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Exploring strategies for effective communication management in construction projects a case
study of Ghana Armed forces

By

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DECLARATION

I hereby declare that this project report on exploring strategies to effective communication management in construction projects; A case study of Ghana Armed forces is the results of my own work, towards the attainment of MSc Project Management. And references to other people's work have duly been cited.

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ABSTRACT

The study aimed at exploring strategies to effective communication management in construction projects. In making the study a success, the following objectives were identified; the challenges of communication, the causes of communication challenges among construction professionals and also to explore strategies to effective communication management in construction projects. The research adopted quantitative strategy. Data was obtained using questionnaire based on the purposive sampling technique. Construction professionals were selected from thirty (30) D1K1-D4K4 construction firms. Three (3) questionnaires were distributed to each of these firms. In all ninety (90) questionnaires were distributed to these entire firm and sixty-five (65) were received. The study was conducted using the sixty-five collected data. The data was analyzed and presented using the Statistical Package for Social Sciences (SPSS) and Microsoft Excel software's and the data was further analyzed using the Mean score ranking and the Relative Importance Index. Results from the first objective came out as follows: *Inadequate co-operation and coordination among project team members, the use of jargons hinders effective team communication, and ineffective information flow among project teams, grammar.* And these were the highest ranked causes of communication. The study was also able to achieve its second objective by identifying the causes of communication challenges in the construction industry. The following factors were ranked high as causes of communication challenges; *Workers having a different perception about the information given, unclear objectives can lead to ineffective communication and language barriers.* In respect of strategies to ensure effective communication in the construction industry, it was identified that; *All team members must have an idea and also know the main goal of the project, which can lead to effective flow of communication, team members must have a full concentration when receiving information, the use of information technologies in the process of communication and both the sender and receiver must have the same understanding of the information.* It was concluded that management of construction firms must adopt these and other strategies that would ensure effective communication in order to improve work output.

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DEDICATION

I dedicate this work to Mrs. Comfort Dadzie and Diana Twieku for their love, encouragement and support.

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

The ability of active communication skill is very essential that project team members must acquire to enhance effectiveness in every organization (Morreale, et al). Therefore, communication within the construction industry is essential as expertise in management of construction project rest on the excellence of good relationships among the stakeholders (Emmit & Gorse, 2003). In relation to this research, The U.S. Army, (1983) defined communication as interchanging and the passing on of an information from one individual to another; it comprises of an information, knowledge, or a feeling transmitted by the sender to the recipient. Conrad and Poole (2005), clarified communication in an organization setting as the conceptual planning, controlling and handling of information in an organization. It was also defined in the construction context that communication can be described as the processes needed to ensure the timely meeting, dissemination, storage, recovery and delivering of project communication to enhance mutual understanding among construction professionals (Zid, 2011). Cherry (1978) explained further that communication the method of interaction between persons in which an understanding is formed and shared. It was also recognized by Dainty et al., (2006) that communication is a diverse term which is also sometimes complex, and this term can have several meanings in diverse situations and setting. This has also been a problem which is very certain in construction project execution, in which many construction projects also expect an effective communication among a wide range of construction personnel's, because of the knowledge they have on how effective communication can enhance a good project delivery. In most cases, it is not doubtful that communication exhibits a significant part in the success of many firms.

Various fields and other scholars have studied the perception of communication; hence it has different background which makes it more extensive by separation (Spitzberg and Chagnon, 2009). It was also said by Kester and Bankole (2008), communication is a significant tool in the everyday activity of man. It aids in achieving organization's objective and also aids in ensuring construction project success. In the business world, communication may be described as the float of message from one stakeholder to another (Keyton, et al, 2013). Research conducted by Ali *et al.* (2002) resulted that, job authorization processes which consist of lengthy chains of communication that include workers, contractors, sub-contractors, owners of project, and managing agents, requires a good channel of communication to ensure project success.

Effective team communication plays a very essential role in all team building activities, (Powell, Piccoli and Ives 2004). According to Zulch (2014), it is significant to the management of projects and also a function of cost, scope, time and quality. It was also affirmed by Langston and Lauge-Kristensen (2002) that active communication between the project managers and other managers is critical to manage very effective knowledge considered and needed to solve a multitude of difficult challenges. The Merriam Webster Dictionary defines communication as the discussion of information between individuals via a common system of symbols, signs or behaviors'. Competence during a project execution is dependent on the value of relations between the clients, construction specialist, contractors, sub-contractors and project managers. In explaining this further, issues that are often found in construction are the challenges of communication (Emmerson, 1962 as mentioned in Emmitt & Gorse 2003).

According to (Higgin and Jessop 1965) the diverse phases of building a structure is dependent on the construction professionals transmitting proper and significant information to help ensure a successful project delivery that matches the client's satisfaction and which also

ensures a good project delivery. This proves how important it is to develop an effective communication management in during project execution.

1.2 PROBLEM STATEMENT

Several projects are being constructed on behalf of the Ghana Armed Forces (GAF), some of these projects have attained a successful completion while others are still being undertaken. These projects have several construction professionals who are engaged in the project execution, in which there will be a need for effective communication, to ensure a successful completion. It has been noticed by the GAF upon how important it is to consider effective communication during project execution. It has also been observed by GAF on how many construction project fails due to poor communication.

In a few past years, there have been enormous developments in the area research relating to communication in project construction. However, some researchers also factored out the existence of ineffective communication in the construction industry (Hoezen-Reymen and Dewulf, 2008; Xie, 2002; Emmitt and Goose, 2003). Studies conducted in the area of communication challenges encountered by project clients and contractors in the facilities management field are not all that the normal kind of challenges. The reason that is observed in this situation may be the stressing on using other innovative communication techniques to successfully deal with time and distance obstacles for construction projects. Therefore, in facilities management, it is imperative to be trained in communication that is effective, especially communications amongst project clienteles and servicers. As it was noted by Lee and Wordsworth (2000) that the effectiveness of work can be influenced by ineffective communication amongst clients and contractors and is a fact that has normally lead to the moderately stumpy output in the construction conservation segment and the industry in general. As noted by Ali *et al.* (2002), when there is absence of knowledge transfer and inadequate networking among several construction professionals, it leads to major challenges

during construction projects. Example of this is poor management of project resources. The course of this study is to initiate a far more enhanced way of communicating and this could possibly save time and cost.

Results from research conducted by BRE (2011) have proven that most failures are as the result of poor communication in the construction industry. However, the above literature proves the limited volume of information available in communication. This therefore creates a gap that needs to be taking into consideration. In regard to this, the study will explore strategies for communicating effectively in construction projects, in which it will also delve into the challenges and causes of communication in the management of project.

1.3 RESEARCH QUESTIONS

1. What are the challenges of communication in the management of project?
2. What are the causes of communication challenges among construction professionals?
3. What are the strategies for having effective communication management in construction projects?

1.4 AIM OF THE STUDY

The aim of the study is to explore strategies of effective communication management in construction projects.

1.4.1 Research Objectives

1. To identify the challenges of communication in management of project.
2. To identify the causes of communication challenges among construction professionals
3. To explore strategies of effective communication management in construction projects

1.5 SIGNIFICANCE OF THE STUDY

From the above introduction it has been realized that most scholars have confirmed how much effective communication is of great importance to the construction industry and has led

to success in many projects. It plays a very essential role in the planning, implementation and execution of projects. This study will explore strategies to effective communication management in construction projects, and how it will impact positively on projects in the Ghana Armed forces.

The study is of much importance because, the results from this study could also be used by policy makers of government to ensure better understanding of how clients and contractors should ensure effective communication during project execution. This study will aid construction professionals in recognizing the challenges of communication during project execution, and what causes these communication challenges will also be revealed in this study. It is also of much importance because; it will bring out strategies to ensure effective communication management in construction projects. This will be of a relevant addition to existing knowledge by means of assisting to undertake further research in this area of study.

1.6 RESEARCH METHODOLOGY

In order to achieve the main aim and objective of this study, presentable and applicable literature concerning the area of the study had been reviewed. Literature had also been extensively explained, which will help develop an excellent understanding of the study. And base on this literature, which will also include the main aim and objectives of the study, questionnaire had been strategically prepared, which will help determine effective factors from the ineffective ones.

The approved methodology for this study is the quantitative technique, this is because of its numerical and mathematical analysis. And it was also said by Walliman (2011) that the primary purpose of quantitative analysis is to delve into to measuring and making comparison. The population for the study was mainly limited to project professionals in D1K1-D4K4 construction firms. Data collected from respondents was based on their experience and knowledge in this area of research. The research selected its sample using the

purposive sampling method. Data collected from respondents was analyzed by means of the Statistical Package for Social Sciences (SPSS), and Microsoft Excel 2016 which included the Mean score ranking and the Relative Importance Index (RII). By this, the data was critically analyzed, and the results aided the study in achieving its aim and objectives.

1.7 SCOPE OF THE STUDY

It is relevant for the study to concentrate on a specific area, this is because communication is a broad topic which needs to be addressed in a strategic manner. The study will generally be centered on project professional of D1K1-D4K4 construction firms engaged by the Ghana Armed Forces in the Greater Accra region. This metropolis was chosen because of the numerous construction projects that are ongoing in this area. Therefore, the research will critically gather data from well experienced project professionals (Architects, Project Engineers, Quantity Surveyors etc) in this area.

1.8 STRUCTURE OF THE STUDY

The study was outlined in five chapters. The chapter one deals mainly about the general introduction to the study. The background of the study was discussed followed by the problem statement. There was also a clarification of the main aim and objectives of the study. The chapter two looked into the literature review in the area of study, in which there was an extensive review of literature to help get a deep understanding of the study. The third chapter indicated the methodology which delved into the procedural approaches adopted for this study while the chapter four deals with the analysis of the data collected via questionnaire and use of relevant and accurate tools for the data analysis. Chapter five which is the last and final chapter concludes the research. In this chapter, the findings and recommendations of the research were deliberated.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter the researcher will delve into several literatures in this area of research, which will help gather more information to achieve the main objective of the study. By this the theoretical outline of the study was mainly discussed. The chapter defined some relevant definitions in regard to this study and it also delved into effective communication management in construction projects, this opened the opportunity for the study to investigate into the challenges of communication in the management of project, what causes these communication challenges among construction professionals, and finally the chapter investigated and suggested several strategies to effective communication management in construction projects. Information in the chapter was retrieved from research papers, books, journals, web articles, conference proceedings and other educative relevant sources. All these exploration was done to aid the study in arriving at its principal purpose.

