EXPLORING RELIGIOUS INFLUENCES ON THE PERFORMANCE OF PUBLIC CONSTRUCTION PROJECTS IN GHANA.

By

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DECLARATION

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extend has been accepted for the award of any other degree or diploma at Kwame Nkrumah University of Science and Technology, Kumasi or any other education institute, except where due acknowledgment is made in the thesis.

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ABSTRACT

The religiousness of Africans is evident in every aspect of life and its impact on their choices is even undeniable. The introduction of project management practices and identification of factors for measuring construction project performance in Ghana has enlightened many practitioners in the field to encourage and improve upon public construction project performances, yet little has been done to fully understand the influences one's beliefs has on these performance factors in Ghana. In this perspective, the following aims were set; to identify factors for measuring project performance in public construction projects in Ghana, to identify religious elements in the Ghanaian society, and to establish and identify the relationship between the factors of public construction project performance measurement and religion (elements of the various religions) in the Ghanaian society. To achieve the research aim and objectives, desk survey and closed-ended questionnaire were designed and used to elicit needed information from practitioners in the construction fields of public construction projects. A total of sixty (60) questionnaires were administered to the three religious bodies relevant to the study. The analysis of the collected data was done using descriptive statistics, mean score ranking, one-way Anova, Tukey Post Hoc analysis, and regression analysis. Findings from the analysis revealed that most of the religious bodies were aware of the presence of the seven factors identified for measuring construction project performance and acknowledged their significance in achieving project success. The six (6) elements of religion identified were all significant and there exist a statistical significance among their individual means. Finally, the findings uncovered that there exists a significant relationship between religion (elements of religion) in Ghana and the factors for measuring construction project performance.

***KEYWORDS*:** Performance factors, Religious elements, Construction Industry, Project performance

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DEDICATION

This thesis is personally dedicated to all my family members and especially to my lovely wife Erica Donkor.

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CHAPTER ONE

GENERAL INTRODUCTION

1.1 BACKGROUND

A project is said to be completed in project management when all the project process groups have been completed with respect to scope and all handing overs are done. Project performance can be on a high or low in construction projects depending on many factors, every project is initiated to achieve a set of goals at the end. Objectives for different projects may vary in many sense but some factors such as cost, time, quality and client satisfaction are basic factors which run across all projects irrespective of the field. Asmah (2014), stated that a successful project is when it has met the targets and objectives as specified in the project scope and plan. Generally, the most important objective of every construction project is that the project is finished on time and within budget as well as the client's problem is solved, desired outcomes and results listed in the projects agreement are achieved and also sustain high-quality and working relationship. According to King (2013), the performance of a project is said to have been fully achieved; if the project is constructed to meet exactly its intended purpose only, constructed to meet the level of quality desired, completed on schedule or ahead of schedule, completed for its intended purpose and completed with high safety standard and minimum damage to the environment. A very active or vibrant construction industry is most acceptable as it serves as a means of employment and a way of driving physical development.

There is a colossal volume of available literature on critical factors that affect construction project performance and the various impact levels on project success in Ghana. The critical

factors from these works of literature are responsible for achieving the project objective or they obstruct the achievement of the project objective. These critical factors can be classified as success factors or failure factors respectively. The success factors are primary principles inherent in a project, which when retained leads to an efficient and effective project team performance, whilst failure factors are those principles in a project that when eliminated will create an efficient environment for project team work to take place in an effective manner which will increase project performance, (Ibrahim et al., 2013). These voluminous evidence identified factors such as; delay in payment of performing organisations, project team commitment, lack of funds for construction projects, liability and risk assessment, unavailability of some resources and unreliable supply of material base, poor communication management processes and an unqualified poor attitude towards adapting to change in technology among both skilled and unskilled personnel's etc. (Amoah et al. 2011).

In Ghana, irrespective of one's class, position or social status, religion plays a key role in an individual's life and these beliefs are what form faith and customs. Salimi et al. (2016) defined religion as a set of beliefs which makes an attempt to bring to man's understanding questions raised during a life period on earth such as; the beginning and end of things, how to create objects etc. For thousands of years it is believed that religious beliefs have influenced the construction industry and project performance in ways that are yet to be fully explored such as; the construction of the Egyptian pyramid, the design and methods employed in building the Larabanga Mosque in the Northern Region of Ghana etc. Religions Urbanisation Africa (2017), strongly argued that the role religion plays to

"strengthen the interface among relevant stakeholders" and also provide grounds for (non-discriminatory) dialogue cannot be ignored.

It is practical in Ghana that places where religion supports the growth of healthy society has led to access of good education, well developed skills and a healthy project environment which are crucial to public construction project performance. This is most obvious in city projects such as the construction of the Tetteh Quashie Interchange. A stakeholder can affect, be affected or even assume to be affected by a project, and managing a stakeholder is necessary to improving public project performance and achieving project objectives. The different religious beliefs of the various stakeholders in Ghana plays a key role in the stakeholder management processes, a project manager depends on the positive inputs of the various stakeholders to take or make decisions.

Communication management processes employed in public projects in Ghana is not left out, religion plays a role in the communication techniques employed during the various construction project faces. This is evident even with how the project team will approach a King or Chief of the project community to the least stakeholder, including the tools and techniques used to disseminate information among the project team members. The customs and norms (beliefs) of the people also serve as a key for the project team to study the rational, reasonable, predictable or consistent ways of various project stakeholders. Stakeholders are very important and influential resource in public construction projects as their input is clearly evident in Ghana, such as communities requesting for a change of a public project contractor etc.

It is therefore evident that public construction projects are not devoid of the mighty "hand" of religion and its impact on project performance, these beliefs may have various

consequences on construction projects performance in Ghana, yet very little research has been directed to it. It is on this note that this research is being undertaken to explore and understand how religious beliefs influence public construction project performance in Ghana.

1.2 PROBLEM STATEMENT

It is generally efficient that any financial and physical investment made in Ghana's construction industry for various projects yield the desired result and achieve the highest possible performance level. Frimpong et al. (2013) cited in Asmah (2014) empirically proved that projects performance levels in the construction industry in Ghana is far from what is desired.

Africa in this 21st century is known to be notoriously religious "and each person have its own religious systems with set of beliefs and practice" and that, religious beliefs influence all aspect of socio-economic life, (Oku 2013). In Ghana, the diversity of religion and beliefs has made it impossible to deny the important role it plays in the development process of the country's economic, social and infrastructure status. Religion and it beliefs shape the political, economic and physical development of Ghana as it has an everyday impact on people's choices.

One cannot deny nor neither prove empirically that construction works carried out in Ghana is devoid of the religious beliefs of the people and its influence on project performance just as various literature has shown its influence in various decision making processes in Ghana. Despite Ghana being a well-known religious country with its daily development and decision making affected by the various religious beliefs of the people, very little has been devoted to exploring and understanding the impact or influence these

beliefs have on the various efforts by governments and others to make Ghana a power house through its construction industry. These religious beliefs can impact public construction projects performance positively or negatively. It is on these background that this work seeks to identify public construction project performance measuring factors and how religious beliefs in Ghana affect or influence the factors.

1.3 RESEARCH QUESTION

To achieve the vision set out for this research, some questions has been raised in light of meeting the aims and objectives for this research;

- What are the factors for measuring public construction project performance in Ghana?
- What are the elements/factors that define religion in the Ghanaian society?
- What is the relationship that exist between the factors for measuring construction project performance and the elements of the various religions in Ghana?

1.4 AIM AND OBJECTIVES

The research work sought to identify factors for measuring project performance and how these factors were influenced by religious beliefs. The study was carried out to achieve these objectives;

1. To identify factors for measuring project performance in Public Construction Projects in Ghana;
2. To identify religious elements in the Ghanaian society; and

3. To establish and identify the relationship between the factors of public construction project performance measurement and religion (elements of the various religions) in the Ghanaian society.

1.5 SIGNIFICANCE OF THE STUDY

It is impossible to overlook the role construction industry plays in the developing and growing of Ghana's economy. This is evident through the usage of roads, development of modern buildings, expansion of Kotoka airport, construction of Bui dam to meet demand for electricity, etc. There has been some number of research on factors that affect or influence project performance in Ghana's construction industry. However, evidence show there is little or no studies to show or explore the influence of religious beliefs in the industry despite Ghana being a highly religious nation. This research work will therefore seek to bridge that gap by providing empirical evidence through practical lessons to broaden the understanding of project managers or performing organisations which in turn will serve as a factor to improve public construction project performance.

1.6 SCOPE OF THE RESEARCH

An asset to economic development and to improve standard of living is an efficient construction industry. This research focused on understanding empirically the role religious beliefs play in influencing public project performance in the Ghanaian construction industry. It covered a wide range of building construction projects and critically examined the impact or role religious beliefs of the people play on public

construction project performance from start to completion of projects, within Accra and Kumasi metropolis.

1.7 RESEARCH METHODOLOGY

The research work applied both quantitative and qualitative techniques, thus the application of descriptive and explorative approaches. The use of questionnaires couples with available data on project performance in the Ghanaian construction industry to examine the influence of religious beliefs on construction project performance. The paper also featured the views of experts with needed examples in the construction industry while critically examining and reviewing relevant literature on the said research questions. Furthermore, the study adopted the use of mathematical software's such as statistical package for the social sciences (SPSS) and other relevant ones to analyse and interpret collected data.

1.8 ORGANISATION OF STUDY

The research work consists of five (5) chapters which include; introduction, literature review, research methodology, analysis, and discussion and Conclusion.

Chapter one (General Introduction) began with an account of the background to the study. It included the problem statement, research questions, aims and objectives of the study. Finally, the research method to be used for is explained before the account of the study structure.

Chapter Two (Literature review) presented a detailed account of project management, project performance and religion in Ghana. It included an overview of Ghanaian

construction and project performance, and its impact on the development of the economy. This is the followed by the overview of religion and its impact on construction projects in Ghana.

Chapter three (Research Methodology), the chapter entailed the research methods used. It focused on the methods that were used in conducting empirical research, framework for the study and research design.

Chapter four (Data Analysis and Result Discussion), this chapter deals with the empirical data collected from the field and answers the questions raised by the objectives.

Chapter five (Conclusion) concludes the findings of the study. Some potential areas for further research are lifted, and the academic practical value of the findings is discussed.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter reviewed available literature on the subject under research. This tool is a useful method to gain deeper understanding of the research topic, Damoah (2015). A system well designed to examine existing literature or publications can assist a researcher to identify the current knowledge areas and provide guidance on further study areas in future, (Mok et. al. 2015, p. 447). This chapter will present a general reviewed work of various literature works on construction project performance and the factors of project performance measurement. Then it follows with stakeholder involvement by addressing its influence on construction project success in the world and specifically in Ghana, it also looks at project communication management in public construction projects, religion and how religious beliefs influence some project management processes which in turn influences project performance. Finally, it discussed the best practices of religion to improve project performance with respect to the research work.

2.2 OVERVIEW OF PROJECT MANAGEMENT AND PROJECTS

Project Management is not new to mankind as it has been with us since the days of life which is evident from the survival of monuments from the earliest days of civilization to make a declaration of the achievement or project success of our ancestors which we still hold high in our imagination and admiration, (Kissi,2013). Project management was conceived in the early 1950s from management discipline, Cleland and Gareis (2006) as

reviewed by Damoah (2015), even though there is no specific date. Project management usage can be directly traced back to the arrival of business management. The "official" introduction of project management practices in projects, programs and portfolios has ensured that the expectations are set to achievable goals, proper budgeting is done and allocation of time is reasonable. Peckendorff (1995), deduced that Project management was recognised in 1950s and 1960s as a body of knowledge, and that "modern-day project management can be credited to the work of Henry Gantt, who invented Gantt Chart as a standardised project management model", (Damoah, 2015). Relying on this will present project management as a method for solving specific problems, by demarcating and grouping the task or activities through the use of different methods and techniques (Soderlund, 2004). Despite the growth of project management and its acceptance in the academic circles, it lacks universally recognised theories for practice and research as a knowledge area (Soderlund, 2004). However, Klein et al. (2015) argued that, due to each projects uniqueness, there is a necessary need to improvise during project management.

