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**Stakeholder Impact on Infrastructure Project Management in the Ghanaian
Construction Industry: A Study of the Perception of Construction Managers in
Construction Firms**

By

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ABSTRACT

To achieve project success, proper management procedures and skills are required. This issue becomes of much concern when the project is large and complex. One aspect of the management of project is the management of people who have interest in the project being executed. These group of people, also called stakeholders have the potential to influence the outcome of a particular project. This research study therefore sought to find the impact of stakeholders on infrastructure project management from the perspective of construction managers in the Ghanaian construction industry. In other to achieve this aim, two objectives were set; examine the key factors that influence stakeholder's decision on construction projects and also to examine stakeholder impact on infrastructure project management. On this basis, critical review of literature was carried out which led to the identification of key factors that influence stakeholders' decision and also their impact on construction projects. Questionnaires were administered to construction managers who work with D1K1 and D2K2 contractors. Data collected from the survey was analysed using descriptive statistics. The findings from the research show that the decision on the influence of stakeholders on infrastructure project is mostly influence by their power, knowledge of the stakeholders and the stakeholders interest in the project. In addition, it was also discovered that politicians in the municipality and planning officials have greater impact as stakeholders on infrastructure project. The media and the environmentalist were discovered to have the least influence on infrastructure projects in Ghana. The research therefore recommended that assessment of stakeholders should be given high priority right from project inception and estimators should make financial provisions for that. The study also recommended that other research work be done on stakeholders from the perspective of designers, estimators and trade foremen.

Keywords: Stakeholder, Management, Factors, Perception, Impact

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DEDICATION

I dedicate this project report to my wife Mrs. Judith Alupungu and children, Aniiwe Alupungu, Wedam Alupungu, Webadua Alupungu, Wemo-Anu Alupungu, Wesono Alupungu, Gladys Alupungu and Atogwe Alupungu.

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CHAPTER ONE

BACKGROUND STUDY

1.1 Introduction

The overall performance of every construction project largely depends on the relationship between the project participants and to those who are affected by the project at hand. Hence several studies have been conducted on stakeholder management and how they influence the success of construction projects. Smith et al. (2001) defined stakeholders as the representatives, direct and indirect, who may have interest and can make contribution to the proposed project. Previous definitions of stakeholders such as the one found in the works of Turner (1999) and Moodley (1999) included people who believe to have interest or benefit in the project at hand and as such have legitimate claim against the substantive aspects of the project. A more comprehensive definition of stakeholder is also found in Winch (2002) where stakeholders were referred to as people who have direct benefit or incur loss, as a result of the project. However, Cleland and Ireland (2007) establish the need for proper stakeholder identification. One approach to identify stakeholders is to classify them into several groups depending on their relative position in the project, involvement level in the project management process or legal relations between them and the project. In this sense, Walker (2003) purported that project stakeholders can be an amalgamation of people who are concerned about the project (team members, core project team, end users, sponsors and those who are not deft into what the project is about.

The PMI (2004) shows that the project manager, customer/user, performing organization (the firms whose employees directly participate in the project), project team members, project management team, sponsor, influencers and the project management organisation form project stakeholders. In Tuman (2006), stakeholders were categorized into four main groups, that is project champions, project participants, community participants and parasite

participants. The people such as the client, developers, customers and investors who bring the project into existence is referred to as the project champions while the project participants includes the project team, engineers, works and constructors as they are responsible for the planning and implementation of the project. The individuals who are directly affected by the project are the community participants as the project influences their economic activities and the social and natural environment where the project is implemented. The last group, parasitic participants includes the media and family who have no direct stake in the project but pose challenges to the implementation of the project. Winch (2004) classified stakeholders into external and internal stakeholders where the formal refers to the clients, competitors, suppliers, and environmental, political and consumer groups. Internal stakeholders include top management, accountants, functional management and project team members.

Previous studies have proposed the need to incorporate stakeholder needs into the formative stage of a project. Smith et al. (2001) opined that it is very essential for stakeholders to express their needs, views and expectations in an appropriate forum. They further proposed a model called Strategic Need Analysis (SNA) to assist clients, stakeholders and their design teams in determining their strategic needs for a given project. The structure of the SNA ensured that the stakeholder is involved at three different levels including briefings, seminars and workshops all in an attempt to create the opportunity for stakeholders to understand and also voice out all their concerns with regards to the project. It is against this background that this study seeks to examine stakeholder impact on infrastructure projects management in the Ghanaian construction industry.

1.2 Problem Statement

The growth and need of infrastructure projects in the world today is increasingly high especially in developing countries. Infrastructure development is one of the areas that have

been offered greater incentives by the government of Ghana. For instance, the budget statement of Ghana (2017) reported that the country reserved over 17 million dollars from its oil proceeds to be invested into the Ghana Infrastructure Investment Fund (GIFI). According to the report, the investment in infrastructure is bound to increase in the coming years. Moreover, the contribution of the Ghanaian construction industry to its GDP is almost the same as that of the other sectors of the economy in the world. An annual review report by the Ghana Statistical Service (2014) shows that within the past decade the Ghanaian construction industry contributed 13.7% to GDP to the economy of Ghana. Nguyen et al. (2004) poses that such increase in investment of infrastructure facilities in the country provides a favourable environment and business opportunity for foreign and local construction firms which brings about intensive competition in the market. Additionally, as growth in the industry will inevitably necessitate change, the management of construction and infrastructure projects will have to make the necessary adaptations and changes in other to ensure the success of projects. In other to ensure the success of projects and remain competitive in the market, construction firms may monitor all the parties involved on a particular project (Thê 2006). Thus focus is placed on stakeholders to a project if a company may want to deliver projects successfully.

Successful projects were traditionally considered to be the fulfilment of the objectives of budget, schedule and quality (Chua et al., 1999). Other researchers such as Mallak et al. (1991) and Sanvido et al. (1992) argue that a project is considered to be an overall success if they meet the expectations of their participants or stakeholders (owners, planners, engineers, contractors and operators). Modern research trends have shown the importance of strategic management of companies (Cleland and Ireland, 2007). They further asserted that stakeholders may have either a positive or negative influence on a project and therefore an examination into the impact of stakeholders on infrastructure project management is an important task for project managers if they are to ensure the success of projects. It is against

this background that this study seeks to examine the impact of stakeholder impact on infrastructure project management in the Ghanaian construction industry.

1.3 Research Aim and Objectives

1.3.1 Aim:

The aim of the study was to examine stakeholder impact on infrastructure project management in the Ghanaian construction industry from the construction managers point of view.

1.3.2 Objectives:

The objectives of the study include:

- i. To examine the key factors that influence stakeholder's decision on construction projects
- ii. To examine the stakeholder impact on infrastructure project management

1.4 Scope of the Study

The study seeks to examine stakeholder impact on infrastructure project management in the Ghanaian construction industry. The study seeks to sought out the view of construction managers on the impact of stakeholders on infrastructure projects. Infrastructure project according to Grimsey and Lewis (2002) looks at several parts of infrastructure, form energy, transport, water and communication. For instance, power generations and supply, toll roads, bridges etc. Nevertheless, the type of infrastructure project that will be the researcher's main focus is social infrastructure projects. Geographically, the researcher purposively sampled Kumasi which is the second largest city in Ghana to collect data for making inference. Kumasi was chosen since it satisfied the intent of the study and was closer to the researcher. In the classification of the construction sector, one can talk of the informal sector and the formal sector. This study considered only the formal sector as it seeks to find out the views of construction managers who work with D1K1 and D2K2 contractors who are in good standing in Kumasi.

1.5 Significance of the Study

Stakeholder impact on infrastructure projects is an essential component of project success. Scholars and industry practitioners have undertaken much studies on the factors that lead to project success. Research has taken a new turn when it comes to project success and it is seen not to relate to only cost, time and quality only but also the meeting the interest and absolute management of the stakeholders involved (Mallak, 1991, Jepsen and Eskerod, 2008). Chan and Chan (2004) therefore opined that an indispensable part of project success is the stakeholder. This study seeks to examine stakeholder's impact on infrastructure project management. It will therefore offer useful lessons and guidelines principally to advocacy and empowerment development organisations including agents and agencies who are involved in project management. Findings from this study will help project managers and other project participants to have good and deep understanding of the concept of stakeholders, its application and the challenges that come as a result. The study will also serve as a basic for further research.

1.6 Research Methodology

This study was conducted using three categorize approaches. First, a comprehensive literature review was done on previous studies to explore stakeholder impact on infrastructure project management. Information obtained from literature was used to construct a structured questionnaire with the aim and objectives of the study being the centre of concentration and it was distributed to construction managers in construction firms. Only D1K1 and D2K2 construction firms were considered for this study. The questionnaire was sent through mails and in person. Sampling techniques which were used to reach the contractors include purposive and snowball sampling techniques. The data upon receipt was analysed with the help of the Statistical Package for Social Sciences (SPSS v20.0) and Microsoft excel 2016.

