapted a publication on 'Organizational Capacity and Viability Assessment' from Centers for Disease Control and Prevention (CDCP). The report measures organizational capacity using the following thematic areas; governance and legal structure, organizational management, monitoring and evaluation, technical capacity, financial management, human resources, grant management, office operations, information technology, resource mobilization, networking and communications. However, in the first edition, PACT's Learning Series Publications (2010) focused on governance, strategic planning and policy framework, financial and grant systems and administrative policies, human resources development, management and policies, program planning, management and supervision practices, external relations and partnership development/interaction program and institutional and financial sustainability – resource mobilization as major determinants of organizational capacity. Table 5 provides a summary of various factors used by various authors to measure organizational capacity.

Table 5. Determinants of organizational capacity

Determinants	Authors
Leadership Capacity, Operational Capacity, Management Capacity and Adaptive Capacity	Engle (2011)
Human Resource, Strategic Leadership, Financial Resource, Processes Management and External Environmental factors	Muriithi (2016)
Leadership, Strategy, Structure/Governance, Skills, Human Capital, and Accountability	Cox et al. (2018)
Governance and Legal Structure, Organizational Management, PM, Monitoring and Evaluation, Technical Capacity, Financial Management, Human Resources, Grant and Sub-Grantee Management, Office Operations, Information Technology, Resource Mobilization, Networking and Communications.	EGPAF (2012)
Governance, Strategic Planning and Policy Framework, Financial and Grant Systems and Administrative Policies, Human Resources Development, Management and Policies, Program Planning, Management and Supervision Practices, External Relations and Partnership Development/Interaction Program and Institutional and Financial Sustainability.	PACT (2010)

Source: Self-devised.

Rankonyana (2015) in his analysis of the effect of organizational capacity on organizational performance in project implementation added that organizational capacity has a direct effect on the quality, time spent and the overall success of a single project. He therefore recommended that project tasks need to be aligned with the particular goals of the projects and the strategic goal of the organization. This will help to guarantee a situation where the project performance is compatible with the specifications of the project and also propel the vision of the organization forward. Barmayehvar (2013) asserted that successful PM depends on the environment and the capacity of an organization, project, and the project stakeholders. While Hanisch et al. (2009) argued that an organization's capacity to transfer knowledge effectively among its members is of critical consequence to the successful management of a project, Bjorvatn and Wald (2018) emphasized that organizational capacity is a driver of the project teams' performance towards PMS.

In his quest to create an organizational capacity-measuring mechanism for agencies serving the poor, homeless and hungry, White et al. (2005) found an insignificant overall association between capacity and effectiveness, although some elements of capacity in his article appear to be more vital than others. However, Cox et al. (2018) discovered that organizations with different capacities or are seen as high-capacity organizations are also higher performing in the management of their projects. They therefore saw it logical to conclude that organizations that improve their capacities are also likely to successfully manage their projects over time. Thus, embarking on effective monitoring and evaluation of an organization's capacity development is of critical importance to ensuring that capacity development initiatives actually lead to successful PM. From the discussions above, the hypothesis below can be deduced.

H_2: Organisational capacity significantly predicts PMS

3.7 Organizational Structure and Project Management Success

Organizational structure is a management framework that is used to supervise the operations of an organization. An effective and suitable organizational structure helps the PM team to improve on their performance during the execution of the project through gains in efficiency and effectiveness (Ubani, 2012).

Organizational structure involves a formal system of work and authority relationships that directs how employees are to integrate and deploy resources to achieve the objectives of the organization (Ochieng, 2016). Mintzberg (1993) defined organizational structure as the way individuals and groups are organized or the way their tasks are divided and coordinated. It involves how project teams are created, their communication lines and their avenues for channeling authority and making decisions. It is about how organizational tasks and power are assigned, and work processes are

carried out among organizational members (Ruekert et al. 1985). Sablynski (2012) concisely defined organizational structure as the method used to divide, categorize and integrate tasks in an organization. It shows an enduring configuration of tasks and activities (Skivington & Daft, 1991). Underdown (2012) stated that organizational structure is the prescribed system of work and communication relationships that directs, integrate, and motivates employees to work together towards the achievement of the organization's objectives. Andrews (1995) however mentioned that organizational structure involves job positions, their relationships to each other and accountabilities for the process and sub-process deliverables. Organizational structure steers the competence of work, the morale of staff and integration among superiors and subordinates for flow of plans and goals in the organization to develop the future plans (Tran & Tian, 2013).

In his article 'evaluating the effects of organizational structure on the effective delivery of civil engineering projects', Ubani (2012) adopted and modified the determinants used by Akpan and Chizea (2002) and Yinghui and Cheng (2004) to measure organizational structure. The determinants include span of control, level of flexibility, caliber of supervisors and level of lean staffing, number of division/department, levels of power/authority and communication flow, accountability and quality oriented indices and level of simplicity. Mukalula (1996) discovered three elements of organizational structure: organizational complexity, formalization, centralization and decentralization of authority.

Pennings (2002) divided the measures of organizational structure into two broad categories; first, Centralization which includes employees involvement in decision making, classification of authority and departmental participation in decision making

and second, Formalization which includes job codification, job specificity, strictness, rule observation and written communication. Zheng et al. (2010) found that the most significant elements of organizational structure include formalization, centralization, and control.

According to Germain (1996), organizational structures are affected by various internal and external factors such as technological demands, organizational growth, environmental turbulence, size and business strategy. Robbins and Bamwell (2002) listed strategy, organizational size, technology, environment and power-control as contingencies of organizational structure. Table 6 provides a summary of the determinants of organizational structure.

Table 6. Determinants of Organizational Structure

Determinants	Authors
Responsibility and Quality, Span of Control, nature of Supervisors and Level of Lean Staffing, Number of Division/Department, Level of Flexibility, Levels of Power/Authority and Communication Flow, Oriented Indices and Level of Simplicity	Ubani (2012)
Organizational Complexity, Formalization, Centralization and Decentralization of Authority	Mukalula (1996)
Centralization and Formalization	Pennings (2002)
Formalization, Centralization, and Control	Zheng et al. (2010)
Technological Demands, Organizational Growth, Environmental Turbulence, Size and Business Strategy	Germain (1996)
Strategy, Organizational Size, Technology, Environment and Power-Control	Robbins and Bamwell (2002)

Source: Self-devised.

In assessing the impact of the organizational structure and project organizational culture on project performance in Slovenian enterprises, Stare (2011) discovered that in most DCs, not enough diligence are applied to plan a project, normally without proper risk

assessment, resulting in the improvisation which is usually the way projects are implemented, mostly for political reasons. Although there are well laid down internal rules to govern project implementation, a lot of project managers in DCs disregard them. The result of which includes low level of authority enjoyed by project managers, the low level of support of line managers, and unsuitable project teams. Almost all of these factors could be attributed to the project organization's structure, which is part of its corporate culture.

The structure of an organization significantly affects its capacity to execute a project successfully (Oberlender, 2000). However, most managers of project oriented organizations in DCs disregard the impact of organizational structure until it is too late. Kerzner (2004) stated that managers of project oriented organizations have come to appreciate the need for their outfits to be dynamic in nature, that is, their organizations should be able to adapt to rapid structuring should environmental conditions change.

Inuwa (2015) observed that the traditional management organizational structure involves the project coordinator performing the managerial functions in addition to their core or technical duties. The project coordinator, normally an architect or an engineer, carry out the duties of the project manager but not in full capacity since the total authority and management rest with the client (Figure 11). With this disposition, the manager of the project- in this case the project coordinator does not get enough authority in to make decisions since he is only made to deal with the information dissemination and the integration of the construction aspect of the project (Ekundayo, et al., 2013; Kerzner, 2000). Work flows are set out vertically, making it difficult for extensive planning and integration to occur. This structure gives little opportunity to workers to work with other functional areas (Kerzner, 2000). However, the PM

organizational structure permits the arrangement of work flow and project integration horizontally and vertically (Figure 12), and this helps in extensive planning and integration (Kerzner, 2000). Again, the structure permits the arrangement of tasks with respect to different functional groups that work with each other. This results in improved coordination and communication among project teams and managers; it also generates productivity, efficiency, and effectiveness in PM (Inuwa & Kunya, 2015).
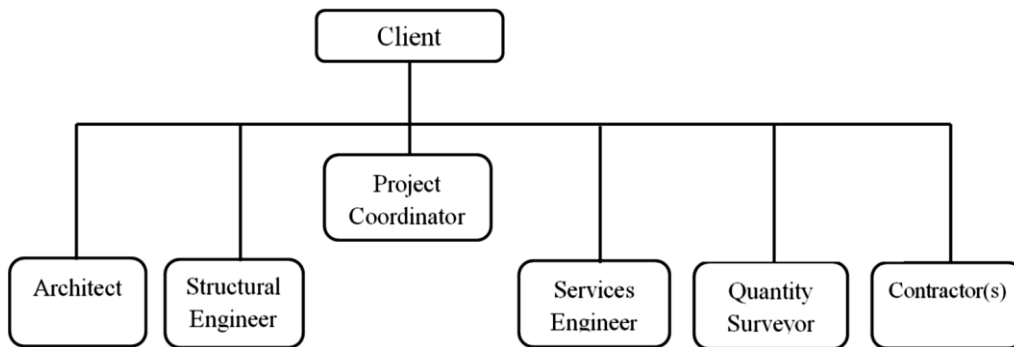
Figure 11: Traditional management structure.

Source: Ekundayo et al. (2013).
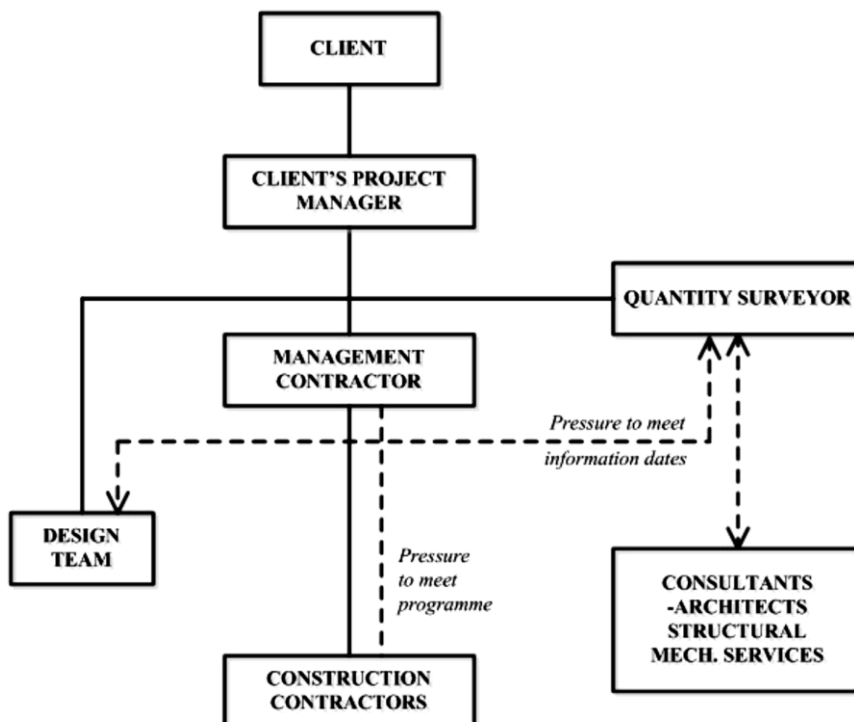
Figure 12: Project management structure.
Source: Ekundayo et al. (2013).

Wallace (2007) identified that the structure of project-oriented organization largely affects the way the project team works. A cautious evaluation of the members of the project team and their interactions among themselves impacts on the successful management of a project. Wallace finally pointed out that the structure of an organization will somehow be altered at every phase of a project to meet the changing nature of the project. Developing an effective project team and a strong organizational structure will impact on PMS (Ubani, 2012). The hypothesis below is developed based on the review above.

H₃: Organisational structure is a significant predictor of PMS

3.8 Leadership and Project Management Success

Lussier and Achua (2013) stated that there hasn't been a generally acceptable definition for leadership because leadership is complex and is studied in different ways that call for different definitions. However, the authors defined leadership as an influencing process between superiors and subordinates towards the achievement of organizational objectives. Leadership refer to the chain of command in an organization from which authority flows. People in leadership are those expected to perform certain roles over other employees and are also expected to assign tasks and responsibilities to their subordinates. (Ochieng, 2016).

Adair (2009:12) defines leadership as *"the ability to make decisions, having energy, having a sense of duty; confidence; and pride in command"*. However Daft (2007:4) gives a different definition of leadership as *"an influential relationship among leaders and followers who intend real changes and outcomes that reflect their shared purposes"*. Gido and Clements (1999) define leadership as getting things done through others. Leadership is the ability to influence followers to engage in achieving

organizational objectives, using appropriate motivational techniques of influence based on power and formal or informal authority (Islam et al., 2017). It is the process of impacting on a group of individuals to accomplish stated goals (Northouse, 2013; Yukl, 2011).

In his assessment of the attributes of leadership in PM, Meredith and Mantel (2011) stated quality of technical skills, political awareness, foundation, kind of orientation towards achieving stated objectives and level of self-esteem as determinants of PM leadership. Dulewicz and Higgs (2004) categorized the determinants of leadership into three, namely:

- **Managerial**: resource management, engaging, communicating, empowering development and achievement.

- **Intellectual**: detailed analysis and judgment, vision and creativity and strategic.

- **Emotional**: self-recognition, emotional resilience, intuitiveness, sensitivity influence, motivating, and consciousness.

Larson and Gray (2014) measured project leadership using factors such a systems thinker, personal integrity, pro-activeness, emotional intelligence, having a general business perspective, time management, skillful politician, and optimism. Coordination, communication and motivation were used to measure leadership in public sector by Malyjurek (2016) whiles Kurzydłowska (2016) used factors such as innovativeness, coherent, inventiveness, concise, confidence, consistency, open-mindedness, and competence to measure leadership. Murugesan (2012) adopted Peter Drucker's basic factors for measuring leadership competence: listening, communicating; purposeful improvement or change, and recognizing tasks over the individual's ego.

When analyzing leadership perspective and its measurement, Goleman (1998) advocated that the determinants for measuring leadership include intelligence, determination, toughness, and vision. He went further to state that these factors were insufficient to be required for a successful leader, as a result, other important determinants of effective leadership are Emotional Intelligence which includes self-awareness, self-regulation, empathy, motivation and social skills. In the words of Lumijärvi (2007:3), "*as a whole, the leadership determinants ... can be summarized in the following factors: knowledge, intelligence, skills, competence, schooling and training, innovativeness and creativity, stability and experience, values, organizational culture, commitment and motivation, entrepreneurship, ability to co-operate and trust, employer image and reputation"*.

According to Culp and Smith (cited in Burger & Verster, 2009), major elements of project leadership includes competence, technical knowledge, interpersonal skills and PM skills. In an article published by Leadership Gap Indicator (LGI) for Center for Creative Leadership in 2015, a summary of indicators of leadership competence with their explanations are stated in Table 7.

Table 7. Determinants and their explanation

Determinant	Explanation
Weighing Personal Life & Work	Weighing work priorities with personal life.
Quick Learning Ability	Ability to learn new technical and business knowledge.
Good Relationships Builder	Creates good working relationships with co-workers and external parties.
Career Management	Uses effective career management tactics, including mentoring, professional relationships, and feedback channels.
Change Management	Uses effective strategies to promote organizational change initiatives and effectively manage change.
Compassion & Sensitivity	Being there for others and trying to meet their needs.
Composure	Ability to control yourself in difficult situations.
Problem Solving	Acts decisively and with fairness when resolving conflicts among staff
Cultural Awareness	Adjusts to different cultures regarding Human Resource practices and effective team process.
Decisiveness	Prefers doing or acting over thinking about the situation.
Employee Development	Direct and encourage employees to develop in their careers.
Boosting Morale	Encourage others to do their best.
Leading Employees	Attracts, encourages, and develops employees.
Participative Management	Consult others, listens, and builds trust.
Putting People At Ease	Is approachable and a good sense of humor.
Respect For Opinions	Effective in working with and treating people of different orientations (culture, gender, age, educational background) and opinions fairly.
Conscious	Has an accurate picture of strengths and weaknesses and is prepared to develop.
Strategic Perspective	Comprehends the views of top executives and efficiently analyzes complex situations.
Strategic Planning	Creates a long-term goal and strategies; convert vision into real business strategies.
Accountability	Is in charge and takes advantage of opportunities.