Projects in itself is not a new discovery. The design and construction of the Egyptian pyramid,

Noah conceived how to design and construct a ship, King Solomon built and maintained the great temple, the Great wall of China, the design and implementation of the Olympic games and men landing on the mon were projects, (Archibald, 2004). Project performance is of great importance to all sort of organizations, government and industries. It's a source for generating profit especially for complex projects or programs. Project performance in general term, tells a project team of the achievements of a project or projects. These achievements can be measured at different stages; it can be measured during it lifecycle

or even after it is completed. The performance level of a project serves as a system to monitor the efficiency, effectiveness and results of an undertaken project, (Asmah,2014).

2.2.1 Definition of Projects

According to Project Management Institute (PMI), (2019) "a project is a temporary endeavour undertaken to create a unique product, service, or result. Projects drives change, it empowers value creation and a successful project maintains relationship and manages uncertainty. Turner (1998) defined a project as an endeavour whereby machines and human, materials and financial resources are organised in a novel manner, for a unique work scope, of given specifics, with a fixed cost and time, so as to achieve beneficial change through qualitative and quantitative objectives. Often the word project is used in conjunction with the term project management for completeness and to make it more meaningful to users, (Kissi,2013).

However, Archibald (2004) defined a project as a complex attempt made in producing specified and unique results given a time frame and a defined budget for the resource that it will consume. Kerzner (2015) argues that, a project is any activity and task in series that are carried out with a specific objective or objectives to be achieved with a specified time range, which has a well-defined start and finish date, with approved funding limit, which is multifunctional and consumes people, money and equipment. This paper agrees with the PMBOK6 that a project is a temporary endeavour, unique in nature and the application of project management is essential to: planning, executing, and monitoring of the project. Public projects from city to urban, rural areas, states, regional levels are all vehicles to realise economic and fiscal growth, (Archibald, 2004).

2.2.2 Definition of Project Management

There is no specific definition to project management as different authors along the years have provided different approaches to defining the concept. These definitions' when put together groups the concept of project management into two areas: (a) project management as a science which follows specific management practices and models, and (b) project management as a non-science which does not follow a specific path of practice and model, (Damoah, 2015). However, (Soderlund,2004) also concluded that there exist two theoretical approaches to project management research: (1) the first with intellectual roots is in applied mathematics and engineering science, this is focused "primarily in the planning techniques and methods of project management", and (2) the second intellectual root is in social science, such as organizational theory, sociology, and psychology which explains organizational behaviour.

PMBOK6 defined project management as an "application of knowledge, skills, tools, and techniques to project activities to meet the project requirements". Kerzner (2003), defined project management as a process which involves planning and monitoring of projects which include:

- Project Planning

  Work requirement definition

  Quality standards and quantity of work well defined

  Definition of needed resource

- Project Monitoring

  Keeping track of work progress

  Compering actual outcome with expected outcome

  Analysing impact

Making approved changes

The success of project management practices is linear to the appropriate application and implementation of the management processes identified for a particular project. Therefore, a project is termed successful when the project activities are completed within the estimated time, cost, scope and meet the specified performance level. Project management is a vehicle for strategic growth, Archibald (2004) and the application of its principles, procedures, policies and practices continues to grow sharply among many organizations across the globe, from private to government.

According to Sinnaps (n.d.), to manage a project requires a skilled project team of competent members whose abilities will complement the team's efforts. Sinnaps, further argued that project management practices and principles are important to modern project because:

- It spells out clearly the project plan: that's it minimizes or eliminates the setbacks that may arise due to an open scope from poor planning.
- It defines the agreed upon schedule from the plan: this will curb the chances of delays, cost overruns and provide a defined part for project monitoring.
- It creates a base for team work
- Maximization of resources
- It helps in integration management
- It helps in cost control of projects
- Its prevents gold plating, and manages approved changes
- Quality is managed continually

The importance of project management cannot be ignored in handling novel and complex project. The debate about project management definitions makes it principles and techniques applicable in a wider scope of academia, and that the argument depends on individual research works.

2.2.3 Project Performance and factors of performance measurement

There is an inclination towards the achievement of high and long term goals from the definition of project and project management as adopted from PMBOK Guide. The returns on the investment made, amount of profit obtained, availability of market demand and competition are the most important parameters within the goals of a project, (Munns and Bjeirmi, 1996). These parameters and factors are the tools that affect achievement of the set out goals. Knowing the position and pace with which a project is moving is an important source to measure project performance, Willis and Willis (1996). Navon (2005), defined project performance as the measurement which establishes the difference between project performance expected and the actual project performance achieved on the ground. This gives a clear indication of how a project has shifted from its main objective or goals in terms of scope, time, cost and quality. Ali and Rahmat (2010), also defined project performance as a 'process of evaluating performance relative to defined goals'. It serves as a tool for monitoring and controlling a project by providing information on works with respect to schedule and scope.

According to Vleem (2018), the key performance indicators (KPIs) are used to measure how successful a performing organisation or a project has been. She further developed the three basic performance indicators as time, cost and scope for evaluating project success. Further research has revealed that, the measurement of scope and quality are subjective as

KPIs whilst cost and time are directly measurable indicators which affect project performance (Lindhard and Larsen, 2015). Yun et al. (2016) deduced a framework for capital projects benchmarking, indicating KPIs and arranging them in descending order of usage: cost, schedule and quality were most used performance measurement indicators or KPIs:

- Cost
- Schedule performance
- Quality performance
- Safety
- Customer satisfaction
- Scope management
- Productivity
- Profitability
- Etc.

However, Ali and Rahmat (2010) identified six (6) factors or elements for measuring project performance, which include cost, quality, time, client satisfaction, health and safety, and functionality.

- Cost as a performance measurement factor

  The degree to which a project is completed successfully within a defined budget (Direct and Indirect cost) is defined as cost of a project. According to Salter and Torbett (2003), variance in the cost of a project was the most commonly used technique to measure design performance which is not confined to the sum from tender but include all incurred cost involved on a project.

- Quality Performance

  Quality is the property or ability of a project to meet accepted standards. These requirements are the features specified in the contractual agreement and characterise the nature of a process, service or product.

- Time performance

  Generally, various groups of stakeholders and the public measure the performance of a project in a macro manner by generally looking at the time of completion. It is the first point of judging construction projects especially. Ali and Rahmat (2010), reviewed the works of Salter and Torbett (2003), and Odeh and Battaineh (2002), and confirmed that time variance is a key performance indicator in construction projects especially public projects.

In Ghana there are many factors that are believed to influence the success of a construction project. The success of public construction projects in Ghana ranges from the pre-qualification stages which starts from selection of design team/frim, selection of contractors through to the various execution stages. It is noted that the financial standing of a selected contractor has a significant impact on the project performance, (Acheamfour et al, 2019; Hatush and Skitmore, 1997). The financial standings of a contractor affect the following construction elements: cost, time and quality of completed project, (Acheamfour, Kissi, and Adjei-Kumi 2019).

There are many factors that were identified in previous literature works that affect the performance of construction project especially in public projects. Edmonds and Miles (1984), provided a qualitative study on factors that affect the performance of Ghanaian construction projects. In Ahadzi (1995), the study provided further research into the

factors that affect/influence the performance of Ghanaian construction projects which had evidence of or repetition of some factors from the work of Edmonds and Miles. Fugar and Agyarkwa-Baah (2010) provided a modern insight by a synthetic approach of these factors and how they influence modern performance techniques in the construction industry of Ghana. Below are some research works and the performance factors identified;

Table 2.1: Factors affecting construction performance in Ghana

Author(s)	**Performance Factors Identified**
Edmonds and Miles (1984)	Unavailability of credit, payment delays, deficient communication structures, lack of constant material suppliers.
Ahadzie (1995)	Unavailability of credit, delay in payment, revision design and variance, lack of proper motivation of craftsmen, poor planning and supervision.
W o r l d B a n k (1996), Westering (1997), Crown Agents (1998), World Bank (2003)	delay in payment, poor communication techniques, lack of proper management skills, fiscal constraint and government (external) control, land litigation.
Fugar and Agyarkwa-Baah (2010)	Materials related, equipment related, finance related, environmental related, changes, government action, contractual relationship, scheduling and controlling techniques.

Source: (Amoah, Ahadzie and Danso, 2011, p 43)

Furthermore, Acheamfour et al (2019) in their study identified project success criteria in Ghana's construction sector. These factors/criteria that influenced the performance of construction projects where cost performance, schedule performance, quality

performance, health and safety performance, relationship with project stakeholders. Project scope and environmental performance.

Table 2.2: Factors affecting construction project performance in Ghana

Criteria	Sub-criteria
Cost performance (CP)	Effective resource planning, Efficient cost estimation, Proper cost budgeting, Effective cost control
Schedule performance (SP)	Availability of resources as planned, Efficient activity scheduling, Pre-tender proceedings
Quality performance (QP)	Top management support, Effective quality planning, Effective quality assurance, Effective quality control
Health and safety performance (H&S)	Top management support, Proper site layout planning, Proper use of PPEs, Availability of welfare facilities
Relationship with project stakeholder (RS)	Top management support, Effective communication, Regular monitoring and feedback by top management
Project scope (PS)	Involvement of stakeholders, Effective communication, Proper scope definition, Monitoring and feedback
Environmental performance (EP)	Top management support, High resource usage efficiency, Efficient construction methods

Source: (Acheamfour, Kissi, and Adjei-Kumi 2019)

In combining the works of Edmonds and Miles (1984), Ahadzie (1995), W o r l d B a n k (1996), Westering (1997), Crown Agents (1998), World Bank (2003), Fugar and Agyarkwa-Baah (2010), and Acheamfour, Kissi, and Adjei-Kumi 2019, it is evident that the factors that influence the performance of construction projects in Ghana can be grouped into influence criteria (factors) and their sub-criteria. For this study, we shall adopt the factors from the work of Acheamfour, Kissi and Adjei-Kumi, as the factors for

measuring public project performance since it embodies the factors from previous works, while focusing on the aim of the study quality performance will be replaced by communication performance from Edmonds and Miles 1984 work.

Table 2.3: Identified Factors affecting construction project performance in modern Ghana

Criteria	Sub-criteria
Cost performance (CP)	Effective resource planning, Efficient cost estimation, Proper cost budgeting, Effective cost control
Schedule performance (SP)	Availability of resources as planned, Efficient activity scheduling, Pre-tender proceedings
Communication performance (QP)	Top management support, Effective planning, Effective dissemination of information and data collection, Effective communication control
Health and safety performance (H&S)	Top management support, Proper site layout planning, Proper use of PPEs, Availability of welfare facilities
Relationship with project stakeholder (RS)	Top management support, Effective communication, Regular monitoring and feedback by top management
Project scope (PS)	Involvement of stakeholders, Effective communication, Proper scope definition, Monitoring and feedback
Environmental performance (EP)	Top management support, High resource usage efficiency, Efficient construction methods

Source: (Acheamfour et al, 2019; Edmonds and Miles 1984)

2.3 OVERVIEW OF THE CONTRUCTION INDUSTRY

'The construction industry often acts as a catalyst to stimulate the growth of a nation's economy' and is often known as the engine of growth, (Ali and Ragmat,2010). The construction industry is dynamic in nature, it is constantly changing with changes in technologies and introduction of new business methods. The industry addresses the

design, extension works, renovation and other construction works including: drains, bridges, roads and dams, (Narh, 2014 cited from Anaman and Osei-Amposah 2007). The major characteristics of the industry is the complex nature of it processes, long time periods of projects, the integration of different specialist, the risk and uncertainties involved, (El-sokhn and Othaman,2014). It is therefore significant for construction companies to develop and adopt techniques to reduce the rate of uncertainties which do arise due to the complex nature of the industry and achieve a high success rate (Jari, 2013). Undoubtedly, the construction industry has its own position in the economic growth of a country and this is evident among countries such as United States of America, China and developing countries such as Ghana. The nature of a countries 'burse' is directly noticeable in its construction industry as the number and level of construction projects are often link to national growth and prosperity, (El-sokhn and Othaman,2014).