Descriptive statistics and mean score ranking are some of the tools that were utilized to analyse the data.

1.7 Structure of the Study

Sequential illustration how the study was conducted help in easy acculturation and intensive reading. Hence, with this in mind, the study was strategically divided into five interrelated but very independent chapters. Chapter one considers the general introduction of the study. Chapter embodies on the literature review of the study. This review provided an extended coverage on earlier works and the topic. Chapter three examines the details of the methodology adopted for the study. Chapter four focuses on the analysis and discussion of the data collected for the study. Chapter five discusses the summary, conclusion and recommendations for the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter gives a conceptual overview of the construction industry and review the various literature on the subject of stakeholder impact on infrastructure project management from the perception of construction managers in the Ghanaian construction industry. The literature review guides the researcher to identify gaps in literature to make decisive conclusions. Literature survey is relevant to a defined problem. It is important to ascertain whether the defined problem had already been investigated, know its status and techniques that are useful to investigate the problem (Kothari, 2004).

2.2 Ghanaian Construction Industry

The contribution of the Ghanaian construction industry to its GDP is almost the same as that of the other sectors of the economy in the world. The annual review report by the Ghana Statistical Service (2014) indicated that within the past decade the Ghana Construction Industry contributed 13.7% GDP to the economy of Ghana. From the 2010 Population and Housing Census indicated that, the Ghana Construction Industry employs about 317,325 representing 3.1% of the Ghana workforce excluding those in the real estate, water supply, sewage and waste management (Ghana Statistical Service, 2012).

The physical infrastructure which is built through construction activities, is the nation's economic backbone as it forms the channels to facilitate productive activity by allowing goods and services to be distributed within and outside the country. The built items such as office complex, hospitals, classrooms, hostels, industries, bridges, dams and roads provide social and welfare benefits. For instance, housing satisfies one of the most basic needs of people by providing shelter from the physical elements. The quality of the design and construction of these facilities has an impact on the efficiency with which the productive

activities and provision of services can be embark on (Ofori, 2012). However, in order to achieve success in the project delivery to cost, time and quality, it is therefore prudent to take the stakeholders into consideration.

2.3 The Concept of Stakeholders

The concept of stakeholders has been in existence for many decades. It became evident during an international memorandum held at Stanford Research Institute (Freeman, 1984). Upon its emergence, it has been presented in four main domains: corporate planning, systems theory, corporate social responsibility and organisational theory. The most recognized book by Freeman (1984) on strategic management defined stakeholders as those groups who can affect or is affected by the achievements of the firm's objectives. This definition has been accepted by many researchers (John, 2002; Jepsen and Eskerod, 2008; Olander, 2007; Frooman, 1999; Stephen and Chris, 2008; Jawahar and Gary, 2001; Mitchell et al., 1997) since it took into account a large number of people and organisations such as customers, suppliers, employees, regulatory authorities, local communities and unions that are directly and/or indirectly related to the organisation.

Despite this, authors such as Mitchell et al. (1997) provides a narrower definition of stakeholders by mainly focusing on the individuals/groups of direct relevance to the principal economic interests of the companies involved while Clarkson (1995) by contrast believes that person/s who have placed something at risk in a relationship with the firm are stakeholders. In order to sum the definitions up, Takim (2009) defined stakeholders as being those who can influence the activities/final results of the project, whose lives or environment are affected either positively or negatively by the project and who receive direct and indirect benefit from it.

According to Winch (2002), two classifications of stakeholders exist in the construction industry. They include internal and external stakeholders. Internal stakeholders are those

people who have legal contact with the client on the demand and supply side. Employees, customers, end users and financials are examples of internal stakeholders on the demand side while architect, engineers, contractors, trade contractors and material suppliers are examples of internal stakeholders on the supply side. There are two sides to the external stakeholders; private and public actors. Local land owners, environmentalist, archaeologist form the private actors whereas the public actors include regulatory agencies and national government. The internal stakeholders are largely in support of the project and the external stakeholders may be in favour, against or indifferent. From the definitions and classification, it can be said that the basic idea of stakeholder theory is that an organisation has relationships with many constituent groups and that it can stimulate and sustain the support of these groups by considering and balancing their important interests (Wicks, 1999). Morris (2003) asserted that organisations have the key responsibility of understanding stakeholder's influences and formulating ways to work with them in order to achieve their goals.

Knowledge about stakeholders will help managers to manage stakeholders more strategically. Project managers who are at the forefront of managing projects recognise stakeholder management as one of the factors of project success (Smith et al. 2001). Hence, an important aspect of project management is to obtain stakeholder buy-in and support for the project. The project management research community and practitioners have been reluctant in adopting the theoretical ideas and insights from general stakeholder management irrespective of the acknowledged relevance of the subject for project success (Achterkamp and Vos, 2008; Jepsen and Eskerod, 2009; Yang et al., 2011)

2.4 Stakeholder Identification

Individuals, organisations, and companies have great influence on construction projects. Their influence can be positive or negative and for different purposes. The diversity of people who can influence a construction project make it difficult for project managers to manage

stakeholders on the project. One way of overcoming this challenge is early identification of stakeholders by project managers and efforts made to understand their interest and also be accurately informed about their likely influence on project (Bourne and Walker, 2005b). Stakeholder identification provides information about the individuals, groups and institutions that will benefit from the project to be undertaken and their level of influence on the project. Bourne and Walker (2005b) opined that identification of various stakeholders involves the use of analytical and intuitive skills. Project managers need to work and communicate with the stakeholders so that they can come to terms with expectations, needs and influence upon the project success. This according to Bourne and Walker (2005b) will help to minimize stakeholder's negative impact and while increasing the positive impacts. McElroy and Mills (2000) pose that project's failure due to inadequate stakeholder can be avoided as organisations are able to draw the line between the parties to involved and those not involved (Vos & Achterkamp, 2006).

A model of stakeholder management for construction projects was proposed Jergeas et al (2000). As part of the model function is the identification of key stakeholders to a project and improving stakeholder management. Their findings show two main ways of identifying stakeholders; formal and informal processes; of which the two processes are highly effective. Moreover, the authors were of the opinion that the management of stakeholders including communicating with them, setting goals and project priorities need to be systematically planned before the project is embarked upon and this can be achieved through the development of a more formalized process.

Key stakeholders are given top priority in the identification of stakeholders. Salmat & Naguchi (2006) defined key stakeholders as those who can significantly influence or are important to the successful delivery of the project objectives. However, for strategic planning purposes, stakeholders can be key or non-key. Non-key stakeholders are those individuals or

groups whose needs do not have to be recognized for the project to be successful, but who will be identified as a result of identifying all stakeholders. This also indicates that stakeholder do not have the same level of importance in the achievement of the objectives of the project (Salamat & Naguchi, 2006). According to Vandekerchove and Dentchev (2005), the importance of stakeholders is influenced by their power, legitimacy and urgency. To them, stakeholders could be classified as either primary stakeholder, secondary stakeholder or non-stakeholder. 'Legitimate and Valid' stakeholders need to first identify and their power and influence has to be analysed in other to appreciate their potential influence on the project (Bourne & Walker, 2005).

Categorizing stakeholders into several groups is one of the most basic ways to identify stakeholders. This can normally be done depending on the comparative position in the project, involvement level in the project management process and the relationship between them and the project with regards to legal issues. Based on this classification, stakeholders can be grouped into project sponsor, end users, client, core project team, and the team members together with community and external groups and shadow team members (Walker, 2003). In a similar way, the PMI (2004) also classifies project stakeholders into project manager(s), customer/user, performing organisation (the firms whose employees directly participate in the project), project team members, project management team, sponsor, influencers and the project management organisation (PMO).

Earlier works by Briner et al., (1996) on the identification of stakeholders posited four different sets of stakeholders. The client, outside services, project leader's organization and invisible team members. Moreover, Tuman (2006) also suggested four groups including project champions, project participants, community participants and parasite participants. The people such as the client, developers, customers and investors who bring the project into being are referred to as the project champions whereas project participants are the those

whose duty is to plan and implement overall project. Project participants include project team, engineers, workers and constructors. Groups and/or individuals who are directly affected by the project; for example, social, economic and natural environment within which the project is being implemented are the communication participants. Parasitic participants are groups and individuals such as the media and family, who have no direct stake in the project but present challenges to the successful delivery of the project.

The most popular identification of stakeholders is whether they are external stakeholders or internal stakeholders (Winch, 2004). Internal stakeholders include top management, accountants, functional management and project team members while external stakeholders are clients, competitors, suppliers and environmental/political/consumer groups (Pinto, 1996). Stakeholders has been identified as either primary or secondary by McElroy and Mills (2000) and direct or indirect by Lester (2007).