Source: LGI (2015).

Table 8 provides a summary of various factors used by various researchers to measure the effectiveness of leadership.

Table 8. Determinants of leadership

Determinants	Authors
quality of Technical Skills, Political Sensitivity, Foundation, Level Of Goal Orientation; and Level Of Self-Esteem	Meredith et al. (1995)
Managerial, Intellectual and Emotional	Dulewicz and Higgs (2003)
Systems Thinker, Personal Integrity, Pro-Activeness, Emotional Intelligence, Having a General Business Perspective, Time Management, Skillful Politician, and Optimism	Larson and Gray (2014)
Coordination, Communication and Motivation	Malyjurek (2016)
Innovativeness, Coherent, Inventiveness, Concise, Confidence, Consistency, Open-Mindedness, And Competence	Kurzydłowska (2016)
Listening, Communicating; Continuous Improvement or Change, and Promoting Tasks over the Individual's Ego	Murugesan (2012)
Intelligence, Determination, Toughness, and Vision	Goleman (1998)
Knowledge, Intelligence, Skills, Competence, Schooling and Training, Innovativeness and Creativity, Stability and Experience, Values, Organizational Culture, Commitment and Motivation, Entrepreneurship, Ability to Co-Operate and Trust, Employer Image and Reputation	Lumijärvi (2007)
Competence, Technical Knowledge, Interpersonal Skills and PM Skills	Burger and Verster (2009)

Source: Self-devised.

In page 28 of his article, Burke et al. (2006) observed the effect of leadership on projects management effectiveness by stating that without dynamic leadership, the project teams responsible for delivery of the organization project objectives would be like a rudderless boat. A rudderless boat he defined in his article as a boat moving without direction.

Kerzner (2013) provided a more detailed evidence on how leadership affects PMS. He mentioned four components that are vital when exercising good PM leadership methodologies: effective communication, effective co-operation, effective team work and trust. Effective communication is normally implemented within the project team, the internal clients, and the whole organization. Effective coordination is however

needed in the whole organization in order to match the organization's objectives. Effective team work is needed in the internal projects team, and the element of trust is exhibited throughout the life cycle of a project for it successful completion. In the context of PM, effective leaders are expected to place appropriate importance to relationships, communicate their values, and at the same time place special emphasis on procedure (Turner, 2006).

Since both PM procedures and the competence of the project members are relevant drivers of PMS, the project manager is expected to pay special attention to his management and leadership roles. In PM, leadership plays an important role which includes developing and communicating the goals of the project, encouraging and influencing project team members, motivating project employees, assisting effective teamwork and creating good relationships among others (Pandya, 2014). Pandya further observed that project managers are expected to stimulate the project team to embark on various relevant actions that will help to achieve the objectives of the project, resulting in effective project implementation. Consequently, effective leadership needs to consider three vital elements of a project: time, cost and scope with the objective of achieving them. Aligned with Pandya's observation, Morgeson et al. (2010) concluded that the scope of a project at a particular time, with a reasonable budget needs a competent and proactive leadership. Therefore, leadership is a major driver of PMS. To achieve the objectives set for a project, it is expected that the efforts of all members of the project team are deployed. Accordingly, it is again the duty of leadership to encourage members of the project team to offer quality services with high level of commitment in order to execute a project successfully. The leader of the project is also expected to take the responsibilities of understanding the competence of the team members, including their strengths and weaknesses.

75

In their article, "PM: The Managerial Process", Larson and Gray (2014:12) emphasized the relevance of an effective project manager's ability to walk the talk. They stated that *"the leadership styles, behavior, and attitudes evidenced by project managers are very critical because their daily actions influence the behavior and success of their team members"*. Larson and Gray mentioned eight feature that they believe can influence PMS: being a systems thinker, having personal integrity, being proactive, having a high emotional intelligence, having a general business perspective, using effective time management, being a skillful politician, and being an optimist. Based on the review above, the following hypothesis is developed.

H4: Leadership significantly predicts PMS.

3.9 Key Competences for an Effective Project Management

Barna (2013) explained competency as a set of related learning, mentalities, aptitudes and other individual characteristics that largely impacts on one's job. In PM, competency is defined as key cluster of related knowledge, abilities or skills, experience, attitudes, and other personal attributes and features that are needed by a project manager in order to deliver high quality project performance (Sebt et al., 2010). Crawford (2005:12) contended that "*competence could be inferred from attributes, which included knowledge, skills and experience, personality traits, attitudes, and behaviors*".

Competencies of project managers have been categorized differently by various scholars. (Thal & Bedingfield, 2010). Spencer and Spencer (1993) proposed five competency characteristics including knowledge, skills, intention, attribute, and self-concept. PMI (2002) revealed that in the PM discipline, competency can be defined using three different dimensions: PM knowledge – i.e. what project managers

contributes to projects from their knowledge and understanding of PM, PM performance – i.e. what project managers show from their abilities to successfully execute their projects, and personal competencies – i.e. the main personality attributes driving the project managers' capabilities to carry out projects. Hence, project managers will be considered to be competent if they have the appropriate mixture of knowledge, performance, and personal competencies (Sebt et al., 2010). Nonetheless, for every project, the project managers is expected to show higher levels of engagement, commitment, and contribution than other project team members to execute their projects successfully (Hölzle, 2010).

In their 2006 Individual Competence Based (ICB) report, the International Project Management Association (IPMA) categorized PM competence as follows:

- **Technical competence:** This is made up of the fundamental PM competence elements. It covers the PM content, sometimes referred to as the solid elements.

- **Behavioral competence:** It is about the personal PM competence elements. It covers the project manager's attitudes and skills.

- **Contextual competence:** it involves the PM competence elements related to the context of the project. It covers the project manager's competence in managing relations with the line management organization and the ability to function in a project focused organization.

The association further provided the element for the three ranges of competence in Table 9.

Table 9. Ranges of PM competence and their elements.

Technical Competence	Behavioral Competence	Contextual Competence
1. PM success	1. Leadership	1. Project orientation
1 Interested parties	2. Engagement	2. Program orientation
2 Project requirements & objectives	3. Self-control	3. Portfolio orientation
3 Risk & opportunity	4. Assertiveness	4. Project, program & portfolio implementation
4 Quality	5. Relaxation	5. Permanent organization
5 Project organization	6. Openness	6. Business
6 Teamwork	7. Creativity	7. Systems, products & technology
7 Problem resolution	8. Results orientation	8. Personnel management
8 Project structures	9. Efficiency	9. Health, security, safety & environment
9 Scope & deliverables	10. Consultation	10. Finance
10 Time & project phases	11. Negotiation	11. Legal
11 Resources	12. Conflict & crisis	
12 Cost & finance	13. Reliability	
13 Procurement & contract	14. Values appreciation	
14 Changes	15. Ethics	
15 Control & reports		
16 Information & documentation		
17 Communication		
18 Start-up		
19 Close-out		

Source: IPMA (2006).

Since PM is increasingly becoming a strategic discipline, project manager are expected to become the link between the strategy of the organization and the PM team. The function of the project manager is therefore becoming more strategic in nature. However, understanding and applying the knowledge, tools, and techniques that are acknowledged as good practice are not enough for effective PM. In addition to any area-specific skills and general management proficiencies needed for the project, efficient PM demands that the project manager have the following competencies:

- **Knowledge:** It refers to what the project manager knows about PM.

- **Performance:** It refers to what the project manager is able to do or accomplish while applying his or her PM knowledge.

- **Personal:** It refers to how the project manager behaves when performing the project-related activity. Personal competence involves attitudes, core personality characteristics, and leadership, that the ability to guide the project team while achieving project objectives and balancing the project constraints (PMBOK, 2013)

As project managers execute their tasks using the project team and other project participants, they are expected to apply a combination of ethical, interpersonal, and conceptual skills to help them to analyze situations and interact properly. Some of these ethical, interpersonal, and conceptual competencies includes leadership, team building, motivation, communication, influencing, decision making, political and cultural awareness, negotiation, trust building, conflict management, and coaching (PMBOK, 2013; Amponsah, 2010).

Whiles members of a project teams are expected to show their areas of expertise for PMS, the manager of the project is also expected to use his expertise to manage the project participants. The project manager having the required expertise will be able to manage the results while having the distinct knowledge of professional PM techniques (Amponsah, 2010).

Kerzner (2000) stated that the development of PM has altered the kind of competence needed to become an efficient project manager. During the early periods of PM, there was a lot of priority was given to only technical skills but as time went on, managerial and behavioral skill became equally relevant as technical skills since the composition of

the project team changed from being solely engineering people. During these times, comprehending people management became a very necessary condition for project manager to be efficient. Contemporary PM demands the application of different set of skills, because the objectives of the business in this current circumstances are to some extent more relevant than the current technical objectives. Project managers are currently supposed to concentrate more on making business decisions than just technical ones. They are supposed to place their roles as managers and leaders ahead of any other roles they may have (PMI, 2008).

Murch (2001) however disagreed with the earlier assertions by suggesting that project managers are supposed to have enough technical competence and understanding to be able to effectively execute their tasks. He stressed that it even becomes more relevant when managing construction projects, because these kinds of projects are usually more technical and complex in nature; requiring enough engineering knowledge and the application of scientific principles. When working on construction projects, it expected that the project manager should have some level of awareness about the technical setbacks that the project team members face. This will help the project managers to effectively manage and lead with full comprehension of the complex challenges that prevail during the life cycle of the project (Lewis, 1998). Monson (2000) sharply contradicted this finding by stating that PMS does not necessary depend on the level of technical competence of the project manager. He observed that deficiencies are normally encountered on the organizational structure of most project oriented organizations who technically competent people as consultants for a project instead of project managers. The main idea is that technical competence (the capacity to solve difficult engineering or scientific challenges) seeks to promote the integrity of the project manager for customers, senior executives and the project team. But, it is not

clear that the project manager's integrity is the most relevant factor for PM competency (Amponsah, 2010).

Koontz and Weihrich (1993) suggested that a project manager needs to have the competence to perform five management functions to able to manage a project successfully. These includes:

- *Planning*: which involves making decisions and choosing a direction that the organization needs to follow. It is about making proactive decisions on what to do, how to do it and when to do it. Planning includes taking an organization from its current state to some desired future state.

- *Organizing*: Involves creating and assigning roles to various members of the organization. The main aim of the organizing function is to help develop a favorable working environment that will support the members of the organization to perform their duties efficiently. and effectively

- *Staffing*: involves preparing and keeping records of the various positions and their roles created on the organizational structure. Staffing includes developing standards for the performance of assigned tasks. Keeping staff records, conducting performance appraisals, recruiting and selecting candidates and compensating and training are other staffing functions.

- *Leading*: involves directing employees to work diligently towards the attainment of the objectives of the organization or the group.

- *Controlling*: is about monitoring and correcting errors emanating from the day to day activities of the business to verify that the operations of the organization is in conformity with the company's developed plans. Consequently, the controlling function matches performance against targets and plans, to discover

where the organization is deviating, and creates a mechanism to correct the deviation in order to realize the plans and the goals of the organization (Koontz & Weihrich, 1993).

3.10 Best Practice Principles for Project Management Success

The concept of PM practice has been construed in many ways by different authors. Some researchers link it with PM competence and apply it equivalently with verifiable performance (Crawford, 2005), while others define it as merely the application of PM tools and techniques on project activities (Olateju, 2011; G. Ofori, 2013). The term PM practice is defined by Jarzabkowski (2004) as a range of customs and rules or bodies of knowledge that state, clearly or implicitly, how a PM practitioner should operate or work in a certain situation. These practices can be documented by emphasizing the best or the preferred practice in the organization or are presented in the form of narratives showing methods used to do things done in the project-oriented organization. PM practices involves PM systems demonstrating specific PM tools and techniques strengthen management processes using the actions of a project manager or professional in order to support project-oriented organizations in managing their projects (Lawani & Moore, 2016).

When performing their duties, project managers normally face issues relating to labor force, conflicts among employees, administrative processes, and prioritization of the project, technical conflicts, timing of the project and budget objectives (Hyväri, 2006). These issues in most cases results in challenges such as inadequate resources, inability to meet deadlines, ambiguous goals, uncommitted team members, improper planning, ineffective communications, inconsistent project objectives and resources, and inconsistency between departments or functions (Pinto, 2007). To address this, PM

researchers have come out with some PM practices to help prevent these issues. Some of these solutions include: periodic feedback from organizational stakeholders, efficient application of network planning techniques, existence of back-up strategies, organizational structure aligned with the project team, proper monitoring and control, project team commitment in project tasks, and project manager's involvement in the quest to achieve project timing, budget, and technical performance objectives (Bowenkamp & Kleiner, 1987; Barmayehvar, 2013).

Fabi and Pettersen (1992) identified crucial human resource management practices in PM for project-oriented organizations. These practices include human resource planning which involves predicting differences between availability and organizational needs for human resource, reception which involves blending new employees with old ones, selection process which includes choosing the best candidates, job analysis which involves obtaining information on the specific jobs, remuneration which includes paying employees based on the evaluation of their contributions, performance assessment which involves judging employees' activity in terms of a certain systematic process and career development which includes education and training, setting of planned learning activities through work-groups, simulation and job rotation (Barmayehvar, 2013).

In their analysis of the PM practices used by organizations in the public sector of Jordan, Abbasi and Al Mharmah (2000) observed that different practices, tools and techniques such as tables, work breakdown structure charts and networks are used in the PM process. To present the project activities and vital information such as duration, dependency, cost, starting points, ending points, required resources, etc., tables are deployed. Again, tables are deployed at the planning and controlling stages of PM and

can be deployed during the implementation and progress measurement stages. Work breakdown structure charts are organizational charts that breaks the project into subsystems, components and tasks that can be readily accomplished. They are used for scheduling, pricing and resource planning. They simplify summarizing and reporting progress and costs (Davies, 1995). Other charts such as Gantt charts and organization break down structure charts which serve as a model that provides a way of arranging resources into categories for better management and tracking of resource allocation and specific work duties are efficient techniques that supports the activities of project managers (Abbasi & Al Mharmah, 2000).

PM techniques and practices are the channels through which PM processes in the organization are provided and assisted. These practices involve beside work breakdown structure or earned value management, the various principles based on which the processes of the organization are defined, including the use of procedure documents, checklists, job aids, and templates, as well as, the use of software packages and various databases (Fernandes, 2013). The proper application of PM practices should make it easier to implement PM techniques (Thomas & Mengel, 2008) such as the implantation of project management information system (PMIS) which is the most used technique that assists and propels the execution of any project, especially those that are complex, unreliable, and under market, time and financial pressures, or other constraints that are difficult to manage (Zhai et al., 2009). As stated by Stewart and Mohamed (2003) without an effective use of IT to facilitate the process of information management amongst project participants, it will be difficult to experience any significant improvements in the communication process, and the management of projects at large if there is a continuous use of the traditional paper-based process.

When highlighting the need for internationally accepted practices in the management of projects, Ilieş et al. (2010) argued that in the 1950s PM was perceived as a distinct management method, different from other management methods used in government or corporate business. But currently, PM has been accepted globally, thus the acceptance of globally recognized PM practices are inevitable. They supported their argument by stressing that the application of internationally accepted practices in the management of projects are associated with such smooth transfer of knowledge, better communication, time and cost savings, better process quality, better team work, better position on the market, an international approach of labor, better monitoring and controlling of projects and more efficient and objective audit. This is shown in Figure 13.

Figure 13: The advantages of using best practices in PM.
Source: Ilieş et al. (2010).