2.2 PROJECT DEFINED

According to Wysocki (2007), a project as “an arrangement of exceptional, complex and related activities having one goal or purpose and that must be completed by a specific time, within budget and according to specification”.

A project is any deliberate, provisional effort undertaken to create a unique product, service or other complete and definite outcome within a limited time scale and budget” (Steyn, 2008).

The shortest and simplest definition, according to Turner (in Knipe *et al.*, 2002), is that a project is “something with a specific beginning and completion”.

2.3 MANAGEMENT DEFINED

Management stands in as the basis of project management (Clements & Gido, 2012). It is then significant to analyze the literature for management concerning communication and other relevant roles. Management is therefore mentioned as the procedure for development, bring together (organization), leading, coordinating, activating and the directing of organization resources in attaining the main goals and objectives of the organization, (Smith & Cronje, 2002). Kroon (1990), also mentioned that there are extra function of management and these are decision making, motivation, communication, assignment, staffing and correcting. He also added in 1998 effective communication as another important function of management.

2.3.1 Definition of construction project management

Management of construction project is the managing of projects inside the built background from beginning to conclusion, which comprises of the running of associated specialized services. The project manager is the one in place to ensure that all activities are productive and well managed, SACPCMP (2006).

2.4 COMMUNICATION DEFINED

According to Cole (2004), effective communication is used in different dimensions including content of communication, form of communication, media of communication, skills of communication and formal channel of communication. It was also identified by Sam (2015) that communication is a resource in every endeavor. This is because it is a vehicle for exchange of information between two or more people. Communication is very important in organizations. He indicated that communication is a means of expressing one's ideas and feelings to other people. This ensures that vital information is provided to all relevant stakeholders. Cole (2004) emphasized that 'communication is the procedure of creating,

transmitting and interpreting ideas, facts, opinions and feelings'. Mehra, (2009), also explained this in a similar way, in which he explained communication as a process of transmitting information from a sender to a receiver with the use of a means in which the information communicated is well understood the same way by the sender and receiver. Communication can be carried out in various formats. They include the use of speech, signs, behavior, symbols, signals and so on. Communication comprises transmitting information from one individual to another. Some scholars of communication take this as a working definition and also a means of circumscribing the field of communication theory.

Other authors like Martin (2001) related communication to decision making and negotiation. He further indicated that communication serves four main functions thus information processing, co-ordination, visioning and personal expression. Processing of information is when communication is not mere exchange of information but it implies the ability of individuals to both create and share information to ensure effective interaction among peoples. This serves as the basis for effective planning and decision making. Co-ordination is when communication involves integrating activities and tasks within an organization. On one hand, visioning as an integral communication which emphasizes on expression of thought and ideas in 'conveying vision, mission and strategy' to employees whereas personal expression is based on the axiom that there are individual views on work and non-work activities.

Communication as a form is "a way of communicating like speaking, writing or drawing. This shows the various distinctive forms or ways of putting messages across". These include verbal and non-verbal communication. Verbal communication is the spoken words and non-verbal communication includes the use of gestures and facial expressions (**Dimbleby & Burton, 1992**).

Research conducted by Dimbleby et al., (1992) resulted that communication has two main characteristics which are:

- Communication is an activity of which individuals actively engage in
- Communication is learnt thus to say that communication skills must be acquired.

Dainty et al., (2006), also specified that there are principally two (2) general forms of communication. These are formal communication and informal communication. Formal and informal communication are all operated by an organization for activities of varying uncertainties. Formal communication is based on regulations. Thus, formal communication follows laid down instructions set in communication strategy of an organization. Smith, Smith, Olian, Sims, O' Bannon and Scully (1994) measures communication by informal nature of communication and the frequency of communication. Communication is conceptualized to involve team interaction. They indicated that communication impacts on team performance and how essential communication is to project success (He, Butler & King, 2007).

2.4.1 Characteristics of Communication

Research according to Mehra (2009) has identified some characteristics of communication and these are as

- Communication is an effective procedure, it does take interruptions, but rather a continues process and it is dynamic.
- The communication process involves one that transfers the message and a recipient.
- It entails information which is the message itself or a valuable content to be given to the receiver.
- Communication process normally involves a medium which are signs, behavior, signals, speech and writing.
- This also entails a common understanding. All persons involved must come to an agreement.
- Communication is a permanent and exchangeable process.

2.4.2 Communication in project management

Project management communication entails the procedure needed to guarantee well-timed and suitable generation, storing, gathering, delivering, recovery and also the clearing of project information. Most managers take enough time when communicating with construction members and other stakeholders, both internal and external in the construction firm. (PMBOK, 2008).

The procedure to monitor for effective project delivery when considering the management of communication.

- Identification of stakeholders.
- Communication planning
- Information being distributed.
- Expectations of stakeholders must be considered.
- Accurate report for performance (PMBOK, 2008).

The APM Body of Knowledge, (2006) stated that acceptance, giving out, preparing and the understanding information must all be involved in communication. Communication information may be transferred vocally or non-verbally, aggressively, passively, formally and informally, deliberately or unconsciously.

In project management active communication is very essential. This creates the link among different stakeholders who are included in the project, linking numerous organizational background and cultures, diverse stages of knowledge and several viewpoints and interests in the outcome of the project execution. (PMBOK, 2008).

It was also said by Burke, (2010) that it is probable that project team member and managers devote about ninety percent of their time involving in some communication that is very relevant to the organization. This can be by talking to project stakeholders, meetings, emails, sharing reports, etc.

Effective communication, according to Kerzner (2009) guarantees that individuals deliver the right info to the correct individuals at the correct time and also at a very operative means. In the view of Steyn (2008), he explains that effective communication must be the main focus to guarantee good management and a successful delivery of projects.

Generally, communication is very significant for every business undertakings not just necessary construction project but other effective projects must also consider effective communication. It brings in the growth possibility and organization of a firm. Communication within an organization brings in a confident influence to construction projects, and causes production to increase and advances the organization members motivation (Emmitt & Gorse, 2003).

2.5 COMMUNICATION CHANNELS

In most construction project, there are many phases of the project, which also depends on the individual communication. These channels of communication include the upward communication, which is from the organization and customer's organization to the management. There is the Lateral communication channel, which goes on within the clients and the project organizations. Also activities need to take place during project execution, which entails additional communication taking place, then there will be a need for downward communication, which is from the management in authority to the workers, or we also consider the horizontal communication, which is from among the workers themselves or lastly the upward communication, which is also from the sub-ordinates to the management in authority.

It was also stated by Mehra (2009) that communication will many at times entail more than one individual. The figure 2.1, shows communication channels which are essential to interact with five project members.

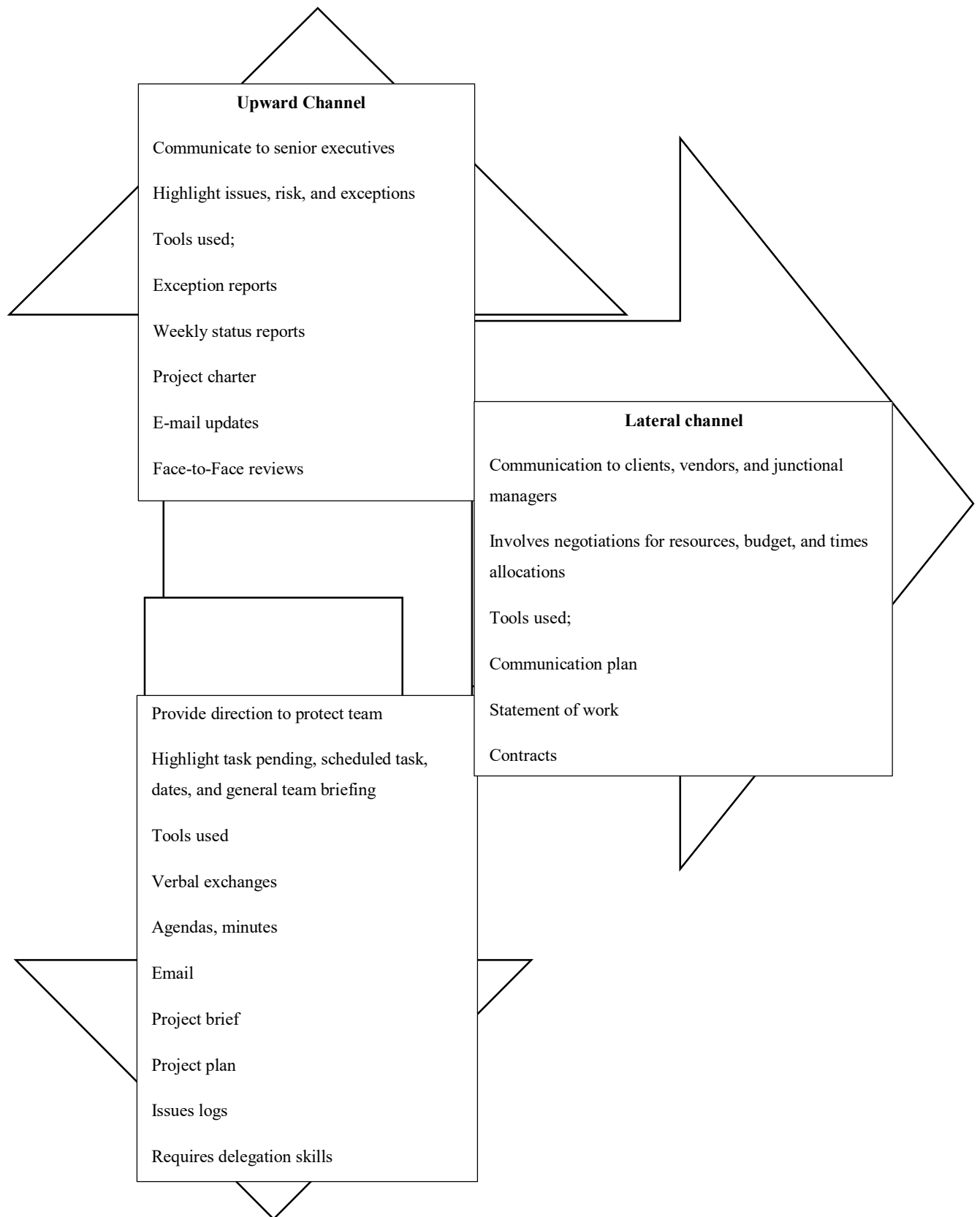


Figure 2.1 - The three communication channels of the project manager (Adopted from Keyton, 2011)

2.5.1 Tools for Communication

Several scholars have identified tools for communication and these are: video conference systems, project office, project planning documents, face-to-face communication, meetings, project portal, telephone, email and smartphone are all regarded as tools or channels to communication information, Stryker and Santor, (2012), Gorse et al., (1999), Dainty et al., (2006).