2.3.1 The Ghanaian Construction Industry

According to Ofori-Kuragu, Owusun-Manu and Ayarkwa (2016), the Ghanaian construction industry is limited in its capacity to fully contribute to national development due to major problems the industry faces. These challenges are evident from previous studies which shows that developing countries such as Ghana face many problems in their construction industry (Badu et al., 2011; Fugar and Agyarkwa-Baah, 2010; Badu and Owusu-Manu, 2010; Platz, 2009; Abd El-Razek, Bassioni and Mobarak, 2008; Alaghbari et al., 2007; Sambasivan and Soon, 2007; Assaf and AlHejji, 2006; Martell and Guess, 2006; Frimpong, Oluwoye and Crawford, 2003; Frimpong and Oluwoye, 2003; Ahmed et al., 2003).

Various research works have proved the importance of the construction industry to the economy of a nation. In 2011, the construction industry contributed 8.2% to the gross

domestic product (GDP) of Ghana (Owusu-Manu and Badu, 2011). However, in comparing Ghana to other developing countries in relation to improving project performance in the construction industry, it is evident that Ghana is far behind, (Ofori-Kuragu, Owusun-Manu and Ayarkwa, 2016). A conclusion is therefore drawn by Chileshe and Yirenkyi-Fianko (2012) that, the nature of failure in the Ghanaian construction industry indicates that major projects in Ghana are awarded to very large firms which are mostly of foreign origin. A number of research works have been conducted to identify the factors leading to poor performances in the construction industry of Ghana. Ofori (2012) identified lack of funds, management deficiency, lack of depth of engineers and poor workmanship as problems that influence construction organisations in Ghana.

A major characteristic of the Ghanaian construction industry is the difference that exist between design and construction. Various professional in the industry operate independently with their loyalty devoted to their various professional bodies such as, Ghana Institute of Engineers (GhiE) and Ghana Institute of Architects (GIA). This has created a rivalry among the various institutions instead of serving as institutional bodies to complement each other, (Ahadzie, 2007 as cited in Ofori-Kuragu, Owusun-Manu and Ayarkwa, 2016).

As is stands the Ghanaian construction industry has little to show for all the efforts put in by government and NGO's to develop the sector through minor and major public construction projects. Adams (2008) pointed out that delay in payment of construction firms or contractors is one key factor that affects the performance of public construction projects in Ghana. These eventually results in claims by these firms or contractors, as majority of public construction projects in Ghana are based on pre-financing policies. Osam (2012) demonstrated how severe the matter is by stating that, some contractors took

to the street to demonstrate against the government to release their payments for completed government projects (cited in Ofori-Kuragu, Owusu-Manu and Ayarkwa, 2016). It is estimated that on an average that public construction projects have an overrun cost of about (60 to 180) % and time overruns of about 12 to 24 months, (Kpamma and Adjei-Kumi,2010). The construction industry has experienced major growth all over the world and the factors that influence construction project have expanded to include the project team performance, communication and leadership style which all affect the aim and objectives of the project directly, (Ham et al, 2012)

The development of the construction industry is therefore a key to boost Ghana's economy. Measures put in place to develop the construction industries capacity and level of effectiveness to address the demands and needs for national growth in civil engineering projects and all aspects of building projects to sustain social and economic development is termed construction industry development, (Ofori-Kuragu, Owusun-Manu and Ayarkwa, 2016). The development of the Ghanaian construction industry will also enhance the competitiveness and level of success of local construction companies whilst maximizing the various roles of all performing parties and all stakeholders through development in technology, resource maximization and institutional enhancement, (Ofori 2012).

2.4 OVERVIEW OF RELIGION IN GHANAIAN PUBLIC CONSTRUCTION PROJECTS

Religion vastly plays an important role in contributing to a nations development. Religion can either complement or motivate development, though it can also obstruct and undermine development. Religion can serve as an avenue for funding a project,

undertaking a project, empowerment, social movement and delivery of services, (Opoku et al., 2015).

There are two basic reasons why a researcher would be concern about the role of religion, religious bodies and their link with economic growth. First is the fact that religion shapes the culture and beliefs of a society, which go a long way to drive economic performance. Secondly, 'it is a fundamental source of 'social identification in a pre-industrial society', (Gani Aldashev and Jean-Philippe Platteau 2014; Guiso et al., 2006; Tabellini, 2008; and contributions in Platteau and Peccoud, 2010).

Religion is a strong traditional tool that exerts one of the highest form of influence upon the thinking and living of people, (Mbiti,1969 cited in Opoko et al. 2015). In simple terms, religion is the practices and beliefs of a group of people based on a sacred conception. Allegrazi (2009), defined religion as the fundamental practices and beliefs of people in a supreme Being(s).

There is a low coverage of literature when it comes to the presence of religion in construction, (Umeokafor and Windapo, 2018). Kheni (2008), found the evidence of religious activities in Ghana's construction industry during construction project, especially public projects. Kheni (2008), also discovered that during most public construction projects there is evidence of belief that the 'supernatural intervene in accidents' and risks, this was evident through prayers on site especially before work began.

Umeokafor and Windapo (2018) reviewed Allen (2012) work and described religion as having the following characteristic: (1) ritual – it covers communion and prayer (2) belief in the existence of the supernatural (3) it serves as a guide for standard of living for each member (4) it is sacred, (5) a place of worship which serves as a public venue and (6)

element which stated that 'each religion subscribes to a central belief'. These characteristics/elements of religion is believed to have some level of influence on the various factors for measuring construction project performance. The various beliefs of each person is assumed to 'sow' values in each person and also contribute to an acceptable way of life or ethics. Moral arguments in the construction industry of Ghana is on the bases of religious and spiritual grounds and in some instances a combination of both. Smallwood (2002) established that certain religious activities against: waste (damaging of materials, equipment, time), stealing (stealing construction materials, overestimating material cost), washing of hands (personal hygiene) just to mention a few had an influence on some factors for measuring public construction performance such as Health and Safety performance (H&S), and resources performance(maximization). He further elaborated on the link between H&S and religion through economic values, sustainability, the 'Golden rule', the spiritual value of work and accountability. Smallwood (2002) therefore shapes his augment to establish that the standards, ethics and norms of people is based on their religiosity. This in turn also paved way for Smallwood to suggest a way to improve H&S through religion (teachings) and to help improve construction project performance in Ghana.

It is evident that many factors have been identified through various research works as being either success factors or failure factors and there have also been the identification of elements which influence these factors such as financial standings, whist little is spent on the influence of religious beliefs on these instruments of measuring construction projects performance.

Ghana is notoriously known for its religiosity. Irrespective of one's class, position and social status one's belief in a supreme being characterises each person's way of life even

in the various professional fields in the construction industry in Ghana. Ghana is a multi-religious country with Christianity forming the majority and Islam and others forming the minority. Due to the sensitive nature of the topic 'religion', emphasis will not be placed specifically on any specific religious belief.

This research work agrees with Umeokafor and Windapo, that the three main religions in Ghana can each be identified by the six (6) elements of religion. Thus we identified each religion by the six elements which represents the grouping for various religious activities.

Table 2.4: Elements of religion in Ghana

Element	Activities
Rituals	prayer, communion, sacrifice etc.
Belief in the supernatural	existence of a higher supreme being, ancestors, eternal reward or punishment
Ethics and norms	standards for living, acceptable behaviour, accountability, etc.
Sacredness	holy days, religion ceremony, consecrated, not profane or common
Public components	place of worship, place of sacrifice, mosque, fellowship of brethren
Central belief	General beliefs of a religious body

Source: (Umeokafor and Windapo, 2018; and Allen 2012)

2.5 RELIGIOUS INFLUENCE ON FACTORS FOR MEASURING PUBLIC CONSTRUCTION PROJECTS PERFORMANCEs IN GHANA.

There have been many works on elements that affect factors for measuring public construction project performance such as: time and cost performances. Nevertheless,

research works on construction project performance is not a onetime activity as the techniques for work in the field keep on changing and making the industry more complex, (Asmah,2014). Allen (2012), all religious bodies have norms, ethics and public components with punishment that can be earthly or eternal and the fear of the consequences may make individuals more responsible. Ethical or religious misconduct such as abuse of power, sexual harassment, corruption, discrimination at workplace, violation of public properties, health and safety nonconformity of workers are just some examples of activities that can occur and have effect on the factors of construction project performance when workers don't apply religious or ethical values, (Mahat, 2018). The contribution of spirituality to making the working environment more suitable and having direct or indirect impact on the various factors for measuring construction project performance is evident in the work of researchers such as Cavanagh and Bandsuch (2002), who argued that spirituality can increase an individual's integrity and religious beliefs that equips a person to develop good moral habits is fit for a working environment.

Every religion has its own ethics and standard of living, with an expectation of earthly punishments from religious leaders and supernatural punishment from the supreme being. The beliefs of a society can be a motivational element for a sense of purpose, this can have a huge impact on an individual and make them dedicate their lives to achieving good deeds even in their professional field. These beliefs influence the identity of a person, a religious person on a public construction project is likely to be influenced many at times in decision making by his/her beliefs. It is of interest to know that this same believes such as accountability and sense of belongingness can motivate a construction project team to maximize cost performance, as how one manages the financial standing of a project can be viewed by a religious body of one's fear for the punishment and rewards of the

supernatural being. Shariff and Rhemtulla (2012), 'one's belief in heaven and hell instils value and has an impact in reducing crime rate' which has a direct effect on project cost.

Schedule performance in construction projects is a very important instrument/factor/element in measuring the performance of a project, it measures the variation between planned schedule and actual schedule. An individual viewing work from a religious background is much likely to have a positive impact on schedule performance such as; when a project team, stakeholder or project manager views work as a spiritual exercise and is dedicated to completing it on and within schedule, (Smallwood, 2002). With this explanation by Smallwood, there is a high probability that one's religion will have a positive influence on the planning, managing and controlling of scope management. Allen (2012), concluded that all religion has a standard of living while Smallwood (2002) demonstrated a link between accountability and project performance factors. The work of Allen and the work of Smallwood on religion in the construction industry demonstrates a quality needed to curb and encourage project teams to define scope clearly and avoid gold plating which directly affect cost performance.

Communication performance is a measuring tool of high interest in the construction industry as proper communication techniques will propel work performance by affecting, schedule management, scope management, cost performance and even stakeholder management. Communication is the fundamental technique to initiating any project. In any Ghanaian society, methods of communication are highly influenced by religious norms and ethics. Various public construction projects have either come to a standstill or delayed massively due to poor communications skills and religious conflicts. W o r l d B a n k (1996), Westering (1997), Crown Agents (1998), World Bank (2003) all identified poor communication techniques as a criteria of poor construction performance in Ghana.

The channel and method of communicating with some stakeholders such as; chiefs, religious leaders and a society is highly influenced by the norms, taboos. There is a vast difference in the beliefs of the three main religions in Ghana and this can affect or influence how people of different religious background communicate with each other, (Lumen, n.d.). Furthermore, based on one's religiosity, people from different backgrounds may approach communication in public projects differently, (Lumen, n.d.).

The construction industry has one of the poorest records of Health and Safety (H &S) performance due to bad practices. Studies such as that of HSE (2014,2017), Windapo and Jegede (2013) established that the poor performance of H&S in the construction industry is in line with poor H&S practices on the field, (Umeokafor and Windapo 2018; Waziri et al. 2015; Windapo and Jegede 2013). It was found in a 2015 study that among the proactive H & S practices only 45% focused towards improving H&S on construction sites, (Waziri et al. 2015). According to (Umeokafor and Windapo, 2018 and Eckhardt, 2001), there are many reasons based on religious grounds to keeping a working environment safe. Eckahardt (2001) further quoted on religious ground a reason to have good H & S practices from the bible, '**Deuteronomy 22:8**; When you build a new house, install a parapet along your roof so that if someone falls from the roof, you won't bring guilt of bloodshed on your house' [KJV]. Religious practices such as washing of hands, is found to support personal hygiene and though some are practiced for ritual reasons it also shows that there is a connection between religion and 'controlling infection, contamination with substances hazardous to health and safety', (Umeokafor and Windapo 2018, Allegranzi et al. 2009). Smallwood (2002), supported the argument that religion can improve H & S performance by arguing that religious practices that are against waste which in this study will include material damage, damage to equipment and plants, and

injuries and fatalities on site influence the H&S performance in construction project which in turn affect/influence the entire project performance.