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

The main objective of this chapter is to explain the design and the methodologies that are used to carry out this research. The chapter begins with a discussion on the meaning of research design and the type of design that is used in this study. The chapter summarizes the hypotheses that have been developed for this research after the review of relevant literature. The model for this study is also shown in this chapter. Subsequently, a discussion on the various research methods and an argument for the selection of the required method for this thesis is also provided. Next, a discussion on the target population, sample and sampling technique used. The chapter again describes the measuring instrument designed and addresses how variables in this research will be operationalized. Other issues such as the methods used to collect data and the techniques used to analyze the data are also presented in this chapter.

4.2 Research Design

This study uses the Factorial Experimental Research Design (i.e. the Factorial Research Design) to conceptualize, operationalize, collect and analyze data.

A factorial research design is the type of design that uses two or more variables or factors in such a way that all the possible combinations of selected values of each variable are used (Mcburney & White, 2012). According to Singh (1998), a factorial research design is an experimental design that allows the manipulation of two or more independent variables to obtain all possible combinations so that their independence and their interaction effect on the dependent variable simultaneously may be known

(Johnson & Christensen, 2000). From the definition above, it can be summarized that the factorial design involves the manipulation of two or more independent variables to be able to study their impact on the dependent variable. Since the focus of this research is to study organizational capacity, organizational structure and leadership simultaneously and their interaction effect on PMS, this research design is deemed appropriate for this study.

4.2.1 Research Hypotheses

To be able to meet the objectives set for this research, this thesis suggest the hypotheses below which were developed from the review of existing literature in Chapter three for examination:

H_1: *Level of PMS rate differ significantly among project-oriented organisations in Ghana*

H_2: *Organisational capacity significantly predicts PMS*

H_3: *Organisational structure is a significant predictor of PMS*

H_4: *Leadership significantly predicts PMS*

4.2.2 Research Model

This study mainly uses the structural equation modeling (SEM). SEM is a full statistical technique that is used to test hypothesis about the relationship between observed and latent variables (Hoyle, 1995). It involves a multivariate statistical technique that is deployed to model complex relationships between directly and indirectly observed (latent) variables. It is a general technique that includes solving systems of linear equations and encompasses other techniques such as regression, factor analysis, path analysis, and latent growth curve modeling at the same time (Stein et al., 2012).

The research model for this study is made up of four latent variables; three of which are exogenous (i.e. Organizational Capacity, Organizational Structure and Leadership) and one endogenous (i.e. PMS). The focus of the model is to first establish the potential causal dependencies between the endogenous variable and the exogenous variables, and establish the measurement model showing the relations between the latent variables and their indicators (observed variables) in the study. Figure 14 below show a diagrammatic representation of the research model for this study.
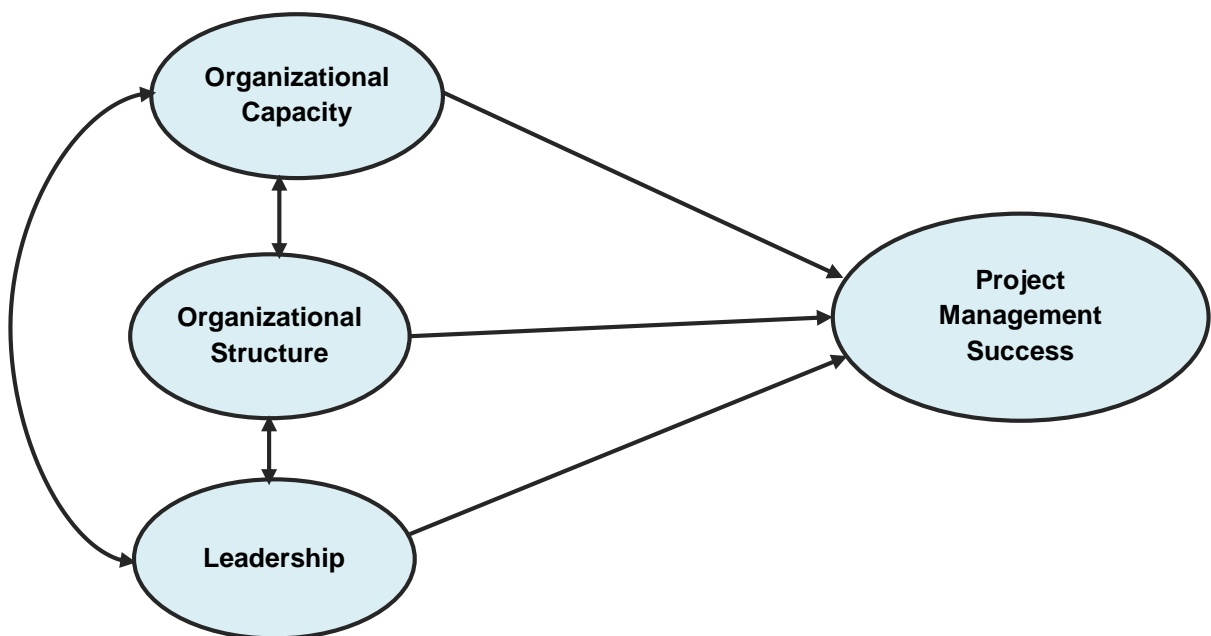
Figure 14: The research model.
Source: Self-devised.

4.3 Research Method

For the purpose of this study, the kind of questions that is posed to respondents require the use of quantitative methods with the required experimental designs throughout this study to come out with the behavior of the variables in the study.

Quantitative research methods are research methods that deal with numbers and anything that is measurable in a systematic way. It involves scrutinizing a phenomenon

and their relationships. This method is deployed to answer questions on relationships between measurable variables with the aim of explaining, predicting and controlling a phenomenon (Leedy, 1993). A total quantitative study normally concludes with the confirmation or disconfirmation of the hypothesis tested. Scholars deploying this method pick out one or a few variables that they want to use in their study and continue with the collection of data related to those variables.

Since the nature of this study fits the characteristics of the quantitative research method: Deduction – which involves predetermined design and a separates data collection and analysis; Objectivity – which dwells on things that can be measured with results not depending on beliefs and the researcher being detached or distant from the data and Generality – which stresses generalization and replication, analyzes of variables and use of experimental and statistical controls (Morgan, 2013), the choice of the method is deemed appropriate for the purposes of this study.

4.4 Population, Sample and Sampling Technique

The population of interest for this research is defined as all certified PM practitioners in Ghana. Participants that are targeted include government officials, heads of public and private institutions and civil servants who give project contracts; contractors and managers, managers of non-governmental organizations and employees of project oriented organizations, students and other individuals who are certified PM practitioners. A population of 442 certified PM practitioners in Ghana (Project Management Institute – Ghana, 2019) is estimated for the purpose of this study. These practitioners hold at least a professional certificate in PM, practicing as project managers and are registered members of Project Management Institute – Ghana. The selection of these people is as a result of their knowledge in PM in DCs.

When choosing a sample size, it is recommended that the researcher decide on the acceptable range of uncertainty, given the time and cost constraints of the research (Rea & Parker, 1997:116). A probability sampling technique is used to select the sample size at 95% confidence level with a maximum sampling error (precision) of ±5% allowed. A minimum sample size of 220 respondents is estimated for data collection and analysis using the questionnaire designed; with the conviction that this estimated number is deemed to be representative enough to be used to make inferences about the population of this study.

4.5   Measuring Instruments

The main instrument used to gather data from respondents for analysis is the questionnaire. The selection of this data collection tool is as a result of its cost effectiveness, convenience, easy to administer, and anonymity of respondents which could help to collect sensitive information (Burns & Bush, 2010).

The questionnaire is made up of 36 items in Four Parts. Part One of the questionnaire was self-devised. Part Two was extracted and adjusted to align with this study from the studies of Gareis and Huemann (2000) and Gemünden et al. (2017). The Third part of the questionnaire is made up of Four Sections (A, B, C, and D). Section A was self-devised, Section B was adopted and modified from Zheng et al. (2010), Section C was extracted and modified from Culp and Smith; cited in Burger and Verster (2009) whiles Section D was also adopted and modified to suit the purpose of this research from the articles of De Wit (1988), Turner (1999), Gomesa and Romao (2016) and Tesfaye (2017). All sections in part three uses a Likert Scale of 1 to 5, with 1 being 'Strongly Disagree' to 5 being 'Strongly Agree'. The Final Part (Part Four) of the questionnaire was adopted and modified from IPMA (2006), PMBOK (2013), Bowenkamp and

Kleiner (1987), Barmayehvar (2013) and Abbasi and Al Mharmah (2000). Below is a detailed description of the various parts and sections of the measuring instrument.

Part One: Demographic Information

The idea behind the first part of the questionnaire is to help the author obtain information about the demographics characteristics of the respondents. The author used closed ended questions to collect data on the gender, age, education, work experience, and certifications. This data collected assisted to set up the context and showed the disparities among the respondents, especially among the different project-oriented organizations. This part is made up of five items.

Part Two: Project-Oriented Organizations

Part two of the questionnaire asked respondents to indicate the type of project-oriented organization they work for. The part required respondents to provide information on the features of their project-oriented organizations by confirming or otherwise, features that are listed for them from section 3.3 of chapter 3. Part two of the instrument is made up of two items.

Part Three – Section A: Organizational Capacity

The objective of this section of the questionnaire was to solicit from respondents, information that will help to measure organizational capacity as a variable in this study. As a result, the section used the Likert Scale to mostly urge the participants to show their level of agreement or disagreement with different structured statements made concerning the capacity of their project-oriented organizations. Indicators such as, governance and legal structure, human capital, monitoring and evaluation, technical capacity, financial management and information technology which were self-devised

were used to frame the structured statement to solicit for the appropriate responses from participants. This section is made of seven items.

Part Three – Section B: Organizational Structure

This portion of the questionnaire was concentrated on soliciting from respondents, the necessary information that will help the researcher to measure the variable organizational structure. This section also used the Likert Scale to mostly query the participants to show their level of agreement or disagreement with different structured statements made concerning the structure of their project-oriented organizations. Indicators such as organizational complexity, formalization, centralization, span of control and communication flow which were adopted and modified from the article Zheng et al. (2010) were used to frame the structured statement to solicit for the appropriate responses from participants. This section is made up of five items.

Part Three – Section C: Leadership

In this section of the questionnaire, the aim was to generate from respondents, information that will help to measure leadership in PM as a variable in this research. This section again used the Likert Scale to mostly urge the participants to show their level of agreement or disagreement with different structured statements made concerning the leadership in their project-oriented organizations. Indicators such as competence, technical knowledge, interpersonal skills, PM skills, open-mindedness and personal integrity which were extracted and modified from Culp and Smith; cited in Burger and Verster, (2009) were used to frame the structured statement to solicit for the general opinion of the participants regarding leadership in their organizations. This section is made of six items.

Part Three – Section D: PMS

The final section of part three of the questionnaire was focused on soliciting from respondents, the necessary information that will help the researcher to measure PMS as a variable in this study. Like other sections in part three, this section also used the Likert Scale to urge the participants to show their level of agreement or disagreement with different structured statements made concerning PMS or otherwise in their project-oriented organizations. Indicators such as time, cost, quality, accomplishing deadlines, adjustment to budget, human resource, communication, satisfying customer's specifications and procurement practices which were adopted and modified from the articles of De Wit (1988), Turner (1999), Gomesa and Romao (2016) and Tesfaye (2017) were used to frame the structured statement to solicit for the appropriate responses from participants on PMS. This section is made of nine items.

Part Four: PM Competences and Practices

The final part of the questionnaire was devoted to obtaining the opinions of respondents on the key competences and their relationship for effective PM. This part of the instrument again was devoted to obtaining the perception of respondents on best practice principles for PM in Ghana. As a result, a mixture of both closed and open ended questions were set in this part for participants to first identify key competences and their relationship for effective PM and to provide best practices principles for PM in Ghana.

Table 10 shows the structure and the content of the questionnaire used for data collection, with the respective sources where the content was extracted and modified when necessary.

Table 10. Structure and content of the questionnaire

Parts	No. of Items	Content	Source
Part One	5	Gender, age, education, work experience, certifications.	Self-devised
Part Two	2	Type of project-oriented organization, features of project-oriented organizations	Gareis and Huemann (2000); Gemünden et al. (2017).
Part Three –Section A	5	Governance and legal structure, human capital, monitoring and evaluation, technical capacity, financial management and information technology.	Self-devised
Part Three –Section B	6	Organizational complexity, formalization, centralization, span of control and communication flow	Zheng et al. (2010)
Part Three –Section C	5	Competence, technical knowledge, interpersonal skills, PM skills, open-mindedness and personal integrity	Culp and Smith; cited in Burger and Verster (2009).
Part Three –Section D	6	Time, cost, quality, accomplishing deadlines, adjustment to budget, human resource, communication, satisfying customer's specifications and procurement practices	De Wit (1988); Turner (1999); Gomesa and Romao (2016); Tesfaye (2017)
Part Four	2	Key competences and their relationship for effective PM best practice principles for PM in Ghana	IPMA (2006); PMBOK (2013); Bowenkamp and Kleiner (1987); Barmayehvar (2013); Abbasi and Al Mharmah (2000).

Source: Self-devised

4.6   Data Collection Methods

The questionnaire which used to gather data was fully developed to create easy and swift understanding. It was developed and presented in English to avoid any ambiguity, and to guarantee that all questions are fully understood by the participants.

The survey was self-administered to the executives of the project management institute (PMI) in Ghana for onward distribution to their members on the 14th of December, 2019. This was done after a letter of request explaining the purpose of the study and asking for their acceptance to participate in the survey had already been issued. A positive response from the PMI was received on the 26th of November, 2019. In an endeavor to acquire the minimum sample size of 220, the author distributed the questionnaire to a total number of 230 respondents. 219 responses (representing a response rate of 95.2%) were returned after completion.

Data collected was screened in order to discover errors, biased responses and other discrepancies or inconsistencies. Although the respondents' understanding of the questions cannot be ascertained with certainty, it was ethical to suppress and/or control some entries from the data set in order to reduce the effect of an unclear interpretation. As a result, out of the 219 responses obtained, 215 were dully completed without errors and were valid for analysis in the present study.

Most of the open ended questions on the instrument were in the form of written interviews and were geared towards obtaining the opinions of respondents on the key competences and their relationship for effective PM and identifying the perception of respondents on best practice principles for PM in Ghana as a confirmation or otherwise of best practices reviewed in section 3.9 of chapter 3 of this study.

4.7 Data Analysis Procedure

The primary data that was collected was analysed by the use of EQS 6.4, fsQCA 3.0, Statistical Package for Social Sciences (SPSS) v25, Excel and Nvivo v8 software.

The analysis began by coding the data obtained to get a data file. The file was cleaned and reduced by carrying out recoding and re-computing. These activities were carried out to help obtain an accurate data for the analysis.

Descriptive statistics were generated. The generation included creating different frequency distribution tables, calculating various measures of central tendencies such as mean, median etc. and calculating various measure of dispersion such as the standard deviation, variance, etc. Participants at the end of the descriptive analysis were categorized into various project-oriented organizations. These analyses were conducted to help describe different relevant variables in the study and subsequently help in doing further comparative analysis. The Analysis Of Variance (ANOVA) was conducted to help test any differences in the mean of our variables of interest.

Once the basic and descriptive analyses were concluded, a set of Exploratory Factor Analyses (EFAs) using principal components analysis and varimax rotation were performed to determine the definitive dimensions of each construct (e.g., PMS, organizational capacity, organizational structure and leadership). Next, the reliability analysis of these constructs were vouched through Cronbach alpha and composite reliability. On the other hand, discriminant validity analysis among these constructs was conducted using standardized covariances between latent factors by examining whether the inter-factor correlations were less than the square root of the average variance extracted (AVE).

A new scale consisting of the new dimensions was obtained from the exploratory analysis and confirmed. To ascertain the fitness of the established dimensions, structural equation modelling (SEM) was conducted using the robust maximum likelihood method from the asymptotic variance-covariance matrix, in order to examine the relationships between each of the latent factors and PMS.