2.6 COMMUNICATION FLOW WITHIN A CONSTRUCTION PROJECT

Categorizing communication can be done using their direction of flow (**Okoh, 2004**).

There are four main directions of communication flow. These are

- Downwards
- Upwards
- Horizontally
- Laterally

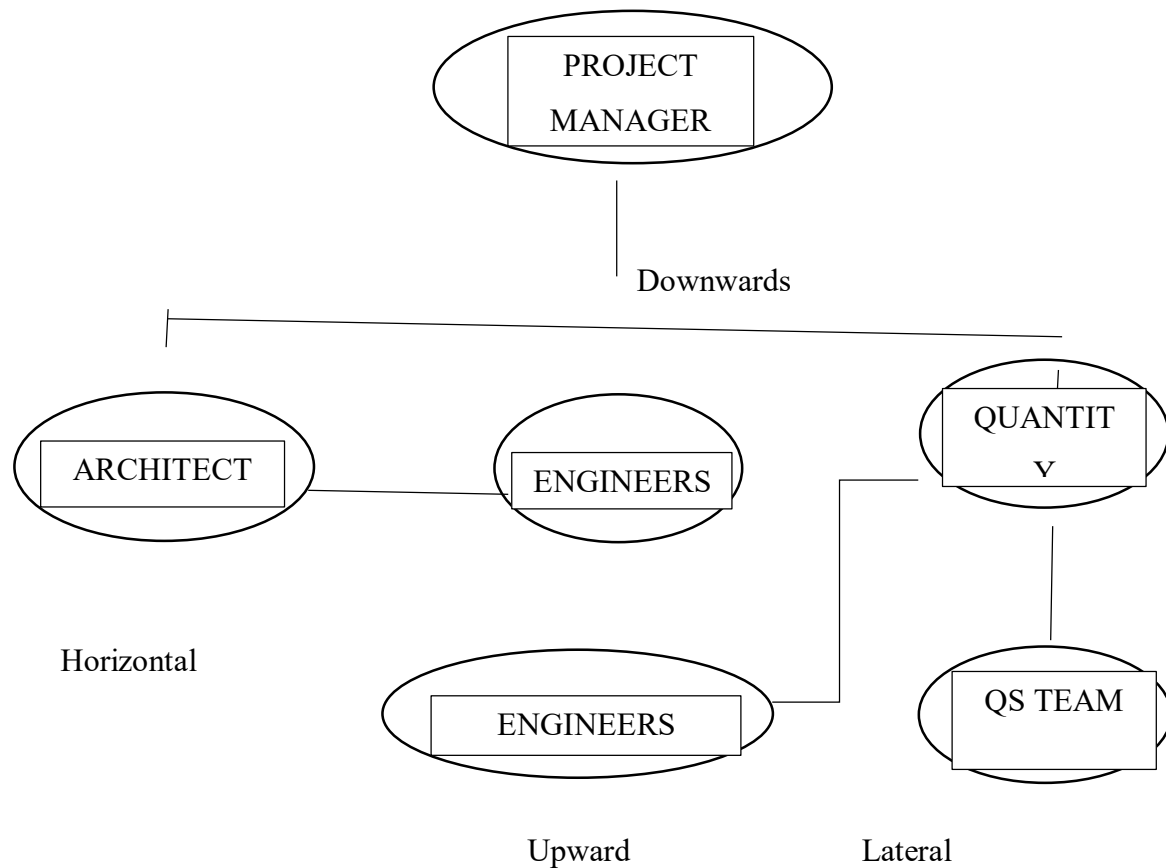


Figure 2.2 Communication Flows: Source (Adapted from Smit and Cronje 2002)

2.7 ORGANIZATIONAL COMMUNICATION SYSTEM MODEL

One important practice that keeps an organization in continuous development and success in all its activities is effective communication. Many firms are reliant on the several speaker's voices, and studies in organizational communication have given emphasis to the 'mounting up' from communication between persons (workers) to the organization (management) (Christensen and Cornelissen, 2010).

Taking this into consideration, a communication structure of a firm is a total of connected elements that function collectively to form and outline the activities of the firm, and the managing of information is the main purpose of the elements (Shelby, 1993; Leipzig and More, Witkin and Stephens, as cited in Shelby, 1993). A general outline of sources proposes that managerial communication is a societal process which offers the exchange of information

which goes on among both departments and units of organization and its surroundings for the determination of successfully completing the activities and objectives of the firm, (Kreps, 1990; Shelby, 1993; Miller, 2006; Christensen and Cornelissen, 2010; Kocabas, 2011, as cited in Ince and Gull, 2011).

2.7.1 Project communication levels

Le Roux, De Beer, Ferreira, Hübner, Jacobs, Kritzing, Labuschagne, Stapelberg and Venter (1999) and Dow and Taylor (2008) propose that construction project communication management takes place on two levels, these are the internal and external type of communication.

External Communication

This type of communication means a communication that goes on among the project task given and its appropriate environment, which may also entail the client and the project organization. Management ensuring good flow of communication in the organization is very essential to the project, which also helps in attaining the success of the task given. It is mostly not surprising that other forces resist in supporting the development of the project. And these resistive forces which includes other negative attitudes results in the absence of information. This also leads to organization workers not getting information on the aim of the task given and where the project itself is even heading. Taking this into consideration, a project must keep its stakeholders well informed with all information needed, including its goals and where the task is heading towards. Therefore, insufficient communication brings in a lot of uncertainties into the project being undertaking. (Choudhury, 1988).

Internal Communication

The internal communication is founded on two aspects in a project, these are: the committee that directs the project and the project team itself. The committee that directs the project are the highest decision makers during a project execution. According to Le Roux *et al.* (1999)

and Dow and Taylor (2008), oral communication goes on in the practice of conferences, discussion groups, talks, interviews, broadcasts and discussions, and this entails the face to face kind of communication and the telephone kind of communication.

The task of the directing committee is to regulate and help the project manager. They also ensure the exchange of interpersonal information between the client, the organization and the project manager. Even though most of the decisions are taken by the committee that directs, the relationship between the committee and the project manager shouldn't be narrowed to only the times of meeting. Effective communication within the project group is founded on mainly the project management. The other best ways of ensuring the flow of good communication are done by meetings of project team, memos, emails, follow up reports and other essential technique... Some of these techniques serves a little as the kind of external communication but it also has an essential effect of being an internal communication conduit.

2.8 METHODS OF COMMUNICATION (CONSTRUCTION INDUSTRY)

In the construction industry, there are several ways and methods of communicating. Even though most of communications done on site are done verbally, many information's given is also done and exchanged in the written form or electronically. So this makes it clear that even if the exchange of information is done verbally, may be by meetings and directions, it will still be prepared in te form of a document and kept for reference of the future. In construction, the choice of work and other important facts are communicated by the means of specifications, drawings and contract document (Maslej, 2006).

Construction projects are normally executed by several worker and construction professionals, it is therefore unfortunate that miscommunication has turn into a general incidence in construction work and this occurs when work is given from superiors downwards from on individual to the other. (Maslej, 2006).

For the comfort of arrangement, the practices and techniques of construction communication are outlined below (Mehra, 2009);

- 1) The formal writing approach – This is in the takes the method of Project Plan, metrics Project agreement, Specifications and Information.
- 2) Formal verbal method – This category entails the speeches and presentation
- 3) The Informal Writing method – This category also entails emails, memos, minutes, etc.
- 4) Informal verbal approach – Relevant conversations, conferences, and stakeholders are categorized under this approach.
- 5) The method of nonverbal messages – We generally identify this method through expressions on our face, and also our attitudes and gestures and what others understand and perceive.
- 6) The method that takes into consideration the tone, pitch, and pacing at which we speak or voice out something is normally known as the para-verbal messages.

Communication is normally considered effective when is placed in a cooperative approach and this entails; an effective listening and redirects the answering of the speaker and the one listening. This also makes good use of the feedback idea to approve and accept the understanding of the message that was sent, which also helps is making things easier.

2.9 INTERPERSONAL COMMUNICATION IN CONSTRUCTION

Several investigations have been conducted in the area of the lack of effective communication in construction. (Emerson, 1962; Banwell 1964; Latham, 1994; Egan 1998, 2002). In the construction industry, communication is regarded as very vital as an outcome of project based technique. Specified that building industry is such a disjointed and different part, active communication turn out to be very necessary “for the effective project delivery and performance goals (Dainty et.al, 2006). Literature in the area of management shows that

readings on communication have paid attention chiefly on interpersonal communication concentrated essentially on the nature of interpersonal communication. Although, it appears there is a small number of practical readings connected to the matter in project-based activities such as construction.

Construction project interpersonal communication, is placed in three methods and these are: oral, written, and nonverbal communication. The oral type of communication refers to transferring messages by using a general type of spoken symbols. This comprises of direct communication (face-to-face), telephone, conferences, and performances. In the surroundings of project, communication is a suitable medium for exchanging information, a quick response, instant creation of message, and a suitable conclusion” Carlsson et.al. (2001). In the category of a written communication, it normally includes electronic mail, fax, memos, plans (strategic and tactical), letters, reports and other important information to be transferred.

Jergeas and Hartman (1994) recommended that, it is vital to keep good records and communications in order to prevent construction project arguments and claims. Gorse et.al, (1999) studied attitudes on interpersonal communication between contractors and other project professionals throughout the execution of project. Their research resulted that methods that are informal such as face-to-face are observed to be the most active communication medium in the industry. Carlsson et.al. (2001) who mentioned construction communication research in Sweden. He then follows this and argues that “challenges to effective communication have the probability of breaking down by a number of project delivery systems that are going on well. Based on this, Shohet and Frydman (2003) recognized active forms of communication levels of construction management in the delivery of projects by procurement in construction management protocol in Israel. They came to a conclusion that verbal communication keeps being extremely important in guaranteeing adherence to the objectives of project.

2.9.1 Communication at beginning stage

In the conceptual phase, communication is normally observed in the midst of the owner and the project management team. This communication line last throughout the entire during of the project. At the stage the client's requirements are communicated to the consultant. The client's requirements may include budget available, scope of work and the limiting of schedule.