The various literature works prove that past studies identified religion as a tool for improving each measurement factor that affects the performance of construction projects. It is therefore of interest that this paper seeks to empirically determine the relationship that exist between the factors that influence public construction projects in Ghana and religious beliefs in Ghana.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the appropriate tools and techniques applied in achieving the aims and objectives of the research work carried out. Arguably the most important step for a researcher to take after literature review is to decide on the most appropriate research methodology (Kissi, 2013, Cooper and Schindler, 2005). It is indeed the process by which a research work should or shouldn't proceed (Gamage, 2011). According to Saunders, Lewis and Thornhill (2007), referencing the 'research onion' revels that methodology include; the philosophy, approaches, methods and strategies, time (zone), collection of data, and techniques for analysis. Furthermore, these elements of the 'research onion' provides a way for a researcher on how to undergo a work to find out what is believed to be true or false. This chapter therefore expands on the following: research design, research method, population size (sampling techniques), data collection, and data analysis.

3.2 RESEARCH DESIGN

To achieve the research aim and objectives, desk survey and closed-ended questionnaire were designed and used to elicit needed information from practitioners in the construction fields of public projects. The level of biasness in the questions was reduced to minimum best and the multiple choice answers gave the participants the opportunity to truly share their points of view clearly.

First the research began with the desk study (survey) on the factors for measuring public construction project performance and the characteristics of religion (beliefs) of Ghanaians, because it forms an integral part of the work as it clears the path for the development of

the questionnaires (Fadhley,1991) and the issues raised during the interview (Saunders, Lewis and Thornhill, 2007).

Secondly the study identified the elements of religion in Ghana through literature survey and an unstructured and informal interview was conducted to ascertain the views of some religious leaders on the elements identified. This method was chosen to allow the participant on the field to well express their opinion on the elements of religion in Ghana. The adjustment of the questionnaires was then possible through the contribution of specific professionals and the nature of the problem in their given knowledge area. Unstructured questionnaire is more of an open conversation used to identify the views of people on a fact. This, allowed the respondent to freely express their ideas while speaking into details and also permitted the interviewer to regulate the questions in a diversified manner rather than a designed questionnaire. A general conclusion can be made that; unstructured and semi-structured interviews are more flexible than a well-structured interview.

Thirdly, closed-ended questionnaires were applied in this research work which made answering on the part of the participant easier and analysis of the data much easy. Closed-ended questionnaires allowed the participants to answer equal and same set of questions. Kissi (2013) cited Salant et al. (1994) in his research work saying, closed-ended questions with well-ordered choices, an example is multi-choice questions are much useful to rank items. However, questions which asked the respondent for data that was not possible to be provided by the respondent was avoided, (Offei, 2015). The development of the close-ended questions were also generated through the construct from the qualitative. To suit this research work and to draw the interest of participants to such a sensitive topic,

questions which will violate the sacredness of one's religion and central belief was avoided because it may be leading to rejection of the questions and failure of the research work.

3.3 RESEARCH METHODS

This research utilizes a method of survey to gather primary data through the administering of questionnaires and also mixed it with unstructured interview. Secondary data was gather through the review of literature to determine the factors for measuring project performance in the Ghanaian construction industry of public projects and to also identify the elements of religious beliefs that exist in Ghana.

The importance of the survey method cannot be undermined in this work as it helped questioning the participant on the subject matter and also described their responses, (Jackson,2011). Survey method is used to test concepts, to analyse people's attitude, establish levels of stakeholder satisfaction, 'a set of other purposes' and can be used for both quantitative and qualitative studies, (Anon, 2019). The data collection approach (instrument) used for the survey was designed through the construct generated from the literature review, (Umwokafor and Abimbola, 2018) and discussion with the research supervisors, and some of the different experts in the construction industry of Ghana.

3.4 POPULATION OF STUDY

In research methodology, population is regathered as being "object and subject, phenomena, cases, activities or specific events for sampling purposes (Narh,2014 and Brynard and Hanekom, 2005). According to Taylor-Powel and Steele (1998), population refers to the units at a location in a time horizon of a geological surrounding that are of

prior interest to a study. This research work focuses on the Ghanaian construction industry with relativity to public project performance through religion. Due to the centralised nature of Ghanaian public construction projects, the study focuses on the two major cities Accra and Kumasi metropolis.

The study population was the main stakeholders in Ghanaian public construction projects, thus: building construction sector. This population size includes the different professionals in the construction industry ranging from the consultants, contractors, surveyors, religious leaders who serve as consultants/building committee members in the three main religious bodies in Ghana. The population size therefore included these professionals who have undertaken, been part and experienced in the Ghanaian building sector.

3.4.1 Sampling Size

A survey for the entire population of this work is not feasible considering the type of information needed and the level of resource available and the time constrain. The sample size was deduced using central limit theorem which is a non-probabilistic sampling method. Central limits theorem states that; 'the sampling distribution of the sample means approaches a normal distribution as the sample size gets bigger', (Kar and Ramalinga, 2013). This simply implies that the average of the mean of the sample is the same as the mean of the population. This fact is empirically proven for sample size of 30 and above.

For this study, sample size chosen is 60. Thus, 20 from each of the three main religious bodies identified across Accra and Kumasi. This number is divided among the Christians, Muslims and traditionalist.

3.4.2 Sampling Technique

The sampling technique used followed a sequence which first involved purposive sampling to select the participants for the semi structured interview and then it was followed by the technique of snowball sampling for the distribution of the survey questionnaires.

Purposive sampling is a technique that allows the researcher to exercise his professional judgement concerning who will provide the most relevant information for the topic of study and then invite such to take part in the survey. This allows the researcher to focus more on the specifics than on general issues (Tuuli etal., 2007). The criteria for selecting the participants included;

1) Persons who were active members of any of the three religious bodies
2) Persons who were either professionals or others who were on the building committees of any of the three religious bodies
3) Participants had been involved in any current public construction project

Snowball sampling was applied to administer some of the questionnaires due to the challenges that arose in assessing the desired population size of the various professionals on mega public construction projects in Ghana. The process refers to a technique where a participant suggests to research the next participant who is well versed in the subject of interest.

3.5 DATA COLLECTION

Data was gathered by using desk survey to identify the factors of performance measurement for construction projects in Ghana and the elements of religion in the Ghanaian society. A questionnaire survey which lasted for a maximum of 15 minutes per

person to gather information on their knowledge on project performance measure, religious practices (elements) in public construction projects and how their religion has influenced a major construction project. The administering of the questionnaires helped to obtain specific data on the topic of study.

3.5.1 Secondary and Primary Data

The research made use of both secondary and primary data. The desk survey made use of secondary data (literature review) to identify the factors for measuring public construction project performance in Ghana and also identified the characteristics/elements of religious beliefs (religion) in Ghana that are found in the construction industry through existing research works. The questionnaire survey provided raw data (primary) which was collected to obtain empirical evidence in covering the area of study for further analysis.

The secondary data (descriptive data) was used to formulate the questionnaires and to gain understanding of the issues being dealt with.

3.5.2 Questionnaire

The questionnaire was designed with regard to similar research works and through the assistance of expert project managers and my project supervisor. (*see appendix 1*).

3.6 DATA ANALYSIS

The data collected through the questionnaire survey was analysed using quantitative technique. The technique used to analyse data depends on the nature of collected data and its scale of measurement as it being, ordinal, nominal, interval or even ratio (Gamage, 2011).

The questionnaires that were received back was coded and analysed using SPSS version 25. SPSS is among the most widely used statistical tool for analyses in various research works and emphasis was based on its level of accuracy. Non-parametric statistical testing such as means score index, and the use of One-way Anova and tukey Post Hoc. Were used. Furthermore, regression analysis was used to estimate the relationship that exist among the variables of cost performance and the elements of religious beliefs in Ghana.

The outcomes provided the bases for the discussion of the results, with all deviations and common trends discussed.

3.7 Ethical Consideration

The paper and topic of interest was well researched with the basis aimed at privacy protection of all individual participants who provided their personal details in the process of the study when they were invited to take part in the research work. Every participant (here in called subject) who became a subject in the research work was first informed of the aim and objective of the study.

Under no instance was a participant selected to take part in the study without him or her being notified of the study aim and objectives and his/ her concern to become a subject.

CHAPTER FOUR

DATA ANALYSIS AND RESULT DISCUSSION

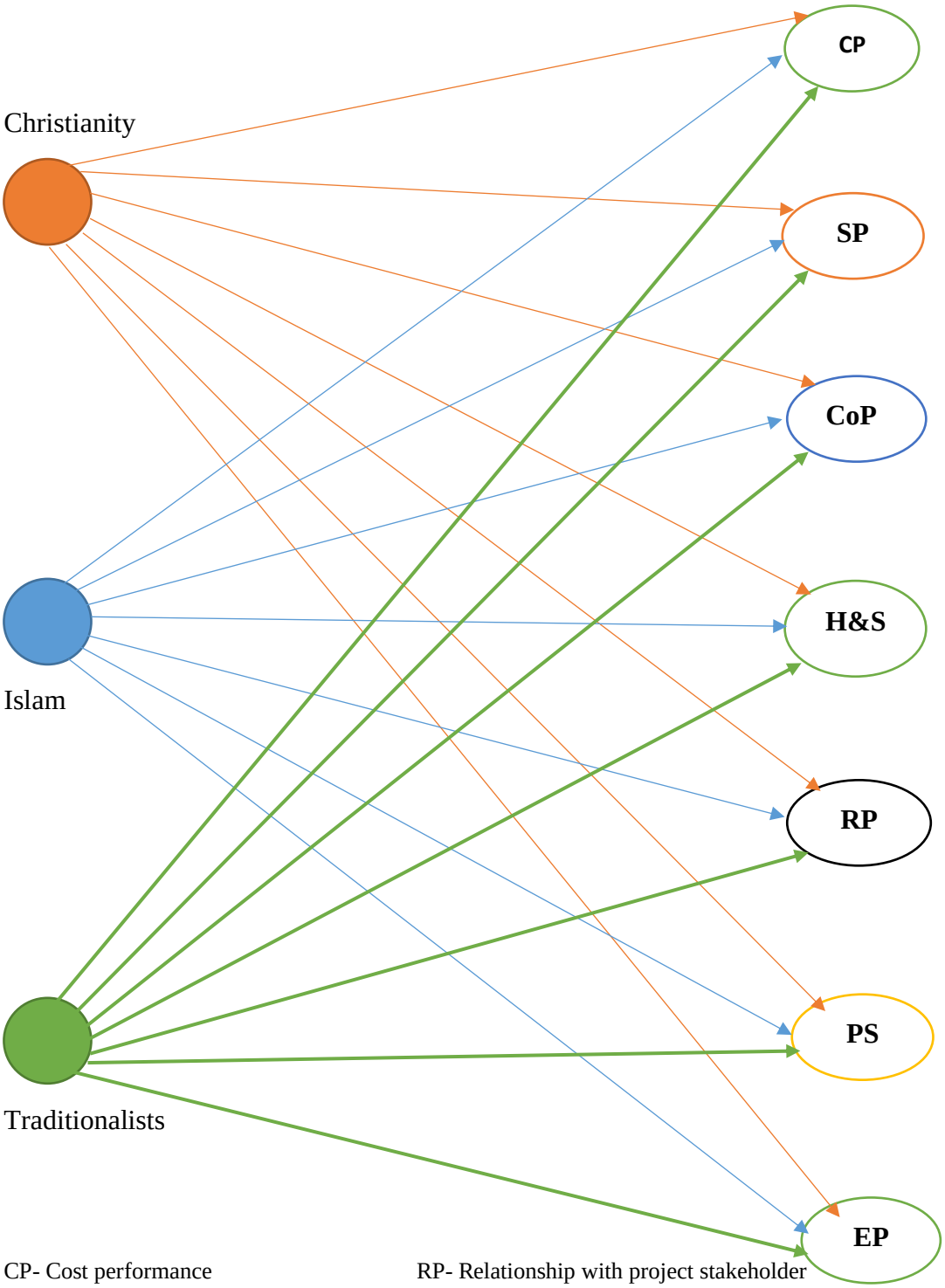
4.1 INTRODUCTION

This chapter provides vivid explanation of the analytical work carried out through the results from the fieldwork/survey, unlike the preceding chapters which addressed the introduction, review of literature relevant to the study, and the methodology adopted for the research.