Finally, to complement the findings from the previous analysis, the fsQCA 3.0 software was used to conduct a qualitative comparative analysis (QCA) to investigate which combination(s) of the latent factors influence PMS. QCA allows for an exploration of equifinality, that is, the existence of different combinations of conditions leading to the same outcome (Fiss, 2011; Ragin, 2008). As a result, QCA shows multiple causal paths that underline management phenomena (Salam et al., 2017). One of the distinctive features of QCA is that it uses Boolean logic instead of the traditional correlation techniques to set causal conditions strongly related to a particular outcome (Ragin, 2008). The approach depends on the analysis of sufficient and necessary conditions to come out with an outcome. A condition is seen as necessary if it is present in all occurrences of the outcome while a condition will be sufficient if a distinct outcome comes out anytime the condition is present (Schneider & Wagemann, 2012). QCA is particularly relevant for this study because the factors that influence the PMS in DCs are multifaceted and complex in nature, and again, the existence of different stakeholders for projects in these countries. Thus, using SEM to study the influence of the latent factors independently will not be enough to provide a clear understanding the problem (Yanwen, 2012; Ofori, 2013; Varajão et al, 2014), requiring the use of alternative techniques such as QCA. Again, QCA is suitable for conducting a context-specific assessment, indicating the ways in which multiple causal recipes relate to a

particular outcome; thus, helping to answer certain questions that could not be addressed by the use of SEM (Ragin, 2008; Paykani et al., 2018).

The qualitative data that was gathered from the unstructured portions of the questionnaire were ttranscribed and coded using Nvivo v8 Software for windows. Content analysis was conducted to help link elements of data and annotate the contents of responses. Thus, helping to deduce appropriate recommendations from them.

Figure 15 shows the linkage between the research objectives, research questions, hypothesis, and the analysis plan for this study.

Specific research objectives	Research questions	Hypotheses	Data analysis techniques
1. To examine the level of PMS rate in Ghana.	1. What is the level of PMS rate in Ghana?	—	-.Descriptive Statistics - Analysis of Variance (ANOVA) - Using Excel and SPSS v25
2. To determine whether the level of PMS rate differ significantly among project oriented organizations in Ghana.	2. Does the level of PMS rate differ significantly among project oriented organizations in Ghana?	H1: Level of PMS rate differ significantly among POO in Ghana	
3. To assess the impact of organizational capacity, organizational structure and leadership on PMS in Ghana.	3. What is the impact of organizational capacity, organizational structure and leadership on PMS in Ghana?	H2: Organizational capacity significantly predicts PMS H3: Organizational structure is a significant predictor of PMS H4: Leadership significantly predicts PMS	- Exploratory Factor Analysis (EFA) - Reliability and Validity Tests - Structural Equation Modelling (SEM) - Qualitative Comparative Analysis (QCA) - Using Excel, SPSS v25, EQS 6.4, fsQCA 3.0
4. To examine the configurational effects of organizational capacity, organizational structure and Leadership on PMS in Ghana.	4. What are the configurational effects of organizational capacity, organizational structure and leadership on PMS in Ghana?	—	
5. To identify key competences and their relationship for an effective PM.	5. What are the key competences and their relationship for an effective PM in Ghana?	—	- Content Analysis - Using Nvivo v8
6. To provide best practices principles for PM in Ghana.	6. What are the best practices principles for PM in Ghana?	—	

Figure 15: Data analysis plan
Source: Self-devised.

CHAPTER FIVE

DATA ANALYSIS, INTERPRETATION AND RESULTS

5.1 Introduction

This chapter presents an analysis of the data that was collected from the survey conducted for the purposes of this study. The data analysis is geared towards the examination of the relevance of organizational capacity, organizational structure and leadership (and their combined effects) in explaining PMS in Ghana. Thus, helping to address the hypotheses of this study. The analysis further intends to help identify key competences and their relationship for an effective PM; and provide best practices principles for PM in Ghana.

5.2 Demographic and Descriptive Statistics

5.2.1 Demographics

The preliminary analysis began with an exploration of the demographic characteristics (Table 11) of the respondents that participated in the survey. Table 11 shows that there are more males (79.50%) than females in the PM sector of Ghana. The table further shows that most of the participants in the PM industry of Ghana are very youthful (i.e. 76.3% between the ages of 21-40), holds a bachelor (50.70%) or masters (30.20%) degree and have worked for more than a year (only 4.20% have worked for less than a year).

Table 11 finally shows that almost all the respondents (except only 3.30%) hold a PM professional certification, with majority of them (60.50%) being PMP and/or CAPM (31.60%).

Table 11. Demography of respondents

	Number	%
Gender		
Male	171	79.50
Female	44	20.58
Total	215	100.00
Age		
18-20	4	1.90
21-31	73	34.00
31-40	91	42.30
41-50	34	15.80
> 50	13	6.00
Total	215	100.00
Education		
Certificate	9	4.20
Diploma	29	13.50
Bachelors	109	50.70
Masters	65	30.20
Doctorate	3	1.40
Total	215	100.00
Work Experience (Years)		
Below 1	9	4.20
1 – 5	83	38.60
6 – 10	66	30.70
Above 10	57	26.50
Total	215	100.00
PM Certification		
PMP	130	60.50
CAPM	68	31.60
PMI-RMP	7	3.30
PMI-PBA	3	1.40
OTHER	7	3.30
Total	215	100.00

5.2.2 Project Oriented Organization

Table 12 provides details on the nature of project oriented organization that respondents work for and the value (s) that these organizations hold. The table shows that majority of the PM practitioners that participated in the survey work for either a constructing/urban development company (23.70%), mining/resources company (13.50%) or educational/training company (9.80%).

Table 12. Project oriented organizations and their values

	Number	%
Organizational Activity		
Arts/Entertainment/Broadcasting	5	2.30
Automotive	4	1.90
Business Services	8	3.70
Constructing/Urban Development	51	23.70
Consulting	10	4.70
Defence and Aerospace	3	1.40
Educational/Training	21	9.80
Environment/Waste/Sewerage	9	4.20
Financial/Insurance Services	9	4.20
Health/Human/Social Services	13	6.00
IT/Information Systems/ E-commerce	4	1.90
Manufacturing	7	3.30
Petrochemical	11	5.10
Pharmaceutical	2	0.90
Transportation/Recreation	8	3.70
Mining/Resources	29	13.50
Telecommunication	6	2.80
Utilities	2	0.90
Other	13	6.00
Total	215	100.00
Organisational Values		
Projects are considered to be strategically significant.	106	49.30
Autonomy and self-organization of projects is promoted by top management to support the performing projects.	40	18.60
PM is considered a general management qualification, not just a specialist one.	43	20.00
Management by projects is an organizational strategy	51	23.70
There are temporary organizations for the performance of complex processes	35	16.30
Management of portfolio of different project types	37	17.20
There is specific permanent organizations to provide integrative functions	33	15.30
There is an explicit project management culture	40	18.60
The organization perceives itself to be project oriented.	61	28.40

Table 12 further shows that most of these organizations that participants work for consider projects as strategically significant (49.30%) and perceive themselves as project oriented (28.40%). Most of these organization consider management by projects is an organizational strategy (23.70%) and see PM as general management

qualification, not just a specialist one (20.00%). The organizations have explicit PM culture (18.60%) and promotes autonomy and self-organization of projects (18.60%).

5.2.3 PMS Rate in Ghana

Following the recommendation of Ullivan and Artino Jr, (2013), the Median, supported by the Mode are used to assess the average PMS rate in Ghana. Table 13 shows an unsatisfactory overall average PMS rate of 1.83 (Median) which is way below the cut off of 3.00 for a five point scale.

Table 13. PMS rate in Ghana

Descriptive Statistics						
	N	Min	Max	Mode	Median	Std. Deviation
PMS Rate	215	1	5	2.00	1.83	1.33
Valid N (listwise)	215					

Descriptive Statistics						
	N	Min	Max	Mode	Median	Std. Deviation
PMS1	215	1	5	1	2.00	1.45
PMS2	215	1	5	2	2.00	1.37
PMS3	215	1	5	1	2.00	1.48
PMS4	215	1	5	1	2.00	1.64
PMS5	215	1	5	2	2.00	1.39
PMS6	215	1	5	1	2.00	1.63
Valid N (listwise)	215					

Even if a different recommended measure of central tendency (Mode) is used, the average PMS rate is still unsatisfactory (i.e. overall Mode = 2.00) since it is still less than 3.00; supporting the interpretation obtained when the Median is used. The median and the Mode for the individual indicators of PMS are also presented in Table 13 and are all less than 3.00; suggesting a relatively low PMS rate in Ghana.

Having identified the level PMS rate in Ghana, Table 14 seeks to discover whether the success rate differ among the project oriented organization presented in Table 12.

Table 14. Analysis of differences in PMS rate

ANOVA					
PMS Rate					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	26.948	18	1.497	0.833	0.659
Within Groups	352.102	196	1.796		
Total	379.050	214			

Tukey HSD,a,b

Organizational Activity	N	Subset for alpha = 0.05
		1
Utilities	2	1.580
Petrochemical	12	2.010
Manufacturing	7	2.070
Other	13	2.210
Automotive	4	2.210
Business Services	8	2.230
Mining/ Resouces	29	2.290
Telecommunication	6	2.330
Defence and Aerospace	3	2.500
Educational/Training	21	2.500
Consulting	10	2.570
Transportation/Recreation	8	2.670
Financial/Insurance Services	9	2.760
Environment/Waste/Sewerage	9	2.800
Constructing/Urban Development	51	2.880
Health/Human/Social Services	12	2.900
Pharmaceutical	2	2.920
IT/Information Systems/ E-commerce	4	2.920
Arts/Entertainment/Broadcasting	5	3.670
Sig.		0.445

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 5.828.
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

From Table 14, the *p*-value (sig.) = 0.659 which is greater than alpha (α) = 0.05. This implies that at 5% significant level, it could be stated that the level of PMS rate in Ghana does not differ significantly among the project oriented organisations in the country. The Tukey test further support this finding as all project oriented organizations are group in one alpha subset (at alpha (α) = 0.05) with respect to PMS rate in Ghana.

5.3 Exploratory Factor Analysis (EFA) and Reliability Tests

To validate the suitability of the data for factor analysis, the Kaiser–Meyer–Olkin (KMO) and the Bartlett's test of Sphericity (Table 15) were conducted using SPSS software. Results from the analysis provided a KMO test value of 0.799 exceeding the threshold value of 0.60, thus, indicating a good sampling adequacy and that the data is suitable for factor analysis. The Bartlett's Test of Sphericity was also positive and significant at 0.05 (i.e., $\chi^2 = 1424.042$, df = 120, p = 0.000 < 0.05). This result affirmed a linear relationship between the variables and supported the fact that the results were good enough for further analysis (Meyer and Collier, 2001; Pallant, 2010).

Table 15. Kaiser–Meyer–Olkin and the Bartlett's test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.799
Bartlett's Test of Sphericity	Approx. Chi-Square	1424.042
	df	120
	Sig.	0.000

To validate the factor structure of the measurement variables of the study, an EFA was launched using principal components analysis and varimax rotation. 16 items, taken from the dimensions of the independent variables in this study were used at this step. The scale used in this study was analyzed and items were retained using a relatively stricter conditions, even greater than the ones used by Bernardo et al. (2012). The conditions included that the item (a) loaded not less than 0.6 on a factor, (b) did not load at more than 0.5 on two factors, (c) had an item-to-total correlation of more than 0.5 and (d) had an eigenvalue greater than 1 (Ladhari, 2012; Wolfinbarger and Gilly, 2003; Field, 2000). In total, four factors emerged from the analyses with eigenvalues greater than 1 (Kaiser, 1960).

Table 16 provides a summary of the results from the EFA. Even though the model for this study is made up of three latent factors, four factors emerged from the EFA and were selected. This is because one latent factor (organizational structure) in the model for this study splitted into two factors. The four selected factors that came out from the EFA, in total contributed 65.97% of the variance in the sample. Table 16 further shows these four selected factors with loads greater than 0.66 highlighted. New labels are suggested, even though relatively few overlap with initial dimensions is shown.

Table 16. Matrixes of the components extracted from the EFA

	EFA (16 ITEMS)			
	2-LEAD	3-OSss	1-OC	4-OSspc
LEAD2	0.896	0.029	-0.027	-0.012
LEAD3	0.846	-0.068	-0.120	0.088
LEAD4	0.823	-0.020	0.042	0.141
LEAD1	0.752	0.156	-0.125	-0.043
OSss1	-0.070	0.796	-0.034	0.214
OSss3	-0.039	0.792	-0.025	0.227
OC5	0.097	0.757	-0.028	0.243
OSss2	0.148	0.705	0.116	0.172
LEAD5	-0.032	0.481	-0.061	0.435
OC2	0.036	0.112	0.834	-0.100
OC3	0.078	0.177	0.796	-0.124
OC4	-0.152	-0.182	0.792	0.206
OC1	-0.275	-0.158	0.791	0.097
OSspc4	0.128	0.230	0.001	0.735
OSspc5	0.061	0.260	0.021	0.729
OSspc6	-0.010	0.331	0.034	0.717
% of Variance	18.302	18.274	16.469	12.922

- *Organizational Capacity (OC)* explained 16.47% of the variance of the 16 items and assesses the required capacity of project oriented organization in DCs to successfully manage a developmental project; especially the complex ones. The factor retained four (OC2, OC3, OC4 and OC1) out of the five original items in its dimension.

- *Leadership (LEAD)* also retained four (LEAD2, LEAD3, LEAD4 and LEAD1) of the five items of its initial dimension and explained 18.30% of the variance. It assesses the type, competence and skills of leadership of project oriented organizations in DCs.

- *Organizational Structure-systems and structures (OSss)* was one of the factors obtained after the factor 'organizational structure' splitted into two. The factor explained 18.27% of the variance of the 16 items and assesses the process, systems and structures put in place by project oriented organizations in DCs to successfully manage a developmental project. The factor detained three out of the six initial items in this dimension (OSss1, OSss3, and OSss2) and added an additional item that was initially under a different dimension (OC5). The emphasis on well laid down legal structure by that item explains why it has been aligned to this factor.

- *Organizational Structure-span of control (OSspc)* was the other factor obtained from the 'organizational structure' factor split. OSspc retained three items out of the six of the initial dimensions (OSspc4, OSspc5 and OSspc6) and extracted 12.92% of the variance of the 16 items in the EFA. It measures the length of the scalar chain of command and the span of control of project oriented organization in DCs.

It is notable that small modifications to the labels were suggested after the grouping of the EFA, given the relatively few overlap with original dimensions. The adjustment was done in consistence with the new dimension contents. Four dimensions (instead of three) were obtained after one of the original three dimensions splitting into two at this point. Specifically, 'Organizational Structure' splitted into 'Organizational Structure-systems and structures' and 'Organizational Structure-span of control' based on the feedback from respondents and the EFA conducted. The final four dimensions obtained after the EFA include: (a) Organizational Capacity, (b) Leadership, (c) Organizational Structure-systems and structures and (d) Organizational Structure-span of control.

Table 17. Loads of the five factors and their reliability statistics

	1		2		3		4	
	OC		**LEAD**		**OSss**		**OSspc**	
	OC1	0.825	LEAD1	0.762	OSss1	0.827	OSspc4	0.809
	OC2	0.815	LEAD2	0.900	OSss2	0.752	OSspc5	0.791
	OC3	0.776	LEAD3	0.856	OSss3	0.814	OSspc6	0.811
	OC4	0.818	LEAD4	0.830	OC5	0.830		
Alpha Cronbach	0.823		0.846		0.818		0.754	
Range of Cronbach's alpha if an item is deleted	0.768 - 0.796		0.754 - 0.858		0.754 - 0.803		0.625 - 0.752	
Range of total corrected scale and correlations	0.606 - 0.666		0.605 - 0.796		0.575 - 0.675		0.519 - 0.627	
Composite Reliability	0.883		0.904		0.881		0.846	
Average Variance Extracted (AVE)	0.654		0.703		0.650		0.646	

* All loads significant at p-value = 0.01

To examine the uni-dimensionality of the newly obtained factors, four new independent factor analysis using an orthogonal rotation method (varimax) were carried out, each with only the items proposed in the previous step (the shaded items in Table 16). The four factors extracted only one factor each, validating our approach. Results are shown in Table 17, including only the loads of those items that significantly contribute to explain each of the factors (loadings > 0.66). Table 17 further provides the statistics for reliability and convergent validity for the four factors obtained. The reliability for each of the items were vouched for by their high loadings. The Cronbach's alpha and the composite reliability of all the factors exceeded the threshold value of 0.7 for internal consistency (Nunnally & Bernstein, 1994; Shemwell et al. 2015).