2.9.2 The flow of communication between Design Team and Building Team

In every task, especially in the construction task, there may be difficulties that are not expected, normally practical issues in drawing given for project execution. These issues could have been dealt with if there is a good flow of communication between the designer and the builder at the beginning stage of the project. Shutt (1992) mentioned that designers are rarely attentive of the various issues until the job has advanced significantly, for the reason that the usual process of supplying in depth illustrations long after the commencement of the project. At this point, communication becomes an issue because the builder has to communicate and order relevant components and the project may delay during to the process of manufacturing and transferring. This proves how relevant it is for the design team or the building team to communicate and flow well with each other to ensure a successful project delivery

2.9.3 Communication in the contractor's organization

The nature of communication structure and the haste with which it works in a building company, functions in a way that considers the size of the organization (Shutt, 1992). Depending on how small the company is, the quicker information will spread in the company. When we take into consideration the large companies, there must a development of communication technique which can help transfer information to where it has to go.

Sometimes this causes a burden in information traveling and this can lead to majority of the information given to end up being unclear to a particular department.

2.9.4 Communication within the parties on site

In construction, the design team in generally puts in efforts to ensure that the dream and requirement of the client is brought into reality and they also ensure that the satisfaction of the client is attained. Normally, meetings on site are normally conducted to get clarity on the progress of work and also the date of project completion and if the project is within time, its challenges and delays that are coming up in the various activities. Shutt (1992), site communication among members on site can be well increased and developed if meetings on site are taking very serious. Professionals on construction site like the designer, contractor, project manager, the foreman in general, clerk of works, subcontractors, etc. could be present in these meetings to help make communication effective. Additional approaches of site communication comprise of weekly reports, which also entail making accurate records of daily work being summarized for the week, and this should be a well prepared complete record.

2.10 THE CHALLENGES OF COMMUNICATION IN THE MANAGEMENT OF PROJECT.

The Ghana Armed forces (GAF) found it very appropriate to know the challenges of communication, which can help know how to identify the strategies to minimize these challenges. According to Shut (1992) in the construction industry, the process of communication is regularly stalled. The interruptions of construction projects are encountered due to these explanations;

- Inadequate co-operation and coordination among the number of phases of construction. This normally happens due to the fragmented nature of the industry.

- The increasing number of sub-contractors by which the key contractor has no authority in the work being executed.
- The construction site being very far away from the main office. This can lead to directives being issued on phone.

The areas of communication problems will be considered under the following headings (Shut, 1992);

Conception/Design stage

- The approval by the planning authority
- The design and building team
- Contractor's firm
- Between site operative

Other challenges of communication

It was identified by Taylor that non-verbal signals, language, listening, pre-judgment, relationship and emotional responses as challenges of communication. Could (1969) mentioned that preparation, language, time, distance and human element are key barriers to effective communication. Jureddi and Brahmaiah (2016) stated that barriers of communication, which also creates challenges in communication are in four main areas thus language, physical, attitudinal and psychological.

a) Language

The effectiveness of communication highly depends on language. Language includes all linguistic ability. Language also relates to the choice of words used in communicating. Words have different meanings in different countries in different context. Also, the background of the communicator includes their experience and knowledge affect understanding in the

process of communication. For instance, foreign language, regional accent and use of technical language affect communication. Language barriers may include culture, jargons, background and expressions, bad grammar and cultural customs, these language barriers bring in several challenges in communication during working activities and essential events (Jureddi et al., 2016; Carroll, 2009). Cultural diversity causes ineffectiveness of communication within an organization in that Shachaf (2008) found that cultural diversity influences team effectiveness. It further impacts negatively on negotiation and decision-making and this affect the type of media selected for communication.

b. Physical Barrier

This barrier includes geographical distance between source and receiver. It may further include personal space. This type of challenges affects effective communication greatly (Jureddi et al., 2016).

c. Attitudinal barrier

Attitudinal barrier includes expectations, biases, gestures, pronunciation, silence, slang, taste, tone of voice, individual differences, listening, motivation, personal appearance, social background, self-talk, self-perception and prejudices. These challenges, which are also barriers can lead to personality conflicts, poor management, resistance to change and inadequate motivation (Jureddi et al., 2016). According to Carroll (2009), listening becomes a communication barrier when individuals have difficulty in listening due to interruption, noise and many others. Other distractions include inattentiveness and short span of attention. It leads to ineffective leaning and inappropriate feedback from members of a team. Another component of attitudinal barrier is ego of individuals. Most times, teams do not function effectively due to the ego of team members. This creates conflicts within the team.

d. Psychological Barriers

Psychological barriers consist of group pressure, threatening motions, stress, smiling, smell, temperature, gestures, frowning, fear, emotions, anger, insecurity and unfamiliar accent (Jureddi et al., 2016). These barriers hinder effective communication particularly within a working team.

e. Communication challenges appears by social and physical influences of the environment.

f. Pressure from and within the organization can lead to several challenges in communication (Emmitt & Gorse, 2003).

g. Semantic barriers – misunderstanding of words that are used or words having different meanings are added to expressions or words. Examples of these are pronunciation, slang and jargon (Tubbs & Moss, 2008; Van Staden *et al.*, 2002)

According to Dainty et al (2006), he also conducted a research in this area as well as Torrington and Hall (1998) also did something similar. These scholars opine that the major challenges to effective communication among project teams on construction projects include;

- the individual's frame of reference
- The use of bad grammar
- The use of jargons hinders effective team communication
- unrealistic contract duration by the clients
- cognitive dissonance,
- Halo or horns' effect,
- The use of jargon,
- not paying attention,
- delay in distribution of information,

- environmental problems,
- Poor listeners Inactive and ineffective listening
- a lack of clear objectives and Faulty transmission.

Hence the Dainty et al. (2006) suggest that the choice of the most suitable communication medium must be based on critical assessment of these challenges in order to ensure effective communication among the team as most communication failures are due to ineffective medium.

2.11 CAUSES OF COMMUNICATION CHALLENGES IN THE CONSTRUCTION INDUSTRY

The study also delved into knowing the what causes the development of these challenges of communication, and the investigation assisted the Ghana Armed Forces in bring out the knowledge in the area of the causes of communication challenges, and according to Becky Schultz (2016), the presents of communication failures on a jobsite can results in mistakes that are very expensive, interruptions in projects and also injuries and unexpected accidents. In view of this, he stated some causes of communication challenges and failures, these are as follows:

- Construction workers are normally in a rush to start the actual work, in the reason of not missing the deadline for the work. And they rush without fully absorbing the instructions and information's given by clients.
- Due to language barriers, sometimes the information given gets confusing and incomplete to some workers.
- Cutting short of the conversation before anyone has a chance to ask questions or get further clarification. And sometimes workers get intimidated to tell the fact that they didn't understand the information discussed.

- Sometimes when superiors are given information, they speak on a low tone that workers find it difficult to hear the information that is being given to them.
- Trust issues causes workers to sometimes ignore the information given
- Workers are not given the opportunity to bring up their ideas about problems in view of this their ideas are always ignored which makes them carry on with wrong information's given, even though they know it's wrong, they wouldn't speak because they put it in mind that their ideas will be ignored.
- Superiors passing on information with a harsh or negative tone causes some workers not to listen, or others listen out of fear which causes them to work in fear.

Other causes of communication challenges

Other causes of ineffective communication breakdown according to Adeleke (2004) and also (Jureddi et al., 2016; Carroll, 2009), include;

a) Poor symbolic representation: In construction, sketches and representations are mostly used in the communication. Poor representations and sketches may be very difficult to reply to (priced and constructed).

b) Poor written media: Poor written information like reports, specifications, bill of quantities may unnecessarily delay projects. It can also lead to disputes which unnecessarily delay projects.

c) Scarce communication equipment: Poor mobile network does not aid in the effective transmission of information to recipients through mobile phones. Also, power outages do not allow e-mails to be sent thereby disrupting information flow.

d) Semantic problem: Words may mean differently to different people. This is a huge barrier to communication and can hinder the recipient from giving appropriate feedbacks

e) Lack of education and training: Some project operatives are not educated therefore do not know how to communicate in English. Also, some are not trained enough to read meaning into drawings.

f) Incompatibility: Different cultural backgrounds interpret information differently.

g) Motivation: If workers are not motivated enough to carry out instructions, they normally pass it on to the next person.

h) Jargon: Communicating with words which are understood by some groups of people. This is also a barrier to communication which can make the recipient to send wrong feedbacks.

i) Perception about the communication: The receiver decides what to accept and what to discard in an information based on his perception of priority.

For the purpose of this research, the study will list a number of causes of communication challenges among construction professionals, and these are:

- Poor listeners
- Poor leadership
- Unclear objectives can lead to ineffective communication
- Conflicting
- cultural values
- Unclear channels of communication
- Ineffective reporting system
- Limited resources
- Religious issues
- Stereotyping
- Lack of concentration

- Language barriers
- Age difference

2.12 STRATEGIES TO EFFECTIVE COMMUNICATION MANAGEMENT IN CONSTRUCTION PROJECTS

Communication within the construction industry is regarded effective when the following themes are achieved (Gudyknust 2003); Understanding, compatibility, displaying positive behavior, smoothness of communication, positive outcomes, positive non-verbal communication and adaption of the message.

- Understanding is where one party understands the other or both parties understanding each other in the communication
- Compatibility includes commonality, honesty to communicate and a constructive atmosphere.
- Presenting positive behavior includes displaying positive attitudes and positive listening.
- Smoothness involves the flow of communication and responsiveness.
- Positive results include attaining, accomplishing or gaining desirable results through communication. Positive non-verbal involves eye contact, positive body language and positive facial expression.
- Adapting message includes adjusting messages to the person with whom respondents are communicating.
- The use information technologies in the process of communication. Examples include the use of emails, teleconferencing, e-meetings and team rooms.

Jooste and Strydom (2001) also investigated strategies for effective communication and this resulted in two approaches, these are: communication approaches called push and pull, suggested by Du Plessis,

- The push strategy is considered when a project is forced through the passages in a systematic manner (Du Plessis *et al.*, 2001). Normally, this type of communication strategy or approach is considered where; the project is being undertaking and it is at its primary phase; it is then seen as very unsafe; and also at where the funds of the organization is limited.
- According to Du Plessis *et al.*, (2001), the pull strategy of communication, pays attention on the promotional effort of clients to make early interest among potential customers, whom sequentially request the project.