Analyses and discussion in this chapter were through the data collected and the linkage it has with the relevant reviewed literature to draw out the works uniqueness. The study first focused on identifying the factors for measuring public construction project performances with the targeted constructions zones being the two major cities (Accra and Kumasi). Then it followed with identifying the elements of the three main religions in Ghana and their influences on the performance factors.

The structure of the analysis proceeded in a coherent manner. The profile of the respondents from the questionnaires was described and the result provided a reliable scale of measurement. A summary(descriptive) statistics was performed on the factors for measuring public construction project performance in Ghana and to ascertained the most significant factor that influences project performance from the view of the respondents. The section presents result of exploratory research through desk survey on the elements of religion in Ghana identified and adopted through literature review, followed by a descriptive statistic to determine the significance of the identified elements in the three religious bodies. The relationship/effect/power of influence that each of the three religious

body exhibit was identified through regression analysis and further Tukey Post Hoc analysis was done to specifically evaluate the relationships.



CP- Cost performance

SP- Schedule performance

CoP- Communication performance

H&S- Health and Safety performance

RP- Relationship with project stakeholder

PS- Project scope

EP- Environmental performance

Figure 4.1 Hypothetical Conceptual framework.

4.2 DISCUSSION OF RESULTS

The section addresses the analysis and discussion of the objectives of the research work, namely;

- To identify factors for measuring project performance in Public Construction Projects in Ghana;
- To identify religious elements in the Ghanaian society; and
- To establish and identify the relationship between the factors of public construction project performance measurement and religion (elements of the various religions) in the Ghanaian society.

4.2.1 Respondents Profile from Questionnaire Data

The demography of the respondent's information was analysed using Statistical Package for Social Sciences (SPSS), version 25 and Graphpad prism vr.7.0. Table 4.1 shows the socio-demographical characteristics of the study participants/respondents. A total of sixty (60) questionnaires was administered to 60 participants which was divided twenty (20) each among the three religious bodies to the target groups. Majority of the participants were male (83.3%), indicating the biasedness in selecting representatives in the religious circles when it comes to construction work. A total of 73.3% of the entire participants were married. BSc holders (58.3%) where the majority and greatly outnumbered the other academic qualifications, with quite a number (18.3%) having a PhD. The probable low level for post graduate degrees could be as a result of most people wanting to get working experience first (Asmah, 2016). Other professional bodies aside the suggested ones in the current study dominated the committees designated for construction works among the

religious bodies with which the respondents were associated, and only a handful were in GIA (8.3%). Breaking it down, GHIS made up 18.3% of the participants, GIA made up 8.3% of the participants, GhIE constituted 13.3% of the participants and others constituted majority of the participants with 60%. The results are shown in Figure 4.1

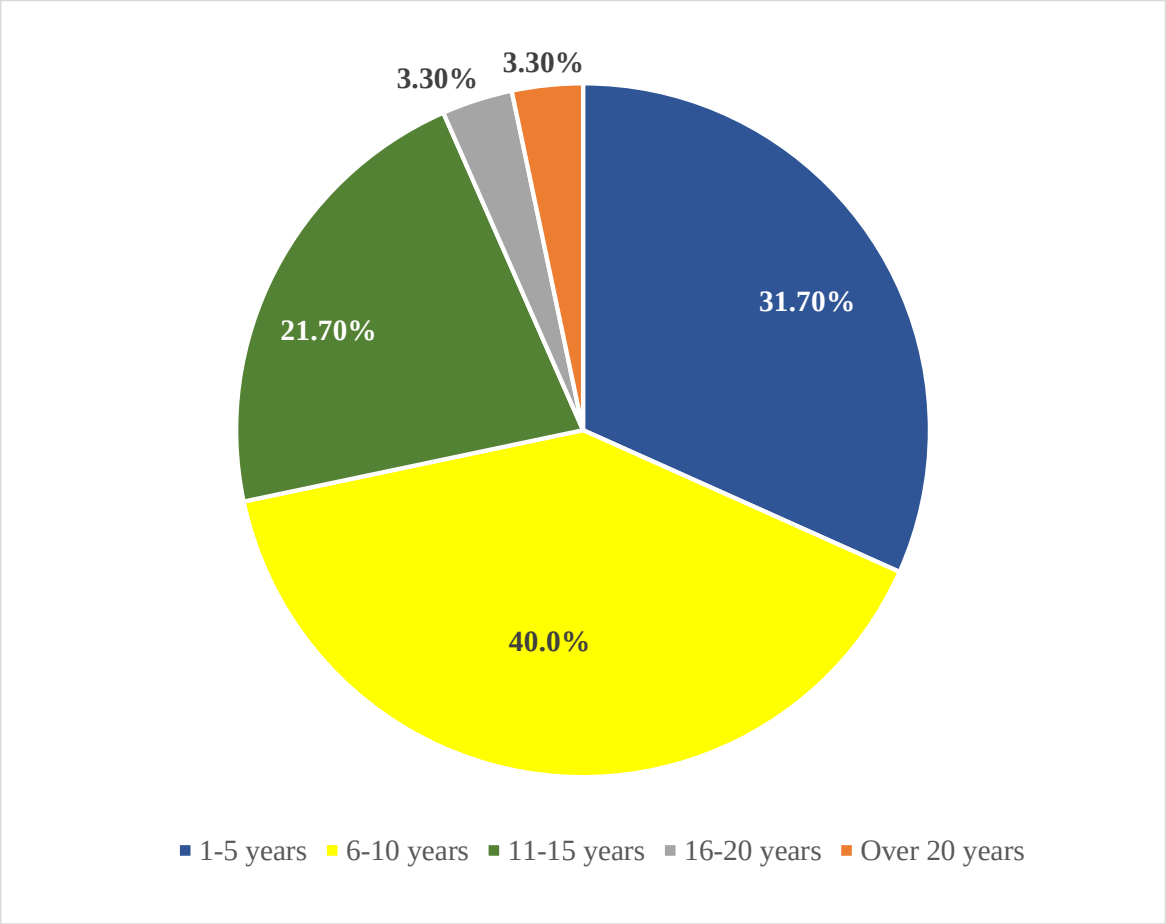
Table 4.1: Socio-demographic characteristics of the study participants

Characteristics	Frequency(N)	Percentage (%)
Gender		
Male	50	83.3
Female	10	16.7
Marital Status		
Single	16	26.7
Married	44	73.3
Educational level		
HND	6	10.0
BSc	35	58.3
MSc/MPhil	6	10.0
PhD	11	18.3
Others	2	3.3
Religion		
Christianity	20	33.33
Islam	20	33.33
Traditionalists	20	33.33
Category in the Professional body		
Professional member	15	25.0
Probationer member	10	16.7
Others	35	58.3

Source: Field survey 2019

The demographic analysis however revealed that most of the respondents (40%) in the study had a 6 – 10 years' practical experience in the construction field, this then followed

by those with 1 – 5 years of practical experience (31.70%), 11 – 15 years of practical experience (21.70), and 16 – 20 years and over 20 years both having (3.33%) each. (see figure 4.1)



Source: Field survey 2019

Figure 4.2 Participants' years of practical experience in the construction industry

4.3 FACTORS FOR MEASURING PUBLIC CONSTRUCTION PROJECT PERFORMANCE

There were seven (7) factors for measuring public construction performance relevant to the study which was identified through desk survey. Thus, cost performance, schedule (Time) performance, communication performance, health and safety performance, relationship with stakeholders, scope performance and environmental performance. Each factor was identified by a sub-criterion.

4.3.1 The participants' view on the level of significance of project performance criteria

A descriptive statistic was conducted to examine the mean and standard deviation for all the factors of measurements. To ascertain the relevance of each factor through the relevance of their sub-criteria, a five (5) Likert scale was used to rank the importance of each measurement factor of public construction project performance. **Table 4.2** depicts the participants' view on the level of significance of the various project performance criteria. Cost performance, health and safety performance, and relationship with stakeholders were all generally seen to be of moderate significance. Moreover, Schedule performance, communication performance, project scope, and environmental performance were all considered to be very significant. Health and Safety performance had the highest standard deviation of ±0.95, thus the H &S performance had the highest probability of its numbers being more spread out from the mean and with communication performance having the least standard deviation of ±0.63. The average mean of the entire project performance criteria was 3.73 and a standard deviation of ± 0.49, which is equivalent to "very significant". Thus the factors of project performance measurement are considered to be

very significant in achieving projects success in the construction industry of Ghana, specifically from the perspective of the various religious bodies relevant to this study. The standard deviation provided information on how the spread (variation) of the set of data is distant from their means. Communication performance had the least variability in its data set of ±0.63, followed by environmental performance with ±0.66 and the worst was H & S performance with variability value of ±0.95. The overall deviation for the entire factors of performance was ±0.47, which indicated that there is a less level of variability in the data set.

The ranking showed that there is a general concern about how a public project influences or benefits the society. The data provided through the questionnaire survey revealed that among the identified factors the participants considered environmental performance the most relevant, this is evident of the concerns of the construction society on effective usage of resources, minimal damage to the environment, and other factors that will not undermine the living conditions of the people or their religious beliefs. It then followed by schedule(Time) performance, the concern of major religious bodies when it comes to construction projects is a projects time of start and time of completion. The least ranked factor is H&S performance. Though H & S performance is seen to be significant in achieving project success, yet participants of the survey identified it as the least influential factor among the seven factors of measuring public construction project performance in Ghana.

Table 4.2: The participants' view on the level of significance of project performance criteria

Characteristic	Min	Max	Mean	Std. Dev	Level of significance	Rank of elements	Overall Rank of factor
COST PERFORMANCE							
Effective resource planning	1	5	3.30	1.23	Moderate	4th	
Efficient cost estimation	1	5	3.35	1.09	Moderate	3rd	**6th**
Proper cost budgeting	1	5	3.52	1.14	Moderate	2nd	
Proper cost budgeting	1	5	3.80	1.10	Moderate	1st	
	Average		**3.49**	**0.83**	**Moderate**		
SCHEDULE PERFORMANCE							
Availability of resources as planned	1	5	3.97	0.956	Very significant	2nd	**2nd**
Efficient activity scheduling	1	5	4.02	0.983	Very significant	1st	
Pre-tender proceedings	1	5	3.68	1.097	Moderate	3rd	
	Average		**3.89**	**0.73**	**Very significant**		
COMMUNICATION PERFORMANCE							
Top management support	1	5	3.67	0.951	Moderate	4th	**3rd**
Effective planning	1	5	3.98	0.873	Very significant	1st	
Effective dissemination of info. and data collection	1	5	3.95	0.946	Very significant	2nd	
Effective communication control	1	5	3.90	0.969	Very significant	3rd	
	Average		**3.88**	**0.63**	**Very significant**		

Table 4.2: Continued

HEALTH & SAFETY PERFORMANCE							
Top management support	1	5	3.03	1.327	Moderate	4th	**7th**
Proper site layout planning	1	5	3.98	0.854	Very significant	1st	
Proper use of PPEs	1	5	3.23	1.358	Moderate	3rd	
Availability of welfare facilities	1	5	3.32	1.321	Moderate	2nd	
	Average		**3.39**	**0.95**	**Moderate**		
RELATIONSHIP WITH PROJECT STAKEHOLDER							
Top management support	1	5	3.33	1.311	Moderate	3rd	**5th**
Effective communication	1	5	3.75	1.114	Very significant	1st	
Regular monitoring and feedback by top management	1	5	3.47	1.157	Moderate	2nd	
	Average		**3.52**	**0.89**	**Moderate**		
PROJECT SCOPE							
Involvement of stakeholders at the initial stages of the project	1	5	3.92	1.03	Very significant	3rd	**4th**
Effective communication	1	5	3.43	1.095	Moderate	4th	
Proper scope definition	1	5	4.1	1.053	Very significant	1st	
Monitoring and feedback	1	5	3.95	0.91	Very significant	2nd	
	Average		**3.85**	**0.74**	**Very significant**		
ENVIRONMENTAL PERFORMANCE							
Top management support	1	5	4.18	1.017	Very significant	2nd	**1st**
High resource usage efficiency	1	5	4.33	0.705	Very significant	1st	

Table 4.2: Continued

Efficient construction methods	1	5	4.03	0.974	Very significant	3rd
	Average		**4.18**	**0.66**	**Very significant**	
	Overall mean		**3.73**	**0.49**	**Very significant**	

Source: Field survey 2019

4.3.2 Comparison of the level of significance between the factors for measuring public construction project performance in Ghana

One-way analysis of variance (ANOVA) was performed to test for the mean differences between the various criteria for assessing project performance. Generally, the overall means of the factors differed significantly from one another ($p<0.0001$) (Table 4.2.1.).