Table 18. Correlation matrix of latent factors

	1	2	3	4
Organizational Capacity	*0.809*			
Leadership	-0.161[*]	*0.839*		
Organizational Structure – systems & structures	-0.011	0.081	*0.806*	
Organizational Structure – span of control	0.029	0.113	0.556**	*0.804*

* Correlation significant at *p*-value = 0.05
** Correlation significant at *p*-value = 0.01

Table 17 again shows that the AVE for each factor was greater than 0.5, which is the benchmark of the required threshold (Fornell & Larcker, 1981). With the exception of LEAD, the Cronbach's alpha values did not improve when any of the items were deleted from the scales for each dimension, and the correlations between each item and the total corrected scales were all above 0.5. An item was not removed under LEAD because the new Cronbach to be obtained was not significantly different from the initial one. Besides, the new Cronbach to be obtained is still greater than 0.7 which is the benchmark. Convergent validity was confirmed for all of the factors, where all of the items were shown to have significant loads (t > 2.58) (Malhorta, 1999).

Table 18 show the results for the analysis of discriminant validity, which was carried using linear correlations or standardized covariances among latent factors by investigation whether the inter-factor correlations were below the square root of the AVE (Fornell & Larcker, 1981). Table 18 shows that the square roots of each AVE were greater than the off-diagonal elements. Thus, discriminant validity was also verified (Hair et al., 2010).

5.4 Structural Equation Modelling (SEM)

To set up the definitive scale, the next step is to conduct an analysis of the four dimensions as dimensions of a second-order Confirmatory Factor Analysis (CFA). The model was estimated using the robust maximum likelihood method from the asymptotic variance–covariance matrix. The fit statistics obtained in the measurement model estimation in Table 19 shows that the variables converged towards the factors established in the CFA. The Satorra–Bentler χ^2 was 314.87, with 179 degrees of freedom and a p-value of 0.000; χ^2/df was 1.76, which was below the acceptable limit of 5. The root mean-square error of approximation (RMSEA) was 0.060, the comparative fit index (CFI) was 0.952 while the 90% confidence interval of RMSEA was reported to be between 0.048 and 0.070. Taking the significance of the robust χ^2 statistic with caution and noting the global indicators, it is apparent that the global fit was acceptable.

Table 19 again provides the standardized coefficients for the relationships established by the model and its t-values; out of which the following findings can be deduced:

Table 19. Confirmatory factor analysis

Dimension	Item	Load	t-value	r^2
Organizational Capacity	OC1	0.785	–	0.617
	OC2	0.714	12.890	0.509
	OC3	0.672	9.570	0.451
	OC4	0.764	11.570	0.584
Leadership	LEAD1	0.661	–	0.437
	LEAD2	0.877	11.590	0.769
	LEAD3	0.798	10.370	0.637
	LEAD4	0.782	9.520	0.611
Organizational Structure – systems & structures	OSss1	0.768	–	0.589
	OSss2	0.641	8.800	0.411
	OSss3	0.748	11.560	0.560
	OC5	0.764	8.270	0.584
Organizational Structure – span of control	OSspc4	0.673	–	0.452
	OSspc5	0.660	6.650	0.436
	OSspc6	0.722	8.060	0.521

		Standardized Coefficient	t-value	r^2
Project Management Success	Organizational Capacity	0.653	10.380[*]	
	Leadership	0.789	9.330*	
	Organizational Structure – systems & structures	0.138	1.319	0.822
	Organizational Structure – span of control	-0.217	-2.050*	

Goodness of fit summary	
Satorra–Bentler scaled χ^2	314.868
Degrees of freedom (df)	179
p-value	0.000
χ^2/df	1.759
Comparative fit index (CFI)	0.952
Root mean-square error of approximation (RMSEA)	0.060
90% confidence interval of RMSEA	(0.048 – 0.070)

First, Table 19 shows that 'Organizational Capacity' has a significant causal relationship with 'PMS' in DCs (standardized coefficient of 0.653 and a t-value of 10.380*). Project oriented organizations with improved capacity are likely to experience higher levels of PMS rate and vice versa.

The table again shows 'Leadership' to be a significant predictor of the 'PMS' in DCs (standardized coefficient of 0.789 and a t-value of 9.330*). The type, competence and skills of the leaders of a project oriented organizations in DCs influence how developmental projects are managed and successfully implemented in these countries. Project oriented organizations, and by extension, DCs with good leadership will experience relatively higher levels of PMS rate.

Table 19 in addition shows that 'Organizational Structure-systems and structures' has a positive relationship with 'PMS', only that the relationship is not statistically significant (standardized coefficient of 0.138 and a t-value of 1.319). Project oriented organizations with structures and operational processes are likely to experience an improvement in the management of their projects. However, 'Organizational Structure-span of control' shows a significant negative relationship with 'PMS' (standardized coefficient of -0.217 and a t-value of -2.050*). Thus, as the number of subordinates under a project manager increases, it is likely his effectiveness with regard to the management of the project team reduces; impacting negatively on the PMS.

Finally, from Table 19, a total coefficient of determination (r^2) of 0.822 is reported. This indicates that 82.20% of the variation in the PMS rate in DCs can be explained collectively by the latent factors in this study; and again, validating that the model obtained in this study has a strong predictive power.

Appendix 1 shows the items (and dimensions) remaining after each debugging phase and in the final scale. Appendices 2 and 3 however shows the new models obtained after the SEM.

5.5   Qualitative Comparative Analysis (QCA)

To complement the findings from the SEM, a qualitative comparative analysis was performed next to help investigate the configurational effects of the latent factors of this study on PMS in DCs. The factors obtained after the EFA (Table 16) were used as the antecedent conditions. PMS was used as the outcome. Data were transformed (i.e. calibrated) into fuzzy-set terms, expressing the values of each observation according to their degree of membership from 0 (full non-membership) to 1 (full membership), with 0.5 being the crossover point (Ragin, 2008). As shown in Table 20, observations falling in the 90th percentile represent the threshold of 0.95, denoting full membership, while the 10th percentile was used as the 0.05 cut of point and represents full non-membership. The median was used to calculate the cross over point, denoting observations with the maximum ambiguity with respect to their membership in the set.

Table 20. Calibration of the outcome and the antecedent conditions

Condition	Membership Threshold Values		
	Full Non-membership	Crossover point	Full Membership
Organizational Capacity	-1.55	0.16	1.13
Leadership	-1.36	0.28	1.21
Organizational Structure – systems & structures	-1.44	0.12	1.04
Organizational Structure – span of control	-1.33	-0.03	1.16
Outcome			
Project Management Success	-1.06	-0.54	1.45

Testing for the necessity of the antecedent conditions in the prediction of the desired outcome is another important step in QCA (Meyer et al., 1993). Consistency scores greater than 0.9 indicate necessity (Ragin, 2008). From Table 21, there is no antecedent

condition that can predict the outcome alone; thus, these preliminary results seem to be in line with the initial intuition in this study that a conjunction of the latent factors can provide more explanation of the outcome.

Table 21. Analysis of necessary conditions

Antecedent Conditions	Consistency	Coverage
OC	0.699	0.690
~ OC	0.493	0.530
LEAD	0.761	0.801
~ LEAD	0.390	0.393
OSss	0.620	0.603
~ OSss	0.563	0.615
OSspc	0.628	0.596
~ OSspc	0.562	0.633

* The symbol (~) represents the negation of the characteristic.

Next, the truth table, which contains all logically plausible combination of conditions was constructed. It has 2^k rows, with k being the number of causal conditions. For all combinations with case membership scores greater than 0.5, those cases are assigned to that combination. Finally a logical reduction of statements is obtained. During this process, rows are decreased based on two parameters: coverage (which shows the empirical importance of a solution) and consistency (which quantifies the extent to which cases sharing similar conditions have the same results). Both measures range from 0 to 1. Recommended values for acceptable consistency and coverage are of 0.75 and 0.45 respectively (Ragin, 2008).

From Table 22, three distinct recipes that lead to the expected outcome are shown, verifying the initial hypothesis for the existence of different successful combinations of factors. It is notable that although all three configuration are equally valid, the third (conf. 3) have the highest raw coverage value (0.522), and therefore, cover a greater

proportion of cases in the sample. The differentiation between core and peripheral conditions is used to systematize the comparison of the solutions (Fiss, 2011; Ragin, 2008). Core conditions depicts the vital causes with robust causal relationship with the outcome of interest, while peripheral conditions are those that are more expendable as they are contingent on specific segments. The solution coverage is 0.661 while the solution consistency is 0.862. All the three configurations also show acceptable consistency scores greater or equal to 0.828. Raw coverage figures are notably high, implying that the degree at which each recipe explains the outcome is sound. However, unique coverage figures are rather low, implying that the proportion of cases that can be explained exclusively by the configuration is low. In other words, there are cases in the sample that emerge from a combination of different recipes.

Table 22. Sufficient configurations of antecedent conditions for PMS

Antecedent Conditions	Configurations		
	1	2	3
Organizational Capacity			●
Leadership	●	●	●
Organizational Structure – systems & structures		⊗	
Organizational Structure – span of control	⊗		
Raw coverage	0.437	0.447	0.522
Unique coverage	0.038	0.030	0.116
Consistency	0.867	0.859	0.914
Solution coverage	0.661		
Solution consistency	0.862		
Frequency threshold	3.000		
Consistency threshold	0.828		

Black circles ● indicate the presence of a condition, and circles with ⊗ indicate its absence. Blank spaces indicate "don't care". All conditions in the table are core conditions.

Table 22 further shows that 'Leadership' is one of the most relevant factors accounting for the successful management of projects in DCs. This factor appears in configurations 1, 2 and 3. Although it needs to be combined either with the absence of 'Organizational Structure – span of control' (conf. 1), the absence of 'Organizational Structure – systems and structures' (conf. 2), or the presence of 'Organizational Capacity' (3); 'Leadership' stands as a core condition in all these configurations.

In configuration 1, the presence of 'Leadership' combines with the absence of 'Organizational Structure – span of control' – both as core conditions. This implies that even if the number of project team members under the project manager are not clearly defined, a project could be successfully managed only if the project oriented organization have competent project managers and/or leadership.

Again, the presence of 'Leadership' appears as a core condition in configurations 2. This factor is combined with the absence of 'Organizational Structure – systems and structures' (also as a core condition). These results confirm the initial intuition that despite the operational processes of a project oriented organizations are poorly developed with systems and structures being unclearly defined, a developmental project in DCs can still be managed successful if the organizations have competent project managers and/or leadership to provide the necessary guidance during the planning, execution and implementation of the project.

Lastly, configuration 3 shows a configuration that combines the presence of 'Leadership' and 'Organizational Capacity'; both as core conditions. This solution can be interpreted by saying that with an acceptable organizational capacity, quality leadership is still needed to ensure a successful management of projects in DCs.

5.6 Analysis of Qualitative Data

The basis for this analysis is to identify the key competences and their relationship for an effective PM and the best practices principles for PM in DCs. This will help to give appropriate recommendation towards the successful management of projects in these countries.

5.6.1 Key Competences and their Relationship for Effective PM

On the issue of identifying the key competences/skills that are necessary for effective PM in DCs, respondents were of the opinion that the key competences below are needed by project managers to effectively manage developmental projects (especially the complex ones) in DCs:

- *"Technical competence, leadership skills, critical thinking ability, project team management, strategy development, communication and decision making competence;*

- *Risk management, project cost and financial management, project schedule management, project stakeholder engagement competences and negotiation skills;*

- *General knowledge in PM, time management, risk management, human resource management competences and expertise in information communication technology (ICT);*

- *Project planning and organization, conflict management and problem solving, project procurement and contract management competences, data analysis and interpretation skills and legal expertise;*

- *Supervisory, interpersonal relationships and record keeping skills, ability to prioritize, delegate effectively and adapt to changes;*

- *Project monitoring, evaluation and control competences, project stakeholder management, feedback management competences, emotional intelligence, proactiveness and innovativeness, ethical and personal integrity".*

A diagrammatic representation of the frequency of the suggestion of various competences/skills is shown in Figure 15 below.
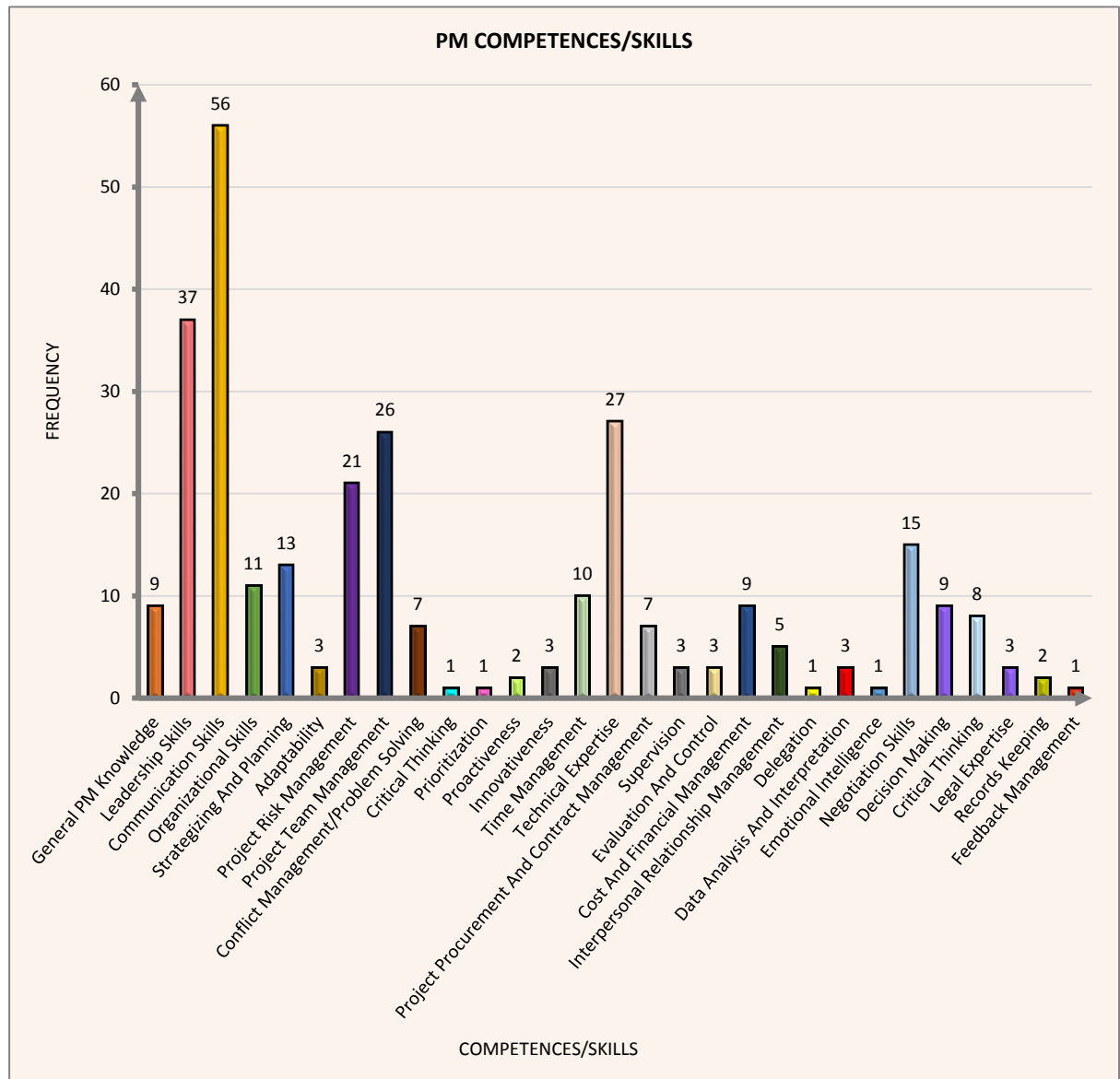
Figure 16. PM competences/skills for effective PM in DCs

5.6.2 Best Practice Principles for Effective PM

Respondents again suggested the following as best practices principles for PM in DCs. Hence, they indicated that for effective PM in DCs, managers of project oriented organizations need to adopt the following practices.