Du Plessis *et al.*, (2001) and Nielsen, (2010) went on by affirming that the push approach is also normally taking into consideration when there is a primary positive demand on behalf of the project. The project may be considerably dissimilar from competitors. It may also be considered where there are solid and expressive intentions which may comprise of an attention on aesthetics safety and health. Complex projects that have several stakeholders may also have communication approaches that will help to reach all stakeholders, both internal and external and also the client, design team and other relevant professionals will be considered in the communication strategy. (CIOB, 2010).

In regard to all this information, it is very vital for construction managers to have an accurate communication strategy to help in presenting the pull and push strategy of communication.

2.13 BENEFITS OF EFFECTIVE COMMUNICATION IN CONSTRUCTION

It is very important for the research to investigate the benefits of effective communication throughout the project execution. According to Sam, (2015), effective planning, organizing, leading, controlling and coordinating stronger decision-making and problem-solving can lead

to increase in productivity; well streamlined workflow; enhanced professional image; sound business relationship; sound team relationship (Taylor); provision of safe and reliable services (Pfrimmer, 2009); higher team performance (Srivastava, Bartol & Locke, 2006; Ray & Ray, 2000; Svensson & Anderson, 2006; Stempfle & Badke-Schaub, 2002; Kozlowski & Bell, 2003; Patrashkova & Bell, 2003; Davies, 2005) effective project management (Zulch, 2014).

Effective communication promotes success in project delivery and leads to an increase in team performance (Griffin & Hauser, 1992). The study presents a list of benefits, and these are:

- Good relationship among project professionals
- increase in productivity
- well streamlined workflow
- enhanced professional image
- sound team relationship
- higher team performance
- effective project management
- Good project delivery and satisfaction

2.14 CHAPTER SUMMARY

This chapter has discussed the strategies to effective communication management in construction projects. The study focused on first of all defined the meaning of project and management in general, it also focused on communication, characteristics of communication, communication in project management, the channels of communication, communication flow within a construction project, the level of project communication, methods of communication, the flow of communication between the various members and other professionals on site. The research also delved into its objective and presented the challenges of communication in the

management of project, the causes of communication challenges in the construction industry and last but not the least the main aim of the research was included which is the strategies to effective communication management in construction projects. The study found it relevant to investigate the benefits of effective communication in construction, which aided in knowing the importance of the study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this chapter, the approach in guiding the study was discussed, which is generally to assist in achieving the main aim of the study. In conducting a research there are several essential stages but one of the very important stages when conducting a research is the research methodology, (Naoum, 2001). The following methods were considered as main headings for the methodology to the study: the method for the gathering of data, the approach to selection of respondent's, the approach for the sample size selection and the technique for the data analysis. Therefore, this chapter is dedicated to highlight the research methods adopted for this study.

3.2 RESEARCH APPROACH

According to Pathirage et al., (2005) and Guba and Lincoln (1994) stated that there are two basic methods to be well considered in describing the gathering and analyzing of data and these are the qualitative and quantitative approaches; they play some very essential roles in a research study by given useful information's the study conducted by the researcher. Also, a research conducted by Creswell, (2008); Cohen *et al.*, (2007); Gliner *et al.*, (2009) and Kothar, (2010), stated that, research approach can be categorized into three, and these are: Quantitative, Qualitative, and Mixed methods research (Both quantitative and Qualitative)

3.2.1 Quantitative research

The quantitative approach was selected for this research, due to its numerical and statistical characteristics, which was also adopted by the study. Quantitative approach involves the generation of statistics or data in a quantitative form by accepting important survey research, using approaches such as questionnaires or structured interviews (Kothari, 2004; Dawson,

2002). In the journal of business and economic research (2007) discovered that quantitative research started around 1250 A.D and this was processed by scholars who were interested in quantifying data to know its outcome.

In this study, structured questionnaires were prepared and distributed to respondents. The data used for the research were primary. Primary data was obtained from the selected respondents located in the Accra Metropolis, using a well-structured close-ended questionnaire.

It was stated that quantitative approach was adopted in the western culture as one vital method for research in creating a new understanding and knowledge for research process. It was stated by Leedy and Ormrod (2001) that quantitative research is exact when we consider its survey process, experimentation, and also assists in correct analysis of data collected.

3.3 POPULATION DEFINITION

Having identified the research approach there is a need to identify the population from which the sample will be taken from (Ritchie et al., 2003). Population refers to the complete set of people, cases, observations or data about which information is desired and is also of interest to a researcher (Passer, 2004; Kothari, 2004; Beins and McCarthy, 2011). Furthermore, Walliman (2011) and Gray (2004) confirmed that a population does not refer to any number of people, units or elements but rather a total quantity of a particular type of people, units or cases relevant to the subject of a researcher. The researcher must identify the group of people from which he can collect the richest and most relevant information pertaining to research question (Ritchie et al., 2003).

From the little literature above, the population for the study was mainly limited to project professionals in certified D1K1-D4K4 construction firms engaged by the Armed Forces in the Greater Accra region of Ghana. Some of this project professional considered were: Project Managers, Architects, Quantity Surveyors, Engineers, and Site Supervisors, the study also

limited itself to thirty (30) D1K1-D4K4 from fifty (50) registered construction firms engaged by the Armed Forces in Accra metropolis. The study selected the Greater Accra region of Ghana because there are currently a lot of construction projects on-going in that area.

3.4 SAMPLING TECHNIQUE

According to Saunders et al. (2007) two types of sampling techniques are mostly considered, these are the: probability and non-probability sampling; explaining the probability sampling, this is the basics of the population have some recognized opportunity of being designated as sample subjects; whiles the in non-probability sampling, the variables do not have a known opportunity of being chosen as subjects which fit into the broad groups of convenience and purposive sampling. It was also defined by Polit and Hungler, (1999) that sampling is a process for choosing a quota of the population to characterize the whole population. A sample entails a subject of the units that entails the population.

The research method used was purposive sampling for the selection of respondents. This technique allows the researcher to select the individual who has good knowledge and understanding in construction projects. (Erbil et al., 2010). And the study selected construction firms in Accra under the category of D1K1-D4K4 to contribute in exploring strategies for effective communication management in construction projects.

3.5 SAMPLE SIZE

A sample can be explained as a part of a whole (population) drawn to reflect the remaining (Naoum, 1998). According to Passer (2004), a sample frame represents the “operational definition of the population”. Furthermore, a sample frame represents a list of items such as names, phone numbers, addresses etc. from which the sample is to be drawn (Passer, 2004; Kothari, 2004).

The study selected construction professionals from the Accra metropolis in the D1K1-D4K4 construction firms. As stated from above, the researcher adopted the quantitative approach for

the study, in view of this; the study also limited itself to thirty (30) D1K1-D4K4 construction firms as sample size out of fifty (50) registered construction firms engaged by the GAF. The study administered three (3) questionnaires to each of the thirty (30) D1K1-D4K4 construction firms. In all this helped in given the study a targeted sample size of (90) from the thirty (30) construction firms.

3.6 DATA COLLECTION

The most suitable instrument or tool that can be used to collect quantitative data is a questionnaire (Walliman, 2011). A questionnaire is made up of a number of printed or typed questions on a form or set of forms arranged in a definite format (Kothari, 2004). The structured format of questionnaires makes it a very flexible tool, convenient for respondents, and less expensive and quick to administer to a large and widely spread population geographically (Walliman, 2011; Kothari, 2004).

In this study, a structured questionnaire was well thought-out for the collection of data from respondents. The data was also analyzed by using quantitative analysis technique by the means of the statistical Package for Social Sciences (SPSS).

3.6.1 Questionnaire design

Questionnaire construction involves framing of questions and asking for self – reported attitudes, knowledge, statements of behavior from respondents (Burnham et al., 2008; Beins and McCarthy, 2011). According to Abdal-Hadi, (2010) using a questionnaire for data collection is possibly the most broadly used method for conducting most surveys in the research process. Research conducted by Frazer and Lawley (2000) stated that most often the research is likely to be unsuccessful or deviate if the questionnaire is not well constructed. It is therefore significant to design an accurate questionnaire. A questionnaire is administered to help gain accurate information from respondents to help attain the main aim of the research.

The questionnaire for this study was carefully constructed because it is considered as the heart of a survey operation (Kothari, 2004). The questionnaire consisted of five main parts; Part one, Part two, Part three, Part four and Part five. Part one covers the demographic data of the respondent; respondent profession, class of their firm, their level of education and other relevant questions needed for the study, Ahadzie (2007) opined that the demographic data of the respondent is required to authenticate the credibility of the data. Part two sought to identify the challenges of communication in the management of project. Part three presented the causes of communication challenges among construction professionals, Part four presented the communication practices and the last part (part five) covered the strategies to effective communication management in construction projects. A five-point Likert scale was adopted in this study to measure the response of each respondent. According to Bertram (2007), Likert scale is a psychometric response scale mostly adopted in questionnaires; it aids the researcher to easily ascertain the degree to which a respondent agrees with a statement. Close ended questions were asked in each part of the questionnaire for the respondent to select from a set of given answers and at the end of each part, an open ended question was asked to enable the respondents qualify their responses. This was done to get the views of the respondents based on their experiences in this area, and base on their responses the main aim of the research will be achieved.

3.8 DATA ANALYSIS

The results of the data collected was analyzed in percentages and figures using descriptive statistics and presented tables, which was also based on the quantitative approach. Processing of data can proceed once the data has been collected; it involves coding of the collected data for efficient analysis of the results (Burnham et al., 2008). Quantitative data analysis normally involves statistics, that is data collected in the form of numbers and their properties can be analyse using mathematical operations (Passer, 2004; Walliman, 2011).

The data collected from the questionnaires were coded and analyzed using simple statistical tools such as the Statistical Package for Social Sciences (SPSS) version 20 and Microsoft Excel. By this tool, the Mean score ranking and the Relative Importance index was also used in helping to analyze data collected, and this helped in attaining the main aim of the study.

In further explanation to the Relative Important Index (RII), The formulae $(RII) = \frac{\sum w}{A \times N}$

Whereby; **W** = the weighting given to each cause by respondents, ranging from 1 to 5, **A**= the highest weight (i.e. 5 in the study), and the **N** = the total number of samples.