Primary stakeholders comprise those who have legal relations with the project and are in charge of the project management processes including cost, time, and quality management. In a similar way, direct stakeholders are people who are engaged directly in how to plan, execute and administer the processes of a project (Lester, 2007). The authors, Cleland and Ireland (2007) and Lester (2007) are in support of the fact that both secondary and indirect stakeholders are not directly involved in the project. They further argued that economic, environmental and social groups, the family and the media are part of the stakeholders who are indirectly involved the project.

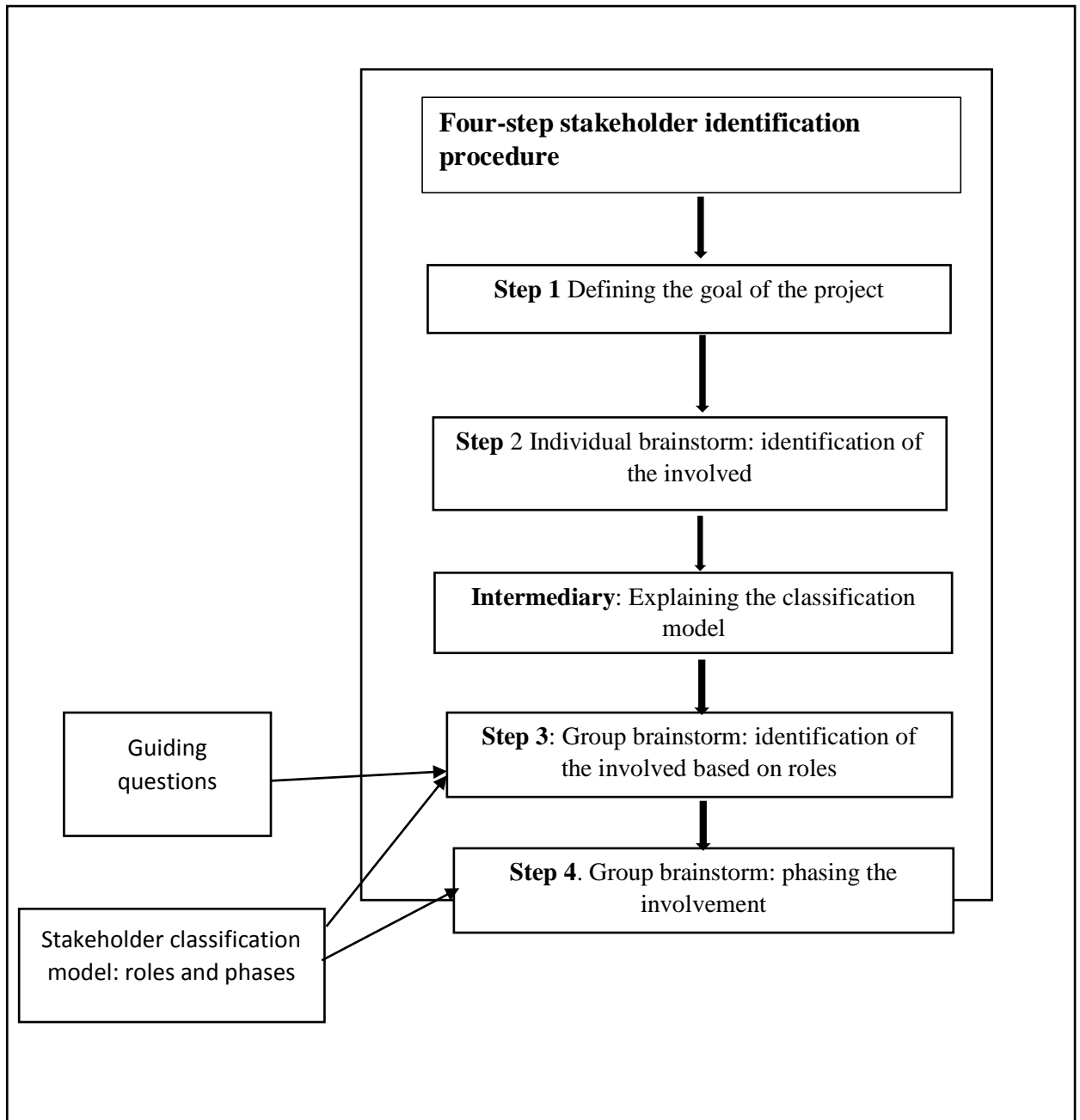
Vos and Achterkamp (2006) argued that identification of stakeholders goes beyond stakeholder classification. In regards to any of the above methods for classifying stakeholders, the most important thing is that it should capture all parties who have the potential to influence the project. Calvert (1995) proposes identifying stakeholders by

conducting brainstorm, in which names of all the stakeholders are identified. During the brainstorming process, the identifiers come out with anything that comes to mind, even if it seems silly. Brugha and Varvasovszky (2000) is of the opinion that one can inquire from persons in the organisation as to who the stakeholders are. Poloudi and Whitley (1997) refer to the use of generic stakeholder lists. In addition, Vos and Achterkamp (2006) propose that categories and names can be collected from informants in the community specifically the members of a population or residents of a geographical area of concern. Also, organisers can consult with organisations that either are or have been involved in similar efforts or that work with the population or in the area of concern. They also suggest the use of opportunities such as community meetings and social media to get to get to the appropriate stakeholders.

In figure 2.1, four steps involved in the identification of stakeholders which was proposed by Vos and Achterkamp (2006) has been illustrated. It can be seen from figure 2.1 that the steps include defining the goal of the project, individual brainstorming to identify stakeholders, group brainstorm based on roles of the involved, group brainstorm phasing the involvement.

The advantage of this model as identified by Vos and Achterkamp (2006) it allows stakeholders to be identified at an early stage before the project commences hence decisions decision taken forth includes diverse perspectives from all sectors and elements of the community affected which gives a clear of the community setting and potential pitfalls. In addition to this, it puts more ideas on the table than would be the case if the development and implementation of the effort was confined to a single organisation or to a small group of like-minded people hence managers tend to obtain the support for the effort from all stakeholders, by making them an integral part of its development, planning, implementation and evaluation. Vos and Achterkamp (2006) continued the list of advantages that early stakeholder identification increases the credibility of the organisation and strengthens the position of the firm during opposition.

Figure 2.1 stakeholder identification process.



Source: Author's construct

2.5 The Role of Stakeholders in Infrastructure Projects

The relevance of stakeholders in achieving the goals and objectives of organisations is to some extent manifest in the above concepts from the different authors but more of it can be seen in Bryson (1995) and Moore (1995). They argued that, throughout the strategic management process, attending to stakeholder needs is important since success for public

organisations and survival of these organisations depends on satisfying key stakeholders. Bryson (2004) asserted that public agencies are born of and live by satisfying interests that are sufficiently influential to maintain the political legitimacy and the resources of the agency that come with it. It is normal to see a change in organisations when key stakeholders need and interest are not met.

Satisfaction of key stakeholders can help organisations to assess and enhance political feasibility (Campbell & Marshall, 2002) and Alexander (2000) poses that catering for the needs of stakeholders is relevant in the sense that it ensures that the requirements for procedural justice, procedural rationality and legitimacy have been met. The role of stakeholders is best met through proper stakeholder management systems.

2.6 Influence of Stakeholders on Construction Projects

In the definition of stakeholders, Takim (2009) explained that stakeholders are those who can have a significant impact on the activities of the project, and who lives or surroundings are affected either in a negative or positive way by the project and who benefit either directly or indirectly from the project. Stakeholder's ability to influence projects is seen in the power they have, their legitimacy, urgency, proximity to the project site, vested interest, stakeholder attitude and stakeholder knowledge.

Takim (2009) definition of stakeholders undoubtedly imply that relationships between stakeholders and the project reflect exchange of social business. This makes the 'power factor' which contributes to the overall influence of the stakeholders on project a key driver for stakeholder manager relations. Power is defined by Weber (1947) as the chances that one actor among a social relationship would be in a position to do his own will in spite of resistance. Mitchell et al (1997) emphasize that power is a relationship within social actors where one social actor, D, can get another social actor, E, to do something that E would not then have done. Handy (1993) identified five major sources of power: physical power,

positional power, resource power, expert power and personal power. In the context of stakeholder management, physical power is hardly used and its of less importance to project management. Handy (1993) argued that the importance of personal power cannot be undermined, however, it is not easy to evaluate in a group of people or an organisation when assessing power levels due to individual traits.

Stakeholders influence projects through legitimate ways. Early research by Freeman (1995) poses that the legitimacy of a stakeholder is a prerequisite for the success of transactions with stakeholders. Many scholars have defined legitimacy and one of such definitions is that legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definitions (Suchman, 1995). In addition, Mitchell et al. (1997) share similar view with other authors who provide the definition for stakeholders as the individuals or organisations who have genuine relations with firms (not excluding contracts, legal and moral rights). The authors share their view regarding the works of Suchman's definition of stakeholders. The concerns were that the definition seem imprecise and difficult and does not signify the sociologically based definitions of legitimacy and contains some useful approaches to identify stakeholders.