A further Tukey Post Hoc Analysis was done to specifically evaluate the relationship between any two selected factors, this provided a numerical evidence of how significant each factor's mean differ from each other. The view of Ghanaians in the religious circles on the level of significance of environmental performance as a criterion for project success was significantly different from that of cost performance ($p<$**0.0001***) and relationship with stakeholder ($p<$**0.0001***). Moreover, the mean response of health and safety performance was also significantly different from that of schedule performance ($p=$**0.01***), communication performance ($p=$**0.013***), project scope ($p=$**0.024***) and environmental performance ($p<$**0.0001***). The results are presented in Table 4.2.2.

Ho: There is no significant difference between the groups of the factors for performance measurement

H1: There is significant differences between the groups of factors for performance measurement

Table 4.3: Comparison of mean responses (ANOVA) between the various factors for measuring public construction project performance in Ghana

Mean	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	28.906	6	4.818	7.894	**<0.0001***
Within Groups	252.036	413	0.61		
Total	280.942	419			

Source: Field survey 2019

The asterisks (***)** values in the table above explains that there is a statistical significance among the groups.

The study therefore disagrees with the null hypothesis, Ho is rejected and H1 is accepted as there is a significant difference between the means of the factors for public construction project performance measurement. Thus, **<0.0001*** interprets that the differences between the means of the groups is statistically significant and did not happen by chance in the population.

Table 4.4: Tukey Post Hoc. Analysis of the mean differences in level of significance between the various factors for measuring public construction project performance in Ghana

Factor	Factors	Mean Difference	Sig.
CP	SP	-0.40	0.081
	CoP	-0.38	0.104
	H&S	0.10	0.992
	RP	-0.03	1
	PS	-0.36	0.157
	EP	-0.69	**<0.0001***
SP	CP	0.40	0.081
	CoP	0.01	1
	H&S	0.50	**0.010***
	RP	0.37	0.126
	PS	0.04	1
	EP	-0.29	0.376
CoP	CP	0.38	0.104
	SP	-0.01	1
	H&S	0.48	**0.013***
	RP	0.36	0.158
	PS	0.03	1
	EP	-0.31	0.319

The asterisks (***)** values in the table above tell exactly where there is a statistical significance among the groups means.

Source: Field survey 2019

Table 4.4:Continued

Factor	Factors	Mean Difference	Sig.
H&S	CP	-0.10	0.992
	SP	-0.50	**0.01***
	CoP	-0.48	**0.013***
	RP	-0.13	0.976
	PS	-0.46	**0.024***
	EP	-0.79	**<0.0001***
RP	CP	0.03	1
	SP	-0.37	0.126
	CoP	-0.36	0.158
	H&S	0.13	0.976
	PS	-0.33	0.23
	EP	-0.67	**<0.0001***
PS	CP	0.36	0.157
	SP	-0.04	1
	CoP	-0.03	1
	H&S	0.46	**0.024***
	RP	0.33	0.23

Source: Field survey 2019

EP	CP	0.69	**<0.0001***
	SP	0.29	0.376
	CoP	0.31	0.319
	H&S	0.79	**<0.0001***
	RP	0.67	**<0.0001***
	PS	0.33	0.229

The asterisks (***)** values in the table above tell exactly where there is a statistical significance among the groups means.

Table 4.4: Continued

Source: Field survey 2019

The asterisks (***)** values in the table above tell exactly where there is a statistical significance among the groups means.

4.3.3 Discussion of the factors for measuring public construction project performance

The result of this work indicated that the seven identified factors for measuring construction project performance are recognized and accepted as project success influencers in Ghana. The understanding that the key performance indicators (KPIs) are used to measure how successful a performing organisation or a project has been by Vleem (2018), was highlighted and agreed upon by the respondents. This further agreed with Willis and Willis (1996) that, knowing the position and pace with which a project is

moving is an important source to measure project performance. Furthermore, the recognition of these factors as key performance indicators (significant factors) by the survey, satisfies the works done by Edmonds and Miles (1984), Ahadzie (1995), W o r l d B a n k (1996), Westering (1997), Crown Agents (1998), World Bank (2003), Fugar and Agyarkwa-Baah (2010), and Acheamfour, Kissi, and Adjei-Kumi (2019).

From literature review, Yun et al. (2016) ranked cost performance as the most significant factor in capital project benchmarking but this survey disagrees with this ranking as the result shows that in Ghana environmental performance is of higher significance in ranking even though both factors were the most statistically significant from the on-way Anova result.

In conclusion, the work observed that the findings of performance measurement factors in public construction projects in Ghana according to this research work matches with the findings of previous works done and their significance is evident. It is therefore on the right part to agree with (Munns and Bjeirmi, 1996) that, the returns on the investment made, amount of profit obtained, availability of market demand and competition are the most important parameters within the goals of a project and these factors are the tools that affect achievement of the set out goals.

4.4 ELEMENTS OF RELIGION IN GHANA

From the desk survey, the research work identified six (6) elements of religion. These elements in other words form the groups into which all religious activities can be placed in the Ghanaian society. (*see table 2.4)*

4.4.1 The participants' view on the level of significance of the Elements of religion in Ghana

From the questionnaire survey, Christianity recorded that the element ritual and belief in the supernatural were the most relevant element in their religious circle and it is the most practiced during construction projects with 60% of the Christian participants saying that its significance is extreme. This is then followed by central belief, thus having the same doctrine, way of life, etc. played a vital role in the body of Christianity. Islam recorded rituals and place of worship as the most significant elements in their religious bodies. While Among the traditionalist, the elements rituals, belief in the supernatural and guide for standard of living were ranked as being extremely important.

The Christian body recorded the second highest mean value for the significant role its elements played in their identity and second least standard deviation. Islam recorded an average of 3.79 being the least mean among the three religious bodies and the highest standard deviation. The traditionalist recorded the highest mean value and lowest standard deviation values of 4.13 and ±0.53 respectively. Thus, the survey identified that the traditional religion valued its elements that characterizes it, and defined it uniqueness more than that of the Christian body and Islam body respectively. On the Likert scale all the

three religious bodies identified the elements of their faith as being "very significant". (*see table 4.5)*

Table 4.5: The participants' perspective on the level of significance of the elements of religion in Ghana

Characteristic	Min	Max	Mean	Std. Dev	Level of significance	Rank of element	Overall Rank of factor
Christianity							
Rituals (prayer, communion etc.)	1	5	4.35	0.93	Very significant	2nd	
Belief in a supernatural being	1	5	4.35	0.75	Very significant	1st	
Guide for standard of living (accountability)	1	5	4.10	0.64	Very significant	3rd	**2nd**
Sacred/Holy day(s) (aside Saturday)	1	5	3.50	0.83	Moderate	6th	
Place of worship	1	5	3.70	1.17	Very significant	5th	
Central belief	1	5	4.00	1.17	Very significant	4th	
	Average		**4.00**	**0.62**	**Very significant**		
Islam							
Rituals (prayer, communion etc.)	1	5	4.10	1.12	Very significant	2nt	
Belief in a supernatural being	1	5	3.75	1.02	Very significant	3rd	
Guide for standard of living (accountability)	1	5	3.55	1.00	Moderate	5th	**3rd**
Sacred/Holy day(s) (aside Saturday)	1	5	3.50	1.28	Moderate	6th	
Place of worship	1	5	3.75	1.29	Very significant	4th	

Central belief	1	5	4.10	1.07	Very significant	1st	
	Average		**3.79**	**0.88**	**Very significant**		
Traditionalists							
Rituals (prayer, communion etc.)	1	5	4.40	0.60	Very significant	1st	

Table 4.5: Continued

Belief in a supernatural being	1	5	4.40	0.60	Very significant	1st	
Guide for standard of living (accountability)	1	5	4.05	1.10	Very significant	4th	
Sacred/Holy day(s) (aside Saturday)	1	5	4.10	0.85	Very significant	3rd	**1st**
Place of worship	1	5	3.80	0.95	Very significant	6th	
Central belief	1	5	4.00	1.12	Very significant	5th	
	Average		**4.13**	**0.53**	**Very significant**		
	Overall Mean		**3.97**	**0.70**	**Very significant**		

Source: Field survey 2019

4.4.2 Comparison of the level of significance of the various elements of religion in Ghana

One-way analysis of variance (ANOVA) was performed to test for the mean differences between the various elements of the three religions. Generally, the overall means of the elements differed significantly from one another (p=**0.039***).

The study therefore disagrees with the null hypothesis, Ho is rejected and H1 is accepted as there is a significant difference between the means of the elements of religion in the three religious bodies in Ghana. (*see Table 4.6*).

Ho: $p \leq 0.05$: There is no significant difference between the various elements of religion in Ghana

H1: $p \geq 0.05$: There is significant differences between the various elements of religion in Ghana

Table 4.6: Comparison of mean responses (ANOVA) between the various elements of religion in Ghana

Mean	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.139	2	0.569	1.167	**0.039***
Within Groups	27.798	57	0.488		
Total	28.937	59			

Source: Field survey 2019

The asterisks (*****) values in the table above explains that there is a statistical significance among the groups of the various religious elements of the three religious bodies.

A further Tukey Post Hoc Analysis was done to specifically evaluate the relationship between the elements of any two selected religions. The level of significance of the

elements of Christianity was significantly different from that of the Islamic religion (p=**0.015***) and the Traditionalists (p=**0.028***). Thus, there is a statistical difference between the means of the three religious groups and their beliefs in Ghana and this is indicated by asterisks (***)** values in the table below which tell exactly where there is a statistical significance among the means of the religious bodies. The more the asterisks (***)** number approaches zero, the higher the difference among the means. The results are presented in Table 4.3.2

Table 4.7: Tukey Post Hoc. Analysis of the mean differences in level of significance between the various elements of each religion in Ghana

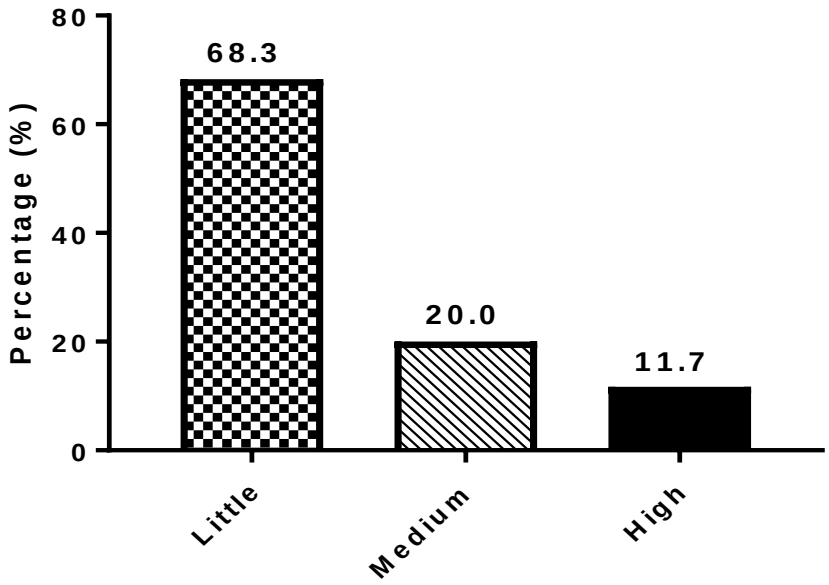
Religion	Religions	Mean Difference	Sig.
Christianity	Islam	0.2085	**0.015***
	Traditionalists	-0.1255	**0.028***
Islam	Christianity	-0.2085	**0.015***
	Traditionalists	-0.334	**0.040***
Traditionalists	Christianity	0.1255	**0.028***
	Islam	0.334	**0.040***

Source: Field survey 2019

The asterisks (***)** values in the table above tell exactly where there is a statistical significance among the groups means of the three religions.