- *"Consider stakeholders requirements, create project team, create project risk response team, create and formalize PM roles, create and align leadership competencies with technical competencies, and deploy acceptable scheduling standards for technical tasks;*

- *Employ qualified, experienced and competent PM personnel, train employees and supervisors before start of the project and continuously inspect ongoing projects;*

- *Establish clear project vision and mission, adopt better scheduling standards, develop leadership and technical competencies, clarify project roles and responsibilities, communicate early and often, monitor each progress and manage risk;*

- *Communicate with project team and beneficiary communities, check the competence and materials of the contractor, involve conflict resolution team in land disputes, investigate any complaint of improper tendering and procurement and involve stakeholders in all stages of the project;*

- *Define the scope and objectives of the project and brief the project team on these objectives, ensure community participation, provide insurance for the project, verify employees' qualifications, provide technical input to project specification., assist tender committee in evaluation., identify stakeholders and*

their requirements, adopt the appropriate mode of communication, set rules on site and using the right PM methodologies;

- *Prepare detailed procedures of work breakdown structures, provide adequate duration for all deliveries, ensure safety standards meets international requirement and coordinate activities of various sections of the project oriented organization".*

Appendix 4 provides the raw responses of respondents on the key competences and their relationship for an effective PM and the best practices principles for PM in DCs.

CHAPTER SIX

DISCUSSION OF RESULTS AND IMPLICATIONS

6.1 Introduction

This chapter discusses the findings obtained in chapter five. The chapter provides a discussion on the results obtained from the demographic and the descriptive analysis. Discussion on the results obtained from the structural equation modelling and the qualitative comparative analysis conducted in the previous chapter are also provided. Finally, deductions made from the qualitative information obtained on the competences/skills for effective PM and the best practices principles for PM in DCs are also reported here.

6.2 Overview

For most DCs, projects are crucial because they form the basis for the formulation and implementation of developmental plans and also have been the main tool used to solicit for grant, credit, loan and technical assistance from international assistance agencies (Adams, 2017). Coupled with the rapid population growth and urbanization, there has been an increase in the demand for projects in many DCs. Consequently, it is common to find a lot of projects been embarked on in many of these countries (Ahmed et al, 2014). However, the management of these well-conceived projects has been the main cause of the poor record of uncompleted projects in many DCs. The failure to properly discover, create, plan and implement projects has continuously been a major impediment to equitable distribution of capital among the citizenry in many DCs (Adams, 2017).

Ofori-Kuragu et al. (2016) highlighted that most projects in DCs are usually lambasted for their time and cost overruns, low productivity and low quality. Many projects that have turned into white elephants due to their poor management are always in the news in DCs and the politicians embark on blaming each other (Ahadzie & Amoa-Mensah, 2010); creating a non-sustainable situation in which usually a lot of projects are uncompleted whiles others are left to the mercy of the weather to rot (Williams, 2016; Assibey-Mensah, 2009; Damoah & Akwei, 2017; Darko & Löwe, 2016).

Hyväri (2007) postulated, and was later affirmed by Blaskovics (2014) and Aniagyei (2011) that organizational capacity, organizational structure and leadership are the major factors that significantly impact on PMS. However, his study was not in the context of DCs. In addition, research works on PM in DCs has not yet gained sufficient scrutiny and are still at early phase (Jekale, 2004).

But Essilfie-Baiden (2019) emphasized that every project is executed and managed locally, even if this is being done in line with some globally accepted standard; and that the characteristics of the project, its location, owner, purpose and objectives can have significant impact on the management methods to be used. It is therefore relevant to study PMS in the context of DCs to better understand and manage projects successfully in these countries.

This thesis therefore aimed at addressing this gap by assessing the impact of organisational capacity, organisational structure and leadership on PMS in project oriented organisations in DCs, and based on the results recommend policy guidelines for the successful management of projects in these countries. To achieve this objective, a literature review was conducted, identifying a list of items (classified into dimensions) that was later validated and readjusted using factor analysis. The final outcome is a list

121

of fifteen items that distribute along four dimensions, namely: Organizational Capacity, Leadership, Organizational Structure – systems & structures and Organizational Structure – span of control. These dimensions (or factors) have been found to be reliable and show convergent and divergent validity. A structural equation modelling complemented by a qualitative comparative analysis were conducted to shed new light on the relationship between these factors and PMS in DCs.

6.3   Discussions of Findings from the Descriptive Analysis

6.3.1 Discussions of results from the Demographic Information

Findings from the demographic analysis revealed a wide gender disparity in the number of PM practitioners. Specifically, it was evident that the number of male PM practitioners was far higher than that of the females. This finding is not surprising since generally, there are more males than females in most professions in Ghana. The Ghanaian culture is masculine in nature thus, men are expected to be more assertive and focused on obtaining material success for the benefit of their families whiles women are expected to be modest, tender and concern with quality of life. In addition, in Ghana, and in most DCs, men are academically advantaged. The high female poverty levels account for this. Thus the dropout rate of women in the educational ladder is higher than men. It is easy to find more males at the tertiary levels than females in Ghana and in most DCs. Again, most women in Ghana are aligned to the development of their expertise in service biased jobs rather than science and technology. These factors perhaps explain the high number of males in PM than females in Ghana and in most DCs.

Again, the demographic analysis shows that majority of the participants in the PM industry in Ghana are youthful in nature. This finding could be explained by the overall

youthful nature of Ghana's population. As in most DCs, about 59.54% of Ghana's population are between the ages of 15 to 64 (GSS, 2019). The PM sector, especially the construction PM sector employs, trains and provides apprenticeship opportunities to young people than any other sector in Ghana (GSS, 2013; Darko & Löwe, 2016). It is therefore in order to find a relatively higher number of young people in the PM industry.

Finally, the demographic information shows that most of the PM practitioners in Ghana have either a bachelor or master's degree, hold either a PMP and/or CAPM professional certificate and have about a year or more work experience. The Ghanaian employment system is certificate oriented. Most employers in Ghana will employ someone with a lot of certificates but have relatively lower competence than the one with enough competence but not enough certifications. The competence of a project manager is mostly determined by the number of certificates s/he holds. As a result, before one could be appointed a project manager in Ghana, he needs to at least have a bachelors and/or be certified; justifying the higher number of Ghanaian project managers with these certificates. Again, work experience is another factor that most employers emphasize when recruiting in Ghana. Therefore, most Ghanaians will strive to do some industrial attachment or some low ranking jobs even before they graduate. It is therefore common to find a Ghanaian graduate with some few months' work experience.

It is notable that the findings from the demographic analysis are consistent with the findings of Amponsah (2010) and Owusuaa (2012) who discovered similar demographic patterns in the Ghanaian PM sector.

6.3.2 Discussions of Results from the Descriptive Statistics

This study found that the majority of the project managers in Ghana work either in the construction or the mining sector. This is because most of the organizations in these sectors are perceived to be purely project oriented. These organizations consider projects as strategically significant, perceive themselves as project oriented, consider management by projects is an organizational strategy, see PM as general management qualification, not just a specialist one, have explicit PM culture and promote autonomy and self-organization of projects. Coupled with the fact that the construction industry in Ghana is growing steadily due to the high demand for such projects as a result of urbanization, it is justifiable that majority of project managers in the country are found in this sector. Again, Ghana is rich in natural resources such as gold, bauxite, oil etc. There is therefore not a short of mining companies in the country. The mining industry account for about 6% of Ghana's GDP and 37% of total exports. Gold, the main focus of Ghana's mining and mineral development industry contributes over 90% of the total minerals exports (GSS, 2017). It is therefore not a surprise for this sector to be the next after the construction sector to have a lot of project managers.

Findings from the descriptive statistics again suggest that the rate of PMS in Ghana and in most DCs leave much to be desired, and this phenomenon is almost the same for most project oriented organisations in these countries, contradicting the first hypothesis (H_1) of this study. Confirming the findings of Transparency International (2015) and Damoah and Akwei (2017), perhaps the over emphasis on certifications instead of competence (as discovered in the demographic analysis of this study), the paucity of planning before undertaking a project, corruption, improper implementation of standardised PM principles, culture, partisan politics, the public administration system,

low level of PM knowledge, inadequate resources, bureaucracy, poor supervision, lack of commitment by project leaders, starting more projects than the government can fund and change in government could explain this finding.

6.4 Discussions of Findings from the Structural Equation Modelling

Findings from the SEM indicate that the capacity of a project oriented organisation has a significant causal effect on its ability to successfully manage projects in DCs, support the earlier preposition (H_2) in this study. If a project oriented organization has the capacity fulfil its mission through a blend of sound management, strong governance, effective utilization of its skills, assets and resources, a persistent rededication to assessing and achieving results, it will achieve PMS. As found in the studies of Rankonyana (2015), Cox et al. (2018) and Hanisch et al. (2009), our results also confirm that the capacity of a project oriented organization to transfer knowledge effectively among its members for instance has a direct effect on the quality, time spent and the overall success of the management of the project.

This thesis also showed that leadership is the most significant predictor of PMS in DCs; which supports the last hypothesis (H_4) of this study. The finding implies that to achieve PMS, managers of project oriented organizations in DCs need to provide effective leadership; which include effective communication and coordination of team members, promoting the goals of the project, developing and encouraging project team members, motivating project personnel, assisting to achieve efficiency in teamwork, reducing corruption, adopting best PM practices and encouraging positive relationships. In line with the findings of Larson and Gray (2014), this study finds that the leadership styles, behavior, and attitudes exhibited by leaders of project oriented organizations are very critical because they influence the behavior and success of their project team members.

At the national levels, one can link the unsatisfactory rate of PMS in DCs to the inability of most of the leaders of these countries to exhibit leadership traits such as being a systems thinker, having personal integrity, being proactive, having a high emotional intelligence, having a general business perspective, using effective time management, being a skillful politician, and being an optimist.

Finally, it was found from the SEM that the structure of a project oriented organization in terms of laid down processes and systems have a statistically insignificant effect on PMS in DCs; partially contradicting the third hypothesis (H_{3a}) of this thesis. Therefore, as also pointed out by Ubani (2012), a well laid down management structure deployed to supervise different activities of a project or how work processes are undertaken among organizational members will lead to an improvement in the success rate of PM. Contrary, additional findings from the SEM revealed that the structure of a project oriented organization in terms of the span of control and chain of command has a significant negative relationship with PMS in DCs; partially supporting the third hypothesis (H_{3b}) of the study. Thus, as the number of subordinates under a project manager increases, it is likely his effectiveness with regard to the management of the project team will reduce; impacting negatively on PMS. Again, if the scalar chains of command in a project oriented organization are long, project participants would have to go through bureaucratic processes to get their issues addressed. This can also affect PMS negatively. But, aligned with the finding of Ochieng (2016), a clear definition of how a project team is composed, its lines of communication and means for channeling authority and making decisions; authority relationships that guides how people are to cooperate and use resources to attain organizational goals, assists the PM team to achieve high performance in the project through gains in efficiency and effectiveness.

6.5 Discussions of Findings from the Qualitative Comparative Analysis

Findings from the QCA complement those from the SEM. Specifically, the QCA suggested that if a project oriented organisation is bureaucratic and is in a situation where a project manager supervises too many subordinates, it cannot successfully manage a project in a DCs unless it has competent leadership. Additionally, it was found from the analysis that the competencies and skills of leadership of project oriented organizations and DCs are crucial for a successful PM in these countries, even if the structures, processes and the framework of the project oriented organizations are not well laid down. The QCA finally suggested that even if project oriented organizations in DCs have the capacity to fulfil their PM goals through a blend of sound management, effective organizational planning, innovation and learning, efficient utilization of skills, assets and resources and effective external relationship and technology management, it still needs leadership with right competence and skills to achieve PMS in DCs. According to Meredith et al. (1995) and Dulewicz and Higgs (2003) these competences and skills include technical, managerial, intellectual, emotional, behavioural and contextual competencies.

6.6 Discussions of Findings from the Analysis of the Qualitative Information

Deductions from the analysis of the qualitative information suggest that for a successful project management in DCs, project managers need to have competences/skills which includes general PM knowledge, leadership skills, communication skills, organizational skills, strategizing and planning, adaptability, project risk management, project team management, conflict, management/problem solving, critical thinking, prioritization, proactiveness, innovativeness, time management, technical expertise, project procurement and contract management, supervision, evaluation and control, cost and

financial management, interpersonal relationship management, delegation, data analysis and interpretation, emotional intelligence, negotiation skills, decision making, critical thinking, legal expertise, records keeping and feedback management.

Further deductions from the qualitative information suggest some best practice principles for effective PM in DCs. These practices include but not limited to the following:

Consider stakeholders requirements, provide technical input to project specification, establish clear project vision and mission, define project scope and objectives, employ and train qualified PM personnel to form the project team, create project risk response, conflict resolution and feedback management teams, verify employees' qualifications, communicate project objectives to project team, assign, develop and formalize PM roles, prepare a detail procedures of work breakdown structures, ensure community participation, provide adequate duration for all deliveries, provide insurance for the project, adopt the appropriate mode of communication, set rules on site and use the right project management methodologies, continuously monitor and control ongoing projects, ensure safety standards meets international requirement and coordinate activities of various sections of the project oriented organization. These findings are in line with those of IPMA (2006); Barmayehvar (2013) and Fernandes (2013) who recommended similar competences and practices for effective PM.

CHAPTER SEVEN

CONCLUDING REMARKS

7.1 Introduction

This chapter provides the concluding remarks for the thesis. It discusses the implications of the main findings of this study. It emphasizes the essence, relevance and the contributions of this research and provides a model for the management of projects in project oriented organizations in DCs. The chapter explains the limitations of this thesis and makes appropriate recommendations for future research.

7.2 Overview

Successfully managed developmental projects have been recognized by Hosseini et al. (2017) as a crucial force for economic growth and poverty reduction for DCs. However, from the beginning of 1980s, public investment in various projects in DCs has almost always failed to meet the demand (Kumari & Sharma, 2017). PM in DCs is confronted with various problems, many of which are peculiar in nature and, as a result, tedious to solve in the context of the traditional PM role. It is therefore clear to suggest that the management of projects in DCs by project oriented organizations are affected by a number of factors; however, the weight of these actors need to be properly comprehended to able to actually appreciate their impact on PMS in DCs (Yanwen, 2012).

But, in most cases, empirical studies on the challenges affecting the delivery of projects, as well as the development of appropriate models for PMS in DCs, are very limited (Kavishe et al., 2018). Venter (2005) concluded that previous studies examining the factors shaping PMS have largely concentrated in Europe, North America and Asia,

inferring their findings to the context of DCs. Juran, (1992) observed that research into the history of PM and the root causes of PM failures by project oriented organization in DCs are frequently neglected by researchers. Ayee (2000) in addition argued that there are no known empirical studies on what causes PM to fail or succeed in DCs, particularly in Ghana. Supporting Ayee's position, Jekale (2004) highlighted that research works on PMS in DCs have not yet received enough attention and are still at the infant stage; and that the available information in the area is few and lack detail.

But, Essilfie-Baiden (2019) highlighted that every project is implemented and managed locally, even if this is being done in accordance with internationally acceptable standard. The attributes of the project, its location, owner, purpose and objectives can have significant impact on the management methods to be used. Therefore, it is relevant to study PM in the context of DCs to better appreciate and manage projects successfully in those countries.