. They pose that legitimacy is a social good – something larger and more shared than mere self-perception that may be defined and bargained differently at different levels of social organisation. According to Phillips (2003), the fundamental clue of legitimacy is understood in relation to normative and derivative. Normative stakeholders are those to whom the organisation has a moral obligation. Thus, Phillips (2003) asserted that, this is the responsibility of stakeholder fairness over and above due to moral social actors, simply by the feature of being human. The derivative stakeholders are also those whose actions and claims must be accounted for by managers, due to their potential effects upon normative

stakeholders. It can therefore be said that the concept of legitimacy of a stakeholder is complex but in contrast, it reflects the contractual relations, legal and moral rights in relationships between stakeholders and a project.

The next influence stakeholders have on projects is their ability to cause a sense of urgency in the delivering of a project. Urgency is defined as the degree to which stakeholder claims call for immediate attention. The argument further continues that urgency exists only when a claim or relationship is of time-sensitive nature, and also whether that claim or relationship is of critical or important to the stakeholder (Mitchell et al., 1997). Mitroff (1983) shared the view that the concept of urgency is much similar to imperative concept as they both create a strong feeling about an issue to act. Hence, the urgency attribute of stakeholders is motivated by the extent to which the attributes such as urgency exert on the project manager.

The proximity of stakeholders also has significant influence on the success of projects. Bourne (2005) defined proximity as the extent to which a stakeholder is involved in the project. In order to prioritize project, Bourne (2005) uses proximity as a criterion on a scale of 1-4; where 1 is relatively remote from the project (does not have direct involvement with the processes) and 4 being directly working on the project (most of the time). The need to take proximity into account is further argued about by Bourne and Walker (2005b) when they emphasize that stakeholders who may have strong power and influence but are relatively far from the project core may seem transparent/invisible. This normally results in underestimating the potential impact of these stakeholders.

The definition of stakeholders incorporates in it 'stakeholder interest' (McElroy and Mills (2000), PMI (2004), and Bourne (2005). Thus, it can be pointed out easily that stakeholder interest in a project is considered to be a factor affecting the success outcome of a project. Also, the interest of stakeholders in a project is included in the power/interest matrix that

Johnson et al. (2005) formulate. This matrix presents project managers with how to keep stakeholders' interest in mind especially when communicating with and managing stakeholders. Cleland and Ireland (2007) assert that there are several reasons for stakeholders vested interest in a project including mission relevancy, economic interest, legal right, political, support, health and safety, lifestyle and opportunism and survival. This clearly indicate that stakeholders vested interest have a great influence on a project.

Mallak et al. (1991) observed that modern day stakeholders tend to be more informed, sophisticated and vocal, which enables them to have more knowledge on the project than ever before. This increase in knowledge can be attributed to technological development as they are able to seek for information from several sources. Certainly, a stakeholder's ability to influence a project is based on his/her knowledge about the project, the level of knowledge is directly proportional to the level of influence. McElroy and Mills (2000) gave a range for stakeholders' knowledge commencing from total ignorance to full awareness. Mostly stakeholders are able to influence the project, once they intent to gain knowledge of the project through facts that are available to them. However, stakeholders whose knowledge on a project is based on hearsay and assumptions rather than facts can be totally ignorant about the operations of the project. In addition, one may argue that the strong salience and great interest exhibited by stakeholders may not necessary account for stakeholders' influence provided the stakeholder lack adequate knowledge on the project. It is no surprise that the driver effecting stakeholder impact on projects is stakeholder's knowledge.

The possibility of stakeholders to have a positive and negative impacts on projects calls for the need to find the objectors and supporters to a project. McElroy and Mills (2000) poses that the attitude of stakeholders is basically based on their support or opposition to the project. Thus, managers depend on the attitude of stakeholders to decide on the positive and negative that awaits a given project, and hence it influences on the project outcomes. Active

opposition, passive opposition, no commitment, passive support and active support are the five levels of attitude of project stakeholders (McElroy & Mills, 2000).

2.7 Stakeholder Impact Analysis on Infrastructure Project Management

The international finance corporation (2007) asserted that stakeholder analysis required a more in-depth look at stakeholder interests, their effect, degree of and the influence they could have on your project. This is necessary especially for project managers for it is not practical and not necessary to involve all the stakeholder group. Hence the IFC (2007) referred to stakeholder analysis as a critical activity which managers of a project handles with great caution. Engaging stakeholder groups requires resources such as time and money. However, when managers are clear on who they are engaging on a project and why they are engaging them, it can lead to savings in cost and time. To achieve this, usually, there is the need to prioritise one's stakeholders; figuring out the most appropriate ways to engage stakeholders depending on who they are and their interest. Prioritising stakeholders involves evaluating the significance of each stakeholder and due to the fact that situations change with time, it is worth knowing that the interest and power of stakeholders is dynamic (IFC,2007).

Additionally, Mitchell et al. (1997) argue that stakeholder's impact can be ascertained by classifying them based on their power, legitimacy and urgency. Also, there are seven types of stakeholders based on the degree of each attribute. They include

- i. Dormant
- ii. Discretionary
- iii. Demanding
- iv. Dominant
- v. Dependant
- vi. Dangerous

vii. Definitive

The above attributes have a strong sense of influence on projects and as such managers have to take critical look at them if they want to silence the stakeholders and manage them properly. The classification of stakeholders based on their attributes have the advantages of assisting managers to group stakeholders and also present them the opportunity to developing responses that are appropriate for each stakeholder group (Mitchell et al, 1997). These findings from Mitchell et al (1997) has been criticised. This approach as a way of assessing the impact of stakeholders does not show whether or not stakeholders support the project and moreover, it is difficult to compare the level of stakeholder influence with each other in the same group.

A more appropriate method was proposed by McElroy and Mills (2000) where managers have the flexibility to map two key factors: stakeholder attitude and knowledge. Thus, the combination of possible attitude and knowledge will enable the grouping of project stakeholders into four quadrants in the chart. The four quadrants include support/aware, support/ignorant, oppose/ignorant and oppose/aware. This approach includes not only the attitude but also the knowledge of the stakeholders in the assessment giving project managers a cue about whether the stakeholder is a friend or enemy. McElroy and Mills (2000) method of assessing impact do not factor other influential attributes such as power, legitimacy and urgency.

Other scholars considered using only two drivers; power and interest to assess stakeholders' impact (Johnson et al., 2005).

The attributes, power and interest are depicted in a chart to form a power/interest matrix which consisting of a grid where power and interest are relevant factors. The factors were on a scale of low to high amounting to four discrete areas in the matrix, each of which produces

a recommended strategy for managing stakeholders. Project managers with the help of the power/interest matrix are able to produce a better strategy for managing stakeholders effectively. Similar to Mitchell et al. (1997) this approach lacked the assessment of the attitudes of stakeholders toward the project. Therefore, stakeholder impact is considered inadequate since the approach does not include the urgency and legitimacy drivers.

Nguyen (2009) proposed a different approach to stakeholder impact by proposing a formula which combines all the four discrete areas of assessing stakeholder impact. The formula is as stated below

$$I = P + L + U + K + D$$

Where I = Impact

P = Power

U = stakeholder urgency level

K = stakeholder knowledge level

L = stakeholder legitimacy level

D = stakeholder proximity degree

Ngumen et al. (2009) adopted the method used by Bourne and Walker (2005b) in developing their second equation. Bourne and Walker (2005b) form a link between the interest/impact and the concepts derived from the risk assessment process associated with probability-impact analysis. They argue that stakeholders to some extent are risk to the success of project including threats and opportunities. Hence, they used a scale measuring stakeholder vested interest (v) and impact (i) as 1 – very low, 2 – low, 3 – neutral, 4 – high, and 5 – very high. The interest/impact is then measured using the formula:

$$V = \sqrt{\frac{v * i}{25}}$$

Where v = stakeholder vested interest-impact; v = stakeholder vested interest level and I = stakeholder impact level.

Another method to identify stakeholders and prioritize them is suggested by Bourne (2005). Bourne (2005) considered three key drivers such as power, proximity and urgency and this was used to develop a model using the stakeholder Circle™ visualisation tool developed by Bourne. This tool is based on the ability of stakeholders to influence project outcomes. Bourne (2005) method compared to the above-mentioned methods gives a clear picture of stakeholder influence on projects. Moreover, project managers are able to prioritize since the level of influence is estimated through the interest/impact index coupled with the level of stakeholder participation through the proximity factor. Thus, stakeholder management process is further enhanced with regards to how effective the work is performed. However, without the consideration for stakeholder attitude, it is difficult to classify them as either objectors or supporters (Bourne, 2005).