3.9 CHAPTER SUMMARY

This chapter was geared towards identifying the procedures to be adopted for this study. A quantitative research approach was employed and data collected was sourced from construction professionals at D1K1-D4K4 construction firms in *Accra metropolis*. The chapter explained the research approach, the research population definition, the sampling technique to the research, the sample size, data collection method, questionnaire design and the tools for the data analysis. The collected data were coded and analyzed using SPSS in which the tools used were the Mean score ranking and Relative Importance Index (RII). The next chapter will critically analyze and discuss the collected data.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 INTRODUCTION

The chapter will bring together the data analysis and discussion of results. The chapter followed sequence where by data was analysed according to the objectives of the study. The various objectives of the study were to; identify the challenges of communication in the management of project, identify the causes of communication challenges among construction professionals, explore strategies for effective communication management in construction projects. As said from the beginning, the chapter will focus on the analysis of the data and the Statistical Package for Social Sciences (SPSS) and Microsoft excel, in which the tools selected is the means score ranking and the Relative Importance index (RII). After this analysis, results are discussed and presented based on results of the findings.

4.2 RESPONSE RATE

Questionnaires taken out there were administered to the respondents selected for the study. The respondents were a total number of ninety (90). Out of this number, a sum of sixty-five (65) questionnaires were received which represented 72.22 percent. Most respondents were interested in the study and they contributed well in helping to achieve the main aim of the study. From the number that contributed to the study shows how effective the results of this study will be, and it was said by Baruch (1999), a response rate of about 35% is satisfactory for most research studies aiming top management or organisations' representative. This makes it evident that the percentage of respondents is very suitable.

4.3 DESCRIPTIVE ANALYSIS OF DATA (DEMOGRAPHIC)

This section of the questionnaire delved into getting personal information from the respondents and some other important respondent individualities to aid the study in knowing how effective data collected from respondents can help the study in achieving its aim. This information included; the profession of respondents, the class of respondent's firm, level of education for respondents, respondent's years of practical experience, and many other relevant questions.

4.3.1 Respondents profession

As specified in table 4.1, respondents specified their field of profession and it is seen that 36.9% of the respondents were project managers. Also from the table that 27.7 percent of the respondents were quantity surveyors. 15.4 percent of the respondents were also project managers. Delving deeper into the table, it is also seen that 12.3 percent of the respondents were Architects and 7.7 percent too were Contractors. The research focused on mainly construction professionals. In which it is seen that a hundred (100%) percent of the respondents were all professionals in construction. And this was very helpful to the study in gathering very effective data.

Table 4.1: Respondents profession

Profession	Frequency (N)	Percent (%)	Cumulative percent
Project Manager	10	15.4	15.4
Architect	8	12.3	27.7
Contractor	5	7.7	35.4
Engineer	24	36.9	72.3
Quantity surveyor	18	27.7	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.3.2: Class of respondent's firms

The research focused on construction professionals in D1K1-D4K4 construction firms. It is known that D1K1 and D2K2 are the bigger firms and the D3K3 and D4K4 firms are considered as minor firms. In this explanation, from the table below (table 4.2), the class of respondents was identified, the respondents that contributed most were from the D2K2 firms with a percentage of 40.0. Also, 33.8 percent of the respondents were also from the D3K3 construction firms, 16.9 percent of the respondents also worked with the class D1K1 construction firms and lastly 9.2 percent of the respondents were also with the D4K4 construction. This showed that more than 50 percent of the respondents were coming from the bigger firms which is the D1K1 and D2K2 firms and the rest of them were from the small firms. And even with this categorization shows that all the respondents are effectively into construction and their contribution was helpful.

Table 4.2: Class of respondent's firms

Class	Frequency (N)	Percent (%)	Cumulative percent
D1K1	11	16.9	16.9
D2K2	26	40.0	56.9
D3K3	22	33.8	90.8
D4K4	6	9.2	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.3.3: Level of education

Level of education was very essential to the study. And this was to know how much they could understand the questionnaire presented to them. The level of education of respondents was seen in the table below and from the table (4.3) 21.5 % of the respondent have their HND, 29.2 % have their Bachelor degree, then 38.5% have their postgraduate degree, the table also showed that 8.3 % of the respondents have their PhD.

Table 4.3: Level of education

Level of education	Frequency (N)	Percent (%)	Cumulative percent
HND	14	21.5	21.5
Degree	19	29.2	50.8
Postgraduate	25	38.5	89.2
PhD	7	8.3	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.3.4: Years of practical working experience in the construction industry

The practical experience of respondents was something that was very needful to the study, the study needed to know how experienced the respondents are in this area of study. And this was possible by knowing their level of experience in the construction industry. And base on the questionnaire distributed, the outcome of the data is seen in the table 4.4 below. And from the results of the data, most (35.5%) of the respondents have had experiences in the construction for 6-10 years, others too with a percentage of 26.2 indicated that they have had experience in the field of construction for more than 10 years, also it is seen in the table below that about 23.1 percent of the respondents have also had experience in the field of construction for 2 – 5 years, lastly the rest of the respondents (15.4%) have had experience in this area for less than 2 years. And from this data it is seen that more than 60 percent of the respondents have been in the industry up to 10 years and this shows how much experience they have had in this very area of study. And this was very helpful to the study in attaining its main aim.

Table 4.4: Years of practical working experience in the construction industry

Experience	Frequency (N)	Percent (%)	Cumulative percent
Less than 2 years	10	15.4	15.4
2 – 5 years	15	23.1	38.5
6 – 10 years	23	35.5	73.8
More than 10 years	17	26.2	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.3.5 Years of working with your current organization

The table 4.5 shows how long respondents have worked in with their current organisation. This was a need to the study because, the study wanted information on how long they have been with their current organisation and how much effective information that they can give to the study to help attain the success of the study. It is seen from the table that 46.2 percent of the respondents have been with their organisations between 6 to 10 years. 30.8 percent of the respondents have been with their current organisations between 2 – 5 years, 13.8 percent of the respondents have worked in their current organisations for more than 10 years. Lastly it is also seen that 9.2 percent of the respondents have been with their organisation for less than 2 years. It is then seen that most of the respondents have been with their current organisations between the years 5 to 10 years. And this shows how much information about communication that they have in their firms to give to the study, in helping to attain the success of the research.

Table 4.5 Years of working with your current organization

Years of working	Frequency (N)	Percent (%)	Cumulative percent
Less than 2 years	6	9.2	9.2
2 – 5 years	20	30.8	40.0
6 – 10 years	30	46.2	86.2
More than 10 years	9	13.8	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.3.6: If firm considers effective communication management among team members

The research found it relevant to ask respondents how their firms consider effective communication management, this question came out as a surprise to the researcher because, majority of the respondents (58.5%) answered “Yes” to the statement. And about 41.5 percent of the respondents answered “No” to the statement. This shows that majority of the respondents experience a good flow of communication in their firms but the percentage that

do not experience a good level of communication in their firms is still a high percentage. Out of 100 percent, there was about 41.5 percent of the respondent saying No to this statement which shows that the knowledge of literature is still limited in the construction sector, and there is a need for this study to help in adding knowledge in this area of study.

Table 4.6: Consideration of effective communication management among team members

Effective	Frequency (N)	Percent (%)	Cumulative percent
YES	38	58.5	58.5
NO	27	41.5	100.0
Total	50	100.0	

Source: Field Survey, 2018

4.4: THE CHALLENGES OF COMMUNICATION IN THE MANAGEMENT OF PROJECT.

The first objective of the study focused on identifying the challenges of communication in the management of project. In this part of the questionnaire (section B), the respondents were presented with a list of 12 challenges of communication in the management of project. Respondents were asked to select based on the level to which they agreed or disagreed with the elements presented to them. After data collection from the respondents, the data was analyzed using the Means score ranking tool and the results of the data is presented in the table below (4.7).

Table 4.7: The challenges of communication in the management of project.

Challenges	N	Mean	Rank
Inadequate co-operation and coordination among project team members	65	4.92	1st
The use of jargons hinders effective team communication	65	4.86	2nd
Ineffective information flow among project teams	65	4.77	3rd
A lack of clear objectives and Faulty transmission.	65	4.05	4th
The use of bad grammar	65	4.00	5th
Poor listeners, Inactive and ineffective listening	65	3.75	6th
Delay in distribution of information,	65	3.08	7th
Lack of necessary communication skills	65	3.03	8th
Cultural and organizational backgrounds	65	2.62	9th
Not paying attention,	65	1.92	10th
Ineffective systems of reporting	65	1.11	11th
Limited communication resources	65	1.02	12th

Source: Field Survey, 2018

Based on the results of the data, it is seen in the table 4.7 above, that respondents were able to rank the factors very effectively and from the table it is seen that five factors were ranked very high and the first factor that was ranked as highest was: *Inadequate co-operation and coordination among project team members* which had a means score value of 4.92, the

second was *the use of jargons hinders effective team communication* with a Means score value of 4.86, the third was *Ineffective information flow among project teams* with a mean score value of 4.7 the last but not the least, which h was the 4th factor was *A lack of clear objectives and Faulty transmission* with had the value of 4.00. And the 5th ranked highest factor was *The use of bad grammar* with a mean score value of 4.00. These factors were also identified by some renowned researchers, according to Shut (1992) in the construction industry, the process of communication is regularly stalled. The interruptions of construction projects are sometimes encountered due to *inadequate co-operation and coordination among the project team members*. According to Jureddi et al., (2016) and Carroll, (2009), the use of jargons hinders effective flow of communication, ineffective information flow among project team's members and the lack of team members having unclear objectives of project aims can cause challenges in the flow of effective communication.

This shows that the respondents really selected these elements out of experience because many other researchers have also mentioned these elements as challenges that need to be dealt with. The last challenge of the effective flow of communication selected by the respondents was *the limited communication resources* which had a means score value of 1.02. Most of the respondents didn't agree with this challenges and looking into literature this very challenge was least mentioned by a lot of scholars. This proves the first high ranked challenges of communication need to be considered and dealt very well with.

4.5: CAUSES OF COMMUNICATION CHALLENGES IN THE CONSTRUCTION INDUSTRY

The third part of the questionnaire presented the causes of communication challenges in the construction industry. This objective of the study was relevant because, it delved into the causes of the challenges identified. And this was presented to respondents to know the level of importance to which the respondents will give to the ten (10) elements presented to them.

The respondents were asked to tick the elements based on the level of importance. And the results of this section was also analyzed using the mean score ranking and the results of this was presented in the table 4.8 below. This has been well ranked using the mean score ranking.