Organizational Capacity, Organizational Structure and Leadership are identified as some of the major factors that significantly impact on PMS (Hyväri, 2007; Blaskovics, 2014; Aniagyei, 2011). But then again, these factors were not studied in the context of DCs. There is therefore the need to study the impact of these factors on PMS in DCs. This study thus seeks to assess the impact of the aforementioned factors (organizational capacity, organizational structure and leadership) on PMS in project oriented-organizations in DCs, using Ghana as the country of study.

7.3 Implications of the Findings of the Study

Based on the main findings obtained in the different analyses conducted, several theoretical, managerial and policy implications can be drawn for successful PM in DCs.

7.3.1 Theoretical Implications

Findings from this thesis confirmed that two (leadership and organizational capacity) out of the three factors in Hyväri's (2006) model have a statistically significant causal relationship with PMS in DCs. However, the causal relationship for the other factor (organizational structure) is not fully supported in this study. Specifically, while we have found support for the effect of organizational structure-span of control on PMS, when examining organizational structure-systems and process, the relationship is not significant. This implies that the theory underlining Hyväri's (2006) model for PMS can be used in the context of DCs, but with some adjustments. The need for this fine-tuning is obviously as a result of the differences in context in the application of the model.

7.3.2 Managerial Implications

Project managers need to select qualified project team members. However, the selection needs to be done using best HR practices to avoid a situation where people with the required expertise are rather left out. Next, project managers need to adopt the transformational form of leadership by making project team members creative, engaged with the project and bringing in new initiatives. The manager needs to integrate team members around defined goals and make them feel responsible for solving project problems. Project managers need to define roles and responsibilities in a team and with other stakeholders and communicate, motivate and inspire their project team members to achieve project goals.

The demands of the project team may differ. Therefore, the project manager is expected to identify the needs of their team and find the most appropriate way to address them. Appreciating the efforts of the project participants motivates project team members, which in turn, improve positively in their performance, which is vital in the quest to

achieve project objectives. Importantly, the project manager must avoid inequality in reward systems. Conflicts can occur at any stage of a project; thus, project managers need to focus on avoiding circumstances that can create these conflicts at various stages of the life cycle of the project. It is crucial for project managers to maintain open communication channel with all the project stakeholders and occasionally update them on the progress of the project.

7.3.3 Policy Implications

First, citizens of various DCs need to vote competent leaders or policy makers into power. Voting political leaders who are incorruptible, patriotic, system thinkers, having personal integrity, proactive, emotionally intelligent, having a general business perspective, effective time managers, negotiators and optimist is the foundation for achieving PMS in these countries. Political leaders of various DCs need to provide the kind of leadership that will propel PMS. Political leaders should only initiate projects that are relevant and have the required funding, creating the right environment for PMS. The leaders should be strengthening the enforcement of their public procurement laws, making it as a policy to adopt open, fair, and transparent tendering and procurement processes and awarding project contracts to only qualified project oriented organizations or contractors. Also, policy makers must enact and enforce legislations and policies that force contractors to complete projects on time.

To achieve high levels of PMS in DCs, project oriented organizations in these countries have to adopt or develop a clear policy, structure, process and framework to oversee various activities of their projects. Project oriented organizations must ensure that not too many subordinates are under a particular project manager, since this will help to increases his/her effectiveness with regard to the management of the project team.

Organizations must clearly define how their project teams are formed, their lines of communication and means for channelling authority and making decisions; authority relationships that guides how people are to cooperate and use resources to attain organizational goals. Project oriented organizations need to ensure that their scalar chains of command are not too long. Bureaucratic processes involved in obtaining support by project team members should be reduced and simplified. The adoption of electronic systems can help in this direction, since these systems reduce corruption and delays in accessing projects documents and promote monitoring and transparency.

Again, project oriented organizations need to make it as a matter of policy to select only qualified project managers to lead their projects. Project managers need to be selected on merit. They must be required to show sound knowledge and qualification in PM. Project oriented organizations need to further polish the leadership skills of their project managers by offering them periodic training and refresher courses. Organizations must also track the performance of their project managers by adopting the use of project management information system and enforce corrective actions.

Finally, before embarking on any project in DCs, project oriented organizations need to make it a policy to accept only contracts they have the required capacity to successfully manage. This capacity includes competent human resource, program and process management team, infrastructure, technology, and financial resources, strategic leadership, networks and linkages with other organizations and groups. Thus, before a project contract is given to a project oriented organization or before a project oriented organization accepts a project contract in a DC, the following confirmations about the organization need to be checked: whether the organization has a well laid down governance system, effective internal leadership and sustainability i.e. plan for

leadership transition (leadership capacity); whether the organization has the ability to ensure effective and efficient utilization of organizational resources (management capacity); whether the organization has the skills, tools, and facilities to deliver its projects and manage its operations (technical/operational capacity); or whether the organization has the ability to monitor, assess, learn, respond to and create internal and external changes in response to changing circumstances (adaptive capacity).

7.4   Original Contribution

7.4.1 Theoretical Contributions

To begin with, by identifying and analysing the drivers of PMS in DCs, this thesis provides an appropriate model that catalyses the adoption of appropriate approaches that support the efficient management of projects in DCs. Accordingly, this thesis might serve as a reference for opinion leaders and other donors who finance most projects in DCs to understand the complexities in the management of projects in DCs, and thus, help them to make appropriate decision concerning PM and the sponsorship of projects in these countries. The thesis also provides new insights that will help the international community to understand why most projects are not completed in DCs.

Furthermore, this thesis builds a competency profile for a good and effective project manager through the recommendations made under the discussion of the implications of the findings of the different analysis performed. In the discussion section, the thesis makes it clear the kind of competencies and capabilities that a project manager needs (in this contemporary and challenging environment) to successfully complete an assigned project.

Finally, this thesis also makes a theoretical contribution, providing new insights to the existing literature in the specific context of PM in DCs. In this regard, this thesis is one of the very first studies that provide a model that serves as a criterion for achieving PMS by project oriented organizations in DCs. The thesis highlights how quantitative and qualitative approaches might be used to investigate a phenomenon which has been relatively under-investigated to date. Specifically, the study highlights the relevance of SEM and QCA.

7.4.2 Managerial Contributions

The managerial contribution of this thesis stems from putting a spotlight on how projects can be successfully managed by project oriented organisation in DCs by identifying, highlighting and analysing the major factors (organisational capacity, organisational structure and leadership) that affect PMS in these countries. By highlighting these factors and their impact on PMS, the problem of high level PM failures in DCs could be better addressed.

Other implications of this thesis emphasize the fact that leadership is the backbone in the quest to achieve PMS in DCs. This will raise awareness of governments and managers of projects oriented organizations in DCs about the need to provide effective leadership during the conception, planning, execution and implementation of developmental projects in order to achieve the desired success.

7.4.3 Contributions Policy Making

The relevance of addressing this topic is based on the fact that the findings of this study will help improve PMS rates in Ghana and in DCs with similar conditions as Ghana. Understanding the major factors that affect PMS in DCs will help both policy makers

and managers of project oriented organizations in these countries to know how to develop appropriate policies that will help to deal with PM challenges faced by their respective countries.

7.5 Limitations of the Study and Future Research Avenues

There are a number of limitations to this study which in turn, open up new opportunities for future research.

First, since the instrument used for the survey measured the perceptions of respondents regarding factors affecting PMS in DCs quantitatively, a degree of subjectivity is expected to be inherent to the data collected. Thus, a systematic variance in the survey population due to either known or unknown influences could cause some form of bias. Also related with data collection, respondents were certified project management experts. It is therefore advisable, for future research to encompass opinions of other project stakeholders such as clients, investors, etc.

Second, the findings from this thesis cannot be inferred to all DCs. The empirical application considers the specific case of one country (Ghana). Future research might consider testing the models developed in other DCs for better inference as well as for comparing the results among different countries and regions.

Third, this thesis looks at project-oriented organization in DCs. At this stage it would be interesting to examine in future works whether non-project oriented organizations in DCs have similar patterns as the ones identified in this study.

Fourth, the sample used in this study is limited, covering only a partial view of the audience the thesis is targeting. A sample from different DCs would have been more ideal, although such data will be difficult to obtain.

Finally, the research model from this thesis was developed using only organizational capacity, leadership and organizational structure as latent factors. Consequently, it is recommended that future research expands the model and incorporate new factors such as culture, politics, the project's external environment, etc.

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Appendix 1. Items (and dimensions) remaining after each debugging step

Original Dimensions	No. of Items from LR	EFA	CFA	Final Dimensions
Organizational Capacity	5	4	4	Organizational Capacity
Leadership	5	4	4	Leadership
Organizational Structure – systems & structures	3	4	4	Organizational Structure – systems & structures
Organizational Structure – span of control	3	3	3	Organizational Structure – span of control
Number of items remaining	16	15	15	

Appendix 2. New research model obtained after the analysis
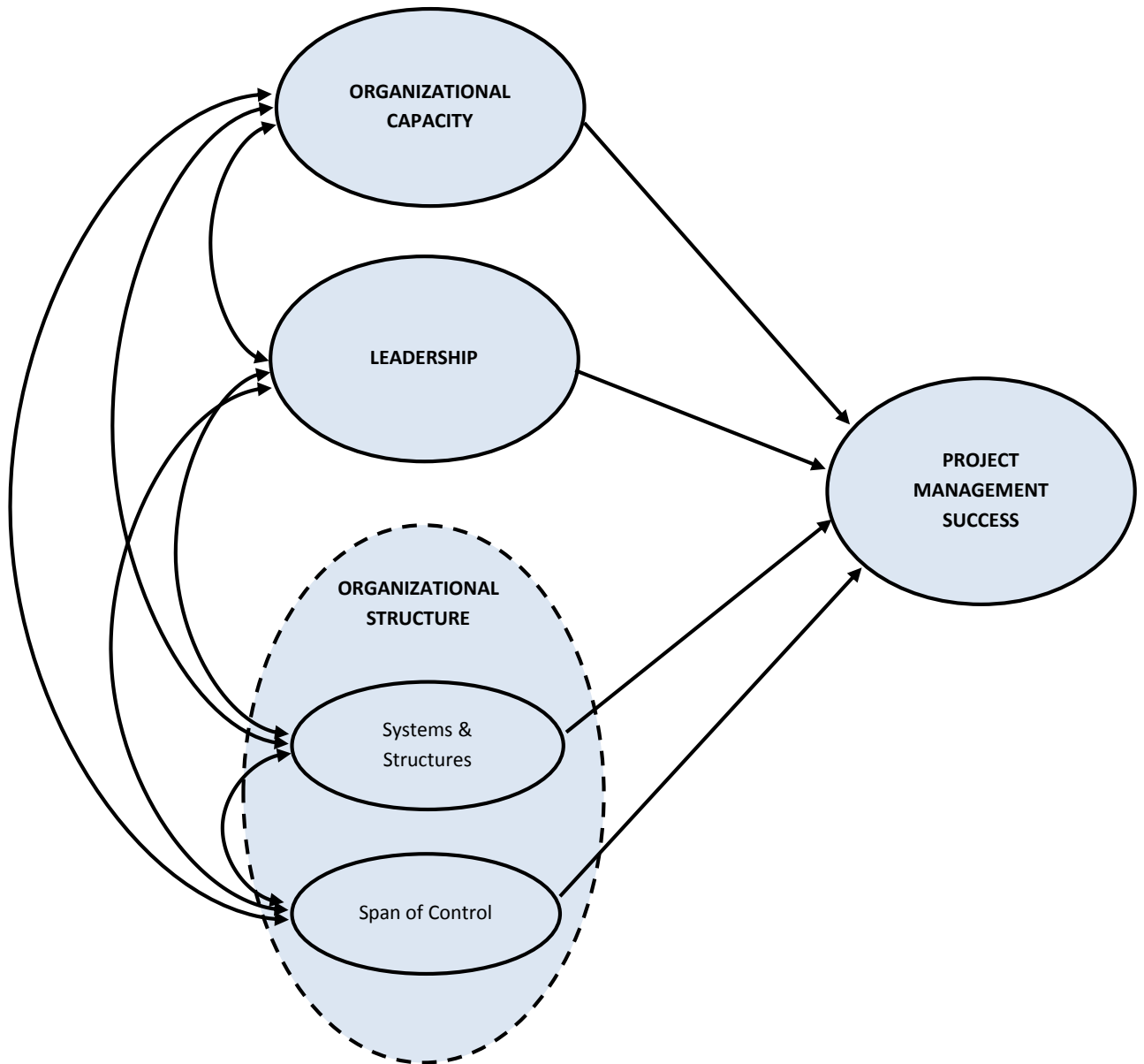
Appendix 3. Structural equation model obtained from the EQS output
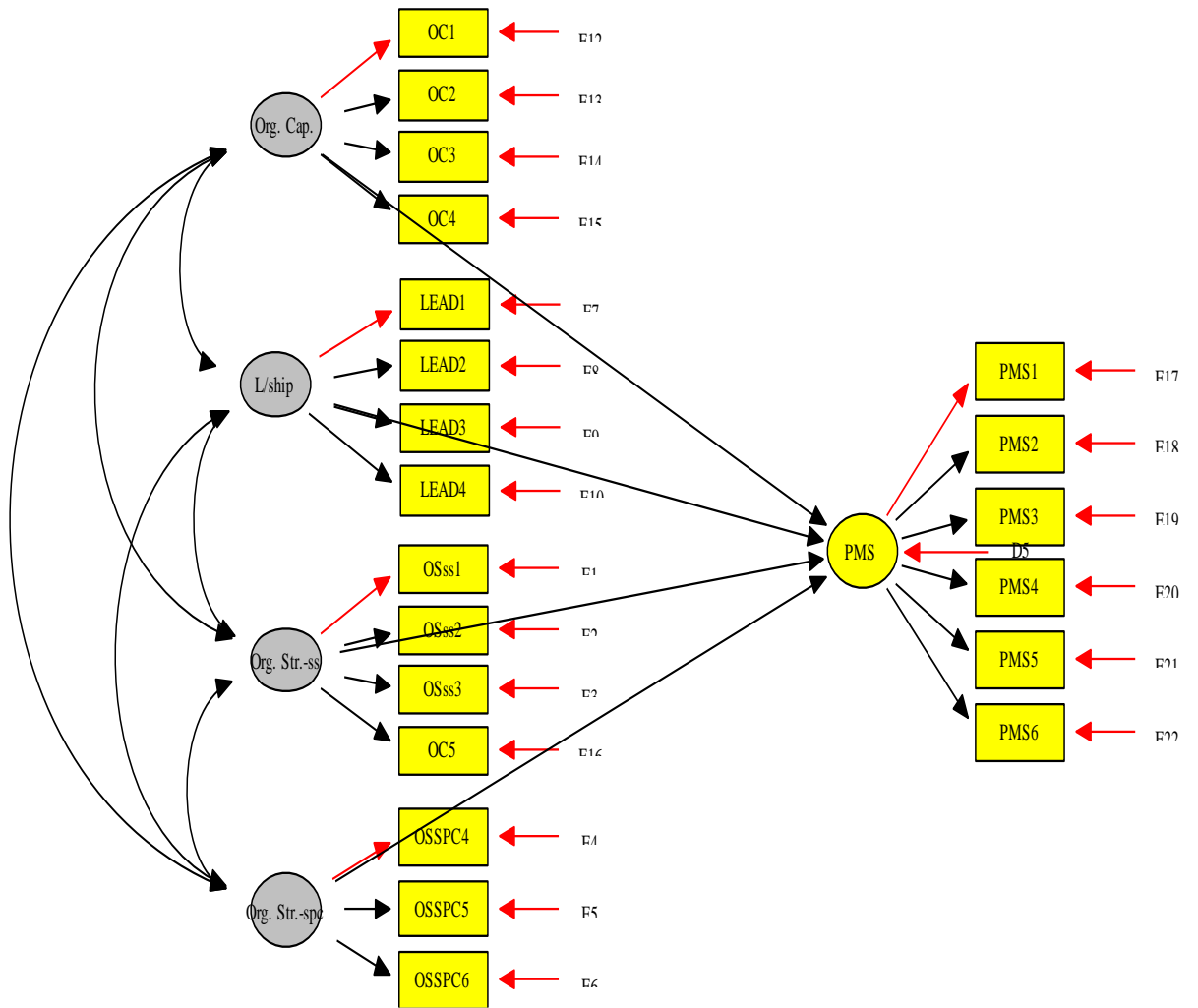
Appendix 4. Loads of the dependent factor and its reliability statistics