An approach for the evaluation of stakeholder impact on projects was suggested by Olander (2007) which involves the calculation of impact index. He considers most key drivers discussed earlier in his work, such as power, legitimacy, urgency, vested interest-impact and attitude. The impact index of a stakeholder then, is the product of the stakeholder attribute (A), vested interest-impact index (ViII) and stakeholder attitude (Pos):

$$S = Vill * Pos$$

To conclude, the comprehensive factors that account for stakeholders' influence on a project have been discussed in Olander's approach (Olander, 2007). However, other authors have raised issues of overlap in Olander's calculation as stakeholder impact and power are both used concurrently. However, the driver of stakeholder impact as it has been identified is power. The calculation does not consider the knowledge of stakeholders which limits its ability to reflect what is happening in practice.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents an outline of the proposed research philosophy, the methodology adopted, the design process and the data collection procedure and techniques for the analyses of the data and the research challenge or limitation.

The research aims to critically examine the impact of stakeholders on infrastructure project management from the perception of construction managers who are also engaged in managing stakeholders on the project in Ghana. Literature review, face to face interviews, a pilot study and a questionnaire survey formed part of the research methodology adopted for the study. The procedure of the research is in line with the studies of Chan et al (2004) and Walker (1997).

3.2 The Research Design

The research is descriptive in nature and it includes a background of what the study is about and it combines both secondary source of data with primary data which will be collected from the field using structured and semi structured questionnaire. Hence the design helps the researcher to do an intensive analysis using multiple sources.

3.3 The Research Approach and Strategy

A quantitative research approach and design was adopted for this study as it can produce in-depth knowledge about the subject matter (Fellows and Liu, 2003). Quantitative research provides a complete and detailed description of the research topic, however, it focusses on mainly gathering of measurement rather than using verbal means. Quantitative research employs statistical analytical tools such as mean score ranking, descriptive statistics and relative importance index to identify facts and relationships that exist. Samples collected are usually large and have to be generalize as a representation of the population.

This study used the quantitative approach and data collected from respondents would be analysed and the results would be discussed and conclusions and recommendations would be drawn from the findings.

3.4 Research Methods

The techniques used to conduct research is collectively referred to as research methods (Kothare, 2004). Methods for research presents the researcher with the ability to obtain data from the fields survey for rigorous analysis and assessments. Interviews, questionnaires, observations, role play, visit, case study and historical record analysis are some of the examples of research methods (Kothari, 2004). This research deployed the questionnaire method and was administered through the mails collected from the field survey. Dommeyer and Moriarity, (2000) poses that administering questionnaire through the electronic mails for data collection has the benefit of being cheap and a quick communication medium. Hardcopies were used as alternative methods as well.

3.5 Population

The research population refers to all the items of enquiry in a research survey (Kothari, 2004). Zikmund (2003) also defined population as a complete group of entities sharing some common set of characteristics. With the background knowledge of what population refers to, this research targeted construction managers in Kumasi which is the capital of the Ashanti region of Ghana. This research seeks to examine the impact of stakeholders on infrastructure project management from the perception of construction managers and hence it is the researcher finds it expedient to solicit data from the construction managers.

3.6 Sampling Techniques Used

The sampling techniques used for this study were purposive sampling technique and snowball sampling technique. Purposive sampling technique advocates for deliberate selection of items to constitute the sample by the researcher and is judgmental in nature. This approach works

on the basis that the selected items are typical representations of the whole (Kothari, 2004). Thus, respondents were purposively contacted by the researcher. By using this method, the researcher was able to contact a few construction managers who work in Kumasi. The researcher then asked the respondents to direct him to another construction manager.

The researcher was also concerned about the quality of data to be collected as well. Hence, a criterion was set for the selection of construction managers. Hence, respondents who worked for D1K1 and D2K2 were selected. Large construction firms such as the D1K1 are involved in handling complex projects which requires that managers have the responsibility of managing the different number of stakeholders on the project. Moreover, the researcher did not only take into consideration the size and type of project but also the experience of the contractors. Hence, contractors who are registered with the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) who are in good standing were used for this study.

3.6.1 Research Sample Size

The sample size of the research is a representative proportion of the population from which data was collected to make inference on the population. The study used a sample size of forty five (45), which constitutes the number of project managers working with the five (5) construction companies.

3.7 Data Collection

The study utilized both primary data and secondary source of data. The primary data consisted of the information collected from the field survey for the first time by the researcher while the secondary source of data are data that have been collected and passed through the statistical process already (Kothari, 2004). Examples of these include information obtained from reviewing literature. Primary data was collected through the field survey through questionnaire administration.

3.8 Data Presentation and Analysis

The retrieved questionnaire was coded and analysed using statistical tools such as the International Business Machines Statistical Package for Social Sciences (IBM) version 21.00. The data obtained was presented graphically and in tabular forms. Information involving the background of respondents was presented graphically and in tabular forms. Analytical tools such descriptive statistics and mean score ranking was used in the analyses of the impact of stakeholders on infrastructure project performance.

3.9 Chapter Summary

This chapter addressed the methodology used for the research and the reasons for its adoption. The research approach used and the method of data collection were discussed in detail. The chapter concluded with the research process and covered issues such as; the population, sources of data, questionnaire developments, sample size determination and finally data presentation and analysis.

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

This chapter presents the results and discuss the primary data derived from retrieved questionnaires distributed for the study. The demographic data was analysed using descriptive statistics while the dependent variables were analysed using mean score ranking. The results are presented in tabular forms and explained accordingly. The first section of the discussion is focused on the profile of the respondents and the influence such attributes have on the research. The other two sections also tackled the objectives set forth for the study in relation to the stakeholder impact on construction project management in Ghana.

Forty-five (45) questionnaires were distributed to construction managers (site supervisors) in the Kumasi metropolis and a number of thirty-two (32) were retrieved. All the retrieved questionnaires were filled and thus could all be subject to analysis. This represents a high respond rate of 71.11% as it exceeds the 30% response rate suggested by Oladopo (2005) as adequate for construction studies. Since, the researcher did not have a large amount of time for distributing and collection of the data, the response rate was considered relatively high and the high response rate can be attributed to the fact that the questionnaire was administered in person coupled with successive follow-ups.

4.2 Analysis of the Demographic Data & Background Information

This section of the questionnaire covered questions seeking basic information from the respondents to help understand their profile as this generates confidence in the credibility of the data collected and hence the research work. Table 4.1 shows information in relation to the academic qualification of respondents, professional body in which respondents is affiliated to and years of experience. Moreover, information regarding the company's background including the number of full-time employees, the kind of construction projects the firm

undertakes and the number of years the company has been in existence were also included as part of the background information collated from the survey.

4.2.1 Academic Qualification of Respondents

This part of the demographics was to ascertain the academic qualification of the respondents. The academic qualification of the respondents gives relevance to the kind and quality of information that will be given out. The information provided by these respondents would be the basics for future research and hence the researcher needed to confirm that the respondents are qualified academically to comment or share their opinion on the issue at hand thus the information obtained give an idea about the capabilities of the respondents. From Table 4.1. it can be seen that none of the respondents have a PHD qualification, 3 of the respondents representing 9.38% have MPhil, 18 of the respondents representing 56.25% have MSC/MEng, 1 respondent have P.G. Diploma representing 3.13% and 10 respondents constituting 31.25% have BSC degrees. It is not uncommon to have no respondent with a PHD qualification since most people with such qualification are usually seen in the academia in Ghana other than working in the industry. Moreover, the qualification status of the respondents indicates that a minimum of first degree is required to practice as a construction manager in Ghana. it can be deduced from the academic qualification information that majority of the respondents have a Master's degree which parallels the quality of information provided by the respondents for the study.

4.2.2 Professional Affiliation

This section of the study sought to find out about the professional affiliation to which each of the respondents belongs. From Table 4.1, it can be seen that 2 of the respondents representing 6.25% belongs to the Ghana Institute of Architects

Table 4.1 Presentation of demographic data of respondents & background information

| VARIABLES | OPTION | FREQUENCY | PERCENTAGE (%) |
|--|--------------------------------------|-----------|----------------|
| Academic qualification | PHD | 0 | 0.00 |
| | MPHIL | 3 | 9.38 |
| | MSC/Meng | 18 | 56.25 |
| | P.G. Diploma | 1 | 3.13 |
| | B.S.C | 10 | 31.25 |
| Professional Affiliation | GIA | 2 | 6.25 |
| | GhIE | 4 | 12.50 |
| | GIOC | 8 | 25 |
| | GhIS | 7 | 21.87 |
| | No Professional Affiliation | 11 | 34.38 |
| Years of Professional Practice | Less than 6 years | 3 | 9.38 |
| | 6 – 10 years | 5 | 15.63 |
| | 11 -15 years | 15 | 46.87 |
| | 16 – 20 years | 7 | 21.87 |
| | Above 20 years | 2 | 6.25 |
| Number of Full-time employees | 1-10 | 0 | 0.00 |
| | 11-20 | 0 | 0.00 |
| | 21-30 | 3 | 9.38 |
| | 31-40 | 5 | 15.63 |
| | 41 and above | 24 | 75.00 |
| Kinds of Construction Projects Undertaking | Building | 7 | 21.87 |
| | Civil Construction | 2 | 6.25 |
| | Both Building and Civil Construction | 23 | 71.88 |
| Years in Business | 1-5 years | 3 | 9.38 |
| | 6-10 years | 10 | 31.25 |
| | 11-15 years | 12 | 37.50 |
| | 16 -20 years | 5 | 15.63 |
| | 21 and above | 2 | 6.25 |

Source: Field survey, 2018.