Table 4.8: Causes of communication challenges in the construction industry

Causes of Challenges	N	Mean	Rank
Workers having a different perception about the information given	65	4.92	1st
Unclear objectives can lead to ineffective communication	65	4.75	2nd
Language barriers	65	4.15	3rd
Superiors giving information speak on a low tone that workers find it difficult to hear the information that is being given to them	65	3.92	4th
Lack of concentration when receiving information	65	3.62	5th
Lack of education and training	65	3.11	6th
Issues of religious differences	65	2.86	7th
Trust issues causes workers to sometimes ignore the information given	65	2.62	8th
Age difference	65	2.09	9th
Misunderstanding during construction activities	65	1.82	10th

Source: Field Survey, 2018

By scrutinizing table 4.8 above, the following elements has been ranked. And according to other researchers, some of these causes of challenges were identified. Three of the elements were ranked high and these were; *having a different perception about the information given*,

Unclear objectives can lead to ineffective communication and Language barriers. These were ranked respectively with mean score values of 4.92, 4.75 and 4.15. According to Adeleke (2004) and also (Jureddi et al., 2016; Carroll, 2009), they stated that; the receiver and workers sometimes have a different perception about the information given and decides what to accept and what to discard in an information based on his perception of priority. Secondly, it was also stated by Becky Schultz (2016), that unclear objectives can lead to ineffective communication. We can see that the first two elements ranked by the respondents were also stated by other researchers. Based on the third highest ranked element, it was again said by Becky Schultz (2016), that due to language barriers, sometimes the information given gets confusing and incomplete to some workers. This proves how in depth the researchers were in this area of study. The other six of the factors were also ranked accordingly and these was done in the following; *Superiors giving information speak on a low tone that workers find it difficult to hear the information that is being given to them (3.92), Lack of concentration when receiving information (3.62), Lack of education and training (3.11), Issues of religious differences (2.86), Trust issues causes workers to sometimes ignore the information given (2.62), Age difference (2.09)* and the last ranked factor was *Misunderstanding during construction activities* which had a means score value of 1.82.

4.5.1 the most ideal means of communication, when giving out an instruction

The laid measures in founding out how these construction professionals communicate with workers when giving out instructions. This is because the studies main objective was to explore strategies to effective communication management in construction projects. And some of these findings could help in finding out what really causes in effective communication on construction sites. The questionnaire presented to the respondents their very means of communicating to workers when giving out instructions, and from the table below shows that majority (44.6%) of the respondents give instructions to workers by

speaking to them verbally which shows the development of good relationship between respondents and subordinates. Also 18.5 percent of the respondents made it clear that they gave written instruction to workers, 10.8 percent of the also use the non-verbal (signals) way to give instructions. 26.2 percent of the respondents also used all of the above mentioned methods to give instructions. This showed that most of the respondents had ways of communicating with their workers and this was considered by the study.

Table 4.9 The most ideal means of communication, when giving out an instruction

	Frequency (N)	Percent (%)	Cumulative percent
Written	12	18.5	18.5
Non- verbal (Signals)	7	10.8	29.2
Verbal	29	44.6	73.8
Any of the above	17	26.2	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.5.2: Respondent preferred mode of instruction.

Respondents were also asked how they preferred an instruction to be given to them. This is because the study wanted to know if how they gave instructions were the same way they expected instructions to be given to them. Truly most of the respondents which was about 43.1 percent preferred any of the below instructions to be given to them. 29.2 percent of the respondents preferred instructions to be given to them verbally. Also 18.5 percent of the respondents preferred instructions in the written way and 9.2 percent of the respondents preferred it in non-verbal (signals) way. This showed that almost all the respondents gave instructions in a way that they also expected the same way to be given to them. And this showed how matured and sincere the respondents were.

Table 4.10: Respondents preferred mode of instruction.

	Frequency (N)	Percent (%)	Cumulative percent
Written	12	18.5	18.5
Non- verbal (Signals)	6	9.2	27.7
Verbal	19	29.2	56.9
Any of the above	28	43.1	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.5.3 How you most regularly communicate with employees with whom you work in the same firm

The study had interest not only in how the respondents gave instruction to workers but also how they communicated with them. And from the table 4.11 below, it is seen that 47.7 percent of the respondents communicated with employees mostly at the group meetings and 32.3 percent of the respondents did this on telephone or mobile phone when they need respondents, 16.9 percent of the respondents also did this face to face and 3.1 percent of the respondents communicated with their employees through email. This makes it evident that most of the respondents communicated with their employees by meeting them in person, in which a lesser number of the respondents did this by means of technology (Email, phone).

Table 4.11 Regular communication with employees.

	Frequency (N)	Percent (%)	Cumulative percent
Face to face	11	16.9	16.9
Email	2	3.1	20.0
Group Meetings	31	47.7	67.7
Telephone/ mobile phone	21	32.3	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.5.4: In what way do you communicate with members from other professions in the construction industry

The study also found it relevant to know how these construction professionals also interact with other professionals. From the table below, we realized that most of these professionals communicate with other professionals by the face to face method. Also 32.3 did this through email, 16.9 percent did this through telephone and lastly 7.7 percent of the respondents did this by group meetings. This made it clear that most of the respondents preferred communication in the individualism way, whereby they do this in person.

Table 4.12: Ways of communicating with members from other professions in the construction industry

	Frequency (N)	Percent (%)	Cumulative percent
Face to face	28	43.1	43.1
Email	21	32.3	75.4
Group Meetings	5	7.7	83.1
Telephone/ mobile phone	11	16.9	100.0
Total	65	100.0	

Source: Field Survey, 2018

4.6: STRATEGIES TO EFFECTIVE COMMUNICATION MANAGEMENT IN CONSTRUCTION PROJECTS.

Base on the literature read, and the in-depth research done in this area, certain strategies to effective communication management were identified. This was done to achieve the main aim of the study. In this part of the questionnaire (part 5) Eight (8) factors were identified and presented to respondents to know the level to which they agree or disagree with these strategies, results gotten from respondents was analyzed using the Relative Importance Index (RII). After the analysis, the strategies were successfully ranked and this helped in attaining the aim of the study. Further explanation to the relative importance index is explained in this

section, $(RII) = \frac{\sum w}{AxN}$

W is the weight given to each factor by the respondent and ranges from 1 to 5

A is the highest weight-5

N= the total number of respondents (40).

Table 4.13: Strategies to effective communication management in construction projects.

No.	STRATEGIES	ΣW	Mean	RII	Rank
1	All team member must have an idea and also know the main goal of the project ongoing, which can lead to effective flow of communication.	316	4.86	0.972	1 st
2	Team members must have a full concentration when receiving information	302	4.65	0.930	2 nd
3	The use information technologies in the process of communication. Examples include the use of emails, teleconferencing, e-meetings and team rooms.	281	4.32	0.864	3 rd
4	Both message sender and receiver must have the same understanding of the information	260	4.00	0.800	4 th
5	Management of project must also ensure all disputes on site are well managed to improve work effectiveness.	238	3.66	0.732	5 th
6	There must be regular meetings, especially face to face meetings to ensure a good flow of communication among team members	203	3.12	0.624	6 th
7	Positive attitudes and attentive listening must be given to the information given	174	2.68	0.536	7 th
8	Smoothness involves the flow of communication and responsiveness.	126	1.94	0.388	8 th

Source: Field Survey, 2018

The study was successful in exploring the strategies for effective stakeholder management. And from the table 4.13 above, the study presented the results of the data collected, and from the table the first four elements ranked very high were; *All team member must have an idea*

and also know the main goal of the project ongoing, which can lead to effective flow of communication (0.972), Team members must have a full concentration when receiving information (0.930), The use information technologies in the process of communication. Examples include the use of emails, teleconferencing, e-meetings and team rooms (0.864), Both the message sender and receiver must have the same information and understanding (0.800), This was done respectively. The rest of the strategies were also ranked in this manner in the table above.

4.6.1 Further discussions to highest ranked strategies

All team member must have an idea and also know the main goal of the project ongoing, which can lead to effective flow of communication

Most of the construction workers do not have an idea of the main or actual goal of project that they are undertaking. This is because the workers focus on other things instead of the main goal of the work they are doing, also, many workers do not pay attention to instruction given, which makes lose focus on the actual aim of what they have to do. If workers and even professional have an idea of the actual aim of project undertaken, the flow of communication will not be misled but rather effectively understood. According to Becky Schultz (2016), he stated that unclear objectives can lead to ineffective communication, and this shows that respondents that contributed to the study have a great understanding and experience in this area of study. Therefore, this strategy must be applied and taken into consideration.

Team members must have a full concentration when receiving information

Many team members and even professionals themselves, mostly do not pay maximum attention when receiving an information. This very strategy must seriously be taken into considerations because it will be of great help to ensure effective communication. It was said by Becky Schultz (2016) that construction workers are normally in a rush to start the actual work, in the reason of not missing the deadline for the work. And they rush without fully absorbing the instructions and information's given by clients. With it shows that if most workers and even professionals concentrate on information given to them, the flow of effective communication will be evident.

The use information technologies in the process of communication

Many respondents that do not consider the face to face or individualism method of communication must ensure other technologies in communication, liken using emails, mobile phones and other technological methods to ensure effective of communication. This strategy is equally important to the very first two selected strategies. According to Gudyknust (2003), he stated that the use of information technologies in the process of communication. Examples include the use of emails, teleconferencing, e-meetings and team rooms, are very relevant.

Both the message sender and receiver must have the same information and understanding.

Many at times the sender and the receiver have different understanding on the information given. If the sender of the message doesn't have full understanding of the information given to him, then he will give a wrong message to the receiver. And sometimes when the sender gets the information right, he must ensure that the receiver understands the message he is passing unto him. It was again said by Gudyknust (2003), Understanding is where one party understands the other or both parties understanding each other in the communication. This

proves that this strategy is very relevant and that there must be the same understanding between the sender and the receiver of the message.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

This chapter focused mainly on the conclusions and recommendations of the study and the chapter will summarize how all the objective were successfully attained. The main aim of the study was to explore strategies to effective communication management in construction projects. This aim was derived from the topic and in order to achieve the aim the following objectives were identified; first the challenges of communication in the management of project and the second objective was to identify the causes of communication challenges among construction professionals and lastly to explore strategies to effective communication management in construction projects. The chapter will summarize all the entire work in which chapter one was the key introduction to the research. The second chapter revealed the review of relevant literature. Chapter three, shows the methodology accepted for the study including research strategy were also discussed. The fourth chapter was principally on the analysis of the research and also delivered detailed discussions on the survey results. This very chapter which is the chapter five will also focus commonly on summarizing the conclusions of the study.