	PMS	
	PMS1	0.865
	PMS2	0.898
	PMS3	0.908
	PMS4	0.923
	PMS5	0.864
	PMS6	0.892
Alpha Cronbach	0.948	
Range of Cronbach's alpha if an item is deleted	0.933 - 0.942	
Range of total corrected scale and correlations	0.806 - 0.882	
Composite Reliability	0.959	
AVE	0.796	
sqrt (AVE)	0.892	

Appendix 5. Suggested PM competencies/skills and best practice principles for effective PM in DCs

No	PM COMPETENCES	BEST PRACTICES
1	PM, leadership skills.	employing qualified personnel for the job
2	Communication skills, leadership skills.	Assigning jobs to people with technical expertise, Ensure projects are executed within time frame
3	Leadership skills, organization and planning skills, communication skills	Have a purpose and stay realistic in defining the results and a well-developed and documented tangible goals
4		Be emphatic, flexible and hold people accountable and motivate the team by celebrating positive changes and wins. Create a knowledge base team of specialist with the resources to deliver, manage possible and or high risks and communicate and track progress effectively in all transparency.
5	Adaptability	Adopt recent technology and exchange programs with foreign partners.
6	Capital and human resources management skills	Procedure observation, there should be teamwork and cooperation.
7	Communication and risk management skills	Tracking and reporting project progression.
8	Leadership, communication, building teams, conflict management, critical thinking, PM, prioritization	Strategizing, Financial plan, Timing and effective execution, Monitoring and controlling Closing phase.
9	Team player, communicator, Pro-activeness, Innovative	Effective communication, Capacity building, Motivation, Delegation of assignment, Monitoring
10	Communication, Leadership skills, Innovation	Delegation of task, Coaching, Project planning, Communication, Tracking and reporting project progress, Change management, Risk management, Define the deliverables
11		Develop strategy and project plan, Finance planning, Schedule and execution, Controlling of project Closing
12	Time management, Communicator, leadership skills	Effective stakeholder engagement, Communication beyond team to other secondary stakeholders, Capacity to use available project management software.
13	Technical skills, Leadership, Risk management.	Articulating the vision and mission of the project.
14	PM, ICT	Best materials should be used to construct complex projects, Permits should be obtained for complex projects, Best engineers should be engaged to supervise such projects
15	Procurement management skills, Communication, human resource management, supervision and control.	Transparency, Accountability, Effective time management
16	Communication, Human resource, procurement, Time management, Cost management and accounting	Coordination of activities from various sections of the organization
17	Knowledge in procurement, Communication, Adherence to stated objectives, Adaptability	Integrity, Conformity to standard , Timing, Monitoring and evaluating
18	Interpersonal relationships mgt	There must be periodic collaborations with agencies involved in certain quarters to project execution and to promote drastic means to propel duties. Frequent capacity building to conscientize people to meet modern trend of events.
19	Planning and organization skills.	Managers are to set standards for the project.
20	Creating a positive team environment.	Project managers must delegate and keep track of every progress of the project
21	Communicators	.
22	Communication.	Project planning
23	Managing complex projects.	Project managers must develop and formalize project management roles.
24	Team management, motivate, inspire, lead and resolve conflicts. Delegation	Managers should set clear project vision and a mission statement.
25	Communication skills, Negotiation skills, leadership, Risk management, Organization and planning skills.	Define life cycle and milestone, Stable requirements and scope, Work authorization and change control, Organization system and roles, Planned commitments, Corrective action decision, Quality assurance, Tracking and various analysis, Escalation and issue management
26	Cost control	Intervention and Execution strategy
27	Technical	Transparency about the project status, There must be a project structure plan.
28	Risk mgt, communication	Clear goals, Risk recognition.
29	Open to creativity	Delegation, Supervision
30	PM	Planning, Controlling, Monitoring, Assessing, Evaluation
31	Leadership	Clear Vision and Mission
32	Data analysis, leadership competencies, technical competence, Adapting to new changes.	
33	Team mgt	Project must be well planned by project managers.
34	Effective communications skills, PM, interpersonal relationship mgt, Technical	Employ skilled labor, Continuous learning
35	Team mgt, negotiation and communication, PM	Vision and mission, Business objective, Standards of engagement, Intervention and execution strategy, Organizational alignment, Measurement and accountability
36	Time management	Proper documentations Effective time management practices
37	Communication	Project managers should communicate with the project team frequently.

38	Communication	Project managers must adopt better scheduling standards for technical work.
39	Tracing progress towards goals.	Project managers must define and evaluate quality standards throughout the project lifecycle.
40	Managing project team.	Project managers should make their projects policies are transparent.
41	Leadership skills , Time management skills	Adoption of PMI based methodologies.
42	Technical, Communication skills, Team work expertise	
43	Technical skills, Experience, People management , communication, Emotional intelligence	Safety standards should meet international requirement
44	Technical, Conflict resolution	Effective leadership and communication, Goal setting, Risk Management
45	Leadership and technical know-how	Involvement of team members and frequent meetings to assess the progress of the projects
46	Project finance mgt, project risk mgt, project client mgt, communication, project team mgt	Using the right project management methodologies, Preparing a detail procedures of work breakdown structures, Effective program /detailed program, adequate duration for all deliveries
47	Leadership skills, technical know how	Have enough funds to meet project completion on time.
48	Financial management, HRM , Procurement law	PMI Principles
49	Communication, Have problem solving skills, leader	Engage team members with required expertise, Segregation of work for proper monitoring and controlling
50	Communicator, project team, supplies, stakeholders mgt	Brief the project team on the projective objectives, Identify stakeholders and their requirements, He must also know their preferred mode of communication, set rules.
51	PM, technical	Follow the land down procedures
52	Deep knowledge in the application of tools and techniques in PM, Interpersonal and behavioral skills, Technical	Project manager must acquaint themselves with the principles in the PMI hand book
53	Integrity, Communication skills, Resource management	Proper documentation, Effective communication, Proper risk management process
54	Communication skills, negotiation skills, PM, leadership	Compliance with legal requirements of the project, Ensure proper planning of projects using recognized PM planning practices, Communication and documentation of all activities of projects , Engagement of stakeholders regularly
55	Communication, Legal oriented, risk Mgt, resources mgt	Stakeholder engagement practices, Apply all the PMIs regulations and rules
56	Technical. , Risk Managers., communication	Provide technical input to project specification., Assist tender committee well in evaluation., Right expertise for execution of project
57	Leadership, Team mgt	Community participation, Stop any sub-contract if it is found, Insurance and guarantors documents must be taken by unsuccessful contractors, verify employees' qualifications.
58	Negotiation skills, Communication., Risk Mgt	Mission and vision statement., Business objectives, Change management
59	Organizing and planning, Communication, Negotiation skills	Business objectives, Accountability and measurement, Standards of engagement, Mission and vision
60	Risk Management competencies	
61	Communication skills, Leadership skills, Technical skills, Human relation skills, Planning skills, Cost estimating	Project scope and objectives definition, Define deliverables, Project Planning, Monitoring and controlling of plans, Change management, Project closure including lessons learned, Communication management, Risk management, Stakeholder, engagement and procurement management
62	Leadership skills , Human relation skills , Organizational skills, Planning skills, Communication skills	Define the scope and objectivities, Define the deliverables , Proper project planning, Communication, Monitoring and Controlling, Change management, Risk Management, takeholder engagement
63	Quick and effective decision maker, communicator, negotiator, critical thinker, team manager, a good planner, have skills in risk management, a good organizer, leader	Some of the best practice principles include; (i) defining the scope and objectives of the project. That is, to under the project objectivities, (ii) the project manager must also adopt the practices of defining the deliverables. By this, you find out or understand what will be delivered by the project (outcome), (iii) project planning is also another best practices, (iv) also, tracking and reporting project progress is a best practice principle for the project managers.
64	Communication, Negotiation skills, Risk Management Competencies, Organizing and planning	Mission and vision statement, Business objectives
65	Critical thinking abilities, Leadership skills , Communication skills, team work	Project vision and mission, Employee productivity, Service quality
66	Organization and planning skills, Communication skills, Leadership skills Critical thinking skills	Vision of the project, Product/service quality, Employee productivity, Project mission
67	Strong leadership.	Vision and mission statement , Business objectives, Core values
68	Strong leadership, Effective communication, Negotiable skills, Risk management, Organization and planning skill	Vision and mission, Business objectives, Standards of Engagement, Intervention and execution strategy, Organizational Alignment, Measure and Accountability
69	Evaluation skills, Good personal relationship, Legal expertise	Contract evaluation and monitoring , Processing of payment rapidly , Resolution of claims
70	Ability to interpret the work chart, Computer literate, Good in contract management	Effective mechanism to settle disputes, stakeholders must be involved in all stages of the project, Registration and certificates of companies should be checked thoroughly., Set up awarded (winners), companies on Ghana integrated financial management
71	Good record keeping skills, Ability to schedule plans and program time	Investigate any complaint of mis-procurement , Issuing tender rejection and debriefing letters, Coordinate training and professional development, Construction entities must register with ministry works and housing
72	Knowledge in disputes resolution/ management PM Qualified academically, Technical knowledge	Contract administration planning , Proper supervision, Effective monitoring and evaluation (M&E)
73	Ability to negotiate and execute contract efficiently , Proper	Use correct materials , Meet objectives of the project well, Complete work on schedule

166

	time management skills, Able to take record and communicate well	, Scrutinize performance indicators
74	Monitoring and evaluation, feedbacks mgt, project administrators	Dialogue with the beneficiary communities, Check the competence and materials of the contractor, Beware if the implementation is going faster than the stipulated time and also caution if it is going slowly., Conflict resolution team should be involved in land disputes , Procurement officers must check the track, record/previous projects implemented by the competing contractors.
75	Communication skills, leadership, Human capital mgt	
76	Communication , technical capacity	
77	Communication, Leadership, Stakeholders mgt	Effective monitoring and evaluation , Project manager must have enough competencies (technical) of the projects they manage
78	Communication, budgeting knowledge, interpersonal skills	Project managers must involve team mates in decision making, Project managers must ensure projects are taken in a timely manner., Project managers must acquire enough knowledge of PM , Project managers must recruit at least a competent person in the, management of the project.
79	Communication, Leadership skills	
80	Proper planning	PMP standard guidelines
81	Leadership , Risk management, Time management , Communication skills, Planning	Creating a risk response team, Contingency plans, Formalize project management rules
82	Negotiable skills, Communication, Critical thinking , Risk management , Leadership skills, Technical expertise	Developing leadership competencies , Developing technical competencies , Making sure stakeholders understand requirements, Create risk team
83	Communication, Technical expertise, Risk management	Better scheduling standards for technical works, Letting stakeholders understand the requirements
84	Problem solving abilities , Technical expertise, leadership skills, Communicate effectively, Risk management skills	Develop project management roles, Develop technical competencies , Adopt better scheduling standards for technical works
84	Leadership skills , Technical expertise, Risk management, Negotiation skills, Critical thinking	Formalize project management , Adopting better scheduling standards, Developing leadership and technical competencies , Ensure stakeholders understand the requirements
86	Communication, Negotiation skills, Time and scheduling management , Leadership skills , Technical expertise , Risk management	Ensure that all stakeholders understand the requirements , Create a risk response team , Develop and formalize project management roles , Develop leadership competencies alongside technical competencies, Adopt better scheduling standards for technical work
87	Critical thinking abilities , Problem solving skills , Technical expertise, Risk management, communication skills	Better scheduling standards for technical work, Develop leadership and technical competencies , Creating risk response team
88	Strong leadership, communication, Negotiation skills, Risk mgt	
89	Leadership, Organization and planning skills, Risk management, Good negotiation skills, Effective communication	Project managers should have a good vision and mission, Project managers should have good intervention and execution strategy, Organizational alignment , Measurement and accountability
90	Communication skills, decision making	Initiation, Monitoring and controlling, Planning, Quality Assurance
91	decision making, communication skills, Technical expertise	Monitoring and controlling, Executing, Initiating, Planning, Quality Assurance
92	Proactiveness, communication, Analytical thinking	They should always take into consideration value for money, Quality should also be another best practice principle that should also be considered
93	Leadership skills, communicate, time management skills, schedule and plan projects, negotiation skills	
94		Qualified, experienced and competent personnel should be employed for project, Employees and supervisors should be trained with the needed skills before start of the job, Continuous inspection should be done on ongoing projects
95	Project cost and financial management skills, Project schedule management skills, Project stakeholder engagement skills, Good leadership and negotiation skills, team-building skills	Prepare project charters before project commences, Develop project management plan with subsidiary plans for projects, Ensure changes go through formal change procedures during the project
96	Leadership, technical expertise and knowledge.	
97	Decision making, Ability to develop strategies, communication with project members, Team management	Effective communication, Risk management, Organization and planning skills, Tracking of project progress and feedbacks, Definition of project scope and rejection
98	Leadership skills , Risk management, Cost control, Technical expertise, communication skills	
99	Cost control, Tech skills, Critical thinking	
100	Leadership, Critical thinking, Technical competence, Team management, Strategy management, Decision making	Clarify project roles and responsibility, Communicate early and often, Monitor east progress, Manage risk

Appendix 6. List of dimensions and items.

Organizational Structure	Organizational Structure - Systems And Structure	OSss1	Formalization
		OSss2a	Explicit rules, regulations, policies and procedures govern organizational activities
		OSss3	Communication flow
	Organizational Structure - Span Of Control	OSspc4	Span of control
		OSspc5	Bureaucracy
		OSspc6	Centralization
Leadership		LEAD1	Leadership skills and behaviors
		LEAD2	Leaders technical knowledge
		LEAD3	Open to creativity, innovation and new ideas
		LEAD4	Leaders ability to connect with others in a positive way
		LEAD5	Personal Integrity
Organizational Capacity		OC1	Organizational governance
		OC2	Availability of enough competent human capital
		OC3	Enough technical capacity to carry out complex projects
		OC4	Well laid down legal structures
		OC5	Availability of adequate IT infrastructure to support complex PM activities
Project Management Success		PMS1	Project schedule management
		PMS2	Project cost management
		PMS3	Project risk management
		PMS4	Project quality management
		PMS5	Costumers expectations management
		PMS6	Project team management

Appendix 7. A physical map of Ghana.

Appendix 8. Computation of reliability of antecedents

	OC	Std Loads	Std Loads Sq	IME	LEAD	Std Loads	Std Loads Sq	IME	Osss	Std Loads	Std Loads Sq	IME	Osspc	Std Loads	Std Loads Sq	IME
	OC1	0.825	0.680625	0.319375	LEAD1	0.762	0.580644	0.419356	OSss1	0.827	0.683929	0.316071	OSspc4	0.809	0.654481	0.345519
	OC2	0.815	0.664225	0.335775	LEAD2	0.9	0.81	0.19	OSss2	0.752	0.565504	0.434496	OSspc5	0.791	0.625681	0.374319
	OC3	0.776	0.602176	0.397824	LEAD3	0.856	0.732736	0.267264	OSss3	0.814	0.662596	0.337404	OSspc6	0.811	0.657721	0.342279
	OC4	0.818	0.669124	0.330876	LEAD4	0.83	0.6889	0.3111	OC5	0.83	0.6889	0.3111				
Sum		3.234	2.61615	1.38385		3.348	2.81228	1.18772		3.223	2.600929	1.399071		2.411	1.937883	1.062117
Sum sq		10.45876				11.2091				10.38773				5.812921		
Cronbach alpha		0.823				0.846				0.818				0.754		
Composite reliablibity		0.883146				0.904192				0.881302				0.845511		
Ave Var Extr (AVE)		0.654038				0.70307				0.650232				0.645961		
Sqrt (AVE)		0.808726				0.838493				0.80637				0.803717		