4.4.3 The participants' level of knowledge on how religion can influence public construction project performance

In quite a strange circumstance, majority of the participant didn't really pay much attention to how their beliefs had influenced their decision taking and factors of measurement construction project performance. Every participant at least had some level of knowledge on how their religious beliefs had influenced the performance of a public construction project they were involved in. The respondents with little knowledge formed majority of the participant having 68.3% of the entire sample size, this was then followed by those with moderate knowledge (20.00%) and those who had high knowledge made up the remaining 11.7%. The percentage breakdown is an indication that though the participants had knowledge that their beliefs had an influence on the factors for measuring the performance of public construction projects, little attention had been given to its effects/influence in the construction of public project. (*see figure 4.7)*



Source: Field survey 2019

Figure 3: Participants' knowledge on religious influences on construction project performance

4.4.4 Discussion of the elements of religion in Ghana

To determine the influence religion or religious beliefs in Ghana have on public construction project performance, the study was concerned with the elements/factors/characteristics that make up or defines a religion and the significance of the elements in each religious body. The result revealed that the six (6) elements of religion identified for this research were very significant across the three religious bodies and they defined the various religions. This highlighted and agrees with the statement make by Umeokafor and Windapo (2018) and Allen (2012), that; ritual, belief in the existence of the supernatural, guide for standard of living, sacred, place of worship which serves as a

public venue and a central belief are the tools to define a religion. Furthermore, the level of knowledge of the presence of religion in construction and the significance of the individual elements exposed and supported the debate that religion is a strong traditional tool which exerts one of the highest influences upon the thinking and living of people, Opoko et al. (2015) and Mbiti,(1969).

In conclusion, the presence and relevance of religious beliefs/religion in the construction industry is revealed from the results of this work as was also stated by Kheni (2008). The elements of religion define the various religious bodies in Ghana and are of significance to each religion.

4.5 THE REGRESSION BETWEEN THE ELEMENTS OF RELIGION AND PROJECT PERFORMANCE

A regression analysis was performed to determine the relationship that exist between the religious elements of each religious body and their impact on the factors for measuring project performance in public construction projects in Ghana, thus the relationship between religion and project performance. A regression analysis between the elements of all the three religions and project performance criteria showed a positive correlation (R) for all comparisons made. Thus, a development in the element of religion would consequently lead to an improvement in project performance and vice versa. R-square values of cost performance and schedule (time) performance showed that the proportion of variance in the dependent variables (factors of success measurement) and independent variables (religious elements) were 68.00% and 76% respectively.

There was little significance associated between overall project performance and the entire elements of all three religions. Thus, on a whole the significance of the elements of religion influencing the sub-criteria to have general effect on the factors for measuring the project success is very low. Majority of the participants' response indicated a low application of their beliefs on construction project and preferred that it had little influence on their professionalism.

Although the correlations were relatively weak for all specific comparisons of project performance criteria, the association between the elements of religion and cost performance, and that of schedule performance were significant (p=**0.044***and **0.034*** respectively). Cost performance exhibited the highest relationship between itself and the overall elements of religion, this was then followed by schedule performance. The significant beta coefficients indicate that a unit rise in the elements of religion would account for a significant **0.308** increase in cost performance, and **0.286** increase in schedule performance (p=0.044 and 0.034 respectively). Communication performance, Health and Safety performance, scope performance, environmental performance, and Relationship with stakeholder all have p>0.05, which indicates a statistical insignificance among the variables. The results are represented in Table 4.4 below.

Ho: $p \geq 0.05$: There is no relationship between the various elements of religion and the factors for measuring public construction project performance in Ghana

H1: $p \leq 0.05$: There is a significant relationship between the various elements of religion and the factors for measuring public construction project performance in Ghana

Table 4.4: Regression analysis between the elements of all religions and project performance criteria

Characteristic	R	Beta coefficient	R-square	p-value
On overall performance criteria	0.242	0.170	0.058	0.063
Cost Performance	0.261	0.308	0.068	**0.044***
Schedule (Time) performance	0.275	0.286	0.076	**0.034***
Communication performance	0.22	1.198	0.048	0.091
Health and Safety performance	0.168	0.227	0.028	0.199
Relationship with stakeholder	0.016	0.020	0.00	0.904
Project scope	0.044	0.046	0.002	0.739
Environmental performance	0.076	0.072	0.006	0.563

Source: Field survey 2019

The asterisks (*) p-values in the table above tell exactly where there is a correlation with the dependent variable. Thus, (*) p-value shows where an association between the changes in the independent (religion) variables and the shifts in the dependent (performance factors) variable.

In regression analysis, the p-value for each independent variable tests the null hypothesis to determine the correlation level among the dependent variables. A ($p < 0.05$) indicates that there is a statistical significance among the dependent and independent variables.

4.5.1 Regression analysis between religion and project cost performance

From table 4.4 indicates that cost performance is statistically significant. The regression coefficients for all three religious bodies was found to be positive. This indicated that as the value of religious elements among the various religions increases, the mean for cost performance also increases. Thus there is a linear relationship. Despite the evidence of statistical significance among all the three religions with respect to cost performance, the elements of religion in Islam were the most significantly associated with cost performance, and a relatively strong association was observed (R=0.831; p<**0.0001**). Thus, Islam has the highest relationship in influencing public construction projects performance relative to cost wise performances. The influence of Islamic religion accounted for 63.5% (i.e. R^2 =0.635) of the outcome/success of cost performance in public construction projects. Specifically, a unit progress in Islamic elements accounted for a 0.827 increase in cost performance. Traditionalists, and the Christian religion had minimal significance on influencing cost performance (Table 4.5).

Ho: $p \geq 0.05$: There is no significant relationship between the various religions (elements of religion) and cost performance

H1: $p \leq 0.05$: There is a significant relationship between the various religions (elements of religion) and cost performance

Table 4.5: Regression analysis between the elements of the various religions and Cost performance

Religion	R	Beta coefficient	R-square	p-value
Christianity	0.772	0.761	0.504	**0.031**
Islam	0.831	0.827	0.635	**<0.0001**
Traditionalists	0.748	0.743	0.461	**0.038**

Source: Field survey 2019

The research rejects or disagrees with the Ho and accepts H1.

4.5.2 Regression analysis between religion and project schedule performance

The table 4.4 indicates that schedule (time) performance is statistically significant. The regression coefficients for all three religious bodies was found to be positive, with Islam having the highest correlation(R=0.858). This indicated that as the value of religious elements among the various religions increases, the mean for schedule performance also increases. The Islamic religion was the most associated and most influential on schedule performance (R=0.508; p= **0.022***), though a significant association was also observed for Christians and Traditionalist of (R=0.753; p=**0.041***) and (R=0.5696; p=**0.047***) respectively. The influence of Islamic religion accounted for 45.8% (i.e. R^2 =0.458) of the outcome/success of schedule performance in construction. Specifically, a unit progress in Islamic elements accounted for a 0.458 increase in schedule performance. (Table 4.6).

Ho: $p \geq 0.05$: There is no relationship between the various elements of religion and cost performance

H1: $p \leq 0.05$: There is a significant relationship between the various elements of religion and cost performance

Table 4.6: Regression analysis between the elements of the various religions and Schedule performance

Religion	R	Beta coefficient	R-square	p-value
Christianity	0.753	0.700	0.321	**0.041***
Islam	0.869	0.858	0.458	**0.022***
Traditionalists	0.696	0.689	0.205	**0.047***

Source: Field survey 2019

The asterisks (*) p-values in the table above tells exactly the statistical significance levels of relationship between religion and schedule performance, with Islam having the highest influence on schedule (or being more concern about project schedule).

4.5.3 Discussion of the relationship between religion in Ghana and public construction project performance

To ascertain the way religion influences the factors of public construction project performance measurement, this study first identified that there exist a statistical significant

among religion/religious elements and the individual factors for measuring project performance. The results indicated that though there exist a weak relationship among religion and the overall factors of measuring construction, some individual factors had very strong relationship with religion. This validates Mahat (2018) study that failure to apply religious or ethical values during construction projects can have an undesired effect on project performance and the works of Cavanagh and Bandsuch (2002).

In conclusion, the result identified schedule (time) performance and cost performance as the factors that are most influenced by the religious beliefs in Ghana and established a fact made by Smallwood (2002) that religion influences schedule performance and Shariff and Rhemtulla (2012) statement 'one's belief in heaven and hell instils value and has an impact in reducing crime rate' which has a direct effect on project cost performance.

4.6 SUMMARY

In general, the outcome of the research survey as has been discussed was found to reflect the actual conditions in the Ghanaian construction industry especially regarding public building projects. It showed how the various religious bodies viewed the factors for measuring public construction performances and their acknowledgement of the presence of these factors and how significant they have been in achieving project success in Ghana. The survey demonstrated that professionals within the three religious bodies are aware of the presence of the six (6) identified religious elements and agree to the fact that these elements have an influence on the various factors for measuring construction projects performances. Cost and Time (Schedule) performances were the most statistically influenced factors. The chapter commenced with the identified factors for measuring

public construction projects performances and their significance in the construction industry in Ghana. It then followed by the elements of religion among Christians, Islam and Traditionalist and the significance of these elements in the religious circles. A general survey of the participant's background was then carried out. The chapter concluded with a regression analysis which determined the relationship that exist between the elements of the various religions and the individual factors for measuring public construction project performance in Ghana. The findings evidently revealed that there is a statistical significance between religious elements and some performance factors (cost performance and schedule performance), while the findings couldn't prove the existence of significance between religion and overall factors for measuring public construction project performance in Ghana, ($p=0.063$).

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

The research aim is to provide a clearer picture through empirical analysis to bring to the understanding the part religious beliefs in Ghana play in influencing the various factors for measuring public construction project performance, specifically building projects in Ghana. This chapter presents an overview of the findings with respect to the research achievement of the aims and objectives. This was done by revisiting the research question and objectives to bring light the progress made by the research work with regard to the aim and objectives. It further outlined the research contribution made to the knowledge of study and its effect on the construction industry. The limitations encountered are discussed and recommendations are made for further/future studies.

5.2 RESEARCH QUESTIONS

From the start of this research work, three main questions were proposed:

- What are the factors for measuring public construction project performance in Ghana?
- What are the elements/factors that define religion in the Ghanaian society?
- What is the relationship that exist between the factors for measuring construction project performance and the elements of the various religions in Ghana?

5.3 ACHIEVEMENT/FINDINGS OF RESEARCH OBJECTIVES

The aim of the research was to investigate and bring to understanding how religious beliefs in Ghana influences the critical factors for measuring public construction project performance with three main objectives. The finding from the objectives are discussed below;

5.3.1 To identify factors for measuring project performance in Public Construction Projects in Ghana

The first objective was achieved through an extensive review of relevant literature on factors for measuring construction project performances in Ghana (*see chapter 2*). The desk survey revealed various factors for measuring construction projects performance in Ghana, seven (7) of these factors were relevant to the research works and was adopted. The seven factor are; cost performance, schedule (time) performance, communication performance, health and safety performance, relationship with stakeholders, scope performance, and environmental performance (*see table 2.3*). Though all these factors were found to be significant in achieving construction project success in Ghana, the most significant factor was environmental performance. Using a one-way variance (Anova), the results revealed that the overall means of the factors differed significantly from each other ($p<0.0001$). A further Turkey Post Hoc analysis also revealed that there is a statistical significance among the individual factors for measuring public construction project success.

5.3.2 To identify religious elements in the Ghanaian society

The second objective was achieved through review of relevant literature on religion, religious beliefs in construction and the elements of religious beliefs. In general, the desk survey revealed that all religious beliefs and activities can be grouped into six (6) elements of religion which characterises or defines a religion (*see chapter 2, table 2.4*). There are three major religious bodies that were identified and were relevant to the study; Christianity, Islam and Traditionalist. The questionnaire survey provided empirical evidence that all the six (6) elements were significant in each of the three religious bodies. Using a one-way variance (Anova), the results revealed that the overall means of the elements was statistically significant from each element. A further Turkey Post Hoc analysis proved that not only is there a statistically significant between the overall mean and each element of the various religions, but also a statistical significance existed between the means of each religion (*see table 4.3.1)*

5.3.3 To establish and identify the relationship between the factors of public construction project performance measurement and the elements of the various religions in the Ghanaian society.