Additionally, 4 respondents representing 12.5% belongs to the Ghana Institute of Engineers, 8 of the respondents representing 25% belongs to the Ghana Institute of Construction, 7 respondents representing 21.87% belongs to the Ghana Institute of Surveyors and 11 respondents representing 34.38% have no professional affiliation. Construction association and affiliation uses stringent methods in selecting its members. Some of these methods includes the number of years of experience of the person and the academic degree. Hence, obtaining information from respondents who are part of a professional affiliation is an indication of the quality of information for such people have the prerequisite knowledge and experience in matters relating to the field of study. It can be deduced from the table that about 65.62% surveyed are part of a professional body which is an indication of the quality of information obtained.

4.2.3 Years of Professional Practice

The purpose of this part of the demographics was to ascertain the working experience of the respondents. This information gave relevance to the kind and quality of information that was given out. Table 4.1 shows the professional experience of the respondents. Apparently most of the respondents have work experience ranging from 11-15 years constitution 46.87% and 7 respondents representing 21.87% have work experience ranging from 16-20 years. This shows that most of the respondents have relative experience in the field of study. Contrary to the above, few respondents have less than 5 years which indicate that most of the respondents have rich experience in their relative field of study.

4.2.4 Number of Full-time Employees

In addition to the information obtained on the background of the respondents, efforts were made to take information regarding the companies with which the respondents work for. The purpose of which is to give an idea about the quantity of the works undertaken by the respondents. With regards to size of the companies in which respondents work for, majority

of the respondents work for companies with full time employees exceeding 41 and above constituting 75%, 5 respondents work for companies with full time employees between 31-40 representing 15.63%. This shows that, most of the respondents work for large companies and hence are involved in undertaking large and complex projects which require the management of a vast number of stakeholders.

4.2.5 Kind of Construction Projects Undertaking by Respondents' firm

As part of the research endeavour, it became imperative to identify the kind of construction projects undertaken by the firm of the respondents. The kind of construction projects identified would help the researcher when analysing information regarding the impact stakeholders have on construction project performance. This information will guide the researcher when making conclusions about the research findings without generalising the outcome of the study. In Table 4.1, 23 of the respondents constituting 71.88% work in firms which undertake both Building and Civil construction works, 7 respondents representing 21.87% undertake only Building works and 2 respondents representing 6.25% work with firms which undertake only civil engineering works. The increase in the number of firms which undertake both building and civil works can be attributed to the fact most construction companies are registered as D1K1 where the D represents building works while K represents civil works. So although in reality most of these firms undertake buildings, they consider themselves as both building and civil works.

4.2.6 Years in Business

The number of years a construction firm has been in business provides a lot of information about its management systems. A company which have been in business for a longer period of time may have in place proper management systems including management of stakeholders on its construction projects. From Table 4.1, majority of the respondents worked with construction firms who have been in business for a period ranging from 6-10 years and

11-15 years constituting 31.25% and 37.50% respectively. This indicates that most of the respondents worked with construction firms which is presumed to have experience when it comes to managing stakeholders on its construction projects.

4.3 Analysis of Dependent Variables

Descriptive statistical analyses such as the mean score ranking was used to analyse the data obtained through the questionnaire survey. The mean score ranking was used to ascertain the factors that influence infrastructure project performance and also determine the impact of certain factors on infrastructure project management. The procedure, findings and relevant discussions are discussed in the succeeding subjects.

4.3.1 Factors That Influence Infrastructure Project Management.

This section discusses the relevant factors that influence stakeholder's decision on infrastructure project management. Seven (7) major factors were determine from literature and respondents were asked to rate the extent to which the factors influence stakeholders' decision on infrastructure project management on a scale of 1-4, where 1 = very low, 2 = low, 3 = high, 4 = very high, the most influencing factors will be made known.

The mean score ranking was used in the analyses to determine the most influencing factors. The main aim of this analyses was to assist in the selection and ranking of the influencing factors with regards to the factors that influence stakeholder's decision on infrastructure project. Table 4.2 reveals the mean score rankings in descending order. It can be seen that stakeholder power was ranked first with a mean score of 3.48, followed by the knowledge of stakeholders (2nd) with a mean score of 3.36. Stakeholder interest and proximity of stakeholders were ranked 3rd and 4th with mean score of 3.18 and 3.12 respectively. Attitude of stakeholders, legitimacy of stakeholders and ability to cause urgency were ranked 5th, 6th and 7th respectively.

Table 4.2 Factors That Influence Stakeholders Decision on Infrastructure Project Management

| No. | Factors that influence stakeholder's decision on infrastructure project management. | N | Mean | Standard Deviation | Ranking |
|-----|---|----|------|--------------------|---------|
| 1 | Stakeholder Power | 32 | 3.48 | 0.836 | 1st |
| 2 | Knowledge of stakeholders | 32 | 3.36 | 1.025 | 2nd |
| 3 | Stakeholders interest | 32 | 3.18 | 0.774 | 3rd |
| 4 | Proximity of Stakeholders | 32 | 3.12 | 0.810 | 4th |
| 5 | Attitude of stakeholders | 32 | 2.69 | 0.845 | 5th |
| 6 | Legitimacy of the stakeholder | 32 | 2.56 | 0.910 | 6th |
| 7 | Ability to cause urgency | 32 | 2.56 | 1.057 | 7th |

Source: Field survey, 2018.

4.3.1.1 Discussing of the factors that influence stakeholders' decision on infrastructure project management.

The literature review in this study revealed there can be many stakeholders on a single project. Hence, researchers (John, 2002; Jepsen & Eskerod, 2008; Olander, 2007; Frooman, 1999; Stephen & Chris, 2008; Jawahar & Gary, 2001; Mitchell et al., 1997) have tried to redefine stakeholders so as for it to have a narrow focus and reduce the number of entities on a particular project and aid project managers to properly manage stakeholders well. Other researchers such as Bourne and Walker, 2005b also focus not only on the definition but also effort to identify stakeholders influence on a particular project. Although, Vandekerchove and Dentchev (2005) made mention of the factors such as stakeholder power, knowledge of stakeholders, proximity of stakeholders from the project site and the attitude of stakeholders

that influence stakeholders' decision on infrastructure project, their level of importance was not identified.

This study reinforces the importance of the factors that affect stakeholders' decision on infrastructure projects. Bourne and Walker (2005) discovered in their study that the power of stakeholders and the interest of the stakeholders are the most influencing factors that should guide professionals in their identification of key stakeholders to a project. Takim (2009) work on the identification of stakeholders also stressed the need for project managers to focus on stakeholders who have the power to influence the smooth running and execution of the project. Thus, the findings from this study is in line with what previous researchers have discovered in their works.

4.3.2 Impact of Stakeholders on infrastructure project management

Several factors were identified in the literature and different approaches by researchers including Mitchell et al. (1997) and McElroy and Mills (2000) have been criticized by other researchers. With this in mind, this research identified various stakeholders from literature and their impact were assessed from three different angles; their impact based on their power, legitimacy and urgency. With the knowledge that the impact stakeholders have on projects either increases or decreases at different stages of the project, respondents were asked to assess the impact of the listed stakeholders at two different stages of the project.; feasibility and design stage and the construction stage. Hence, on a scale of 1-3 where 1 = low impact and 3 represents a high impact, respondents ranked the impact of the listed stakeholders at the feasibility and conceptual design stage and the construction stage.

In addition, the mean score ranking was used to analyse the data with the help of the Statistical Package for Social Science version 20.0. This analysis helped to identify which group of stakeholders have the greatest impact on infrastructure project in Ghana and also

whether this impact is as a result of its power, legitimacy or ability to cause urgency on the project.