5.2 ACCOMPLISHING RESEARCH OBJECTIVES

The three main objectives used in attaining the main aim of the study were accomplished. The achievement of these objectives was briefing discussed.

5.2.1 Objective 1: To identify the challenges of communication in the management of project.

The study focused on this objective to know the challenges of communication that affects the effective flow of communication The study found it as a need that to be able to identify

certain strategies to help in the effective flow of communication, then there is a need to know the challenges of communication, its causes then after the strategies can be explored on how to ensure the effective flow of communication. Before the study delved into this objective, it went through certain relevant definitions. From the first objective the results of the challenges of communication are respectively as follows; inadequate co-operation and coordination among project team members, the use of jargons hinders effective team communication, ineffective information flow among project teams, a lack of clear objectives and Faulty transmission, the use of bad grammar. The rest of the objectives was also done and this sequence but the last objective ranked by the respondents was; Limited communication resources. After the data was analyzed, the study was able to achieve the success of its first of objective by presenting several challenges of communication.

5.2.2 Objective 2: To identify the causes of communication challenges among construction professionals.

The second objective was to identify the causes of communication challenges among construction professionals. The study focused on this by getting the literature in this area of the study, and knowing the causes of challenges aided the research in knowing how to identify strategies in dealing with these challenges and its causes. The Mean score raking was used to analyse the data base on the respondents rating. With the help of the means score the ranking resulted in this manner; workers having a different perception about the information given, unclear objectives can lead to ineffective communication, language barriers, superiors giving information speak on a low tone that workers find it difficult to hear the information that is being given to them, lack of concentration when receiving information, etc. All the other factors also went through this process of ranking and the research was able to present the causes of challenges of communication.

5.2.3 Objective 3: To explore strategies to effective communication management in construction projects

The study delved into an in-depth literature, in exploring the strategies to ensure effective communication. Based on the literature, a questionnaire was prepared and eight (8) factors were presented to the respondents and after this, results of the data was collected and analysed using the Relative Importance Index (RII), and this resulted in the following; All team members must have an idea and also know the main goal of the project ongoing, which can lead to effective flow of communication, team members must have a full concentration when receiving information. The use of information technologies in the process of communication was found to be necessary. Examples include the use of emails, teleconferencing, e-meetings and team rooms and lastly both the message sender and receiver must have the same information and understanding. These strategies were ranked as the first four highest, in which the rest of the strategies were also ranked in this manner. One factor was ranked last by the respondents and this was; the smoothness involves the flow of communication and responsiveness. Even though this was ranked last, all the strategies were relevant to the respondents and must be taken into consideration to help ensure the effective flow of communication in construction.

5.3 CONCLUSION

The study went into mainly exploring the strategies for effective communication management in construction projects. In considering the first and second objective, the study was able to achieve the main challenges of communication and also the main causes of communication challenges in the construction industry. Most of the identified challenges had to do with inadequate co-operation and coordination, use of jargons as well as ineffective flow of information among project members. These adversaries affect effective communication at construction firms and site. Additionally, the cause of these communication challenges were

identified as language barriers, unclear objectives, religious differences, lack of education and training, issues with trust and many others. These causes make receivers to have different perceptions of the information been received or get confused about the information. The study also focused further on exploring strategies to effective communication management in construction projects. And some of these strategies were; all team members must have an idea and also know the main goal of the project ongoing, which can lead to effective flow of communication, secondly, there was the need for team members to have full concentration when receiving information, the need to use information technologies in the process of communication, both the message sender and receiver must have the same information and understanding. Managers of project must also ensure all disputes on site are well managed to improve work effectiveness. This also included other relevant strategies too. In achieving all these three objectives the study was able to achieve its main aim. It was evident that, operative communication strongly affects the project delivery performance and managers within the construction industry. Therefore, communication strategies and structures must always be clearly established and managed properly on construction projects.

5.4 RECOMMENDATIONS

The following recommendations are noted worthy to be considered:

- Construction firms should make use of information technologies in the process of communication among construction professionals. Examples include the use of emails, teleconferencing, e-meetings and team rooms.
- Management of project should also ensure all disputes on site were well managed through appropriate dispute management tools such as mediation, negotiation and arbitration if necessary to improve work effectiveness.

- Organizational communication planning should be implemented for effective project communication system in construction firms.
- Construction firms and organizations need to develop and encourage education and training programs for its employees for effective communication amongst stakeholders on the construction project.
- Construction firms and organizations need to ensure strategies for feedback are implemented to compare perceptions of the information senders (encoder) and the receiver (decoder).
- Positive attitudes and attentive listening should be given when receiving information by sender and receiver respectively by the Construction professionals.

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APPENDICES

QUESTIONNAIRE

APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ART AND BUILT ENVIRONMENT

DEPARTMENT OF CONSTRUCTION TECHNOLOGY AND MANAGEMENT

QUESTIONNAIRE

Topic: Exploring strategies to effective communication management in construction projects; A case study of Ghana Armed forces

INTRODUCTION

Effective communication in the construction industry is a major thing that must be considered by all construction professionals. Many researchers have proven how communication can affect project delivery and project activities. Communication is a process of transmitting information from a sender to a receiver with the use of a means in which the information communicated is well understood by the sender and the receiver. The effective flow of communication on site has helped increase the productivity in many projects. And many project has encountered several issues due to the failure on effective communication that is why the questionnaire for the study is therefore aimed at exploring strategies to effective communication management in construction projects.

The information obtained from this research shall be kept unknown and totally confidential. Only for academic purpose and this will be submitted to the relevant authorities.

I would like to express my gratitude as you contribute in answering these questions.

Harrison Dadzie

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QUESTIONNAIRE

PART ONE: DEMOGRAPHIC CHARACTERISTICS OF RESPONDANT

Please appropriately respond to this questionnaire based on an authentic experience and please answer by ticking [✓] the appropriate cell.

1. What is your profession?

Project manager []

Architect []

Contractor []

Engineer []

Quantity surveyor []

Others (please specify)

2. Please indicate the class of your firm.

D1/K1 []

D3/K3 []

D2/K2 []

D4/K4 []

3. What is your level of education?

HND []

Degree []

Postgraduate(MSc/MPhil) []

PhD []

Others (please specify)

4. How many years of practical working experience do you have in the construction industry?

Less than 2 years []

2-5 years []

6-10 years []

10 years and above []

5. How many years have you been working with your current organization?

Less than 2 years []

2-5 years []

6-10 years []

10 years and above []

6. Do your firm consider effective communication management among team members?

YES []

NO []

PART TWO

THE CHALLENGES OF COMMUNICATION IN THE MANAGEMENT OF PROJECT.

Based on the review of literature, a number of challenges of communication in the management of project have been identified. From practical experience in project activities, please express your views on the following challenges listed below. (Please tick [✓] the suitable box). [Where Strongly Disagree = SD (1); Disagree = D (2); Neutral = N (3); Agree = A (4); and Strongly Agree = SA (5)]

No.	CHALLENGES OF COMMUNICATION	Scale				
		SD (1)	D (2)	N (3)	A (4)	SA (5)
1.	The use of bad grammar					
2.	The use of jargons hinders effective team communication					
3.	Poor listeners, Inactive and ineffective listening					
4.	Ineffective information flow among project teams.					
5.	Lack of necessary communication skills					
6.	Cultural and organizational backgrounds					
7.	Delay in distribution of information,					
8.	Not paying attention,					
9.	A lack of clear objectives and Faulty transmission.					
10.	Inadequate co-operation and coordination among project team members					
11.	Ineffective systems of reporting					
12.	Limited communication resources					
	<i>If others, please specify</i>					

PART THREE

CAUSES OF COMMUNICATION CHALLENGES IN THE CONSTRUCTION INDUSTRY

Below are a number of causes of challenges of communication in the construction industry.

Please tick the appropriate response according to the level to which you agree with these causes of challenges as indicated by the given scale. (Please tick the suitable cell). [Where: 1

– Not important, 2 – Quite/low important, 3–Moderately Important, 4 –Important, 5 - Very important

No.	CAUSES OF CHALLENGES	Scale				
		(1)	(2)	(3)	(4)	(5)
1.	Unclear objectives can lead to ineffective communication					
2.	Language barriers					
3.	Lack of concentration when receiving information					
4.	Issues of religious differences					
5.	Age difference					
6.	Misunderstanding during construction activities					
7.	Having a different perception about the information given					
8.	Lack of education and training					
9.	Trust issues causes workers to sometimes ignore the information given					
10.	Superiors giving information speak on a low tone that workers find it difficult to hear the information that is being given to them.					
.	<i>If others, please specify</i>					

PART FOUR:

Communication practices

7. What is your most ideal means of communication, when giving out an instruction?

- a) Written b) Non- verbal (Signals)
- c) Verbal d) Any of the above

8. How would you prefer an instruction to be given to you?

- a) Written b) Non- verbal (Signals)
- c) Verbal d) Any of the above

9. How do you most regularly communicate with employees with whom you work in the same firm?

- a) Face to face b) Email
- c) Group meetings d) Telephone/ mobile phone

Others

10. In what way do you communicate with members from other professions in the construction industry?

- a) Face to face b) Email
- c) Group meetings d) Telephone/ mobile phone

Others

PART FIVE

STRATEGIES TO EFFECTIVE COMMUNICATION MANAGEMENT IN CONSTRUCTION PROJECTS

Effective communication management enhances a good project delivery, below are a number of strategies that can be helpful to ensure effective communication in the construction industry. Based on your experience, please answer by ticking [✓] suitable box. [Where Strongly Disagree = SD (1); Disagree = D (2); Neutral = N (3); Agree = A (4); and Strongly Agree = SA (5)]

No.	STRATEGIES TO EFFECTIVE COMMUNICATION	Scale				
		SD (1)	D (2)	N (3)	A (4)	SA (5)
1.	Both the sender and receiver of the message must have the same understanding of the information					
2.	Positive attitudes and attentive listening must be given to the information given					
3.	Smoothness involves the flow of communication and responsiveness.					
4.	Management of project must also ensure all disputes on site are well managed to improve work effectiveness.					
5.	All team member must have an idea and also know the main goal of the project ongoing, which can lead to effective flow of communication.					
6.	Team members must have a full concentration when receiving information					
7.	The use information technologies in the process of communication. Examples include the use of emails, teleconferencing, e-meetings and team rooms.					
8.	There must be regular meetings, especially face to face meetings to ensure a good flow of communication among team members					
	<i>If others, please specify</i>					

THANK YOU