The developed questionnaire, regression analysis between the identified factors for public construction performance measurement and the elements of the various religious bodies revealed a strong statistical significance among cost performance and schedule (Time) performance. A further analysis showed that, cost performance and schedule (time) performance is statistically significant among all the three religions with Islam having the most significance.

5.4 CONTRIBUTION TO KNOWLEDGE AND INDUSTRY IN THE GAHANIAN CONTEXT

The study has contributed immensely to both knowledge and the construction industry in a diverse way.

- It revealed the extent to which the factors for construction project performance measurement influence projects from the perspective of Christianity, Islam and Traditional religions;
- It has unearthed the elements that define religions in Ghana and how significant these factors are in each religious body identified;
- The study analysed the awareness of Ghanaians in the issue relating to the presence of religion in construction;
- The research established the relationship which exist between religion and the factors for measuring public construction project performance in Ghana.

5.5 CONCLUSION

As far as the religious beliefs of Ghanaians shapes their way of life and society, it is not possible to ignore the impact religion can play in development. The objectives of the research helped draw the following conclusions based on the research work done;

The study revealed that there were seven (7) main factors for measuring public construction project performance in Ghana, while exploring that all these factors are significant in achieving project success. Stakeholders ranked environmental performance as the most significant factor.

Secondly, there are three main religious bodies in Ghana (Christianity, Islam and Traditional religions). These religious bodies are all defined by the six (6) elements of religion; rituals, belief in the supernatural, guide for standard of living, sacred, place of worship, and central belief. The research further revealed that all these elements are significant among all the religions.

Thirdly, the level of knowledge among Ghanaians on the presence of religious influence in the construction was explored and majority was on "little knowledge". Further, the research explored and revealed that there is a statistical significance among the religious elements and the factors for measuring project performance in the Ghanaian construction industry.

5.6 RESEARCH LIMITATION

There were a few problems that was encountered during the research processes and they are outlined as follows;

- The research involved traveling to different cities and towns to gather data from the targeted participant, time constrain was a major factor that nearly hided the research work from reaching all it targeted participants.
- There is a possibility of sampling and measurement error and the effect of these errors on the collected data
- The study looked at the seven (7) factors that were relevant to the research work, there is a possibility of having other components.

5.7 RECOMMENDATION

In light of the above findings, the study recommends the following;

- Governments, religious bodies and all stakeholders involved in public construction projects must not ignore the factors for measuring construction project performance in Ghana in public projects;
- More attention must be given to the presence of religious elements in construction projects by the various stakeholders;
- Professional bodies must enlighten people about how their religious beliefs can affect the performance of a construction project they are on, and use these elements of religion to maximize project performance.

5.8 RECOMMENDATIONS FOR FUTURE RESEARCH

This work has opened possible avenues for further research into the subject matter of religion in the Ghanaian construction industry. It is recommended that future research work should explore further the degree to which religion affects the factors of performance measurement and how to maximize the religious elements to help increase/improve construction project performances in Ghana.

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APPENDIX :

QUESTIONNAIRES FOR THE STUDY

Kwame Nkrumah University of Science and Technology

Department of Construction Technology and Management

TOPIC;

Exploring religious influences on public construction project performance in Ghana.

To whom it may concern

Dear Sir/Madam,

Invitation to participate in a research to explore religious influences on public construction project performance in Ghana

I write to request your assistance as an experienced practitioner with substantial knowledge in construction project success to complete the attached questionnaire. Currently, I am undertaking a Master of Science (MSC) in the Department of Construction Technology and Management of the Kwame Nkrumah University of Science and Technology under the supervision of Mr. Peter Amoah. This research is entitled "**Exploring religious influences on public construction project performance in Ghana"**.

This research aims to determine the impact of religion on public construction project performance in Ghana. Hence, your expert knowledge and experience will be extremely useful for this research in establishing the influence of religion on project success. ***The definition of the identified success criteria can be found in page six (6).***

The questionnaire will take 10 to 15 minutes. All your responses will be treated with strict confidentiality and used only for academic purpose. Your views are valuable for the success of this research. After the research, we are willing to share a summary of the outcomes with practitioners in Ghana and anyone who shows interest. For any enquiries, please contact Donkor, Michael Ekow {Tel.: **0205000460**; & email: ekowdonkor@gmail.com }.

Sincerely,

~~DME~~

Donkor, Michael Ekow, MSC Student

Mr. **Peter Amoah**, Supervisor

Department of Construction Technology and Management

Institute of Distance Learning (IDL)

Kwame Nkrumah University of Science and Technology, Ghana

Exploring Religious Influences on Public Construction Project Performance in Ghana.

Questionnaire Survey

Important Instructions:

1. Please duly fill this questionnaire with reference to how religious influences affect the construction project performance.
2. Please answer the questions by ticking {such as "✓"} or checking {such as "☒"}.
3. Section E of the questionnaire involves writing of appropriate rate (Details in section E)
4. If you wish to have a copy of the report on research findings, please provide your email address:

SECTION A: Background of respondent

Q1. Gender
Male ☐; Female ☐;

Q2. Marital Status
Single ☐; Married ☐; Divorced ☐; Co-habitation ☐;

Q3. Please indicate your academic qualifications.
HND ☐; BSc ☐; MSc/Mphil ☐; PhD ☐; Others ☐

Q4. Please select your religion
Christianity ☐; Islam ☐; Traditionalist ☐;

Q5. Please indicate the professional body you are associated with.
GHIS ☐; GIA ☐; GhIE ☐; Others ☐

Q6. Please indicate your category in the professional body you are associated with.
Fellow ☐; Professional member ☐; Probationer member ☐; Others ☐

Q7. Please indicate your years of practical experience in the construction industry.
1-5yrs☐; 6-10yrs☐; 11-15yrs☐; 16-20yrs☐; Over 20yrs ☐

Q8. Please rate your knowledge on religious influences on construction project performance?

No knowledge ☐; Little ☐ ; Medium ☐; High ☐

SECTION B: Factors affecting construction project performance

Question: Construction project success criteria: How **significant** are the following construction project success criteria in construction projects?

Please, rate the significance of each factor with respect to construction projects under which they are listed. **1 = extremely low significance; 2 = very low significance; 3 = Moderate significance; 4 = Very significance; 5 = extremely significant.**

No.	Performance criteria	Level of Significance
		Low <<<---------- >>>Extreme
A	**Cost performance**	
1	Effective resource planning	☐1; ☐2; ☐3; ☐4; ☐5
2	Efficient cost estimation	☐1; ☐2; ☐3; ☐4; ☐5
3	Proper cost budgeting	☐1; ☐2; ☐3; ☐4; ☐5
4	Effective cost control	☐1; ☐2; ☐3; ☐4; ☐5
B	**Schedule performance**	
1	Availability of resources as planned	☐1; ☐2; ☐3; ☐4; ☐5
2	Efficient activity scheduling	☐1; ☐2; ☐3; ☐4; ☐5
3	Pre-tender proceedings	☐1; ☐2; ☐3; ☐4; ☐5
C	**Communication performance**	
1	Top management support	☐1; ☐2; ☐3; ☐4; ☐5
2	Effective planning	☐1; ☐2; ☐3; ☐4; ☐5
3	Effective dissemination of information and data collection	☐1; ☐2; ☐3; ☐4; ☐5
4	Effective communication control	☐1; ☐2; ☐3; ☐4; ☐5
D	**Health and Safety performance**	
1	Top management support	☐1; ☐2; ☐3; ☐4; ☐5
2	Proper site layout planning	☐1; ☐2; ☐3; ☐4; ☐5
3	Proper use of PPEs	☐1; ☐2; ☐3; ☐4; ☐5
4	Availability of welfare facilities	☐1; ☐2; ☐3; ☐4; ☐5
E	**Relationship with project stakeholder**	
1	Top management support	☐1; ☐2; ☐3; ☐4; ☐5
2	Effective communication	☐1; ☐2; ☐3; ☐4; ☐5
3	Regular monitoring and feedback by top management	☐1; ☐2; ☐3; ☐4; ☐5
F	**Project scope**	
1	Involvement of stakeholders at the initial stages of the project	☐1; ☐2; ☐3; ☐4; ☐5
2	Effective communication	☐1; ☐2; ☐3; ☐4; ☐5
3	Proper scope definition	☐1; ☐2; ☐3; ☐4; ☐5

4	Monitoring and feedback	☐1; ☐2; ☐3; ☐4; ☐5
G	**Environmental performance**	
1	Top management support	☐1; ☐2; ☐3; ☐4; ☐5
2	High resource usage efficiency	☐1; ☐2; ☐3; ☐4; ☐5
3	Efficient construction methods	☐1; ☐2; ☐3; ☐4; ☐5

SECTION C: Influence of religious factors on performance measurement

Question: How would you rate the **effect** of the following religious characteristics on cost performance as a factor for measurement of public construction project performance? Please, rate the significance as:

1 = extremely low significance; 2 = very low significance; 3 = Moderate significance; 4 = Very significant; 5 = extremely significant.

No.	Cost Performance	Level of Significance of Religious Influence
		Low <<<------ >>>Extreme
	Christian	
1	Rituals (prayer, communion etc.)	☐1; ☐2; ☐3; ☐4; ☐5
2	Belief in a supernatural being	☐1; ☐2; ☐3; ☐4; ☐5
3	guide for standard of living (accountability)	☐1; ☐2; ☐3; ☐4; ☐5
4	Sacred/Holy day(s) (aside Saturday)	☐1; ☐2; ☐3; ☐4; ☐5
5	Place of worship	☐1; ☐2; ☐3; ☐4; ☐5
6	Central belief	☐1; ☐2; ☐3; ☐4; ☐5
	Islam	
1	Rituals (prayer, communion etc.)	☐1; ☐2; ☐3; ☐4; ☐5
2	Belief in a supernatural being	☐1; ☐2; ☐3; ☐4; ☐5
3	guide for standard of living (accountability)	☐1; ☐2; ☐3; ☐4; ☐5
4	Sacred/Holy day(s) (aside Saturday)	☐1; ☐2; ☐3; ☐4; ☐5
5	Place of worship	☐1; ☐2; ☐3; ☐4; ☐5
6	Central belief	☐1; ☐2; ☐3; ☐4; ☐5
	Traditionalist	
1	Rituals (prayer, communion etc.)	☐1; ☐2; ☐3; ☐4; ☐5
2	Belief in a supernatural being	☐1; ☐2; ☐3; ☐4; ☐5
3	guide for standard of living (accountability)	☐1; ☐2; ☐3; ☐4; ☐5
4	Sacred/Holy day(s) (aside Saturday)	☐1; ☐2; ☐3; ☐4; ☐5
5	Place of worship	☐1; ☐2; ☐3; ☐4; ☐5
6	Central belief	☐1; ☐2; ☐3; ☐4; ☐5

--This is the end of the survey---Thank you for your time

Definition of the success criteria

- **Cost performance:** The ability to complete a construction project within the baseline cost
- **Schedule performance:** The ability to complete a construction project within the baseline schedule.
- **Communication performance:** The ability to successfully maximize the available communication channels and disseminate information to the right people effectively and on time.
- **Health and Safety performance:** The ability to complete a construction project within a firm's specified health and safety regulation.
- **Relationship with stakeholders:** The ability to complete a construction project while maintaining a cordial relationship with other construction stakeholders
- **Scope performance:** The ability for a project to conform to the required planned work and only that work.

Definition of the religious characteristics

1. **Rituals:** This are activities which include prayer, communion, sacrifice
2. **Belief in the supernatural:** it represents the individual's belief in the existence of a supernatural being who will punish 'man' earthly or eternally for life lived.
3. **Guide for standard of living:** thus the norms and ethics of one's belief influences their way of living, including choice of work and relationships at work
4. **Sacred:** Holy days

5. **Public components:** Public places of worship near construction sites (religious leaders)