Table 4.3 Impact of Stakeholders on Infrastructure Project Management

| FEASIBILITY AND CONCEPTUAL DESIGN STAGE | | N | Mean | Standard Deviation | Ranking |
|--|---------------------------------|----------|-------------|---------------------------|------------------|
| No | POWER | | | | |
| 1 | Politicians in the municipality | 32 | 2.88 | 0.471 | 1 st |
| 2 | Materials suppliers | 32 | 2.47 | 0.962 | 2 nd |
| 3 | Local Land Owners | 32 | 2.45 | 0.335 | 3 rd |
| 4 | Planning officials | 32 | 2.45 | 0.895 | 4 th |
| 5 | Design team | 32 | 2.35 | 0.584 | 5 th |
| 6 | Local District Assemblies | 32 | 2.35 | 0.845 | 6 th |
| 7 | Residence in the vicinity | 32 | 2.15 | 1.023 | 7 th |
| 8 | Trade contractors | 32 | 2.14 | 1.025 | 8 th |
| 9 | The media | 32 | 1.98 | 0.445 | 9 th |
| 10 | Environmentalist | 32 | 1.98 | 0.446 | 10 th |
| | LEGITIMACY | | | | |
| 1 | Material suppliers | 32 | 2.34 | 0.625 | 1 st |
| 2 | Design teams | 32 | 2.29 | 0.748 | 2 nd |
| 3 | Planning officials | 32 | 2.25 | 0.452 | 3 rd |
| 4 | Residents in vicinity | 32 | 2.25 | 0.668 | 4 th |
| 5 | Politicians in the metropolis | 32 | 2.19 | 1.203 | 5 th |
| 6 | Trade contractors | 32 | 2.18 | 1.336 | 6 th |
| 7 | Local District Assemblies | 32 | 1.99 | 1.028 | 7 th |
| 8 | Environmentalist | 32 | 1.65 | 0.335 | 8 th |
| 9 | Design team | 32 | 2.29 | 0.748 | 9 th |
| 10 | Local Land Owners | 32 | 1.45 | 1.124 | 10 th |
| | URGENCY | | | | |
| 1 | Design team | 32 | 2.73 | 0.448 | 1 st |
| 2 | Trade contractors | 32 | 2.61 | 0.448 | 2 nd |
| 3 | Local District Assemblies | 32 | 2.45 | 0.668 | 3 rd |
| 4 | Planning officials | 32 | 2.42 | 0.358 | 4 th |
| 5 | Politician in metropolis | 32 | 2.35 | 0.685 | 5 th |

| | | | | | |
|---------------------------|---------------------------------|----------|-------------|---------------------------|------------------|
| 6 | Material suppliers | 32 | 2.35 | 0.678 | 6 th |
| 7 | Trade contractors | 32 | 2.32 | 0.448 | 7 th |
| 8 | The Media | 33 | 2.04 | 1.145 | 8 th |
| 9 | Environmentalists | 32 | 1.95 | 1.230 | 9 th |
| 10 | Material suppliers | 32 | 1.48 | 1.253 | 10 th |
| CONSTRUCTION STAGE | | N | Mean | Standard Deviation | Ranking |
| No | POWER | | | | |
| 1 | Politicians in the municipality | 32 | 2.68 | 0.669 | 1 st |
| 2 | Material suppliers | 32 | 2.47 | 0.962 | 2 nd |
| 3 | Planning officials | 32 | 2.45 | 0.895 | 3 rd |
| 4 | Local land owners | 32 | 2.45 | 0.335 | 4 th |
| 5 | Local district assemblies | 32 | 2.35 | 0.845 | 5 th |
| 6 | Design team | 32 | 2.35 | 0.584 | 6 th |
| 7 | Residents in the vicinity | 32 | 2.15 | 1.023 | 7 th |
| 8 | Trade contractors | 32 | 2.14 | 1.025 | 8 th |
| 9 | Environmentalists | 32 | 1.98 | 0.446 | 9 th |
| 10 | The media | 32 | 1.98 | 0.445 | 10 th |
| LEGITIMACY | | | | | |
| 1 | Material suppliers | 32 | 2.34 | 0.625 | 1 st |
| 2 | Design team | 32 | 2.29 | 0.748 | 2 nd |
| 3 | Residents in the vicinity | 32 | 2.25 | 0.668 | 3 rd |
| 4 | Planning officials | 32 | 2.25 | 0.452 | 4 th |
| 5 | Politicians in the vicinity | 32 | 2.19 | 1.203 | 5 th |
| 6 | Trade contractors | 32 | 2.18 | 1.336 | 6 th |
| 7 | Local district assemblies | 32 | 1.99 | 1.028 | 7 th |
| 8 | Environmentalists | 32 | 1.65 | 0.335 | 8 th |
| 9 | The media | 32 | 1.54 | 1.068 | 9 th |
| 10 | Local land owners | 32 | 1.45 | 1.124 | 10 th |
| URGENCY | | | | | |
| 1 | Local district assembly | 32 | 2.45 | 0.668 | 1 st |
| 2 | Planning officials | 32 | 2.42 | 0.358 | 2 nd |
| 3 | Politicians in the municipality | 32 | 2.35 | 0.685 | 3 rd |
| 4 | Material suppliers | 32 | 2.35 | 0.678 | 4 th |
| 5 | Trade contractors | 32 | 2.32 | 0.447 | 5 th |
| 6 | The media | 32 | 2.23 | 0.646 | 6 th |

| | | | | | |
|----|---------------------------|----|------|-------|------------------|
| 7 | Design team | 32 | 2.20 | 0.225 | 7 th |
| 8 | Local land owners | 32 | 2.12 | 0.446 | 8 th |
| 9 | Residents in the vicinity | 32 | 2.10 | 1.027 | 9 th |
| 10 | Environmentalists | 32 | 1.54 | 1.124 | 10 th |

Source: Field Survey, 2018.

Table 4.3 shows the mean score rankings of various stakeholders in the construction industry. At the feasibility and conceptual design stage, politicians in the municipality were ranked first with a mean score of 2.88 as having the power and ability to cause urgency on the project. Moreover, politicians were also ranked 1st and 4th with respect to their power and ability to cause urgency at the construction stage. However, with regards to the legitimacy of politicians in the municipality, most of the respondents believed that the level of legitimacy of the politicians are not very high compared to their power. This is seen as politicians in the municipality is ranked 5th and 6th with regards to legitimacy at both the construction and feasibility and conceptual design stage mean scores of 2.19 and 2.16 respectively.

The legitimacy of planning officials is very high according to the respondents. This is seen as planning officials were ranked 3rd in both feasibility and conceptual design stage and construction stage with mean scores of 2.45 and 2.25 respectively with respect to legitimacy. In addition, the ranking indicates that the planning also has the ability to cause urgency during the construction stage. This can be attributed to the fact that they can bring on-going construction activities to a halt.

Another group of stakeholders who ranked low is the media and environmentalist. From Table 4.3, the mean score rankings for media with regards to their power, legitimacy and their ability to cause agency is 8th, 9th and 8th respectively for the feasibility and conceptual design stage and 9th, 9th and 6th for construction stage respectively. Bourne (2005) asserted that grouping project stakeholders gives a clear description of what project managers and other managers need to focus on when making decisions on project. In addition, the

environmentalist ranked 9th, 8th and 9th with regards to power, legitimacy and ability to cause urgency on the project respectively at the feasibility and conceptual design stage. The results were not quite different from environmentalist impact at the construction stage as it was ranked last in both their power as stakeholders and their ability to cause urgency.

Another intriguing results from the mean score rankings is the design team. The mean score rankings depict the nature of their job as the designers. Design ranked high at the feasibility and conceptual design stage. However, the mean score ranking for the design team dropped at the construction stage. The mean score rankings for the design team at the construction stage were 5th, 2nd and 7th with respect to their power, legitimacy and urgency.

Although several mathematical methods such as the ones found in Bourne (2005), Olander (2007) and Ngumen et al (2009) have been developed to help in evaluating stakeholders' impact, the findings from this research also gives an overview of the impact of stakeholders on infrastructure project management in the Ghanaian Construction industry. Bourne and Walker (2005) asserted that stakeholders to some extent are risk to the success of the project and hence any effort made in assessing their impact can help managers of construction projects to prioritize when dealing with different group of stakeholders.

4.4 Chapter summary

The respondents' demographic information on academic qualification, affiliated profession and professional experience were considered relevant in this survey as it gave an indication as to the credibility and reliability of the survey data collected for analysis. Descriptive statistical tools such as the mean score ranking was used to ascertain the most relevant factors that influence stakeholder's decision on infrastructure projects and also their impact on infrastructure project management.

CHAPTER FIVE

SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

The aim of the study was to assess stakeholders' impact on infrastructure project management. The research objectives are revisited in this chapter to show the extent to which the aim of the study has been achieved throughout the various stages of the study. The chapter also presents recommendations based on the findings from the study and states the limitations of the study as well. The outcome of this research was stated in brief to enable the reader appreciate the subject matter as a whole.

5.2 Review of Objectives

The two objectives that were set to guide the study towards the achievement of the aim of this study include:

1. To examine the key factors that influence stakeholder's decision on construction projects
2. To examine the stakeholder impact on infrastructure project management

5.2.1 Key factors that influence stakeholders' decision on construction projects

Seven key factors were identified from the literature review. In order to achieve this objective, the respondents were asked to indicate the extent to which the identified factors influence stakeholders' decision on construction projects. Results from the data retrieved showed that stakeholder power with a mean score of 3.48 was the most influencing factor that is considered by managers when determining which category of stakeholders they are to give priority to. Also, knowledge of the stakeholders and stakeholder interest was ranked 2nd and 3rd with mean scores of 3.36 and 3.18 respectively. The 4th, 5th and 6th positions were occupied by the proximity of stakeholder, attitude of stakeholders and legitimacy of stakeholders with mean scores of 3.12, 2.69 and 2.56 respectively. The seventh and also the

last ranked factor was stakeholders' ability to cause urgency with a mean score of 2.56. The values of the mean scores indicate that all the seven factors have a high chance of influencing managers' decision with regards to infrastructure projects. This explains to some point the reasons why in the works of Bourne and Walker (2005) and Bourne (2005) no effort was made to identify which of the methods was the most relevant as all the factors have a higher chance of influencing the decision of managers with regards to infrastructure management.

5.2.2 Impact of Stakeholders on Infrastructure Project management

Similar to the factors that influence stakeholders' decision identified above, ten (10) key stakeholders in the construction industry were identified from literature. The stakeholders include politicians in the municipality, planning officials, residents in the vicinity, local district assemblies, local land owners, the media, environmentalist, material suppliers, design team and trade contractors. The impact of these stakeholders were assessed from three different dimensions; their power, legitimacy and urgency. Moreover, the stakeholders impact was assessed both at the feasibility and conceptual stage and also the construction stage. Results from the data shows that politicians in the municipality were ranked first with a mean score of 2.88 as having the power and ability to cause urgency on the project at the feasibility and conceptual design stage. During the construction stage, politicians' power and ability to cause urgency on the project was ranked 1st and 4th respectively. However, with regards to the legitimacy of politicians in the municipality, most of the respondents believed that the level of legitimacy of the politicians were not very high compared to their power. This is seen as politicians in the municipality is ranked 5th and 6th with regards to legitimacy at both the construction and feasibility and conceptual design stage mean scores of 2.19 and 2.16 respectively

Planning officials were ranked 3rd with mean scores of 2.45 and 2.25 at both the feasibility and conceptual design stage and the construction stage with respect to their legitimacy. The

high ranking can be attributed to the ability of planning officials to bring an on-going construction project to a halt.

Unlike the planning officials and politicians in the municipality, the media and environmentalist impact on infrastructure project management is minimal. The results from the rankings show the mean score rankings of the media with regards to their power, legitimacy and their ability to cause agency are 8th, 9th and 8th respectively for the feasibility and conceptual design stage and 9th, 9th and 6th for construction stage respectively.

Another intriguing results from the mean score rankings is the design team. The mean score rankings depict the nature of their job as designers. The design team ranked high at the feasibility and conceptual design stage. However, the mean score ranking for the design team dropped at the construction stage. The mean score rankings for the design team at the construction stage were 5th, 2nd and 7th with respect to their power, legitimacy and urgency.

5.3 Conclusion

The concept of stakeholder management is increasing as large projects make stakeholder management more complex. The factors identified as the top influencing factors regarding stakeholder management in infrastructure projects can guide managers in the construction industry to prioritize when making decisions regarding the management of stakeholders. Moreover, this research study examined the impact of different stakeholder groups to help managers to narrow down and focussed on the more important stakeholders. These recommendations given in this research will assist managers and other stakeholders of the construction industry to make informed decisions on stakeholder management.

5.3 Recommendations

The study has highlighted key factors that influence stakeholders' decision on infrastructure projects and also has critically assessed the impact of different stakeholder groups on

infrastructure project management. As a result, the following recommendations have been proposed.

1. Assessment of stakeholders should be given priority right from project inception and design and estimators should make financial provisions for that.
2. Effective stakeholder involvement and management should be followed right after stakeholder impact assessment without delay.
3. There is the need to form separate organisational units to handle stakeholders right from project inception.
4. Organisations should build a database on project stakeholder management which contains information on how stakeholders' impact was assessed and how issues were resolved during project execution.
5. Conferences, workshops, fairs and exhibitions should be frequently organised by professional bodies and other regulatory bodies to educate members on stakeholder management.

5.4 Limitations of the Research

As with most survey research, this study also had limitations which need to be acknowledged. It is important to acknowledge the relatively small sample size used for the study. Moreover, retrieving questionnaires from the respondents was difficult as most of the respondents had busy schedules and needed successive follow-ups and phone calls. This made the distribution and retrieval of the questionnaires quite a laborious task.

5.5 Directions for future Research

Although several research studies have been done on stakeholder management in the construction industry, several research opportunities exist. The following recommendations are made for future research

1. This study focussed on the influencing factors of stakeholders from the perception of construction managers, future research can explore the influence of stakeholders from the perceptions of the design team, estimators, subcontractors and trade foremen.
2. The sample size for this study was very small as it focussed on construction firms in Kumasi. Other research studies can consider increasing the sampling size by conducting survey studies in other regions of Ghana.

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APPENDIX A

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

COLLEGE OF ART AND BUILT ENVIRONMENT

DEPARTMENT OF BUILDING TECHNOLOGY

RESEARCH QUESTIONNAIRE

TOPIC: STAKEHOLDER IMPACT ON INFRASTRUCTURE PROJECT MANAGEMENT

My name is Edward Alupungu, an MSc Project Management student from the Department of Building Technology at the Kwame Nkrumah University of Science and Technology, Kumasi.

This research questionnaire is focused on soliciting information from practicing Construction managers in the Ghanaian Construction Industry (GCI). It is aimed:

- To examine the key factors that influence stakeholder's decision on construction projects
- To examine the stakeholder impact on infrastructure project management

Information provided will be used for academic purposes only and will be kept confidential.

The findings will also form the basis for identifying the current level of stakeholder impact on infrastructure project management from the perception of the construction manager in the Ghanaian construction industry.

I am most appreciative for your cooperation in dedicating some time off your schedule to complete this questionnaire. In case you have any questions or comments, kindly contact me on 0243436999 or via email; eddiepu40@gmail.com. Your time and cooperation is unreservedly appreciated. Thanks.

Please tick [] in the box where appropriate

Section A – Background of Respondents

1. Kindly indicate your academic qualification?
 - a. PHD ()
 - b. MPHIL ()
 - c. MSC/MEng ()
 - d. P. G. Dipoma ()
 - e. BSC ()
 - f. Others please specify.....
2. Which professional body are you affiliated to?
 - a. Ghana Institute of Architects (GIA)()
 - b. Ghana Institution of Engineers (GhIE) ()
 - c. Ghana Institute of Construction (GIOC) ()
 - d. Ghana Institution of Surveyors (GhIS) ()
 - e. No Professional Body ()
3. For how long have you been in professional practice? ()
 - a. Less than 6 years ()
 - b. 6 – 10 years ()
 - c. 11 – 15 years ()
 - d. 16 – 20 years ()
 - e. Above 20 years ()
4. How many full time employees does your company have?
 - a. 1-10 ()
 - b. 11-20 ()
 - c. 21-30 ()

- d. 31-40 ()
 - e. 41 and above ()
5. What kind of construction projects does your firm undertake?
- a. Building ()
 - b. Civil Construction ()
 - c. Both ()
6. How long have your company been in business?
- a. 1-5 years ()
 - b. 6 – 10 years ()
 - c. 11 – 15 years ()
 - d. 16 – 20 years ()
 - e. 21 and above ()

Section B (Objective 1 and 2)

7. Kindly indicate the extent to which the following factors influence stakeholders’ decision on infrastructure project management. Please tick (√) in the appropriate box on a scale of 1-4 where 1 = very low, 2 = low, 3 = high, 4 = very high

| | Factors that influence infrastructure project management. | 1 | 2 | 3 | 4 |
|----------|--|----------|----------|----------|----------|
| 1 | Stakeholder Power | | | | |
| 2 | Proximity of Stakeholders | | | | |
| 3 | Stakeholders interest | | | | |
| 4 | Knowledge of stakeholders | | | | |
| 5 | Attitude of stakeholders | | | | |
| 6 | Legitimacy of the stakeholder | | | | |
| 7 | Ability to cause urgency | | | | |

Section C (Objective 3)

Please kindly indicate by ticking () in the appropriate box the impact the following factors have on infrastructure management. Using a scale of 1-3 where 1 = low impact and 3 represents a high impact.

| | Variables | Feasibility and Conceptual design stage | | | Construction Stage | | |
|----|---------------------------------|---|------------|---------|--------------------|------------|---------|
| | | Power | Legitimacy | Urgency | Power | Legitimacy | Urgency |
| 1 | Politicians in the municipality | | | | | | |
| 2 | Planning officials | | | | | | |
| 3 | Residents in the vicinity | | | | | | |
| 4 | Local district assemblies | | | | | | |
| 5 | Local land owners | | | | | | |
| 6 | The media | | | | | | |
| 7 | Environmentalists | | | | | | |
| 8 | Material suppliers | | | | | | |
| 9 | Design team | | | | | | |
| 10 | Trade contractors | | | | | | |

Thank you.